scales seems to be adapted to peculiar kinds of cloth, as was formerly the case with respect to the Holland, cambric and lawn reeds in Scotland.

The fineness of any piece of cloth, therefore, takes its denomination from the sett of reed in which it has been woven, without any regard to its breadth, or the quantity of warp it may contain; for when the cloth is intended to be broader or narrower than the standard, proportional parts must be added or subtracted, to give the requisite quantity of warp. Thus, the standard for Scotch reeds is 37 inches, which is commonly divided into 16 parts, called nails; and the breadth of a web is generally expressed by the number of nails or sixteenths which it fills of the reed. This was uniformly the case with respect to all goods made of linen yarn, which were subjected to the inspection of a stamp master; but since the cotton manufacture has become so extensive, and every manufacturer must make his goods to suit the market for which they are destined, it is more common to calculate the breadths of webs by inches.

Hence, when the standard is divided into nails, to find how much warp is requisite for any breadth of a given sett of reed, multiply the number of splits in an ell or 37 inches, by the nails in the breadth of the web, and divide by 16. Or, make the nails in the breadth of the web the numerator of a vulgar fraction, and 16 the denominator; then, after having reduced the fraction to its lowest terms, multiply by the former, and divide by the latter.

Example 1. How much warp is requisite for a 1300 web, 18 nails broad?

Here $\frac{18}{16}=\frac{9}{8}$ then, 1300
9

8)11700

1462½ splits, or 14 hundreds, 3 porters,
2½ splits.

2. How many splits of a 1100 reed will be filled by a web 17 nails broad?

Here, $\frac{1100\times 17}{16} = 1169$ splits nearly, or 11 hundred, 3 porters, and 9 splits.

Or thus; divide the splits in ell, by the difference between the given breadth and ell, then add or subtract the quotient to or from the splits in ell, as the breadth exceeds or falls short thereof.

In the first example, the difference is $\frac{2}{16}$ths or $\frac{1}{8}$th; in second, $\frac{1}{16}$th; then,

First, 8)1300	Second, 16)1100
$162\frac{1}{2}$	69 nearly.
$1462\frac{1}{2}$	1169 as above.

When the breadth is given in inches, to find the number of splits, multiply the warp in an ell by the number of inches broad, and divide by 37.

Example. How many splits warp are in a 1000 reed 32 inches broad?

Here, 1000
32

37)32000(865 nearly.
296

240
222

180
185

Table IV. contains the number of splits in the breadth, from 36 to 72 inches, and from a 600 to a 2400. When either more or fewer inches are required, it is only neces-

sary to add or subtract such numbers as will give the answer.

To reduce cambric reeds to reeds on 37 inches, say,

As 34 : 37 : : so the cambric : to the lawn or 37 inch reed.

Thus, to find what reed on 37 inches is equivalent to 2000 cambric, say,

As 34 : 37 : : 2000 : 2176, or 21 hundred, 3 porters and 16 splits.

To reduce Holland reeds to reeds on 37 inches, the proportion is,

As 40 : 37 : : so the Holland : to the lawn or 37 inch reed.

Example. How many splits of a 19 hundred Holland reed are there in 37 inches? say,

As 40 : 37 : : 1900 : 1757½ splits.

The number of the reed in which any piece of cloth has been woven, is generally ascertained by the help of a small instrument, called a web glass. It consists of a magnifying glass fixed in a brass stand, at the focus of which is a plate perforated with holes, adapted to the different scales of reeds: when these holes are adapted to the reeds used in Scotland, they are of such a size, that we can count one thread of warp for each hundred or sett of the reed; but in England, they are usually adapted to the number of threads in an inch, or some part of an inch.

Hence, to find if a web glass be accurately made, we say,

As 100 : 37 : : 1 : 0.37; that is, $\frac{37}{100}$ parts of an inch.

This, however, would show a split for each hundred of the reed; but to show single threads, it must be divided by 2, which gives .185, the decimal parts of an inch for the diameter of the hole. Again, if one inch be divided by this fraction, we will have the number of times this glass will be contained in an inch, thus,

$$\frac{1.000}{.185}=5.4054, \text{ or } 5\frac{2}{5} \text{ nearly.}$$

Hence it is evident, that if any number of shots of weft, counted by the glass for 37 inches, be multiplied by 5.4, it will give the shots in an inch, and the contrary.

If the web glass were intended to count one thread for each porter in 37 inches, which is necessary for very coarse fabrics, we have only to multiply the fraction .185 by 5, because 5 porters make a hundred, and the product, .925 is the diameter of the aperture of the plate.

Table V. exhibits a comparison of the English reeds. In the first column are the Nos. or setts of the Manchester and Bolton count; and in the second, the number of dents and hundredth parts of a dent in an inch. The number of dents in any piece of cloth, will therefore be found by multiplying these numbers for any given reed, by the inches in the breadth. Thus, if it were required to find the number of dents in 50 inches of a 40 reed, we have

32.98
50

1649.00, that is 1649 dents.

The third and fifth columns contain the Nos. of the Stockport reeds; and the fourth and sixth, the number of dents less or more on a yard than the Manchester count. For example: Suppose I have a 60 reed Stockport, and wish to know what it is Manchester count, I look in the third column for 60, and in the same line in the fourth column I find 12+36, which shows that a 60 Stockport has 12 dents more in a yard than a 36 Manchester and Bolton.

TABLE IV.

Showing the number of Splits in the following Setts of Reed, and inches broad.

Inches.	600	700	800	900	1000	1100
36	584	681	778	876	973	1070
37	600	700	800	900	1000	1100
38	616	718	821	924	1027	1130
39	632	737	842	949	1054	1159
40	649	756	864	973	1081	1189
41	665	775	885	997	1108	1219
42	681	795	907	1022	1135	1249
43	697	814	929	1046	1162	1278
44	714	832	950	1070	1189	1308
45	730	851	972	1095	1216	1338
46	746	870	994	1119	1243	1368
47	762	889	1015	1143	1270	1397
48	778	908	1037	1168	1297	1427
49	795	927	1058	1192	1324	1457
50	811	945	1080	1216	1351	1486
51	827	964	1102	1241	1378	1516
52	843	987	1123	1265	1405	1546
53	860	1002	1145	1289	1432	1576
54	876	1021	1167	1314	1459	1605
55	892	1041	1188	1338	1486	1635
56	908	1059	1210	1362	1514	1665
57	924	1078	1231	1386	1541	1695
58	941	1097	1253	1411	1568	1724
59	957	1116	1275	1435	1595	1754
60	972	1135	1296	1459	1622	1784
61	999	1154	1318	1484	1649	1814
62	1015	1173	1340	1508	1676	1843
63	1032	1192	1361	1532	1703	1873
64	1048	1211	1383	1557	1729	1903
65	1064	1230	1404	1581	1756	1932
66	1070	1249	1426	1605	1784	1962
67	1086	1268	1448	1630	1811	1992
68	1103	1287	1469	1654	1838	2022
69	1119	1305	1491	1678	1865	2051
70	1135	1324	1522	1703	1892	2081
71	1151	1343	1534	1727	1919	2111
72	1168	1362	1557	1751	1946	2141

TABLE IV. CONTINUED.

Inches.	1200	1300	1400	1500	1600	1700
36	1168	1264	1362	1459	1556	1654
37	1200	1300	1400	1500	1600	1700
38	1232	1335	1438	1541	1643	1746
39	1265	1370	1476	1581	1686	1792
40	1297	1405	1513	1622	1729	1838
41	1330	1441	1551	1662	1772	1884
42	1362	1476	1589	1703	1815	1930
43	1395	1511	1627	1743	1858	1976
44	1427	1546	1665	1784	1902	2021
45	1459	1581	1703	1824	1945	2067
46	1492	1616	1741	1865	1989	2113
47	1524	1651	1778	1905	2032	2159
48	1556	1686	1816	1946	2075	2205
49	1589	1722	1854	1986	2118	2251
50	1621	1756	1892	2027	2162	2297
51	1654	1792	1930	2067	2205	2343
52	1686	1827	1968	2108	2248	2389
53	1719	1862	2005	2148	2291	2435
54	1751	1897	2043	2189	2335	2481
55	1784	1932	2081	2230	2378	2527
56	1816	1968	2119	2270	2421	2573
57	1849	1993	2157	2311	2464	2619
58	1881	2028	2195	2351	2508	2665
59	1914	2063	2232	2392	2551	2711
60	1946	2098	2270	2432	2594	2757
61	1978	2133	2308	2473	2637	2803
62	2011	2168	2346	2513	2681	2848
63	2043	2204	2384	2553	2724	2894
64	2076	2239	2421	2594	2767	2940
65	2108	2276	2459	2635	2810	2986
66	2141	2309	2497	2676	2853	3032
67	2173	2344	2535	2716	2897	3078
68	2205	2379	2573	2756	2940	3124
69	2238	2414	2611	2777	2983	3170
70	2270	2449	2649	2837	3026	3216
71	2303	2495	2686	2878	3070	3262
72	2335	2530	2724	2919	3113	3308

TABLE IV. CONTINUED.

Inches.	1800	1900	2000	2100	2200	2300
36	1752	1850	1946	2043	2141	2238
37	1800	1900	2000	2100	2200	2300
38	1848	1951	2054	2154	2260	2362
39	1898	2003	2108	2211	2318	2424
40	1946	2054	2162	2268	2378	2487
41	1994	2105	2216	2325	2438	2549
42	2044	2157	2270	2385	2498	2612
43	2092	2208	2324	2442	2556	2674
44	2140	2259	2378	2496	2616	2736
45	2180	2311	2432	2553	2676	2798
46	2238	2362	2486	2610	2736	2861
47	2286	2413	2540	2667	2794	2923
48	2336	2465	2594	2724	2854	2985
49	2384	2516	2648	2781	2914	3047
50	2432	2567	2702	2835	2972	3109
51	2482	2619	2756	2892	3032	3172
52	2530	2670	2810	2961	3092	3233
53	2578	2701	2864	3006	3152	3296
54	2628	2773	2918	3063	3210	3358
55	2676	2824	2972	3123	3270	3420
56	2724	2876	3028	3177	3330	3482
57	2772	2927	3082	3234	3390	3544
58	2822	2978	3136	3291	3448	3606
59	2870	3030	3190	3348	3508	3669
60	2918	3081	3244	3405	3568	3731
61	2968	3132	3298	3462	3628	3793
62	3016	3184	3352	3519	3686	3855
63	3064	3235	3406	3576	3746	3917
64	3114	3286	3459	3633	3806	3980
65	3162	3338	3512	3690	3864	4042
66	3210	3389	3568	3747	3924	4104
67	3260	3440	3622	3804	3984	4166
68	3308	3491	3676	3861	4044	4228
69	3356	3543	3730	3915	4102	4290
70	3406	3595	3784	3972	4162	4352
71	3454	3645	3838	3929	4222	4413
72	3502	3697	3892	4086	4282	4477

TABLE V.

Manchester and Bolton.	Dents, and 100 parts in an inch.	Stockport Count.	Dents in a yard less or more than Manchester and Bolton.	Stockport Count.	Dents in a yard less or more than Manchester and Bolton.
20	16.49	34	11—21	100	11—61
22	18.14	36	5—22	102	4—62
24	19.79	38	2+23	104	2+63
26	21.44	40	8+24	106	8+64
28	23.09	42	14+25	108	15+65
30	24.74	44	9—27	110	9—67
32	26.39	46	3—28	112	2—68
34	28.04	48	3+29	114	4+69
36	29.69	50	10+30	116	10+70
38	31.34	52	14—32	118	13—72
40	32.98	54	7—33	120	7—73
42	34.63	56	1—34	122	1—74
44	36.28	58	5+35	124	6+75
46	37.93	60	12+36	126	12+76
48	39.58	62	12—38	128	11—78
50	41.23	64	5—39	130	5—79
52	42.88	66	1+40	132	1+80
54	44.53	68	7+41	134	8+81
56	46.18	70	13+42	136	14+82
58	47.83	72	10—44	138	10—84
60	49.48	74	4—45	140	3—85
62	51.13	76	3+46	142	3+86
64	52.78	78	9+47	144	9+87
66	54.43	80	14—49	146	14—89
68	56.08	82	8—50	148	8—90
70	57.73	84	2—51	150	1—91
72	59.38	86	5+52	152	5+92
74	61.03	88	11+53	154	11+93
76	62.68	90	12—55	156	12—95
78	64.32	92	6—56	158	6—96
80	65.97	94	—57	160	—97
90	74.22	96	6+58	162	7+98
100	82.47	98	13+59	164	13+99

SECT. III. CAAMING, SLEYING OR SETTING.

THESE terms are severally employed to denote the proportioning of the grists or fineness of warps to the different setts of reeds, so as to preserve a uniformity of fabric in the same species of cloth. In order to explain what is meant by the word fabric; let us suppose that a piece of cloth is woven in any sett of reed, as for instance, a 1200 on 37 inches, and that the diameters of the warp threads and the small spaces between them are exactly of the same size. Then, if we have another piece of cloth of the same texture, woven, for example, in an 1800 reed, the diameters of the warp threads being also equal to the intervening spaces, then these two sizes of cloth are said to be of the same fabric, although the one is a third finer than the other; so that, when the diameters of the threads are greater than the spaces, the fabric is proportionally stouter, and the reverse when they are smaller. Now, the method of determining the several grists of yarn that will preserve this uniformity of fabric through the different setts of reed, depends on the following analogy:—

As the square of any given reed:
To the grist of yarn that suits that sett::
So is the square of any other sett of reed:
To its respective grist for the same fabric.

The reason of this rule will evidently appear, by considering the threads of warp, when stretched in the loom, as so many cylinders of equal length or altitude, and the reed as the scale which measures the space in which a given number of these threads are contained; therefore, the solidities of the threads in one sett of reed, will be to the solidities of those in any other sett of reed, as their bases, or, which is the same thing, as the squares of their diameters, by *p.* 11. *b.* 12 of Euclid. But the weights of the cylinders or threads, supposing them of the same density

will be as their solidities; and a determinate number of splits or dents of any reed, or rather the intervals between them, may be substituted for the diameters of the warp threads which pass through them: therefore, by the last analogy, it will be, as the square of the number of splits in any given reed, to the known weight or grist of yarn; so is the square of any other number of splits, occupying the same space, to the weight or grist of yarn that will produce cloth of the same fabric, which is the rule given above.

The threads of warp are here supposed to be all of the same density, which may in some instances appear not to be the case, owing to the difference of twist they may have received in spinning; but when the warps are tightly stretched in the loom, and all their fibres compactly laid by the weaver's dressing, their density, though perhaps not mathematically the same, will be sufficiently near to answer every practical purpose of the manufacturer.

Example 1. If No. 72 make a 1200 jaconet, what will suit a 1600?

Here, 144 is the square of 12, and 256 the square of 16;
then 144 : 72 : : 256

```
      72
    ------
     512
    1792
   ------
144)18432(128 No.
   144
   ---
    403
    288
    ---
    1152
    1152
```

So that No. 148, woven in a 1600 reed, will make the same fabric as 72 in a 1200.

When the reed contains odd porters, which is frequently

the case where the fabrics are coarse, the hundreds must be reduced to porters, and squared as above.

Example 2. Suppose No. 50 for a 1200 pullicate, what will answer a 900 and 3 porters.

hund.	hund.	pors.
say, 12	9	3
5	5	
60	48	
60	48	
3600	384	
	192	
	2304	

3600 : 50 : : 2304
50 No.

36|00)1152|00(32, Answer.
108
72
72

When the grist of yarn is given to find the reed, invert the terms of the proportion, and extract the square root of the fourth term for the answer.

Example 3. If No. 70 make a 1600 cotton cambric, what sett will No. 93 make?

The square of 16 is 256.

then, 70 : 256 : : 93 : 340.
93
768
2304
7|0)2380(8
340—8

And 340.8(18.46
1
28)240
8 224
364(1680
4 1456
3686(22400
22116
284

That is, 18 hundred reed, 46 splits, or $18\frac{1}{2}$ nearly.

When linen yarn is gristed by the number of heers in the pound, the process will be the very same as the preceding, only substituting the heers for Nos. but when it is gristed by the weight of a spyndle or hesp, the proportion will be inverse, as the numbers expressing the grist of the yarn decrease, while those denoting the setts of reed increase.

Example 4. If yarn which weighs 8 oz. per hesp make a 600 lawn, what grist of yarn will make a 1200 of the same fabric?

Say, as 36 : 8 : : 144 : 2 oz.

8

144)288(2

288

0

Example 5. If $4\frac{1}{8}$ oz. per hesp, work in a 600 gauze, what will answer an 800?

Here the ounces must be reduced to eighths, which are 33, then, 36 : 33 : : 64 : $18\frac{1}{2}$ eighths, or 2 oz. 5 drs.

33

108

108

64)1188(18

64

548

512

36 = $\frac{1}{2}$ nearly

Example 6. Suppose, as before, 8 oz. to a 600 lawn, what reed will 4 oz. require, to make the same fabric?

Say, 8 : 36 : : 4 : 72, then $7\dot{2}$(8.48

64

164)800

656

1688)14400

13504

896

That is, 8 hundred and 48 splits, or an $8\frac{1}{2}$ nearly.

These examples, though sufficiently plain to illustrate the general principles of caaming, may still, in practice, be considered as intricate and perplexing to those who are unacquainted with the management of square numbers. In order, therefore, to facilitate these calculations, and render them as simple as possible, the two following tables are inserted, by the help of which caaming tables may be constructed to the greatest degree of accuracy, for every fabric within the range of our most extended manufactures.

In Table VI. the third column contains the complete hundreds or setts of reed on 37 inches from 1 to 32, and along the top, the odd porters. In the first column are the nearest corresponding numbers of the Manchester and Bolton count, and in the second, those of Stockport. In the body of the Table are the logarithms, with their indices, of the squares of all these setts of reed, agreeably to their respective titles. Table VII. contains all the Nos. of yarn, with their logarithms and indices from 1 to 264 inclusive.

USE OF THE TABLES.

1. Take out the logarithm of the given sett of reed from Table VI. and subtract it from 10,000, or which is the

same thing, subtract every figure of the logarithm from 9, except the unit figure, which take from 10, and reserve the remainder. This subtraction, which is merely finding the reciprocal of the logarithm, may always be performed mentally, as the figures are taken out of the table.

2. Take out the logarithm of the given grist of yarn, from Table VII. and add it to the remainder reserved above, and their sum will be a constant quantity ready for the construction of the table.

3. Write down this constant quantity on a piece of paper, and to it add the logarithm of any other reed, and their sum will be the logarithm of the grist of yarn sought, which will be found in the adjacent column.

Example.—Suppose it were required to make a caaming table, commencing with a 700 reed, for jaconets, whose fabric is made by weaving No. 75 in a 1200, and wefted with No. 94. First, look in the third column of Table VI. for 1200, and opposite to it in the fourth column will be found 2158. Take this from 10,000 leaves 7842; which is done mentally thus: beginning at the left hand say, 2 from 9, leaves 7; 1 from 9, leaves 8; 5 from 9, leaves 4; and 8, the unit figure from 10 leaves 2. To this number 7842 add the logarithm of 75 from Table VII. viz. 1875, and their sum, which is 9717, will be a constant quantity for the construction of the table.

Secondly, To this last number add the logarithm of 700, viz. 1690, and look for their sum, viz. 1407, (rejecting 1 at the left hand when the sum of the addition exceeds four figures,) or nearest number thereto in Table VII. which is 26, and this will be the No. of the warp for a 700 reed.

Again, Take down the constant number, and to it add the logarithm of seven hundred and a half, which is 1750, and the number answering to their sum, viz. 1467 in Table VII. is 29, the No. for a $7\frac{1}{2}$ reed; and so on, as in the following specimen, where a caaming table is given at length, both for warp and weft:—

Reeds.	Warp.	Weft.
700	26	32
7½	29	37
800	33	42
8½	38	47
900	42	53
9½	47	59
1000	52	65
10½	58	72
1100	63	79
11½	69	86
1200	75	94
12½	81	102
1300	88	110
13½	95	119
1400	102	128
14½	109	136
1500	117	147
15½	125	157
1600	133	167
16½	142	178
1700	150	188
17½	160	200
1800	169	211
18½	179	223
1900	188	235
19½	199	248
2000	208	261

Constant quantity. 9717

700 . . 1690 Warp

——No.

1.1407=26

9717

7½ . . . 1750

1.1467=29

9717

800 . . 1806

1.1523=33

9717

8½ . . . 1858

1.1575=38

9717

900 . . 1908

1.1625=42

9717

9½ . . . 1955

1.1672=47

9717

1000 . 2000

1.1717=52

9717

10½ . . 2042

1.1759=58

&c

Constant quantity. 9815

700 . . 1690 Weft

——No.

1.1505=32

9815

7½ . . . 1750

1.1565=37

9815

800 . . 1806

1.1621=42

9815

8½ . . . 1858

1.1673=47

9815

900 . . 1908

1.1723=53

9815

9½ . . . 1955

1.1770=59

9815

1000 . . 2000

1.1815=65

9815

10½ . . 2042

1.1857=72

&c.

When caaming tables are required for reeds with odd porters, the logarithms for these reeds are found in the table on a line with the complete hundreds, and below the number of odd porters, and managed as with the half setts in the preceding example.

In this manner may caaming tables be made for any fabric that can be proposed, when the yarn is gristed by the number of hanks or heers in the pound; but when the yarn is gristed by the weight of a spyndle, half spyndle, or hank, the logarithm of the reed must always be subtracted from the constant quantity, as the proportion in this case, is inverse.

Example of a caaming table for clear lawn, whose fabric is made by weaving 2 oz. per hesp or half spyndle, in a 1200 reed.

Reduce the ounces to drams, which are 32; then the sum of the logarithms of 1200 and 32 is 3663, which is a constant number from which the logarithms of the other setts are to be subtracted.

Thus, Constant Number, 3663
Logarithm of 600=1556

2507=128 drs.=8 oz.

600½=3663
1625

2038=109 do.=6 oz. 13 drs.

700=3663
1690

1973=94 do.=5 oz. 14 drs
&c.

In like manner may caaming tables be made for English reeds; for it is only necessary to annex the nearest Nos. of the English counts found in Table VI. to the grists of yarn, suitable to the reeds on 37 inches; or the intermediate setts of the former may be ascertained sufficiently accurate, by proportioning them to the odd porters of the latter.

TABLE VI.

REEDS.

Manch. & Bolton.	Stockport	Hund. on 37 inches.	Log. hund.	Log. 1 por.	Log. 2 por.	Log. 2½ por.	Log. 3 por.	Log. 4 por.
3½	6	100	0000	0158	0292	0352	0408	0510
6½	10	200	0602	0684	0760	0795	0830	0894
10	16	300	0954	1010	1061	1088	1112	1159
13	22	400	1204	1246	1286	1306	1324	1462
16½	26	500	1397	1432	1464	1480	1496	1526
20	32	600	1556	1584	1612	1628	1639	1664
23	38	700	1690	1714	1738	1750	1760	1784
26	44	800	1806	1827	1848	1858	1868	1888
29½	48	900	1908	1927	1946	1955	1964	1982
33	54	1000	2000	2017	2034	2042	2050	2066
36	60	1100	2083	2098	2113	2121	2128	2143
39½	64	1200	2158	2172	2186	2193	2201	2214
42½	70	1300	2227	2241	2254	2260	2267	2279
46	76	1400	2292	2304	2316	2322	2328	2340
49	82	1500	2352	2363	2375	2380	2386	2397
52½	86	1600	2408	2419	2429	2434	2440	2450
56	92	1700	2460	2471	2481	2486	2491	2500
59	98	1800	2510	2520	2529	2534	2539	2548
62½	102	1900	2557	2566	2575	2580	2584	2593
65½	108	2000	2602	2610	2619	2623	2627	2636
69	114	2100	2644	2652	2660	2664	2668	2676
72	118	2200	2684	2692	2700	2704	2708	2715
75½	124	2300	2723	2730	2738	2742	2745	2753
78½	130	2400	2760	2767	2774	2778	2781	2788
82	134	2500	2795	2802	2809	2813	2816	2823
85	140	2600	2829	2836	2843	2846	2849	2856
88½	146	2700	2862	2869	2875	2878	2881	2888
92	152	2800	2894	2900	2906	2909	2912	2918
95	156	2900	2924	2930	2936	2939	2942	2948
98½	162	3000	2954	2960	2965	2968	2971	2977
102	168	3100	2982	2988	2993	2996	2999	3004
105	172	3200	3010	3015	3021	3023	3026	3031

TABLE VII.

NUMBERS OF COTTON YARN.

No.	Log.	No.	Log.	No.	Log.	No.	Log.
1	0000	34	1531	67	1826	100	2000
2	0301	35	1544	68	1832	101	2004
3	0477	36	1556	69	1838	102	2008
4	0602	37	1568	70	1845	103	2012
5	0698	38	1579	71	1851	104	2017
6	0778	39	1591	72	1857	105	2021
7	0845	40	1602	73	1863	106	2025
8	0903	41	1612	74	1869	107	2029
9	0954	42	1623	75	1875	108	2033
10	1000	43	1633	76	1880	109	2037
11	1041	44	1643	77	1886	110	2041
12	1079	45	1653	78	1892	111	2045
13	1114	46	1662	79	1897	112	2049
14	1146	47	1672	80	1903	113	2053
15	1176	48	1681	81	1908	114	2056
16	1204	49	1690	82	1913	115	2060
17	1230	50	1699	83	1919	116	2064
18	1255	51	1707	84	1924	117	2068
19	1278	52	1716	85	1929	118	2071
20	1301	53	1724	86	1934	119	2075
21	1322	54	1732	87	1939	120	2079
22	1342	55	1740	88	1944	121	2082
23	1361	56	1748	89	1949	122	2086
24	1380	57	1755	90	1954	123	2090
25	1398	58	1763	91	1959	124	2093
26	1415	59	1770	92	1963	125	2096
27	1431	60	1778	93	1968	126	2100
28	1447	61	1785	94	1973	127	2103
29	1462	62	1792	95	1977	128	2107
30	1477	63	1799	96	1982	129	2110
31	1491	64	1806	97	1986	130	2113
32	1505	65	1812	98	1991	131	2117
33	1518	66	1819	99	1995	132	2120

TABLE VII. CONTINUED.

No.	Log.	No.	Log	No.	Log.	No.	Log.
133	2123	166	2220	199	2298	232	2365
134	2127	167	2222	200	2301	233	2367
135	2130	168	2225	201	2303	234	2369
136	2133	169	2227	202	2305	235	2371
137	2136	170	2230	203	2307	236	2373
138	2139	171	2232	204	2309	237	2374
139	2143	172	2235	205	2311	238	2376
140	2146	173	2238	206	2313	239	2378
141	2149	174	2240	207	2315	240	2380
142	2152	175	2243	208	2318	241	2382
143	2155	176	2245	209	2320	242	2383
144	2158	177	2247	210	2322	243	2385
145	2161	178.	2250	211	2324	244	2387
146	2164	179	2252	212	2326	245	2389
147	2167	180	2255	213	2328	246	2391
148	2170	181	2257	214	2330	247	2392
149	2173	182	2260	215	2332	248	2394
150	2176	183	2262	216	2334	249	2396
151	2178	184	2264	217	2336	250	2398
152	2181	185	2267	218	2338	251	2399
153	2184	186	2269	219	2340	252	2401
154	2187	187	2271	220	2342	253	2403
155	2190	188	2274	221	2344	254	2405
156	2193	189	2276	222	2346	255	2406
157	2195	190	2278	223	2348	256	2408
158	2198	191	2281	224	2350	257	2410
159	2201	192	2283	225	2352	258	2411
160	2204	193	2285	226	2354	259	2413
161	2206	194	2287	227	2356	260	2415
162	2209	195	2290	228	2358	261	2416
163	2212	196	2292	229	2359	262	2418
164	2214	197	2294	230	2361	263	2420
165	2217	198	2296	231	2363	264	2421

Another practical method of making caaming tables may be derived from the following property of numbers:—

If any square number be divided by its root, and to the square adding the quotient, and this sum divided by the same root, and the quotient added to the said sum, the result will be the square of a number greater by unity than the given root.

For example:—4)16, is the square of 4,
4
4)20
5
5)25, is the square of 5,
5
5)30
6
36, is the square of 6, &c.

Having fixed on the grist of yarn for the given sett of reed, as before, divide the grist of the yarn by the complete hundreds of the reed, and to the dividend add the quotient; this sum is the grist of yarn for the next half sett. Divide the grist thus found by the same complete hundreds, and add the quotient as before, and the sum will be the grist of yarn, answering the next full sett. This operation is to be repeated at every full sett, always dividing the grist of yarn for any full sett, by that sett, both for the half, and full sett immediately following: But in carrying the table below the given sett, the quotients must always be subtracted.

Take the foregoing Example, which has been already wrought by logarithms, where No. 75 makes a 1200 jaconet.

12)75
add 6.25

12)81.25 for a $12\frac{1}{2}$
add 6.77

13)88.02 — 13
add 6.77

13)94.79 — $13\frac{1}{2}$
add 7.29

14)102.08 — 14
add 7.29

14)109.37 — $14\frac{1}{2}$
add 7.8

15)117.17 — 15
add 7.8

15)124.97 — $15\frac{1}{2}$
add 8.33

16)133.30 — 16
add 8.33

16)141.63 — $16\frac{1}{2}$
add 8.85

150.48 — 17
&c.

And for descending below the given sett.

12)75
sub. 6.25

12)68.75 for $11\frac{1}{2}$
sub. 5.73

11)63.02 — 11
sub. 5.73

11)57.29 — $10\frac{1}{2}$
sub. 5.20

10)52.09 — 10
sub. 5.2

10)46.89 — $9\frac{1}{2}$
sub. 4.69

42.20 — 9
&c.

From the above specimen it appears, that the last quotient of one sett, and first quotient of the sett following, are always the same numbers, so that one division only is necessary for each full sett.

AN EXAMPLE FOR LINEN YARN.

Suppose 16 oz. per spyndle, or 8 oz. per hesp, to work in a 600 clear lawn; it is required to form a caaming table for the different setts of the same fabric.

First find in Table I. the number of heers in the pound corresponding to 16 oz. per spyndle, which in this case, are 24. Then,

			Or decimally thus
	6)24 for a 6		6)24 $=6^{00}$
add	4		4
	6)28	— $6\frac{1}{2}$	6)28 $=6\frac{1}{2}$
add	$4_{\frac{1}{3}}$		$4.\dot{6}$
	$7)32\frac{2}{3}$	— 7	$7)32.\dot{6}=7$
add	$4\frac{2}{3}$		$4.\dot{6}$
	$7)37\frac{1}{3}$	— $7\frac{1}{2}$	$7)37.\dot{3}=7\frac{1}{2}$
add	$5\frac{1}{3}$		$5.\dot{3}$
	$8)42\frac{2}{3}$	— 8	$8)42.\dot{6}=8$
add	$5\frac{1}{3}$		$5.\dot{3}$
	8)48	— $8\frac{1}{2}$	$48.0=8\frac{1}{2}$
add	6		&c.
	54	— 9	
	&c.		

Thus the number of heers in the pound is found, at each operation, answering the different half setts; from which the weight of a spyndle or half spyndle will be found by inspection, in Table I. for opposite $32\frac{2}{3}$ heers, or rather 33, is 11 oz. 10.1 drs. per spyndle, the half of which is 5 oz. 13 drs. per hesp; and so on for any other grist.

The following setts for several fabrics of cloth are added, merely to exemplify the preceding methods of constructing caaming tables.

1000 Book, or hard muslin, from No. 82 to 110; weft from No. 90 to 110.
900 Cotton Gauze, No. 84; weft about the same.
1300 Cotton Shirting, No. 34; weft 38.
1200 Pullicate, No. 50; weft about the same.
1200 Gingham, No. 36; weft 40 to 44.
1600 Cotton Cambric, on 37 inches, No. 70; weft 96.
1600 Do. do. on 34 do. No. 75; do. 104.
1100 Cossie, No. 52; weft about the same.
1500 Linen, on 40 inches, 8 oz. per hesp; weft 7 oz.
1600 Linen Cambric, on 34 inches, $5\frac{3}{4}$ oz. per spyndle; weft 5 oz.
1600 Linen Cambric, French Yarn, 6 oz. per penee; weft $5\frac{1}{4}$ oz.
1200 Clear Lawn, 2 oz. 10 drs. per hesp; weft 2 oz. 6 drs.
1400 Do. do. French Yarn, 5 oz. per penee; weft $4\frac{1}{2}$ oz.
2200 Holland, on 40 inches, 8 oz. per spyndle; weft 7 oz.
1400 Shirt Linen, 6 oz. per hesp; weft 5 oz.
600 Linen Gauze, $4\frac{1}{8}$ oz. per hesp; weft 5 oz.
1000 Sheeting, three threads in the split, warp 22; weft 20.

SECT IV. CALCULATION OF WARPS AND WEFTS.

LINEN YARN.

THE length of warps is usually measured by the English ell of 45 inches; and as the linen reel is 90 inches in circumference, one thread or round of it will make a splitful one ell long. A cut, therefore, will produce 6 porters, a heer 12, a hank 72, a hesp 144, and a spyndle 288, as exhibited in the small Table in page 402. Hence, to find the quantity of warp requisite for any web, we have the following

Rule: Multiply the ells by the porters in the web, and divide by 288 for spyndles, 72 for hanks, 12 for heers, or 6 for cuts.

Example 1. How many spyndles will it require to make a web 100 ells long, with 62 porters warp?

100 ells.
62

288)6200(21 sp. 2 hks. $1\frac{1}{3}$ cuts.
576

440
288

72)152(2
144

6)8

$1\frac{1}{3}$

Or if there are 6 heers, or one hank, to be wound on each bobbin, to find the number of bobbins or runners for the warper, divide the product of the porters and ells by 72, and the remainder by 12, for heers.

Example 2. How much warp will it require to make 144 ells of a 1200 seven-eighths clear lawn?

First, $1200\times7=8400$, and $\frac{8400}{8}=1050$ splits, or $52\frac{1}{2}$ porters; to which may be added, 3 porters more, to uphold the breadth in bleaching, &c. Then,

144
55

720
720

7920
add 72 for the half porter.
---
72)7992(111 hks. or bobbins.
72

79
72

72
72

0

To these must be added the allowance for waste in reeling, winding and warping, which, for linen yarn, is commonly 5 per cent.

When the porters and spyndles are given to find the ells, multiply the number 288 by the spyndles, and divide by the porters in the warp.

If I have 20 spyndles of yarn that will answer a 1200 linen, how many ells will it make, allowing $62\frac{1}{2}$ porters?

288
20

62.5)5760.0($92\frac{4}{25}$ ells.
5625

1350
1250

100=$\frac{4}{25}$

Or thus, 288
20

$62\frac{1}{2}$ 5760
2 2

125)11520(92
1125

270
250

20=$\frac{4}{25}$

But the fraction and four ells more may be deducted for waste, as mentioned above; which will leave 88 ells nett for the length of the web.

If it were required to calculate the warp by the yard of 36 inches, instead of the ell 45, we must substitute the number 360 for 288; for 36 : 45 : : 288 : 360.

Let the first example be resumed, in which 100 ells will produce 125 yards; thus,

125 yards.
62

250
750

36.0)775.0(21 sp. 2 hks. $1\frac{1}{2}$ cut, as before.
72

55
36

19
4 hanks.

36)76(2
72

4=$\frac{1}{9}$=$1\frac{1}{2}$ cutt.

COTTON WARPS.

It has been already shown, that the spyndle of cotton produces 302.4 porters one ell long; consequently, the No. or hank will give 16 porters and 16 splits, or decimally, 16.8. Hence, to find the spyndles when the ells and porters are given,

Multiply the ells and porters together, and divide by 302.4 for spyndles, and the remainder by 16.8 for hanks, and 24 for skeins.

Example 1. How many spyndles will it require for a warp of 146 ells, with 88 porters?

146 ells.
88 porters.

1168
1168

302.4)12848.0(42 sp. 8 hks. $5\frac{1}{3}$ skeins.
12096

7520
6048

168)1472(8
1344

24)128($5\frac{1}{3}$
120

$8=\frac{1}{3}$

Example 2. How many spyndles will it take to make 100 ells of a web, with 92 porters and 12 splits?

12 splits is $\frac{3}{5}$ of a porter; then,

100
92

9200

$\frac{100 \times 3}{5}$ = 60 for 12 splits.

302.4)9260.0(30 sp. 11 hks. $1\frac{1}{3}$ sk.
9072
---
168)1880(11
168

200
168
---
24)32($1\frac{1}{3}$
24

8

Or decimally thus, 92.6
100

302.4)92600(30, &c.

Or, to avoid fractions, divide the product of the ells and porters by 302, and the remainder by 18, and the result will be sufficiently near for practice.

But if six Nos. or hanks of the warp are to be wound on each bobbin, the number of bobbins, and consequently the quantity of yarn necessary for any cotton web, may be found sufficiently correct, by the following rule:—

Multiply the ells and porters together, as before, and cut off the two right hand figures of the product; then the figures on the left will be the number of bobbins or runners, and those cut off will be the decimal parts of a spyndle.

In the first example, the product of the ells and porters is 12848, which, by cutting off 48, the two right hand figures, gives 128 bobbins and .48 of a fraction,

which multiplied by 18 and 7, and the two decimal figures cut off at each product, gives 8 hks. $4\frac{1}{2}$ skeins.

The allowance that is usually made for waste in winding and warping linen yarn, should also be sufficient to uphold cotton warps, though calculated by the rules here laid down; for linen yarn is fully more liable to waste in the different stages of manufacture, than cotton, not only in each operation, but in boiling and washing it shrinks considerably, which cotton yarn is not subject to. Besides, when the yarn is wound from the cops, which saves the loss that takes place in reeling, the allowance for waste should not be so much as above stated. However, as 5 per cent. is commonly allowed for cotton warps as well as linen, they may be calculated by the rules there given, only, instead of dividing by 12 for heers, divide by 16 for hanks or Nos.; although the allowance for waste will depend on the quality of the yarn.

3. For example, the product of the ells and porters in the last Example is 12848; then,

```
288)12848(44 sp. 11 hks.
    1152
    ----
     1328
     1152
     ----
16)176(11
   16
   --
    16
    16
    --
     0
```

When odd splits occur along with the porters, as in the second Example, they may be reduced to the decimal of a porter by inspection, thus: divide them by 2, supposing a cipher annexed when their number is odd. So the decimal of 12 splits is .6; of 13, is .65, &c. But to avoid

decimals, the porters may be reduced to splits, adding the odd ones, and then multiplying by the ells; but the product is to be divided by 20, to reduce them again to porters, before the division takes place.

4. Suppose for a Gingham, 120 ells long, there are 10 porters red, 7 porters and 12 splits blue, 12 porters and 8 splits orange, and 30 porters white; what quantity of warp, of each kind, is requisite for the web?

```
      120
       10 Red.
      ----
302.4)1200.0(3 sp. 17 hks. 3 sks.
      9072
      ----
       168)2928(17 hks.
           168
           ----
           1248
           1176
           ----
            24)72(3 sks.
                72
                --
```

```
      120
       7.6 Blue.
      ----
       720
       840
       ---
302.4)912.0(3 sp. 0 hks. 2 sks.
      9072
      ----
       24)48(2
          48
          --
```

```
      120
       12.4 Orange.
      ----
       480
      1440.
      -----
302.4)1488.0(4 sp. 16 hks. 4 sks.
      12096
      -----
       168)2784(16
           168
           ----
           1104
           1008
           ----
            24)96(4
                96
                --
```

```
      120
       30 White.
      ----
302.4)3600.0(11 sp. 16 hks. 2 sks.
      3024
      ----
       5760
       3024
       ----
       168)2736(16
           168
           ----
           1056
           1008
           ----
            24)48(2
               48
               --
```

That is,	3	spys.	17	hks.	3 sks.	red.
	3	...	0	...	2 ...	blue.
	4	...	16	...	4 ...	orange.
	11	...	16	...	2 ...	white.
	23	...	14	...	4 ...	in all.

For proof, say, as 302.4 : 60 porters : : 120 : 23 sps. 14 hks. 4 sks.

5. To find the quantity of warp, of both kinds, in 99 ells of a 1200 stripe, same as the annexed pattern.

21	5	6	10	6	5	21
splits	splits	splits	splits	splits	splits	splits
fine.	coarse.	fine.	coarse.	fine.	coarse.	fine.

By examining the pattern, it will be found to contain 54 splits fine, and 20 splits coarse, in one set of the draught: their sum is 74. Suppose 93 porters, or 1860 splits warp in the web: then,

```
74)1860(25
  148
  ---
  380
  370
  ---
   10 splits over.
```

To the 10 splits of remainder, 4 more may be added, which will make 14 splits for selvages.

Then 54, the splits of fine in the draught, multiplied by 25, the times the draught is repeated, is 1350, to which add the 14 splits of selvages, and you will have 1364, or 68 porters and 4 splits fine.

Again, as there are nett 20 splits of coarse, the whole of the coarse in the web will be 25 porters.

Then, 68.2 por.
99 ells.

6138
6138

302.4)6751.8(22 sp. 5 hks.
6048 $6\frac{1}{4}$ sks.

7038
6048

168)990(5
840

24)150($6\frac{1}{4}$
144

6

Again, 99
25

495
198

302.4)2475.0(8 sp. 3 hks. $2\frac{1}{4}$ sks.
24192

168)558(3
504

24)54($2\frac{1}{4}$
48

6

But, if the stripes be woven with 4 threads in the split, the spyndles of coarse must be doubled; so that, in the above example, there would be 16 spyndles, 6 hanks, $4\frac{1}{2}$ skeins.

When the porters and spyndles are given to find the ells, multiply the number 302.4 by the spyndles, and divide by the porters in the warps.

Note. In this multiplication, there will always be a decimal in the product, for which there must be a cypher annexed to the divisor.

6. Suppose 24 spyndles of warp and 63 porters, how many ells?

```
  302.4
    24
  ------
  12096
   6048
  ------
63.0)7257.6(115 ells.
    630
    ---
     957
     630
     ---
     3276
     3150
     ----
      126
```

But the fraction and 5 ells may be allowed for waste, as formerly noticed, which will leave 110 ells for the nett length.

To find the number of ells in any bundle of yarn, or quantity of cops, the weight being given, without regarding the spyndles.

Multiply the Nos. of the yarn, the pounds in the quantity of yarn, and the number 16.8 together, for a dividend, and divide by the porters the result will be the ells in the quantity.

7. How many ells will a 5 lb. bundle of No. 84, or 5 lb. of cops produce, supposing 62 porters?

```
  16.8
   84
  ----
   672
  1344
 ------
 1411.2
      5 lb.
 ------
62)7056.0(113 ells, answer.
  62
 ---
  85
  62
 ---
 236
 186
 ---
  50
```

To find what weight of cops will make any web, without regard to the spyndles, the ells, porters, and Nos. of the yarn being given.

Multiply the ells and porters together for a dividend, and the Nos. of the yarn by 16.8, for a divisor; the quotient is the weight required.

8. What weight of cops, No. 120, will make 99 ells of a web, in which there are 93 porters?

93
99

16.8 837
120 837

2016|0) 9207(4 lb.
8064

1143
16 oz.

2016)18288(9
18144

144
16 drams.

864
144

2016)2304(1
2016

288=$\frac{5}{21}$

That is, 4 lb. 9 oz. 1$\frac{5}{21}$ drams.

If it were required to calculate the length of warps in yards of 36 inches, the product of the porters and yards is divided by 378 for spyndles; by 21 for Nos. or hanks; and by 3 for skeins. For, 36 : 45 : : 302.4 : 378.

Example. Required the warp for 125 yards, with 93 porters?

125 yards.
93

375
1125

378)11625(30 sp. 13 hanks. 4 sks.
1134

21)285(13
21

75
63

3)12

4

In calculating whips, multiply the ells by the number of needles, and divide by 20 for the porters; then proceed as in the foregoing examples.

9. How many spyndles will 800 ells require, with 63 needles?

63
800

2|0)5040|0

302.4)2520.0(8 sp. 6 hks.
24192

168)1008(6
1008

0

WARP TABLE.

ELLS.

	1.			2.			3.			4.			5.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
40	0	2	8	0	5	0	0	7	8	0	10	0	0	12	8
41	0	2	9	0	5	2	0	7	11	0	10	4	0	12	13
42	0	2	10	0	5	4	0	7	14	0	10	8	0	13	2
43	0	2	11	0	5	6	0	8	1	0	10	12	0	13	7
44	0	2	12	0	5	8	0	8	4	0	11	0	0	13	12
45	0	2	13	0	5	10	0	8	7	0	11	4	0	14	1
46	0	2	14	0	5	12	0	8	10	0	11	8	0	14	6
47	0	2	15	0	5	14	0	8	13	0	11	12	0	14	11
48	0	3	0	0	6	0	0	9	0	0	12	0	0	15	0
49	0	3	1	0	6	2	0	9	3	0	12	4	0	15	5
50	0	3	2	0	6	4	0	9	6	0	12	8	0	15	10
51	0	3	3	0	6	6	0	9	9	0	12	12	0	15	15
52	0	3	4	0	6	8	0	9	12	0	13	0	0	16	4
53	0	3	5	0	6	10	0	9	15	0	13	4	0	16	9
54	0	3	6	0	6	12	0	10	2	0	13	8	0	16	14
55	0	3	7	0	6	14	0	10	5	0	13	12	0	17	3
56	0	3	8	0	7	0	0	10	8	0	14	0	0	17	8
57	0	3	9	0	7	2	0	10	11	0	14	4	0	17	13
58	0	3	10	0	7	4	0	10	14	0	14	8	1	0	2
59	0	3	11	0	7	6	0	11	1	0	14	12	1	0	7
60	0	3	12	0	7	8	0	11	4	0	15	0	1	0	12
61	0	3	13	0	7	10	0	11	7	0	15	4	1	1	1
62	0	3	14	0	7	12	0	11	10	0	15	8	1	1	6
63	0	3	15	0	7	14	0	11	13	0	15	12	1	1	11
64	0	4	0	0	8	0	0	12	0	0	16	0	1	2	0
65	0	4	1	0	8	2	0	12	3	0	16	4	1	2	5
66	0	4	2	0	8	4	0	12	6	0	16	8	1	2	10
67	0	4	3	0	8	6	0	12	9	0	16	12	1	2	15
68	0	4	4	0	8	8	0	12	12	0	17	0	1	3	4
69	0	4	5	0	8	10	0	12	15	0	17	4	1	3	9
70	0	4	6	0	8	12	0	13	2	0	17	8	1	3	14
71	0	4	7	0	8	14	0	13	5	0	17	12	1	4	3
72	0	4	8	0	9	0	0	13	8	1	0	0	1	4	8
73	0	4	9	0	9	2	0	13	11	1	0	4	1	4	13
74	0	4	10	0	9	4	0	13	14	1	0	8	1	5	2

WARP TABLE.

ELLS.

	10.			20.			30.			40.			100.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
40	1	7	0	2	14	0	4	3	0	5	10	0	13	16	0
41	1	7	10	2	15	4	4	4	14	5	12	8	14	4	4
42	1	8	4	2	16	8	4	6	12	5	15	0	14	10	8
43	1	8	14	2	17	12	4	8	10	5	17	8	14	16	12
44	1	9	8	3	1	0	4	10	8	6	2	0	15	5	0
45	1	10	2	3	2	4	4	12	6	6	4	8	15	11	4
46	1	10	12	3	3	8	4	14	4	6	7	0	15	17	8
47	1	11	6	3	4	12	4	16	2	6	9	8	16	5	12
48	1	12	0	3	6	0	5	0	0	6	12	0	16	12	0
49	1	12	10	3	7	4	5	1	14	6	14	8	17	0	4
50	1	13	4	3	8	8	5	3	12	6	17	0	17	6	8
51	1	13	14	3	9	12	5	5	10	7	1	8	17	12	12
52	1	14	8	3	11	0	5	7	8	7	4	0	18	1	0
53	1	15	2	3	12	4	5	9	6	7	6	8	18	7	4
54	1	15	12	3	13	8	5	11	4	7	9	0	18	13	8
55	1	16	6	3	14	12	5	13	2	7	11	8	19	1	12
56	1	17	0	3	16	0	5	15	0	7	14	0	19	8	0
57	1	17	10	3	17	4	5	16	14	7	16	8	19	14	4
58	2	0	4	4	0	8	6	0	12	8	1	0	20	2	8
59	2	0	14	4	1	12	6	2	10	8	3	8	20	8	12
60	2	1	8	4	3	0	6	4	8	8	6	0	20	15	0
61	2	2	2	4	4	4	6	6	6	8	8	8	21	3	4
62	2	2	12	4	5	8	6	8	4	8	11	0	21	9	8
63	2	3	6	4	6	12	6	10	2	8	13	8	21	15	12
64	2	4	0	4	8	0	6	12	0	8	16	0	22	4	0
65	2	4	10	4	9	4	6	13	14	9	0	8	22	10	4
66	2	5	4	4	10	8	6	15	12	9	3	0	22	16	8
67	2	5	14	4	11	12	6	17	10	9	5	8	23	4	14
68	2	6	8	4	13	0	7	1	8	9	8	0	23	11	0
69	2	7	2	4	14	4	7	3	6	9	10	8	23	17	4
70	2	7	12	4	15	8	7	5	4	9	13	0	24	5	8
71	2	8	6	4	16	12	7	7	2	9	15	8	24	11	12
72	2	9	0	5	0	0	7	9	0	10	0	0	25	0	0
73	2	9	10	5	1	4	7	10	14	10	2	8	25	6	4
74	2	10	4	5	2	8	7	12	12	10	5	0	25	12	8

WARP TABLE.

ELLS.

	1.			2.			3.			4.			5.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
75	0	4	11	0	9	6	0	14	1	1	0	13	1	5	7
76	0	4	12	0	9	8	0	14	4	1	1	0	1	5	12
77	0	4	13	0	9	10	0	14	7	1	1	4	1	6	1
78	0	4	14	0	9	12	0	14	10	1	1	8	1	6	6
79	0	4	15	0	9	14	0	14	13	1	1	12	1	6	11
80	0	5	0	0	10	0	0	15	0	1	2	0	1	7	0
81	0	5	1	0	10	2	0	15	3	1	2	4	1	7	5
82	0	5	2	0	10	4	0	15	6	1	2	8	1	7	10
83	0	5	3	0	10	6	0	15	9	1	2	12	1	7	15
84	0	5	4	0	10	8	0	15	12	1	3	0	1	8	4
85	0	5	5	0	10	10	0	15	15	1	3	4	1	8	9
86	0	5	6	0	10	12	0	16	2	1	3	8	1	8	14
87	0	5	7	0	10	14	0	16	5	1	3	12	1	9	3
88	0	5	8	0	11	0	0	16	8	1	4	0	1	9	8
89	0	5	9	0	11	2	0	16	11	1	4	4	1	9	13
90	0	5	10	0	11	4	0	16	14	1	4	8	1	10	2
91	0	5	11	0	11	6	0	17	1	1	4	12	1	10	7
92	0	5	12	0	11	8	0	17	4	1	5	0	1	10	12
93	0	5	13	0	11	10	0	17	7	1	5	4	1	11	1
94	0	5	14	0	11	12	0	17	10	1	5	8	1	11	6
95	0	5	15	0	11	14	0	17	13	1	5	12	1	11	11
96	0	6	0	0	12	0	1	0	0	1	6	0	1	12	0
97	0	6	1	0	12	2	1	0	3	1	6	4	1	12	5
98	0	6	2	0	12	4	1	0	6	1	6	8	1	12	10
99	0	6	3	0	12	6	1	0	9	1	6	12	1	12	15
100	0	6	4	0	12	8	1	0	12	1	7	0	1	13	4
101	0	6	5	0	12	10	1	0	15	1	7	4	1	13	9
102	0	6	6	0	12	12	1	1	2	1	7	8	1	13	14
103	0	6	7	0	12	14	1	1	5	1	7	12	1	14	3
104	0	6	8	0	13	0	1	1	8	1	8	0	1	14	8
105	0	6	9	0	13	2	1	1	11	1	8	4	1	14	13
106	0	6	10	0	13	4	1	1	14	1	8	8	1	15	2
107	0	6	11	0	13	6	1	2	1	1	8	12	1	15	7
108	0	6	12	0	13	8	1	2	4	1	9	0	1	15	12
109	0	6	13	0	13	10	1	2	7	1	9	4	1	16	1

WARP TABLE.

ELLS.

	10.			20.			30.			40.			100.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
75	2	10	14	5	3	12	7	14	10	10	7	8	26	0	12
76	2	11	8	5	5	0	7	16	8	10	10	0	26	7	0
77	2	12	2	5	6	4	8	0	6	10	12	8	26	13	4
78	2	12	12	5	7	8	8	2	4	10	15	0	27	1	8
79	2	13	6	5	8	12	8	4	2	10	17	8	27	7	12
80	2	14	0	5	10	0	8	6	0	11	2	0	27	14	0
81	2	14	10	5	11	4	8	7	14	11	4	8	28	2	4
82	2	15	4	5	12	8	8	9	12	11	7	0	28	8	8
83	2	15	14	5	13	12	8	11	10	11	9	8	28	14	12
84	2	16	8	5	15	12	8	13	8	11	12	0	29	3	0
85	2	17	2	5	16	4	8	15	6	11	14	8	29	9	4
86	2	17	12	5	17	8	8	17	4	11	17	0	29	15	8
87	3	0	6	6	0	12	9	1	2	12	1	8	30	3	12
88	3	1	0	6	2	0	9	3	0	12	4	0	30	10	0
89	3	1	10	6	3	4	9	4	14	12	6	8	30	16	4
90	3	2	4	6	4	8	9	6	12	12	9	0	31	4	8
91	3	2	14	6	5	12	9	8	10	12	11	8	31	10	12
92	3	3	8	6	1	0	9	10	8	12	14	0	31	17	0
93	3	4	2	6	8	4	9	12	6	12	16	8	32	5	4
94	3	4	12	6	9	8	9	14	4	13	1	0	32	11	8
95	3	5	6	6	10	12	9	16	2	13	3	8	32	17	12
96	3	6	0	6	12	0	10	0	0	13	6	0	33	6	0
97	3	6	10	6	13	4	10	1	14	13	8	8	33	12	4
98	3	7	4	6	14	8	10	3	12	13	11	0	34	0	8
99	3	7	14	6	15	12	10	5	10	13	13	8	34	6	12
100	3	8	8	6	17	0	10	7	8	13	16	0	34	13	0
101	3	9	2	7	0	4	10	9	6	14	0	8	35	1	4
102	3	9	12	7	1	8	10	11	4	14	3	0	35	7	8
103	3	10	6	7	2	12	10	13	2	14	5	8	35	13	12
104	3	11	0	7	4	0	10	15	0	14	8	0	36	2	0
105	3	11	10	7	5	4	10	16	14	14	10	8	36	8	4
106	3	12	4	7	6	8	11	0	12	14	13	0	36	14	8
107	3	12	14	7	7	12	11	2	10	14	15	8	37	2	12
108	3	13	8	7	9	0	11	4	8	15	0	0	37	9	0
109	3	14	2	7	10	4	11	6	6	15	2	8	37	15	4

WARP TABLE.

ELLS.

	1.			2.			3.			4.			5.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
110	0	6	14	0	13	12	1	2	10	1	9	8	1	16	6
111	0	6	15	0	13	14	1	2	13	1	9	12	1	16	11
112	0	7	0	0	14	0	1	3	0	1	10	0	1	17	0
113	0	7	1	0	14	2	1	3	3	1	10	4	1	17	5
114	0	7	2	0	14	4	1	3	6	1	10	8	1	17	10
115	0	7	3	0	14	6	1	3	9	1	10	12	1	17	15
116	0	7	4	0	14	8	1	3	12	1	11	0	2	0	4
117	0	7	5	0	14	10	1	3	15	1	11	4	2	0	9
118	0	7	6	0	14	12	1	4	2	1	11	8	2	0	14
119	0	7	7	0	14	14	1	4	5	1	11	12	2	1	3
120	0	7	8	0	15	0	1	4	8	1	12	0	2	1	8
121	0	7	9	0	15	2	1	4	11	1	12	4	2	1	13
122	0	7	10	0	15	4	1	4	14	1	12	8	2	2	2
123	0	7	11	0	15	6	1	5	1	1	12	12	2	2	7
124	0	7	12	0	15	8	1	5	4	1	13	0	2	2	12
125	0	7	13	0	15	10	1	5	7	1	13	4	2	3	1
126	0	7	14	0	15	12	1	5	10	1	13	8	2	3	6
127	0	7	15	0	15	14	1	5	13	1	13	12	2	3	11
128	0	8	0	0	16	0	1	6	0	1	14	0	2	4	0
129	0	8	1	0	16	2	1	6	3	1	14	4	2	4	5
130	0	8	2	0	16	4	1	6	6	1	14	8	2	4	10
131	0	8	3	0	16	6	1	6	9	1	14	12	2	4	15
132	0	8	4	0	16	8	1	6	12	1	15	0	2	5	4
133	0	8	5	0	16	10	1	6	15	1	15	4	2	5	9
134	0	8	6	0	16	12	1	7	2	1	15	8	2	5	14
135	0	8	7	0	16	14	1	7	5	1	15	12	2	6	3
136	0	8	8	0	17	0	1	7	8	1	16	0	2	6	8
137	0	8	9	0	17	2	1	7	11	1	16	4	2	6	13
138	0	8	10	0	17	4	1	7	14	1	16	8	2	7	2
139	0	8	11	0	17	6	1	8	1	1	16	12	2	7	7
140	0	8	12	0	17	8	1	8	4	1	17	0	2	7	12
141	0	8	13	0	17	10	1	8	7	1	17	4	2	8	1
142	0	8	14	0	17	12	1	8	10	1	17	8	2	8	6
143	0	8	15	0	17	14	1	8	13	1	17	12	2	8	11
144	0	9	0	1	0	0	1	9	0	2	0	0	2	9	0

WARP TABLE.

ELLS.

	10.			20.			30.			40.			100.		
	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$	sps.	hks.	$\frac{1}{16}$
110	3	14	12	7	11	8	11	8	4	15	5	0	38	3	8
111	3	15	6	7	12	12	11	10	2	15	7	8	38	9	12
112	3	16	0	7	14	0	11	12	0	15	10	0	38	16	0
113	3	16	10	7	15	4	11	13	14	15	12	8	39	4	4
114	3	17	4	7	16	8	11	15	12	15	15	0	39	10	8
115	3	17	14	7	17	12	11	17	10	15	17	8	39	16	12
116	4	0	8	8	1	0	12	1	8	16	2	0	40	5	0
117	4	1	2	8	2	4	12	3	6	16	4	8	40	11	4
118	4	1	12	8	3	8	12	5	4	16	7	0	40	17	8
119	4	2	6	8	4	12	12	7	2	16	9	8	41	5	12
120	4	3	0	8	6	0	12	9	0	16	12	0	41	12	0
121	4	3	10	8	7	4	12	10	14	16	14	8	42	0	4
122	4	4	4	8	8	8	12	12	12	16	17	0	42	6	8
123	4	4	14	8	9	12	12	14	10	17	1	8	42	12	12
124	4	5	8	8	11	0	12	16	8	17	4	0	43	1	0
125	4	6	2	8	12	4	13	0	6	17	6	8	43	7	4
126	4	6	12	8	13	8	13	2	4	17	9	0	43	13	8
127	4	7	6	8	14	12	13	4	2	17	11	8	44	1	12
128	4	8	0	8	16	0	13	6	0	17	14	0	44	8	0
129	4	8	10	8	17	4	13	7	14	17	16	8	44	14	4
130	4	9	4	9	0	8	13	9	12	18	1	0	45	2	8
131	4	9	14	9	1	12	13	11	18	18	3	8	45	8	12
132	4	10	8	9	3	0	13	13	8	18	6	0	45	15	0
133	4	11	2	9	4	4	13	15	6	18	8	8	46	3	4
134	4	11	12	9	5	8	13	17	4	18	11	0	46	9	8
135	4	12	6	9	6	12	14	1	2	18	13	8	46	15	12
136	4	13	0	9	8	0	14	3	0	18	16	0	47	4	0
137	4	13	10	9	9	4	14	4	14	19	0	8	47	10	4
138	4	14	4	9	10	8	14	6	12	19	3	0	47	16	8
139	4	14	14	9	11	12	14	8	10	19	5	8	48	4	12
140	4	15	8	9	13	0	14	10	8	19	8	0	48	11	0
141	4	16	2	9	14	4	14	12	6	19	10	8	48	17	4
142	4	16	12	9	15	8	14	14	4	19	13	0	49	5	8
143	4	17	6	9	16	12	14	16	2	19	15	8	49	11	12
144	5	0	0	10	0	0	15	0	0	20	0	0	50	0	0

CALCULATION OF WEFTS.

The quantity of warp in any web or piece of cloth can be found by the rules already given, to any degree of accuracy; but the same accuracy in the calculation of wefts is not so easily obtained: for this process depends, in general, on the number of shots on the glass, which, as already observed, is contained 5.4 times in an inch for reeds on 37 inches; and therefore, a fractional part of a shot, which cannot be well ascertained, may amount to a considerable error in the length of a web. Thus, for instance, if there were 36 spyndles of warp in a web woven in a 1200 reed, and counting 12 shots on the glass, it would be presumed that there were 36 spyndles of weft also. If 13 shots, that there were a twelfth more, or 39 spyndles; and if only 11, a twelfth less or 33; being 3 spyndles of difference for each shot. Hence it is evident that when a larger measure can be easily applied, the risk of error would be thereby diminished, so that an inch, for example, would reduce such errors in the ratio of 5.4 to 1.

When the number of shots on the glass and the breadth of the cloth are given, the quantity of weft on one yard will be found by the following rule:—

Multiply the shots on the glass, the inches in the breadth, and the number 5.4 together, and divide by the number of yards in a skein, heer, hank, or spyndle.

Or, when the number of shots in an inch can be ascertained, multiply the shots in an inch, by the inches in the breadth, and divide as above.

Example. Suppose a piece of cloth 60 inches broad, with 18 shots on the glass, to find the Nos. and skeins in a yard, allowing 5 per cent. off the cotton reel for waste.

In the small Table, page 407, it will be found that there are 120 yards in a skein, and 840 in a No. or hank; which

after deducting 5 per cent. will leave 114 for the former, and 798 for the latter.

Then, 5.4
60

324.0
18

25920
3240 skeins.

114)5832.0(51.15
570

132
114

180
114

660
570

90

Or thus,

798)5832.0(7 Nos. 3 sks.
5486

114)346
732

4

But the quantity of weft will be found more readily by the following Table. The breadths in inches run along the top, from 28 to 63 inclusive, the shots on the glass in the left, and the corresponding shots on an inch in the right hand columns. In the body of the Table, below each breadth, are two columns, in the first of which are the yards and hundredth parts of a yard produced from one spyndle, corresponding to the several breadths and number of shots. The second contains the fractional parts of a spyndle on one yard.

Although these fractions be all reduced to decimals, for the sake of ease and accuracy of computation; yet, by attending to the following directions, the use of the Table, it

is presumed, will be sufficiently understood, even by those who have no previous knowledge of decimal arithmetic.

First, when the number of yards are required which one spyndle of weft will produce, they will be found under the breadth of the cloth on the top, and on a line with the number of shots on the glass, in the left hand column. Thus, for example, under 37 inches, and opposite 16 shots, will be found 4.50; which shows that one spyndle of weft will produce 4 yards of cloth, and 50 hundredth parts, or $4\frac{1}{2}$ yards of the above breadth and thickness.

But, if the number of yards be required from more spyndles than one, multiply the number of yards thus found, by the spyndles, and cut off the two right hand figures from the product; the figures on the left are yards, and those on the right are hundredth parts, as above.

FOR EXAMPLE.

To find the number of yards 40 inches broad, with 15 shots on the glass, which 24 spyndles will weft; look in the first column, below 40 inches, and on a line with 15 shots will be found

	4.44
Which multiplied by	24
	1776
	888
is	106.56

That is, 106 yards and 56 hundredth parts of a yard, or half a yard nearly.

Secondly, when the quantity of weft on one yard of cloth is required, it will be found in the second column, below

the breadth, and opposite the number of shots on the glass. Thus, supposing the cloth 38 inches broad, and 17 shots, at an average, on the glass, the number found in the table will be .2425, for the fractional part of a spyndle; which may be reduced to Nos. and skeins, by multiplying by 18 and 7; and cutting off four figures from the right of each product, as in the following example:—

EXAMPLE.

Suppose the quantity of weft on 39 yards of cloth of the above description, were required; then,

	.2425
Multiplied by	39
	21825
	7275
Spyndles,	9.4575
	18
Nos.	36600
	4575
Skeins,	8.2350
	7
	1.6450

That is 9 spyndles, 8 Nos. and $1\frac{2}{3}$ skeins nearly.

If the cloth be unevenly woven, or thicker in one part than another, take the number of shots on the glass in different parts, where it is thickest and thinest, and add them all together; then, their sum divided by the number of times the cloth was glassed, will give, at an average, the shots on the glass. Thus, if there are 12 shots on one part, 15 on another, 13 on a third, and 14 on a fourth; then,

12, 15, 13 and 14 added together, is 54, which divided by 4, gives $13\frac{1}{2}$ shots for the average thickness. And if the numbers opposite to 13 and 14 shots be added together, and divided by 2, the result will be the quantity answering to $13\frac{1}{2}$ shots.

If there be not an exact number of shots on the glass, as will often be the case in coarse cloth, count the shots on $\frac{3}{4}$ths of an inch, and divide them by 4, and the quotient will give the number of shots on the glass more accurately. Thus, suppose there are more than 7, and less than 8 shots on the extent of the glass, but it is found that there are 29 on $\frac{3}{4}$ths of an inch; then 29 divided by 4, will give $7\frac{1}{4}$ shots for the average which may be proportioned for, as in the last example.

If the breadth of the cloth should exceed the extent of this table, any two breadths may be taken, which will make up the breadth in question; observing, when the numbers under spyndles in a yard are to be added, those under yards in a spyndle are to be subtracted.

Example. Suppose it were required to find the number of yards produced from one spyndle, and the quantity of weft on one yard of cloth 65 inches broad, and 14 shots on the glass. Here it will easily be observed that 28 and 37 inches will make the given breadth. Then the yards in a spyndle under 28 inches, and opposite 14 shots, are 6.79 and those under 37 inches, and on a line with 14 shots are 5.14; then,

6.79
5.14

1.65

That is 1 yard and .65 hundredth parts.

Again, in the column under spyndles on a yard, for 37 inches is .1944, and for 28 is .1471; their sum, which

is .3415, is the fractional parts of a spyndle for 65 inches broad.

If the breadth of the cloth should not be found on the head of the table, a proportional part of the difference between the numbers in the adjacent columns may be taken: by these means the quantity of weft on any piece of cloth may be ascertained to any degree of accuracy.

Thus, suppose $38\frac{3}{4}$ inches instead of 38 in the preceding example, to find the weft on 39 yards with 19 shots on the glass.

In the table for 39 inches, is	.2488
for 38	.2425
difference,	63
$\frac{3}{4}$ths	3
	4)189
	47
Added to 38	.2425
gives $38\frac{3}{4}$ inches.	.2472

which multiplied by 18 and 7, will give the quantity of weft as before.

Note. This table is calculated for the cotton standard, with an allowance of one spyndle to 20 for waste; so that, if applied to linen cloth, an additional allowance of 5 per cent. must be made.

WEFT TABLE.

Shots on the glass.	28 inches.		29 inches.		30 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	23.79	.0420	22.96	.0435	22.20	.0450	21
5	19.03	.0525	18.37	.0544	17.76	.0563	27
6	15.86	.0631	15.31	.0653	14.80	.0675	32
7	13.59	.0736	13.12	.0762	12.68	.0788	38
8	11.90	.0841	11.48	.0871	11.10	.0901	43
9	10.57	.0946	10.21	.0980	9.87	.1013	46
10	9.51	.1051	9.18	.1088	8.88	.1126	54
11	8.65	.1156	8.35	.1197	8.07	.1239	59
12	7.93	.1261	7.65	.1306	7.40	.1351	65
13	7.32	.1366	7.07	.1415	6.83	.1464	70
14	6.79	.1471	6.56	.1524	6.34	.1576	76
15	6.34	.1576	6.12	.1633	5.92	.1689	81
16	6.95	.1682	5.74	.1742	5.55	.1802	86
17	6.60	.1787	5.40	.1851	5.22	.1914	92
18	5.28	.1892	5.10	.1959	4.93	.2027	97
19	5.01	.1997	4.83	.2068	4.67	.2139	103
20	4.75	.2102	4.59	.2177	4.44	.2252	108
21	4.53	.2207	4.37	.2286	4.23	.2365	113
22	4.32	.2312	4.17	.2395	4.03	.2477	119
23	4.13	.2417	3.99	.2504	3.86	.2590	124
24	3.96	.2522	3.82	.2613	3.70	.2703	130
25	3.80	.2627	3.67	.2721	3.55	.2815	135
26	3.66	.2733	3.53	.2830	3.41	.2923	140
27	3.52	.2838	3.40	.2939	3.29	.3040	146
28	3.39	.2943	3.28	.3048	3.17	.3153	151
29	3.28	.3048	3.16	.3157	3.06	.3266	157
30	3.17	.3153	3.06	.3266	2.96	.3378	162
31	3.07	.3258	2.96	.3375	2.86	.3491	167
32	2.97	.3363	2.87	.3483	2.77	.3603	173

WEFT TABLE CONTINUED.

Shots on the glass.	31 inches.		32 inches.		33 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	21.48	.0465	20.81	.0481	20.18	.0495	21
5	17.19	.0582	16.65	.0601	16.14	.0619	27
6	14.32	.0698	13.87	.0721	13.45	.0743	32
7	12.27	.0814	11.89	.0841	11.54	.0867	38
8	10.74	.0931	10.40	.0961	10.09	.0991	43
9	9.55	.1046	9.25	.1081	8.97	.1115	46
10	8.59	.1164	8.32	.1201	8.07	.1239	54
11	7.81	.1280	7.56	.1321	7.34	.1362	59
12	7.16	.1396	6.94	.1441	6.73	.1486	65
13	6.61	.1513	6.41	.1561	6.21	.1610	70
14	6.13	.1629	5.94	.1681	5.76	.1734	76
15	5.73	.1745	5.55	.1802	5.38	.1858	81
16	5.37	.1862	5.20	.1922	5.05	.1982	86
17	5.05	.1978	4.90	.2042	4.74	.2106	92
18	4.77	.2094	4.62	.2162	4.48	.2229	97
19	4.52	.2211	4.38	.2282	4.25	.2353	103
20	4.30	.2327	4.16	.2402	4.03	.2477	108
21	4.09	.2443	3.96	.2522	3.84	.2601	113
22	3.90	.2560	3.78	.2642	3.67	.2725	119
23	3.73	.2676	3.62	.2763	3.51	.2849	124
24	3.58	.2792	3.47	.2883	3.36	.2973	130
25	3.44	.2909	3.33	.3003	3.23	.3097	135
26	3.30	.3025	3.20	.3123	3.10	.3221	140
27	3.18	.3142	3.08	.3243	2.99	.3344	146
28	3.06	.3258	2.97	.3363	2.88	.3468	151
29	2.96	.3374	2.87	.3483	2.78	.3592	157
30	2.86	.3491	2.77	.3603	2.69	.3716	162
31	2.77	.3607	2.68	.3723	2.60	.3840	167
32	2.68	.3723	2.60	.3843	2.52	.3964	173

WEFT TABLE CONTINUED.

Shots on the glass.	34 inches.		35 inches.		36 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	19.59	.0511	19.12	.0525	18.50	.0540	21
5	15.67	.0638	15.22	.0657	14.80	.0675	27
6	13.06	.0766	12.68	.0788	12.33	.0811	32
7	11.19	.0893	10.87	.0919	10.57	.0946	38
8	9.79	.1021	9.51	.1051	9.25	.1081	43
9	8.71	.1149	8.45	.1182	8.22	.1216	46
10	7.83	.1276	7.61	.1314	7.40	.1351	54
11	7.12	.1404	6.92	.1445	6.72	.1486	59
12	6.53	.1531	6.34	.1576	6.17	.1621	65
13	6.03	.1659	5.86	.1708	5.69	.1756	70
14	5.59	.1787	5.43	.1839	5.28	.1892	76
15	5.22	.1914	5.07	.1971	4.93	.2027	81
16	4.90	.2042	4.76	.2102	4.62	.2162	86
17	4.61	.2170	4.48	.2233	4.35	.2297	92
18	4.35	.2297	4.23	.2365	4.11	.2432	97
19	4.12	.2425	4.00	.2496	3.89	.2567	103
20	3.91	.2552	3.80	.2627	3.70	.2702	108
21	3.73	.2680	3.62	.2759	3.52	.2837	113
22	3.56	.2808	3.46	.2890	3.36	.2973	119
23	3.40	.2935	3.31	.3027	3.22	.3108	124
24	3.26	.3061	3.17	.3153	3.08	.3243	130
25	3.13	.3191	3.04	.3284	2.96	.3378	135
26	3.01	.3318	2.93	.3416	2.84	.3518	140
27	2.90	.3446	2.82	.3547	2.74	.3648	146
28	2.79	.3573	2.71	.3678	2.64	.3783	151
29	2.70	.3701	2.62	.3810	2.55	.3918	157
30	2.61	.3829	2.53	.3941	2.46	.4054	162
31	2.53	.3956	2.45	.4073	2.38	.4189	167
32	2.45	.4084	2.38	.4204	2.31	.4324	173

WEFT TABLE CONTINUED.

Shots on the glass.	37 inches.		38 inches.		39 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	18.00	.0555	17.52	.0570	17.08	.0585	21
5	14.40	.0694	14.02	.0713	13.66	.0732	27
6	12.00	.0883	11.68	.0856	11.38	.0878	32
7	10.28	.0972	10.02	.0998	9.76	.1024	38
8	9.00	.1111	8.76	.1141	8.54	.1171	43
9	8.00	.1250	7.79	.1283	7.59	.1317	46
10	7.20	.1388	7.01	.1426	6.83	.1464	54
11	6.54	.1527	6.37	.1569	6.21	.1610	59
12	6.00	.1666	5.84	.1711	5.69	.1756	65
13	5.54	.1805	5.40	.1854	5.25	.1963	70
14	5.14	.1944	5.10	.1997	4.88	.2049	76
15	4.80	.2083	4.67	.2140	4.55	.2169	81
16	4.50	.2222	4.38	.2282	4.27	.2342	86
17	4.23	.2361	4.12	.2425	4.02	.2488	92
18	4.00	.2500	3.89	.2567	3.79	.2635	97
19	3.79	.2638	3.69	.2710	3.60	.2781	103
20	3.60	.2777	3.50	.2853	3.41	.2928	108
21	3.43	.2916	3.34	.2995	3.25	.3074	113
22	3.27	.3055	3.18	.3138	3.10	.3220	119
23	3.13	.3194	3.05	.3280	2.97	.3367	124
24	3.00	.3333	2.92	.3423	2.84	.3513	130
25	2.88	.3472	2.80	.3566	2.73	.3659	135
26	2.97	.3611	2.70	.3708	2.62	.3806	140
27	2.66	.3750	2.60	.3851	2.53	.3952	146
28	2.57	.3888	2.50	.3994	2.44	.4099	151
29	2.48	.4027	2.41	.4136	2.35	.4245	157
30	2.40	.4166	2.33	.4280	2.27	.4391	162
31	2.32	.4305	2.26	.4422	2.20	.4539	167
32	2.25	.4444	2.19	.4564	2.13	.4684	173

WEFT TABLE CONTINUED.

Shots on the glass.	40 inches.		41 inches.		42 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	16.65	.0600	16.24	.0615	15.86	.0630	21
5	13.32	.0750	13.00	.0769	12.68	.0788	27
6	11.10	.0912	10.83	.0923	10.57	.0946	32
7	9.51	.1054	9.28	.1077	9.06	.1103	38
8	8.32	.1201	8.12	.1231	7.93	.1261	43
9	7.40	.1351	7.22	.1385	7.05	.1419	46
10	6.66	.1501	6.50	.1539	6.34	.1576	54
11	6.05	.1651	5.90	.1693	5.76	.1734	59
12	5.55	.1801	5.41	.1847	5.28	.1892	65
13	5.12	.1952	5.00	.2000	4.88	.2050	70
14	4.75	.2102	4.64	.2154	4.53	.2207	76
15	4.44	.2252	4.33	.2308	4.23	.2364	81
16	4.16	.2402	4.06	.2462	3.96	.2522	86
17	3.92	.2552	3.82	.2616	3.73	.2680	92
18	3.70	.2702	3.61	.2770	3.52	.2837	97
19	3.50	.2853	3.42	.2924	3.34	.2995	103
20	3.33	.3003	3.25	.3078	3.37	.3153	108
21	3.14	.3153	3.09	.3232	3.02	.3310	113
22	3.02	.3303	2.95	.3386	2.88	.3468	119
23	2.89	.3453	2.82	.3540	2.76	.3626	124
24	2.77	.3603	2.70	.3693	2.64	.3783	130
25	2.66	.3753	2.60	.3847	2.54	.3941	135
26	2.56	.3904	2.50	.4001	2.44	.4099	140
27	2.46	.4054	2.40	.4155	2.35	.4256	146
28	2.37	.4204	2.32	.4309	2.26	.4414	151
29	2.29	.4354	2.24	.4463	2.18	.4571	157
30	2.22	.4504	2.16	.4617	2.11	.4729	162
31	2.15	.4654	2.09	.4771	2.05	.4887	167
32	2.08	.4805	2.03	.4925	1.98	.5044	173

WEFT TABLE CONTINUED.

Shots on the glass.	43 inches.		44 inches.		45 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	15.49	.0645	15.13	.0660	14.80	.0675	21
5	12.39	.0807	12.11	.0824	11.84	.0844	27
6	10.32	.0968	10.09	.0988	9.82	.1043	32
7	8.85	.1130	8.65	.1153	8.46	.1182	38
8	7.74	.1291	7.57	.1318	7.40	.1351	43
9	6.88	.1452	6.73	.1483	6.58	.1520	46
10	6.19	.1614	6.05	.1648	5.92	.1689	54
11	5.63	.1775	5.50	.1812	5.38	.1858	59
12	5.16	.1937	5.04	.1977	4.93	.2027	65
13	4.77	.2098	4.66	.2142	4.55	.2196	70
14	4.42	.2260	4.32	.2307	4.23	.2364	76
15	4.13	.2421	4.04	.2471	3.94	.2533	81
16	3.87	.2582	3.78	.2636	3.70	.2702	86
17	3.64	.2744	3.56	.2801	3.48	.2871	92
18	3.44	.2905	3.36	.2966	3.39	.3040	97
19	3.26	.3066	3.18	.3131	3.11	.3210	103
20	3.10	.3228	3.02	.3295	2.96	.3378	108
21	2.95	.3390	2.88	.3460	2.82	.3547	113
22	2.81	.3551	2.75	.3625	2.69	.3716	119
23	2.69	.3712	2.63	.3790	2.57	.3885	124
24	2.58	.3874	2.52	.3954	2.46	.4053	130
25	2.48	.4035	2.42	.4120	2.37	.4222	135
26	2.38	.4196	2.33	.4284	2.27	.4391	140
27	2.29	.4358	2.24	.4450	2.19	.4560	146
28	2.21	.4520	2.16	.4613	2.11	.4730	151
29	2.13	.4681	2.08	.4778	2.04	.4898	157
30	2.06	.4842	2.02	.4943	1.97	.5067	162
31	2.00	.5008	1.95	.5108	1.91	.5236	167
32	1.93	.5165	1.89	.5273	1.85	.5405	173

WEFT TABLE CONTINUED.

Shots on the glass.	46 inches.		47 inches.		48 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	14.48	.0690	14.17	.0705	13.87	.0720	21
5	11.58	.0863	11.33	.0882	11.10	.0901	27
6	9.65	.1036	9.44	.1058	9.25	.1081	32
7	8.27	.1208	8.10	.1235	7.93	.1261	38
8	7.24	.1381	7.08	.1411	6.94	.1441	43
9	6.43	.1554	6.39	.1587	6.16	.1621	46
10	5.79	.1726	5.67	.1764	5.55	.1802	54
11	5.26	.1900	5.15	.1940	5.04	.1982	59
12	4.82	.2072	4.72	.2117	4.62	.2162	65
13	4.45	.2244	4.36	.2293	4.27	.2342	70
14	4.13	.2417	4.05	.2470	3.96	.2522	76
15	3.86	.2590	3.78	.2646	3.70	.2702	81
16	3.62	.2762	3.54	.2822	3.47	.2883	86
17	3.41	.2935	3.34	.3000	3.27	.3063	92
18	3.21	.3108	3.15	.3175	3.08	.3243	97
19	3.05	.3280	2.98	.3352	2.92	.3423	103
20	2.89	.3453	2.83	.3528	2.77	.3603	108
21	2.76	.3626	2.70	.3705	2.64	.3783	113
22	2.63	.3798	2.57	.3881	2.52	.3964	119
23	2.52	.3971	2.46	.4057	2.41	.4144	124
24	2.41	.4144	2.36	.4234	2.31	.4324	130
25	2.31	.4316	2.26	.4410	2.22	.4504	135
26	2.22	.4489	2.18	.4587	2.13	.4684	140
27	2.14	.4662	2.10	.4763	2.06	.4865	146
28	2.06	.4834	2.02	.4940	1.98	.5045	151
29	2.00	.5007	1.95	.5116	1.91	.5225	157
30	1.93	.5180	1.89	.5292	1.85	.5405	162
31	1.87	.5352	1.83	.5469	1.79	.5585	167
32	1.81	.5525	1.77	.5645	1.73	.5765	173

WEFT TABLE CONTINUED.

Shots on the glass.	49 inches.		50 inches.		51 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	13.59	.0735	13.32	.0750	13.05	.0765	21
5	10.87	.0919	10.65	.0938	10.44	.0957	27
6	9.06	.1103	8.88	.1162	8.70	.1148	32
7	7.77	.1287	7.61	.1313	7.46	.1340	38
8	6.79	.1471	6.66	.1501	6.53	.1531	43
9	6.03	.1655	5.92	.1689	5.80	.1723	46
10	5.43	.1839	5.33	.1877	5.22	.1914	54
11	4.94	.2023	4.84	.2064	4.75	.2105	59
12	4.53	.2207	4.44	.2252	4.35	.2297	65
13	4.18	.2391	4.10	.2440	4.02	.2488	70
14	3.88	.2575	3.80	.2627	3.73	.2680	76
15	3.62	.2759	3.55	.2815	3.48	.2871	81
16	3.39	.2943	3.33	.3003	3.27	.3063	86
17	3.20	.3127	3.13	.3190	3.07	.3254	92
18	3.02	.3311	2.96	.3378	2.90	.3446	97
19	2.86	.3494	2.80	.3566	2.75	.3637	103
20	2.71	.3678	2.66	.3753	2.61	.3829	108
21	2.59	.3862	2.53	.3941	2.49	.4020	113
22	2.47	.4046	2.42	.4129	2.37	.4211	119
23	2.36	.4230	2.31	.4316	2.27	.4403	124
24	2.26	.4414	2.22	.4504	2.17	.4594	130
25	2.17	.4598	2.13	.4692	2.09	.4786	135
26	2.09	.4782	2.05	.4880	2.01	.4977	140
27	2.01	.4966	1.97	.5067	1.93	.5169	146
28	1.94	.5150	1.90	.5255	1.86	.5360	151
29	1.87	.5334	1.83	.5442	1.80	.5551	157
30	1.81	.5518	1.77	.5630	1.74	.5743	162
31	1.75	.5701	1.72	.5818	1.68	.5934	167
32	1.69	.5885	1.66	.6005	1.63	.6126	173

WEFT TABLE CONTINUED.

Shots on the glass.	52 inches.		53 inches.		54 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	12.80	.0780	12.56	.0796	12.33	.0811	21
5	10.24	.0976	10.05	.0994	9.86	.1013	27
6	8.54	.1171	8.37	.1193	8.24	.1216	32
7	7.32	.1366	7.18	.1392	7.05	.1419	38
8	6.40	.1561	6.28	.1591	6.16	.1621	43
9	5.69	.1756	5.58	.1790	5.86	.1824	46
10	5.12	.1952	5.03	.1989	4.93	.2027	54
11	4.65	.2147	4.57	.2188	4.48	.2230	59
12	4.27	.2342	4.18	.2387	4.11	.2432	65
13	3.94	.2537	3.87	.2586	3.79	.2635	70
14	3.66	.2732	3.59	.2785	3.52	.2838	76
15	3.41	.2928	3.35	.2984	3.29	.3040	81
16	3.20	.3123	3.14	.3183	3.08	.3243	86
17	3.01	.3318	2.95	.3382	2.90	.3446	92
18	2.84	.3513	2.79	.3581	2.74	.3649	97
19	2.69	.3708	2.64	.3780	2.59	.3851	103
20	2.56	.3904	2.51	.3979	2.46	.4054	108
21	2.44	.4099	2.39	.4178	2.35	.4256	113
22	2.32	.4294	2.28	.4377	2.24	.4460	119
23	2.23	.4489	2.18	.4576	2.14	.4662	124
24	2.13	.4684	2.09	.4775	2.05	.4865	130
25	2.05	.4879	2.02	.4973	1.97	.5087	135
26	1.97	.5075	1.93	.5172	1.89	.5270	140
27	1.89	.5270	1.86	.5371	1.82	.5473	146
28	1.83	.5465	1.79	.5570	1.76	.5675	151
29	1.76	.5660	1.73	.5769	1.70	.5878	157
30	1.70	.5855	1.67	.5968	1.64	.6081	162
31	1.65	.6051	1.62	.6167	1.59	.6283	167
32	1.60	.6246	1.57	.6366	1.54	.6486	173

WEFT TABLE CONTINUED.

Shots on the glass.	55 inches.		56 inches.		57 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	12.11	.0825	11.89	.0841	11.68	.0856	21
5	9.68	.1033	9.51	.1051	9.34	.1070	27
6	8.07	.1238	7.92	.1261	7.78	.1283	32
7	6.92	.1445	6.80	.1471	6.67	.1497	38
8	6.05	.1651	5.94	.1681	5.84	.1711	43
9	5.38	.1857	5.62	.1892	5.19	.1925	46
10	4.84	.2064	4.75	.2102	4.67	.2140	54
11	4.40	.2270	4.32	.2312	4.25	.2353	59
12	4.03	.2477	3.95	.2522	3.89	.2567	65
13	3.72	.2683	3.66	.2732	3.59	.2781	70
14	3.46	.2890	3.39	.2943	3.33	.2995	76
15	3.23	.3096	3.17	.3153	3.11	.3209	81
16	3.02	.3302	2.97	.3363	2.92	.3432	86
17	2.85	.3509	2.79	.3573	2.75	.3637	92
18	2.69	.3715	2.64	.3783	2.59	.3851	97
19	2.55	.3921	2.50	.3994	2.46	.4065	103
20	2.42	.4128	2.38	.4204	2.33	.4279	108
21	2.30	.4334	2.26	.4414	2.22	.4493	113
22	2.20	.4541	2.16	.4624	2.12	.4707	119
23	2.10	.4747	2.06	.4834	2.03	.4921	124
24	2.01	.4953	1.98	.5045	1.94	.5135	130
25	1.93	.5160	1.90	.5255	1.87	.5349	135
26	1.86	.5366	1.83	.5465	1.79	.5563	140
27	1.79	.5573	1.76	.5675	1.73	.5777	146
28	1.73	.5780	1.70	.5885	1.69	.5991	151
29	1.67	.5985	1.64	.6096	1.61	.6201	157
30	1.61	.6192	1.58	.6306	1.55	.6419	162
31	1.56	.6398	1.53	.6566	1.50	.6632	167
32	1.51	.6605	1.48	.6726	1.46	.6846	173

WEFT TABLE CONTINUED.

Shots on the glass.	58 inches.		59 inches.		60 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	11.48	.0871	11.29	.0886	11.10	.0900	21
5	9.18	.1089	9.03	.1108	8.88	.1126	27
6	7.65	.1306	7.52	.1328	7.40	.1340	32
7	6.56	.1524	6.45	.1540	6.34	.1576	38
8	5.74	.1741	5.64	.1772	5.55	.1802	43
9	5.10	.1959	5.01	.1992	4.93	.2026	46
10	4.59	.2177	4.51	.2214	4.44	.2252	54
11	4.17	.2394	4.10	.2436	4.03	.2478	59
12	3.82	.2612	3.76	.2658	3.70	.2702	65
13	3.53	.2830	3.48	.2878	3.41	.2928	70
14	3.28	.3048	3.22	.3100	3.17	.3152	76
15	3.06	.3265	3.01	.3322	2.96	.3378	81
16	2.87	.3483	2.82	.3544	2.78	.3604	86
17	2.70	.3701	2.65	.3766	2.61	.3828	92
18	2.55	.3918	2.51	.3986	2.46	.4054	97
19	2.41	.4136	2.38	.4208	2.33	.4278	103
20	2.29	.4354	2.25	.4430	2.22	.4504	108
21	2.18	.4571	2.15	.4650	2.11	.4730	113
22	2.01	.4789	2.05	.4872	2.01	.4954	119
23	1.98	.5007	1.96	.5094	1.93	.5180	124
24	1.91	.5225	1.88	.5316	1.35	.5406	130
25	1.83	.5442	1.80	.5536	1.78	.5630	135
26	1.76	.5660	1.73	.5758	1.70	.5846	140
27	1.70	.5878	1.67	.5980	1.64	.6080	146
28	1.64	.6095	1.61	.6202	1.58	.6306	151
29	1.58	.6313	1.55	.6422	1.53	.6532	157
30	1.53	.6531	1.50	.6644	1.48	.6756	162
31	1.48	.6748	1.45	.6866	1.43	.6982	167
32	1.43	.6971	1.41	.7088	1.38	.7206	173

WEFT TABLE CONTINUED.

Shots on the glass.	61 inches.		62 inches.		63 inches.		Shots on inch.
	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	Yards from a spyndle.	Parts of a spyndle.	
4	10.91	.0916	10.74	.0930	10.57	.0946	21
5	8.73	.1144	8.59	.1164	8.45	.1182	27
6	7.28	.1374	7.16	.1396	7.04	.1418	32
7	6.24	.1603	6.13	.1628	6.04	.1654	38
8	5.45	.1832	5.37	.1862	5.28	.1852	43
9	4.85	.2060	4.78	.2092	4.70	.2128	46
10	4.36	.2290	4.29	.2328	4.22	.2364	54
11	3.97	.2518	3.90	.2560	3.84	.2602	59
12	3.63	.2758	3.58	.2792	3.52	.2838	65
13	3.36	.2976	3.30	.3026	3.25	.3074	70
14	3.11	.3206	3.06	.3258	3.02	.3310	76
15	2.91	.3434	2.86	.3490	2.82	.3546	81
16	2.73	.3664	2.68	.3724	2.64	.3784	86
17	2.57	.3892	2.52	.3956	2.48	.4020	92
18	2.42	.4122	2.38	.4188	2.35	.4246	97
19	2.30	.4350	2.26	.4422	2.22	.4492	103
20	2.18	.4580	2.15	.4654	2.11	.4730	108
21	2.08	.4808	2.04	.4886	2.01	.4964	113
22	1.90	.5036	1.95	.5120	1.92	.5200	119
23	1.98	.5266	1.86	.5352	1.84	.5438	124
24	1.81	.5496	1.79	.5584	1.76	.5676	130
25	1.74	.5724	1.72	.5818	1.69	.5912	135
26	1.68	.5954	1.65	.6050	1.62	.6148	140
27	1.61	.6182	1.59	.6284	1.56	.6384	146
28	1.55	.6412	1.53	.6516	1.51	.6622	151
29	1.50	.6640	1.48	.6748	1.45	.6858	157
30	1.45	.6870	1.43	.6982	1.41	.7094	162
31	1.40	.7098	1.38	.7214	1.36	.7330	167
32	1.36	.7326	1.34	.7446	1.32	.7766	173

To find the quantity of weft or spotting on any number of lashes, having also the breadth of the cloth.

Multiply together the number of lashes, the shots on each lash, and the inches broad, and divide, first by 36, the inches in a yard, and again by the number of yards in a spyndle, abating the allowance for waste.

EXAMPLE.

How much weft on 126000 lashes, 2 shots on each lash, and 54 inches broad?

```
                                                    spyndles.
  126000                  and 1368|0)37800|0(27.63
      54                              2736
  ------                          -------
  504000                          10440
  630000                           9576
  ------                          -------
 6804000                           8640
       2                           8208
  ------                          -------
36)13608000(378000                 4320
  108                              4104
  ---                             -------
  280                               216
  252
  ---
  288
  288
  ---
    0
```

In the spyndle of linen yarn there are 14400 yards, 5 per cent. off which, leaves 13680 for the last divisor; and the quotient is 27 spyndles and 63 hundred parts.

The following table, for which I am indebted to Mr. D. M'Nicol, Paisley, will be found useful for ascertaining the quantity of weft or spotting on any number of lashes from

one to a million, and breadths from 40 to 72 inches. It is calculated for 2 shots on the lash, with an allowance of 5 per cent. off the linen standard, which is equal to 10 per cent. off the cotton. The number of lashes run along the top, and increase or decrease in a ten-fold proportion. The body of the table contains the spyndles and decimal parts of a spyndle, and follows the same proportion as the lashes, merely by moving the decimal point to the right or left, one figure for 10, two for 100, &c.—thus,

900000	lashes,	at	40	inches	broad,	is = 145.8 spyndles.
90000	—	—	—	—	=	14.58
9000	—	—	—	—	=	1.458
900	—	—	—	—	=	.1458
90	—	—	—	—	=	.01458
9	—	—	—	—	=	.001458

EXAMPLE.

Suppose, as above, 126000 lashes, and the breadth 54 inches—then,

100000	lashes	= 21.87
20000	—	= 4.374
6000	—	= 1.312
		27.556

That is, 27 spyndles, and a little more than a half.

Note. In these calculations allowance must be made for catch cords when they are employed, which, in general, is about 100 splits.

If there had been 4 shots on each lash, this quantity would have been multiplied by 2; if 8, by 4, &c.

A TABLE

Showing the quantity of Weft on any given Breadth, from 40 *to* 72 *Inches, and from one Lash to millions of Lashes; by whole and decimal numbers, decreasing or increasing by a ten-fold proportion—with* 5 *per cent. allowance on the Linen Standard, equal to* 10 *per cent. on the Cotton, providing it is full tale.*

Inches broad.	1000ths. *Lashes.*	900ths. *Lashes.*	800ths. *Lashes.*	700ths. *Lashes.*	600ths. *Lashes.*
40	162.000	145.800	129.600	113.400	97.200
41	166.050	149.445	132.840	116.235	99.630
42	170.100	153.090	136.080	119.070	102.060
43	174.150	156.735	139.320	121.905	104.490
44	178.200	160.380	142.560	124.740	106.920
45	182.250	164.025	145.800	127.575	109.350
46	186.300	167.670	149.040	130.410	111.780
47	190.350	171.315	152.280	133.245	114.210
48	194.400	174.960	155.520	136.080	116.640
49	198.450	178.605	158.760	138.915	119.070
50	202.500	182.250	162.000	141.750	121.500
51	206.550	185.895	165.240	144.585	123.930
52	210.600	189.540	168.480	147.420	126.360
53	214.650	193.185	171.720	150.255	128.790
54	218.700	196.830	174.960	153.090	131.220
55	222.750	200.475	178.200	155.925	133.650
56	226.800	204.120	181.440	158.760	136.080
57	230.850	207.765	184.680	161.595	138.510
58	234.900	211.410	187.920	164.430	140.940
59	238.950	215.055	191.160	167.265	143.370
60	243.000	218.700	194.400	170.100	145.800
61	247.050	222.345	197.640	172.935	148.230
62	251.100	225.990	200.880	175.770	150.660
63	255.150	229.635	204.120	178.605	153.090
64	259.200	233.280	207.360	181.440	155.520
65	263.250	236.925	210.600	184.275	157.950
66	267.300	240.570	213.840	187.110	160.380
67	271.350	244.215	217.080	189.945	162.810
68	275.400	247.860	220.320	192.780	165.240
69	279.450	251.505	223.560	195.615	167.670
70	283.500	255.150	226.800	198.450	170.100
71	287.550	258.795	230.040	201.285	172.530
72	291.600	262.440	233.280	204.120	174.960

A TABLE

Showing the quantity of Weft on any given Breadth, from 40 *to* 72 *Inches, and from one Lash to millions of Lashes; by whole and decimal numbers, decreasing or increasing by a ten-fold proportion—with* 5 *per cent. allowance on the Linen Standard, equal to ten per cent. on the Cotton, providing it is full tale.*

Inches broad.	500ths. *Lashes.*	400ths. *Lashes.*	300ths. *Lashes.*	200ths. *Lashes.*	100ths. *Lashes.*
40	81.000	64.800	48.600	32.400	16.200
41	83.025	66.420	49.815	33.210	16.605
42	85.050	68.040	51.030	34.020	17.010
43	87.075	69.660	52.245	34.830	17.415
44	89.100	71.280	53.460	35.640	17.820
45	91.125	72.900	54.675	36.450	18.225
46	93.150	74.520	55.890	37.260	18.630
47	95.175	76.140	57.105	38.070	19.035
48	97.200	77.760	58.320	38.880	19.440
49	99.225	79.380	59.535	39.690	19.845
50	101.250	81.000	60.750	40.500	20.250
51	103.275	82.620	61.965	41.310	20.655
52	105.300	84.240	63.180	42.120	21.060
53	107.325	85.860	64.395	42.930	21.465
54	109.350	87.480	65.610	43.740	21.870
55	111.375	89.100	66.825	44.550	22.275
56	113.400	90.720	68.040	45.360	22.680
57	115.425	92.340	69.255	46.170	23.085
58	117.450	93.960	70.470	46.980	23.490
59	119.475	95.580	71.685	47.790	23.895
60	121.500	97.200	72.900	48.600	24.300
61	123.525	98.820	74.115	49.410	24.705
62	125.550	100.440	75.330	50.220	25.110
63	127.575	102.060	76.545	51.030	25.515
64	129.600	103.680	77.760	51.840	25.920
65	131.625	105.300	78.975	52.650	26.325
66	133.650	106.920	80.190	53.460	26.730
67	135.675	108.540	81.405	54.270	27.135
68	137.700	110.160	82.620	55.080	27.540
69	139.725	111.780	83.835	55.890	27.945
70	141.750	113.400	85.050	56.700	28.350
71	143.775	115.020	86.265	57.510	28.755
72	145.800	116.640	87.480	58.320	29.160

	Quantity of Cloth at the rates of			
No. of Lashes.	50 *Lashes* ℔ *Inch.*		60 *Lashes* ℔ *Inch.*	
	Ells.	In.	Ells.	In.
100	0	2	0	$1\frac{2}{5}$
200	0	4	0	$3\frac{1}{5}$
300	0	6	0	5
400	0	8	0	$6\frac{2}{5}$
500	0	10	0	$8\frac{1}{5}$
600	0	12	0	10
700	0	14	0	$11\frac{2}{5}$
800	0	16	0	$13\frac{1}{5}$
900	0	18	0	15
1000	0	20	0	$16\frac{2}{5}$
2000	0	40	0	$33\frac{1}{5}$
3000	1	15	1	5
4000	1	35	1	$21\frac{2}{5}$
5000	2	10	1	$38\frac{1}{5}$
6000	2	30	2	10
7000	3	5	2	$26\frac{2}{5}$
8000	3	25	2	$43\frac{1}{5}$
9000	4	0	3	15
10000	4	20	3	$31\frac{2}{5}$
20000	8	40	7	$18\frac{1}{5}$
30000	13	15	11	5
40000	17	35	14	$36\frac{2}{5}$
50000	22	10	18	$23\frac{1}{5}$
60000	26	30	22	10
70000	31	5	25	$41\frac{2}{5}$
80000	35	25	29	$28\frac{1}{5}$
90000	40	0	33	15
100000	44	20	37	$1\frac{2}{5}$
200000	88	40	74	$3\frac{1}{5}$
300000	133	15	111	5
400000	177	35	148	$6\frac{2}{5}$
500000	222	10	185	$8\frac{1}{5}$
600000	266	30	222	10
700000	311	5	259	$11\frac{2}{5}$
800000	355	25	296	$13\frac{1}{5}$
900000	400	2	333	15
1000000	444	20	370	$16\frac{2}{5}$

This table shows the quantity of cloth produced by any number of lashes, at the rates of 50 and 60 lashes per inch.

For example, 126800 lashes, with 50 lashes, or 100 shots to an inch, will produce as under:—

	ells.	inches.
100000 =	44	20
20000 =	8	40
6000 =	2	30
800 =	0	16
	56	16

WARPING.

When the quantity of warp in any web is ascertained, it is given to the warper, with a ticket expressing the number of ells, spyndles, and porters in the web. If the web be stripped, either with different grists, or colours of yarn, one sett of the pattern must likewise be drawn on the ticket, for the warper and weaver's instruction. In the 2d example of the calculation of webs from cotton yarn, it was found, that 30 spyndles, and about 12 Nos. were requisite for a web in which were 100 ells, and 92 porters, 12 splits. But, as this calculation was made to the full extent of the cotton standard, the usual allowance of 1 spyndle to 20 must be made for waste, which in the present instance, may be taken at 1 spyndle and 12 Nos. This added to 30 spyndles 12 Nos. gives $32\frac{1}{3}$ spyndles for the nett warp of the web. If six numbers of the yarn be wound on the bobbin, as is generally the case, the number of bobbins, or runners, in this example will be 97. When these are placed in the bank, and the ends taken through the heck, they are all knotted together and placed on the upper pin of the mill. The lease is then formed by raising alternately the two parts or frames of the heck, and secured on the upper lease pins; after which, the yarn is divided into small parcels, called half gangs or half bouts, which are kept separate by the rollers on the frame of the heck, during the process of warping. The number of threads in the half gang are usually regulated by the sett of the reed, though this is often left to the warper's discretion. The mill is then turned round, and as the cord by which the heck is suspended unwinds itself from the upper spindle of the mill, the heck gradually descends, and warps the yarn round the mill in a spiral direction, until the length of the web be determined. In the present example, if the mill were five ells round, 20 rounds or turns of the mill would give the length; but if the mill were only four ells,

25 rounds would be requisite. The under lease fork is then placed a little beyond the 100 ells, to make an allowance for the thrum and neck; and the half gangs are turned round the pins of the fork, and crossed alternately in manner of a lease. The mill is then turned the contrary way, until the heck be again opposite the upper fork, when a lease is made by the heck, and placed in the fork pins as before. Once down the mill and up again is called a *bout*, or *mill-gang;* and as there are now two threads on the mill for each runner, the number of splits in one bout will always be equal to the number of runners.

Before the warper proceeds further, he must calculate how many bouts are necessary to produce the whole warp of the web. This is done by reducing the porters in the web to splits, and dividing by the number of runners, and the quotient will give the answer—thus,

porters.	splits.
92	12
20	

97)1852(19 bouts.
97

882
873

9 splits over.

That is, 19 bouts and 9 splits over; which 9 splits must be made up either by running another bout with 9 bobbins, or adding another bobbin for the last 9 bouts.

When the warp consists of different grists or colours of yarn, as in stripes, ginghams, pullicates, &c. the bobbins must be arranged in the bank agreeably to the order in which the draught is marked on the ticket. For instance, in the 5th example of the calculation of webs from cotton yarn, there is one half of the fine space, viz. 21 splits, marked on each side of the stripe, in the pattern, for one

side of which 42 bobbins fine must be placed in the bank. And as the first stripe contains five splits coarse, supposing four threads to the split, 20 bobbins must next be placed in the bank. Then follow 12 bobbins fine for the six splits in the intervening space; but as no ordinary heck will admit the whole of the pattern at one time, one half of it must be taken, which will require other 20 bobbins coarse for the half of the centre stripe.

The number of runners therefore will be 94; and one bout, or once down and up the mill will complete one set of the pattern. The selvages are warped independent of the draught, either by themselves, or by adding the requisite number of bobbins to the first and last bouts.

As the circumference of the five ell mill is now commonly divided by the spokes, into 20 equal parts, and the four ell mill into 16, each of these parts will be equal to $\frac{1}{4}$th of the English ell of 45 inches. At whatever distance, therefore, the keels, or cutting marks are to be placed, the ells and parts of an ell between them, may be counted round the mill, and marked accordingly. But if the web is to be divided into pieces of any particular lengths, as for squares, &c. a nitting divided into inches, and applied round the mill, along the chain, will give any length required.

When the whole of the warp is on the mill, the leases are secured by tying a piece of twine round the upper parts of the warp, which are separated by the pins, and the web is taken off the mill, either by rolling it up in form of a clue, or making it into a chain, by taking it over each hand alternately, in loops.

When the web is finished, the warper marks the number of pins on the ticket for the beamer's instruction, which is found by doubling the number of pins in the race, and multiplying them by the number of gangs.

In large factories where the warper is not restricted to any number of bobbins, it is customary to allow one runner for each porter in the web, which will always give 20 bouts.

In warping stripes or ginghams, when the stripes are not similar on each side, the pattern must be *couped;* that is, when the lease is taken the second time, both at head and foot, that part of the warp that would be outward in the usual way, must be turned toward the mill at each bout.

BEAMING.

To find the number of the ravel, or evener, which will spread out the warp of a web to the given breadth on the beam—ravels, like reeds, are counted by the number of teeth, or pins, in 37 inches, between each of which a half gang is placed in beaming.

When, therefore, the web is any other breadth than ell, the number of half gangs multiplied by 16, and divided by the nails in the breadth, will give the number of the ravel sought.

In the preceding example of warping, suppose 308 half gangs, then as the web is $\frac{6}{4}$

```
  308                    Or thus, 308
   16                             2
 ------                         ----
 1848                         3)616
  308                          ----
 ----                          205 = 1/3
24)4928(205
  48
 ----
  128
  120
 ----
    8
```

That is 205 pins, or a *ten score or 5 ravel.* But, as the web is always laid a little broader on the beam than it is in the reed, the ravel must be somewhat coarser, or consist of fewer pins; and the *headings* are sloped gradually by holding the ravel less or more oblique.

COTTON YARN TABLES,

BOTH BY DISCOUNT, AND AT A PRICE PER LIB.

Cotton yarn lists have, from time to time, been calculated to a great extent; but owing to the progressive changes which have taken place in the state of trade, the greater part of them have now become obsolete. The following Tables have therefore been stript of all the encumbrances resulting from these changes, and adapted to the present state of the Cotton Manufacture: at the same time, embracing a range fully adequate to meet all the fluctuations that, under existing circumstances, are likely to take place in the Cotton Market. In the table by discounts, all below 50 per cent. is thrown off as useless, and the discounts on this New List, advance by $2\frac{1}{2}$ to 65 per cent. To prevent, however, any confusion arising from this new arrangement, the corresponding old rates of discount are added at the bottom of the pages; so that either of these methods can be adopted at pleasure.

The finer yarns are sold at a variable price per lib. for No. 120; and the rate of this variation is, in the general trade, 3d. per lib.; the rise and fall from that No. being for the most part arbitrary. In the extensive speculations in the year 1825, cotton yarn was sold as high as 7/3 per lib. for No. 120, and since that time, in the most depressed state of the market, it has been sold below 4/. These prices, therefore, would seem to present limits to the fluctuations of the market; but it was considered that a Table, calculated from 3/. to 8/. per lib. would be fully sufficient to meet all the contingencies of the trade. The scales by which the prices rise and fall from No. 120, as already observed, are also variable, as many of the Spinners make out lists for themselves; but on comparing the lists of the principal Cotton Yarn Merchants in Scotland and England,

this difference will be found not so great as to prove any objection to a general standard. This will appear from the two specimens subjoined to these Tables, of the lists of two principal Spinners, one in Glasgow, and the other in Manchester, and bearing the same date, viz. May 1st, 1824, a year in which trade may have been considered in a settled state. In Mr. Hussey's list, No 200 is 17/11, and in Ancoats', now Benjamin Gray's, Esq. the price of the same is 18/1, a difference of only 2d. on the lib. of this high No. or about $\frac{3}{10}$ths of a penny on the spyndle. It is from these data that the Table of Prices by the lib. for No. 120 has been calculated; and the whole have been carried to the 16ths of a penny per spyndle, which was considered necessary for the low prices at which yarns are now sold.

MULE TWIST, BY DISCOUNT.

No.	List Price.						New List.						$2\frac{1}{2}$ per cent.						5 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	6	6	0	2	11	0	3	3	0	1	5	8	3	2	0	1	5	1	3	1	0	1	4	10
42	6	8	0	2	10	4	3	4	0	1	5	2	3	3	0	1	4	11	3	2	0	1	4	4
44	6	10	0	2	9	8	3	5	0	1	4	12	3	4	0	1	4	6	3	3	0	1	4	0
46	7	0	0	2	9	0	3	6	0	1	4	8	3	5	0	1	4	0	3	3	15	1	3	9
48	7	2	0	2	8	4	3	7	0	1	4	2	3	5	15	1	3	12	3	4	14	1	3	6
50	7	4	0	2	7	12	3	8	0	1	3	14	3	6	14	1	3	8	3	5	13	1	3	2
52	7	6	0	2	7	4	3	9	0	1	3	10	3	7	14	1	3	4	3	6	12	1	2	14
54	7	8	0	2	6	12	3	10	0	1	3	6	3	8	14	1	3	0	3	7	11	1	2	9
56	7	10	0	2	6	4	3	11	0	1	3	2	3	9	13	1	2	13	3	8	10	1	2	6
58	8	1	0	2	6	0	4	0	8	1	3	0	3	11	5	1	2	10	3	10	1	1	2	5
60	8	4	0	2	6	0	4	2	0	1	2	14	4	0	12	1	2	9	3	11	8	1	2	4
62	8	6	0	2	5	8	4	3	0	1	2	12	4	1	11	1	2	7	4	0	7	1	2	2
64	8	8	0	2	5	4	4	4	0	1	2	8	4	2	11	1	2	3	4	1	6	1	1	12
66	8	10	0	2	5	0	4	5	0	1	2	8	4	3	11	1	2	0	4	2	6	1	1	10
68	9	1	0	2	4	12	4	6	8	1	2	6	4	5	2	1	2	0	4	3	12	1	1	11
70	9	4	0	2	4	12	4	8	0	1	2	6	4	6	10	1	2	0	4	5	3	1	1	11
72	9	7	0	2	4	12	4	9	8	1	2	6	4	8	1	1	2	0	4	6	10	1	1	11
74	9	10	0	2	4	12	4	11	0	1	2	6	4	9	8	1	2	0	4	8	1	1	1	11
76	10	1	0	2	4	12	5	0	8	1	2	6	4	11	0	1	1	12	4	9	8	1	1	10
78	10	4	0	2	4	12	5	2	0	1	2	6	5	0	7	1	1	12	4	10	15	1	1	10
80	10	7	0	2	4	8	5	3	8	1	2	4	5	1	15	1	1	12	5	0	5	1	1	10
82	10	10	0	2	4	8	5	5	0	1	2	4	5	3	6	1	1	12	5	1	12	1	1	8
84	11	1	0	2	4	8	5	6	8	1	2	4	5	4	13	1	1	12	5	3	3	1	1	8
86	11	5	0	2	4	12	5	8	8	1	2	6	5	6	12	1	2	0	5	5	1	1	1	9
88	11	9	0	2	4	12	5	10	8	1	2	6	5	8	12	1	2	0	5	7	0	1	1	11
90	12	1	0	2	5	0	6	0	8	1	2	8	5	10	11	1	2	2	5	8	14	1	1	12
92	12	7	0	2	5	8	6	3	8	1	2	12	6	1	10	1	2	5	5	11	12	1	2	0
94	13	1	0	2	6	0	6	6	8	1	3	0	6	4	8	1	2	12	6	2	8	1	2	6
96	13	7	0	2	6	8	6	9	8	1	3	4	6	7	7	1	2	14	6	5	7	1	2	8
98	14	1	0	2	7	0	7	0	8	1	3	8	6	10	6	1	3	1	6	8	4	1	2	11
100	14	7	0	2	7	8	7	3	8	1	3	12	7	1	5	1	3	5	6	11	2	1	3	0
102	15	1	0	2	8	0	7	6	8	1	4	0	7	4	4	1	3	8	7	2	0	1	3	2
104	15	7	0	2	8	8	7	9	8	1	4	4	7	7	3	1	3	12	7	4	13	1	3	6
106	16	1	0	2	8	12	8	0	8	1	4	6	7	10	1	1	3	14	7	7	11	1	3	8
108	16	7	0	2	9	4	8	3	8	1	4	10	8	1	0	1	4	9	7	10	8	1	3	11
110	17	1	0	2	9	8	8	6	8	1	4	12	8	4	0	1	4	6	8	1	6	1	3	14
112	17	9	0	2	10	4	8	10	8	1	5	2	8	7	14	1	4	10	8	5	3	1	4	3
114	18	5	0	2	11	0	9	2	8	1	5	8	8	11	12	1	5	0	8	9	0	1	4	8
116	19	1	0	2	11	8	9	6	8	1	5	12	9	3	10	1	5	5	9	0	12	1	4	14
118	19	9	0	3	9	4	9	10	8	1	6	2	9	7	8	1	5	8	9	4	8	1	5	2
120	20	5	0	3	0	12	10	2	8	1	6	6	9	11	7	1	6	0	9	8	6	1	5	8

50 per cent.	$51\frac{1}{4}$ per cent.	$52\frac{1}{2}$ per cent.

MULE TWIST, BY DISCOUNT.

No.	7½ per cent.						10 per cent.						12½ per cent.						15 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	3	0	1	1	4	4	2	11	2	1	3	12	2	10	2	1	3	5	2	9	2	1	2	14
42	3	1	0	1	5	13	3	0	0	1	3	5	2	11	0	1	2	14	2	10	0	1	2	7
44	3	1	15	1	5	9	3	0	14	1	3	3	2	11	14	1	2	12	2	10	14	1	2	4
46	3	2	14	1	3	3	3	1	13	1	2	15	3	0	12	1	2	6	2	11	11	1	2	0
48	3	3	12	1	2	13	3	2	11	1	2	7	3	1	10	1	2	1	3	0	8	1	1	11
50	3	4	11	1	2	10	3	3	10	1	2	4	3	2	8	1	1	14	3	1	6	1	2	8
52	3	5	10	1	2	8	3	4	8	1	2	2	3	3	6	1	1	12	3	2	4	1	1	6
54	3	6	8	1	2	5	3	5	6	1	1	10	3	4	3	1	1	6	3	3	1	1	1	0
56	3	7	8	1	2	1	3	6	5	1	1	8	3	5	2	1	1	3	3	4	0	1	0	13
58	3	8	14	1	1	14	3	7	10	1	1	8	3	6	7	1	1	3	3	5	4	1	0	12
60	3	10	4	1	1	14	3	9	0	1	1	8	3	7	12	1	1	2	3	6	8	1	0	12
62	3	11	3	1	1	11	3	9	14	1	1	6	3	8	10	1	1	1	3	7	5	1	0	8
64	4	0	1	1	1	7	3	10	13	1	1	2	3	9	8	1	0	12	3	8	3	1	0	6
66	4	1	0	1	1	6	3	11	11	1	0	15	3	10	6	1	0	10	3	9	0	1	0	4
68	4	2	7	1	1	5	4	1	1	1	0	14	3	11	11	1	0	10	3	10	5	1	0	4
70	4	3	13	1	1	5	4	2	6	1	1	0	4	1	0	1	0	10	3	11	10	1	0	4
72	4	5	3	1	1	5	4	3	12	1	1	0	4	2	5	1	0	8	4	0	14	1	0	4
74	4	6	9	1	1	5	4	5	2	1	1	0	4	3	10	1	0	8	4	2	3	1	0	4
76	4	8	0	1	1	5	4	6	7	1	1	0	4	4	15	1	0	8	4	3	7	1	0	4
78	4	9	6	1	1	5	4	7	15	1	1	0	4	6	4	1	0	8	4	4	11	1	0	4
80	4	10	12	1	1	5	4	9	2	1	0	14	4	7	8	1	0	8	4	6	0	1	0	2
82	5	0	2	1	1	5	4	10	8	1	0	14	4	8	14	1	0	8	4	7	4	1	0	2
84	5	1	8	1	1	5	4	11	14	1	0	14	4	10	5	1	0	8	4	8	8	1	0	2
86	5	3	6	1	1	5	5	1	10	1	0	14	5	0	0	1	0	8	4	10	3	1	0	2
88	5	5	3	1	1	5	5	3	7	1	1	0	5	1	11	1	0	9	5	0	0	1	0	4
90	5	7	1	1	1	7	5	5	4	1	1	1	5	3	7	1	0	11	5	1	10	1	0	5
92	5	9	13	1	1	10	5	8	0	1	1	4	5	6	1	1	1	0	5	4	3	1	0	8
94	6	0	10	1	2	0	5	10	11	1	1	10	5	8	11	1	1	4	5	6	12	1	0	14
96	6	3	6	1	2	1	6	1	6	1	1	12	5	11	5	1	1	5	5	9	4	1	1	0
98	6	6	3	1	2	5	6	4	1	1	2	0	6	2	0	1	1	8	5	11	15	1	1	2
100	6	9	0	1	2	8	6	6	12	1	2	3	6	4	8	1	1	12	6	2	6	1	1	6
102	6	11	11	1	2	12	6	9	7	1	2	5	6	7	3	1	2	1	6	4	15	1	1	8
104	7	2	8	1	3	0	7	0	2	1	2	8	6	9	13	1	2	5	6	7	8	1	1	12
106	7	5	4	1	3	2	7	2	14	1	2	11	7	0	7	1	2	4	6	10	0	1	1	14
108	7	8	1	1	3	6	7	5	12	1	3	0	7	3	2	1	2	8	7	0	10	1	2	0
110	7	10	13	1	3	8	7	8	4	1	3	1	7	5	11	1	2	10	7	3	2	1	2	3
112	8	2	8	1	3	12	7	11	14	1	3	6	7	9	3	1	3	0	7	6	8	1	2	8
114	8	6	3	1	4	2	8	3	8	1	3	12	8	0	12	1	3	4	7	10	0	1	2	13
116	8	10	0	1	4	7	8	7	1	1	4	0	8	4	3	1	3	10	8	1	5	1	3	1
118	9	1	10	1	4	10	8	10	11	1	4	4	8	7	12	1	3	12	8	4	12	1	3	5
120	9	5	5	1	5	0	9	2	4	1	4	8	8	11	5	1	4	1	8	8	2	1	3	10
	55¾ per cent.						55 per cent.						56¼ per cent						57½ per cent.					

MULE TWIST, BY DISCOUNT.

No.	17½ per cent.						20 per cent.						22½ per cent.						25 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	2	8	3	1	2	7	2	7	3	1	2	0	2	6	3	1	1	10	2	5	4	1	1	5
42	2	9	0	1	2	0	2	8	0	1	1	11	2	7	0	1	1	4	2	6	0	1	0	14
44	2	9	13	1	1	13	2	8	13	1	1	6	2	7	12	1	1	0	2	6	12	1	0	9
46	2	10	10	1	1	9	2	9	10	1	1	2	2	8	9	1	0	12	2	7	8	1	0	5
48	2	11	8	1	1	5	2	10	6	1	0	14	2	9	5	1	0	8	2	8	4	1	0	1
50	3	0	5	1	2	2	2	11	3	1	0	11	2	10	2	1	0	4	2	9	0	0	11	14
52	3	1	2	1	0	13	3	0	0	1	0	8	2	10	14	1	0	1	2	9	12	0	11	11
54	3	1	15	1	0	10	3	0	13	1	0	4	2	11	0	0	11	14	2	10	8	0	11	8
56	3	2	12	1	0	7	3	1	10	1	0	1	3	0	7	0	11	11	2	11	4	0	11	5
58	3	4	0	1	0	7	3	2	13	1	0	0	3	1	9	0	11	10	3	0	6	0	11	4
60	3	5	4	1	0	6	3	4	0	1	0	0	3	2	12	0	11	10	3	1	8	0	11	4
62	3	6	1	1	0	3	3	4	13	0	11	13	3	3	8	0	11	8	3	2	4	0	11	1
64	3	6	14	1	0	0	3	5	10	0	11	11	3	4	5	0	11	5	3	3	0	0	11	0
66	3	7	11	0	11	14	3	6	6	0	11	9	3	5	1	0	11	3	3	3	12	0	10	13
68	3	9	0	0	11	14	3	7	8	0	11	8	3	6	4	0	11	2	3	4	12	0	10	12
70	3	10	3	0	11	12	3	8	13	0	11	8	3	7	6	0	11	2	3	6	0	0	10	12
72	3	11	7	0	11	12	3	10	0	0	11	8	3	8	9	0	11	2	3	7	2	0	10	12
74	4	0	11	0	11	12	3	11	3	0	11	8	3	9	12	0	11	2	3	8	4	0	10	12
76	4	1	15	0	11	12	4	0	6	0	11	8	3	10	12	0	11	2	3	9	6	0	10	12
78	4	3	2	0	11	12	4	1	10	0	11	8	4	0	1	0	11	2	3	10	8	0	10	12
80	4	4	6	0	11	12	4	2	3	0	11	8	4	1	3	0	11	2	3	11	10	0	10	12
82	4	5	10	0	11	12	4	4	0	0	11	7	4	2	6	0	11	2	4	0	12	0	10	11
84	4	6	14	0	11	12	4	5	3	0	11	7	4	3	8	0	11	1	4	1	14	0	10	11
86	4	8	8	0	11	12	4	6	13	0	11	7	4	5	1	0	11	1	4	3	6	0	10	11
88	4	10	3	0	11	14	4	8	6	0	11	8	4	6	10	0	11	2	4	4	14	0	10	12
90	4	11	13	1	0	0	4	10	0	0	11	10	4	8	3	0	11	4	4	6	6	0	10	14
92	5	2	4	1	0	2	5	0	6	0	11	13	4	10	8	0	11	7	4	8	10	0	11	1
94	5	4	12	1	0	8	5	2	13	1	0	0	5	0	13	0	11	10	4	10	14	0	11	4
96	5	7	4	1	0	8	5	5	3	1	0	4	5	3	2	0	11	13	5	1	2	0	11	8
98	5	9	11	1	0	12	5	7	9	1	0	7	5	5	8	1	0	0	5	3	6	0	11	10
100	6	0	3	1	1	0	5	10	0	1	0	9	5	7	13	1	0	3	5	5	10	0	11	13
102	6	2	10	1	1	2	6	0	6	1	0	12	5	10	2	1	0	6	5	7	14	1	0	0
104	6	5	2	1	1	5	6	2	13	1	0	15	6	0	7	1	0	9	5	10	2	1	0	2
106	6	7	10	1	1	7	6	5	3	1	1	1	6	2	13	1	0	11	6	0	6	1	0	4
108	6	10	2	1	1	10	6	7	10	1	1	4	9	5	2	1	0	14	6	2	10	1	0	7
110	7	0	8	1	1	12	6	10	0	1	1	7	6	7	7	1	1	0	6	4	14	1	0	9
112	7	3	14	1	2	1	7	1	3	1	1	11	6	10	8	1	1	4	6	7	14	1	0	13
114	7	7	3	1	2	6	7	4	6	1	1	15	7	1	10	1	1	8	6	10	14	1	1	1
116	7	10	8	1	2	10	7	7	9	1	2	3	7	4	12	1	1	12	7	1	14	1	1	5
118	8	1	12	1	2	14	7	10	13	1	2	8	7	7	14	1	2	0	7	4	14	1	1	9
120	8	5	1	1	3	3	8	2	0	1	2	11	7	10	15	1	2	4	7	7	14	1	1	12

58¾ per cent.	60 per cent.	61¼ per cent.	62½ per cent.

MULE TWIST, BY DISCOUNT.

No.	27½ per cent.						30 per cent.						32½ per cent.						35 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	2	4	4	1	0	12	2	3	5	1	0	4	2	2	5	0	11	13	2	1	6	0	11	6
42	2	5	0	1	0	7	2	4	0	1	0	0	2	3	0	0	11	9	2	2	0	0	11	2
44	2	5	12	1	0	3	2	4	11	0	11	12	2	3	11	0	11	5	2	2	10	0	10	14
46	2	6	7	0	11	15	2	5	6	0	11	8	2	4	6	0	11	1	2	3	5	0	10	11
48	2	7	5	0	11	11	2	6	1	0	11	4	2	5	0	0	10	14	2	4	0	0	10	8
50	2	7	15	0	11	8	2	6	13	0	11	1	2	5	11	0	10	11	2	4	10	0	10	5
52	2	8	10	0	11	5	2	7	8	0	10	15	2	6	6	0	10	8	2	5	4	0	10	2
54	2	9	5	0	11	1	2	8	3	0	10	12	2	7	1	0	10	6	2	5	15	0	10	0
56	2	10	1	0	11	0	2	8	14	0	10	9	2	7	11	0	10	3	2	6	9	0	9	13
58	2	11	2	0	10	14	2	10	0	0	10	8	2	8	12	0	10	2	2	7	8	0	9	12
60	3	0	4	0	10	13	2	11	0	0	10	8	2	9	12	0	10	2	2	8	8	0	9	12
62	3	1	0	0	10	11	2	11	11	0	10	6	2	10	7	0	10	0	2	9	2	0	9	10
64	3	1	11	0	10	9	3	0	6	0	10	4	2	11	2	0	9	14	2	9	13	0	9	8
66	3	2	7	0	10	8	3	1	2	0	10	2	2	11	12	0	9	12	2	10	7	0	9	6
68	3	3	6	0	10	7	3	2	0	0	10	1	3	0	11	0	9	11	2	11	5	0	9	6
70	3	4	10	0	10	7	3	3	3	0	10	1	3	1	13	0	9	11	3	0	6	0	9	6
72	3	5	11	0	10	7	3	4	4	0	10	1	3	2	13	0	9	11	3	1	6	0	9	5
74	3	6	12	0	10	6	3	5	5	0	10	1	3	3	13	0	9	11	3	2	6	0	9	4
76	3	7	14	0	10	6	3	6	6	0	10	0	3	4	13	0	9	11	3	3	5	0	9	4
78	3	9	0	0	10	6	3	7	6	0	10	0	3	5	14	0	9	11	3	4	5	0	9	4
80	3	10	0	0	10	6	3	8	7	0	10	0	3	6	14	0	9	11	3	5	4	0	9	4
82	3	11	2	0	10	6	3	9	8	0	10	0	3	7	14	0	9	10	3	6	4	0	9	4
84	4	0	3	0	10	5	3	10	8	0	10	0	3	8	14	0	9	10	3	7	3	0	9	4
86	4	1	11	0	10	5	4	0	0	0	10	0	3	10	4	0	9	10	3	8	8	0	9	4
88	4	3	2	0	10	6	4	1	6	0	10	0	3	11	9	0	9	11	3	9	13	0	9	5
90	4	4	9	0	10	8	4	2	12	0	10	2	4	0	15	0	9	13	3	11	2	0	9	7
92	4	6	12	0	10	11	4	4	14	0	10	5	4	3	0	0	10	0	4	1	1	0	9	10
94	4	8	4	0	10	14	4	6	15	0	10	8	4	5	0	0	10	2	4	3	0	0	9	12
96	4	11	1	0	11	1	4	9	1	0	10	11	4	7	0	0	10	5	4	5	0	0	9	15
98	5	1	4	0	11	4	4	11	2	0	10	14	4	9	0	0	10	8	4	6	15	0	10	1
100	5	3	7	0	11	7	5	1	4	0	11	0	4	11	1	0	10	10	4	8	14	0	10	4
102	5	5	10	0	11	9	5	3	6	0	11	3	5	1	1	0	10	12	4	10	13	0	10	6
104	5	7	12	0	11	12	5	5	7	0	11	5	5	3	2	0	10	15	5	0	12	0	10	8
106	5	10	0	0	11	14	5	7	9	0	11	8	5	5	2	0	11	1	5	2	12	0	10	10
108	6	0	2	1	0	0	5	9	10	0	11	10	5	7	2	0	11	3	5	4	10	0	10	12
110	6	2	5	1	0	3	5	11	12	0	11	12	5	9	3	0	11	5	5	6	10	0	10	14
112	6	5	3	1	0	6	6	2	9	1	0	0	5	11	14	0	11	9	5	9	3	0	11	2
114	6	8	2	1	0	10	6	5	6	1	0	3	6	2	9	0	11	12	5	11	14	0	11	5
116	6	11	0	1	1	14	6	8	2	1	0	7	6	5	4	1	0	0	6	2	7	0	11	9
118	7	1	15	1	1	2	6	10	15	1	0	10	6	8	0	1	0	3	6	5	0	0	11	12
120	7	4	13	1	1	5	7	1	12	1	0	14	6	10	11	1	0	7	6	7	10	0	11	15
	65¾ per cent.						65 per cent.						66⅔ per cent.						67½ per cent.					

MULE TWIST, BY DISCOUNT.

No.	37½ per cent.						40 per cent.						42½ per cent.						45 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	2	0	6	0	11	0	1	11	6	0	10	8	1	10	7	0	10	1	1	9	7	0	9	11
42	2	1	0	0	10	11	2	0	0	0	10	4	1	11	0	0	9	14	1	10	0	0	9	7
44	2	1	10	0	10	8	2	0	10	0	10	1	1	11	9	0	9	10	1	10	9	0	9	4
46	2	2	4	0	10	4	2	1	3	0	9	14	2	0	2	0	9	8	1	11	1	0	9	0
48	2	2	14	0	10	1	2	1	13	0	9	11	2	0	12	0	9	4	1	11	10	0	8	14
50	2	3	8	0	9	15	2	2	7	0	9	8	2	1	5	0	9	2	2	0	3	0	8	12
52	2	4	2	0	9	12	2	3	0	0	9	5	2	1	14	0	9	0	2	0	12	0	8	9
54	2	4	12	0	9	9	2	3	9	0	9	3	2	2	7	0	8	13	2	1	5	0	8	7
56	2	5	6	0	9	7	2	4	3	0	9	1	2	3	0	0	8	11	2	1	14	0	8	5
58	2	6	5	0	9	6	2	5	2	0	9	0	2	3	14	0	8	10	2	2	11	0	8	4
60	2	7	4	0	9	6	2	6	0	0	9	0	2	4	12	0	8	10	2	3	8	0	8	4
62	2	7	14	0	9	4	2	6	10	0	8	14	2	5	5	0	8	8	2	4	0	0	8	2
64	2	8	8	0	9	2	2	7	3	0	8	12	2	5	14	0	8	6	2	4	10	0	8	0
66	2	9	2	0	9	0	2	7	13	0	8	11	2	6	7	0	8	5	2	5	2	0	7	15
68	2	9	15	0	9	0	2	8	9	0	8	10	2	7	3	0	8	4	2	5	14	0	7	14
70	2	11	0	0	9	0	2	9	10	0	8	10	2	8	3	0	8	4	2	6	13	0	7	14
72	2	11	15	0	9	0	2	10	8	0	8	10	2	9	2	0	8	4	2	7	12	0	7	14
74	3	0	14	0	8	14	2	11	6	0	8	8	2	9	15	0	8	2	2	8	7	0	7	14
76	3	1	13	0	8	15	3	0	5	0	8	9	2	10	12	0	8	4	2	9	4	0	7	14
78	3	2	12	0	8	15	3	1	3	0	8	9	2	11	10	0	8	4	2	10	2	0	7	14
80	3	3	11	0	8	15	3	2	2	0	8	9	3	0	8	0	8	4	2	10	15	0	7	14
82	3	4	10	0	8	15	3	3	0	0	8	9	3	1	6	0	8	3	2	11	12	0	7	13
84	3	5	9	0	8	14	3	3	14	0	8	9	3	2	3	0	8	3	3	0	9	0	7	13
86	3	6	13	0	8	14	3	5	1	0	8	8	3	3	6	0	8	3	3	1	11	0	7	14
88	3	8	1	0	8	15	3	6	5	0	8	9	3	4	9	0	8	4	3	2	12	0	7	15
90	3	9	5	0	9	1	3	7	8	0	8	11	3	5	11	0	8	5	3	3	14	0	8	0
92	3	11	3	0	9	4	3	9	5	0	8	14	3	7	6	0	8	8	3	5	8	0	8	2
94	4	1	1	0	9	6	3	11	1	0	9	0	3	9	2	0	8	10	3	7	3	0	8	4
96	4	3	0	0	9	9	4	0	15	0	9	3	3	10	14	0	8	12	3	8	13	0	8	6
98	4	4	13	0	9	11	4	2	11	0	9	5	4	0	9	0	8	15	3	10	8	0	8	8
100	4	6	11	0	9	13	4	4	8	0	9	8	4	2	5	0	9	1	4	0	2	0	8	11
102	4	8	9	0	10	0	4	6	5	0	9	9	4	4	0	0	9	3	4	1	12	0	8	12
104	4	10	7	0	10	2	4	8	2	0	9	11	4	5	12	0	9	5	4	3	7	0	8	14
106	5	0	5	0	10	4	4	9	14	0	9	13	4	7	12	0	9	6	4	5	1	0	9	0
108	5	2	3	0	10	6	4	11	11	0	10	0	4	9	3	0	9	8	4	6	12	0	9	2
110	5	4	1	0	10	8	5	1	8	0	10	1	4	10	15	0	9	10	4	8	6	0	9	4
112	5	6	9	0	10	11	5	3	14	0	10	4	4	11	1	0	9	13	4	10	9	0	9	7
114	5	9	1	0	10	14	5	6	5	0	10	8	5	3	8	0	10	0	5	0	12	0	9	9
116	5	11	9	0	11	2	5	8	11	0	10	11	5	5	14	0	10	3	5	3	0	0	9	12
118	6	2	1	0	11	5	5	11	2	0	10	13	5	8	2	0	10	6	5	5	3	0	9	15
120	6	4	9	0	11	8	6	1	8	0	11	0	5	10	7	0	10	9	5	7	6	0	10	2

68¾ per cent.	70 per cent.	71¼ per cent.	72½ per cent.

MULE TWIST, BY DISCOUNT.

No.	47½ per cent.						50 per cent.						52½ per cent.						55 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	1	8	8	0	9	3	1	7	8	0	8	12	1	6	8	0	8	5	1	5	9	0	7	14
42	1	9	0	0	8	16	1	8	0	0	8	9	1	7	0	0	8	2	1	6	0	0	7	11
44	1	9	8	0	8	13	1	8	8	0	8	6	1	7	8	0	8	0	1	6	7	0	7	8
46	1	10	1	0	8	10	1	9	0	0	8	4	1	8	0	0	7	13	1	6	15	0	7	6
48	1	10	9	0	8	8	1	9	8	0	8	1	1	8	7	0	7	11	1	7	5	0	7	4
50	1	11	2	0	8	5	1	10	0	0	7	15	1	8	15	0	7	8	1	7	12	0	7	2
52	1	11	10	0	8	3	1	10	8	0	7	12	1	9	6	0	7	6	1	8	4	0	7	0
54	2	0	2	0	8	1	1	11	0	0	7	11	1	9	14	0	7	4	1	8	11	0	6	15
56	2	0	11	0	7	15	1	11	8	0	7	9	1	10	5	0	7	3	1	9	2	0	6	13
58	2	1	8	0	7	15	2	0	4	0	7	8	1	11	1	0	7	2	1	9	13	0	6	12
60	2	2	4	0	7	14	2	1	0	0	7	8	1	11	12	0	7	2	1	10	8	0	6	12
62	2	2	12	0	7	12	2	1	8	0	7	6	2	0	3	0	7	0	1	10	15	0	6	11
64	2	3	5	0	7	11	2	2	0	0	7	5	2	0	11	0	6	15	1	11	6	0	6	9
66	2	3	13	0	7	9	2	2	8	0	7	4	2	1	3	0	6	14	1	11	14	0	6	8
68	2	4	8	0	7	9	2	3	2	0	7	3	2	1	12	0	6	13	2	0	6	0	6	8
70	2	5	6	0	7	9	2	4	0	0	7	3	2	2	10	0	6	13	2	1	3	0	6	8
72	2	6	5	0	7	9	2	4	14	0	7	3	2	3	7	0	6	13	2	2	0	0	6	8
74	2	7	0	0	7	7	2	5	8	0	7	1	2	4	0	0	6	11	2	2	9	0	6	6
76	2	7	12	0	7	8	2	6	4	0	7	2	2	4	12	0	6	12	2	3	4	0	6	7
78	2	8	9	0	7	8	2	7	0	0	7	2	2	5	7	0	6	12	2	3	14	0	6	7
80	2	9	5	0	7	8	2	7	12	0	7	2	2	6	3	0	6	12	2	4	9	0	6	7
82	2	10	2	0	7	8	2	8	8	0	7	2	2	6	14	0	6	12	2	5	4	0	6	7
84	2	10	14	0	7	7	2	9	4	0	7	1	2	7	9	0	6	11	2	5	14	0	6	6
86	3	0	0	0	7	8	2	10	4	0	7	2	2	8	9	0	6	13	2	6	13	0	6	7
88	3	1	0	0	7	9	2	11	4	0	7	3	2	9	8	0	6	14	2	7	12	0	6	8
90	3	2	1	0	7	10	3	0	4	0	7	4	2	10	7	0	6	14	2	8	10	0	6	8
92	3	3	10	0	7	12	3	1	12	0	7	6	2	11	14	0	7	0	2	10	0	0	6	10
94	3	5	3	0	7	14	3	3	4	0	7	8	3	1	4	0	7	2	2	11	5	0	6	12
96	3	6	12	0	8	0	3	4	12	0	7	10	3	2	11	0	7	4	3	0	11	0	6	14
98	3	8	6	0	8	2	3	6	4	0	7	12	3	4	2	0	7	6	3	2	0	0	7	0
100	3	9	15	0	8	4	3	7	12	0	7	14	3	5	9	0	7	8	3	3	6	0	7	1
102	3	11	8	0	8	6	3	9	4	0	8	0	3	6	15	0	7	9	3	4	11	0	7	3
104	4	1	1	0	8	8	3	10	12	0	8	1	3	8	6	0	7	11	3	6	1	0	7	4
106	4	2	11	0	8	9	4	0	4	0	8	3	3	9	15	0	7	12	3	7	7	0	7	6
108	4	4	4	0	8	11	4	1	12	0	8	5	3	11	4	0	7	14	3	8	12	0	7	8
110	4	5	13	0	8	13	4	3	4	0	8	6	4	0	11	0	8	0	3	10	2	0	7	9
112	4	7	14	0	9	0	4	5	4	0	8	9	4	2	9	0	8	2	3	11	15	0	7	11
114	4	10	0	0	9	3	4	7	4	0	8	11	4	4	8	0	8	4	4	1	12	0	7	13
116	5	0	2	0	9	5	4	9	4	0	8	14	4	6	6	0	8	7	4	3	8	0	8	0
118	5	2	4	0	9	8	4	11	4	0	9	0	4	8	4	0	8	9	4	5	5	0	8	2
120	5	4	5	0	9	11	5	1	4	0	9	2	4	10	3	0	8	10	4	7	2	0	8	3

73¾ per cent.	75 per cent.	76¼ per cent.	77½ per cent.

MULE TWIST, BY DISCOUNT.

No.	57½ per cent.						60 per cent.						62½ per cent.						65 per cent.					
	per lb.			per spy.			per lb.			per spy.			per lb.			per spy.			per lb.			per spy.		
	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16	s.	d.	16
40	1	4	9	0	7	7	1	3	9	0	7	0	1	2	10	0	6	9	1	1	10	0	6	2
42	1	5	0	0	7	4	1	4	0	0	6	14	1	3	0	0	6	7	1	2	0	0	6	0
44	1	5	7	0	7	2	1	4	6	0	6	11	1	3	6	0	6	4	1	2	6	0	5	14
46	1	5	14	0	7	0	1	4	13	0	6	9	1	3	12	0	6	3	1	2	11	0	5	12
48	1	6	4	0	6	14	1	5	3	0	6	7	1	4	2	0	6	1	1	3	1	0	5	10
50	1	6	11	0	6	12	1	5	10	0	6	6	1	4	8	0	5	5	1	3	6	0	5	7
52	1	7	2	0	6	10	1	6	0	0	6	4	1	4	14	0	5	13	1	3	12	0	5	6
54	1	7	9	0	6	8	1	6	6	0	6	2	1	5	4	0	5	12	1	4	2	0	5	6
56	1	8	0	0	6	7	1	6	13	0	6	1	1	5	10	0	5	11	1	4	7	0	5	4
58	1	8	10	0	6	6	1	7	6	0	6	0	1	6	3	0	5	10	1	5	0	0	5	4
60	1	9	4	0	6	6	1	8	0	0	6	0	1	6	12	0	5	10	1	5	8	0	5	4
62	1	9	11	0	6	5	1	8	6	0	5	15	1	7	2	0	5	9	1	5	14	0	5	3
64	1	10	2	0	6	3	1	8	13	0	5	13	1	7	8	0	5	8	1	6	3	0	5	2
66	1	10	8	0	6	2	1	9	3	0	5	12	1	7	14	0	5	7	1	6	9	0	5	1
68	1	11	0	0	6	1	1	9	11	0	5	12	1	8	5	0	5	6	1	7	1	0	5	0
70	1	11	13	0	6	1	1	10	6	0	5	12	1	9	0	0	5	6	1	7	10	0	5	0
72	2	0	7	0	6	1	1	11	1	0	5	12	1	9	11	0	5	6	1	8	2	0	5	0
74	2	1	1	0	6	0	1	11	10	0	5	10	1	10	2	0	5	6	1	8	10	0	5	0
76	2	1	12	0	6	1	2	0	3	0	5	11	1	10	11	0	5	6	1	9	3	0	5	0
78	2	2	6	0	6	1	2	0	13	0	5	11	1	11	4	0	5	6	1	9	11	0	5	0
80	2	3	0	0	6	1	2	1	6	0	5	11	1	11	13	0	5	6	1	10	3	0	5	0
82	2	3	10	0	6	1	2	2	0	0	5	11	2	0	6	0	5	6	1	10	12	0	5	0
84	2	4	4	0	6	0	2	2	9	0	5	10	2	0	15	0	5	5	1	11	4	0	4	15
86	2	5	2	0	6	1	2	3	7	0	5	11	2	1	11	0	5	6	2	0	0	0	5	0
88	2	6	0	0	6	2	2	4	3	0	5	12	2	2	7	0	5	7	3	0	11	0	5	1
90	2	6	13	0	6	2	2	5	0	0	5	13	2	3	3	0	5	7	2	1	6	0	5	1
92	2	8	1	0	6	4	2	6	3	0	5	15	2	4	5	0	5	9	2	2	7	0	5	3
94	2	9	6	0	6	6	2	7	6	0	6	0	2	5	7	0	5	10	2	3	8	0	5	4
96	2	10	10	0	6	8	2	8	9	0	6	2	2	6	9	0	5	11	2	4	8	0	5	5
98	2	11	15	0	6	9	2	9	13	0	6	3	2	7	11	0	5	13	2	5	9	0	5	7
100	3	1	3	0	6	11	2	11	0	0	6	5	2	8	13	0	5	15	2	6	10	0	5	8
102	3	2	7	0	6	12	3	0	3	0	6	6	2	9	14	0	6	0	2	7	11	0	5	9
104	3	3	12	0	6	14	3	1	6	0	6	8	2	11	1	0	6	1	2	8	12	0	5	10
106	3	5	0	0	6	15	3	2	10	0	6	9	3	0	3	0	6	2	2	9	12	0	5	11
108	3	6	4	0	7	1	3	3	13	0	6	10	3	1	5	0	6	4	2	10	13	0	5	13
110	3	7	9	0	7	2	3	5	0	0	6	11	3	2	7	0	6	5	2	11	14	0	5	14
112	3	9	4	0	7	4	3	6	9	0	6	13	3	3	15	0	6	7	3	1	4	0	6	0
114	3	10	15	0	7	7	3	8	3	0	7	0	3	5	7	0	6	8	3	2	11	0	6	2
116	4	0	11	0	7	9	3	9	14	0	7	2	3	6	15	0	6	11	3	4	1	0	6	3
118	4	2	6	0	7	11	3	11	7	0	7	3	3	8	7	0	6	12	3	5	8	0	6	5
120	4	4	1	0	7	12	4	1	0	0	7	4	3	10	0	0	6	13	3	6	14	0	6	6

78¾ per cent.	80 per cent.	81¼ per cent.	82½ per cent.

YARN SOLD AT A PRICE FOR NO. 18.

No.	At 1s.						At 1s. 0½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	0	0	1	0	0	1	0	2	1	0	8
20	1	1	0	0	11	11	1	1	2	1	0	2
22	1	1	2	0	11	1	1	2	0	0	11	7
24	1	2	0	0	10	8	1	2	2	0	10	14
26	1	2	2	0	10	0	1	3	0	0	10	6
28	1	3	0	0	9	10	1	3	2	0	9	15

No.	At 1s. 1d.						At 1s. 1½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	1	0	1	1	0	1	1	2	1	1	8
20	1	2	0	1	0	9	1	2	2	1	1	1
22	1	2	2	0	11	14	1	3	0	1	0	4
24	1	3	0	0	11	4	1	3	2	0	11	10
26	1	3	2	0	10	12	1	4	0	0	11	1
28	1	4	0	0	10	4	1	4	2	0	10	9

No.	At 1s. 2d.						At 1s. 2½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	2	0	1	2	0	1	2	2	1	2	8
20	1	3	0	1	1	8	1	3	2	1	1	15
22	1	3	2	1	0	10	1	4	0	1	1	1
24	1	4	0	1	0	0	1	4	2	1	0	6
26	1	4	2	0	11	6	1	5	0	0	11	12
28	1	5	0	0	10	15	1	5	2	0	11	4

No.	At 1s. 3d.						At 1s. 3½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	3	0	1	3	0	1	3	2	1	3	8
20	1	4	0	1	2	6	1	4	2	1	2	14
22	1	4	2	1	1	8	1	5	0	1	1	15
24	1	5	0	1	0	12	1	5	2	1	1	2
26	1	5	2	1	0	2	1	6	0	1	0	7
28	1	6	0	0	11	9	1	6	2	0	11	14

No.	At 1s. 4d.						At 1s. 4½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	4	0	1	4	0	1	4	2	1	4	8
20	1	5	0	1	3	5	1	5	2	1	3	12
22	1	5	2	1	2	5	1	6	0	1	2	11
24	1	6	0	1	1	8	1	6	2	1	1	14
26	1	6	2	1	0	13	1	7	0	1	0	2
28	1	7	0	1	0	3	1	7	2	1	0	8

No.	At 1s. 5d.						At 1s. 5½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	5	0	1	5	0	1	5	2	1	5	8
20	1	6	0	1	4	3	1	6	2	1	4	10
22	1	6	2	1	3	2	1	7	0	1	3	9
24	1	7	0	1	2	4	1	7	2	1	2	10
26	1	7	2	1	1	8	1	8	0	1	1	13
28	1	8	0	1	0	14	1	8	2	1	1	3

No.	At 1s. 6d.						At 1s. 6½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	6	0	1	6	0	1	6	2	1	6	8
20	1	7	0	1	5	2	1	7	2	1	5	9
22	1	7	2	1	3	15	1	8	0	1	4	6
24	1	8	0	1	3	0	1	8	2	1	3	6
26	1	8	2	1	2	3	1	9	0	1	2	9
28	1	9	0	1	1	8	1	9	2	1	1	15

No.	At 1s. 7d.						At 1s. 7½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
18	1	7	0	1	7	0	1	7	2	1	7	8
20	1	8	0	1	6	0	1	8	2	1	6	7
22	1	8	2	1	4	12	1	9	0	1	5	3
24	1	9	0	1	3	12	1	9	2	1	4	2
26	1	9	2	1	2	14	1	10	0	1	3	4
28	1	10	0	1	2	2	1	10	2	1	2	7

YARN SOLD AT A PRICE FOR NO. 30.

No.	At 1s. 2d.						At 1s. 2½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	2	0	0	8	6	1	2	2	0	8	11
32	1	2	2	0	8	2	1	3	0	0	8	6
34	1	3	0	0	8	0	1	3	2	0	8	3
36	1	3	2	0	7	12	1	4	0	0	8	0
38	1	4	0	0	7	8	1	4	2	0	7	13
40	1	4	2	0	7	6	1	5	0	0	7	10
42	1	5	0	0	7	4	1	5	2	0	7	8

	At 1s. 3d.						At 1s. 3½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	3	0	0	9	0	1	3	2	0	9	5
32	1	3	2	0	8	11	1	4	0	0	9	0
34	1	4	0	0	8	8	1	4	2	0	8	12
36	1	4	2	0	8	4	1	5	0	0	8	8
38	1	5	0	0	8	0	1	5	2	0	8	4
40	1	5	2	0	7	14	1	6	0	0	8	2
42	1	6	0	0	7	11	1	6	2	0	7	15

	At 1s. 4d.						At 1s. 4½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	4	0	0	9	9	1	4	2	0	9	14
32	1	4	2	0	9	4	1	5	0	0	9	9
34	1	5	0	0	9	0	1	5	2	0	9	4
36	1	5	2	0	8	12	1	6	0	0	9	0
38	1	6	0	0	8	8	1	6	2	0	8	12
40	1	6	2	0	8	5	1	7	0	0	8	9
42	1	7	0	0	8	2	1	7	2	0	8	6

	At 1s. 5d.						At 1s. 5½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	5	0	0	10	3	1	5	2	0	10	8
32	1	5	2	0	9	13	1	6	0	0	10	2
34	1	6	0	0	9	8	1	6	2	0	9	13
36	1	6	2	0	9	4	1	7	0	0	9	8
38	1	7	0	0	9	0	1	7	2	0	9	3
40	1	7	2	0	8	12	1	8	0	0	9	0
42	1	8	0	0	8	8	1	8	2	0	8	12

	At 1s. 6d.						At 1s. 6½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	6	0	0	10	13	1	6	2	0	11	1
32	1	6	2	0	10	6	1	7	0	0	10	11
34	1	7	0	0	10	1	1	7	2	0	10	5
36	1	7	2	0	9	12	1	8	0	0	10	0
38	1	8	0	0	9	8	1	8	2	0	9	11
40	1	8	2	0	9	3	1	9	0	0	9	7
42	1	9	0	0	9	0	1	9	2	0	9	3

	At 1s. 7d.						At 1s. 7½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	7	0	0	11	6	1	7	2	0	11	11
32	1	7	2	0	11	0	1	8	0	0	11	4
34	1	8	0	0	10	9	1	8	2	0	10	13
36	1	8	2	0	10	4	1	9	0	0	10	8
38	1	9	0	0	9	15	1	9	2	0	10	3
40	1	9	2	0	9	11	1	10	0	0	9	14
42	1	10	0	0	9	7	1	10	2	0	9	10

	At 1s. 8d.						At 1s. 8½d.					
	per lb.			per spy			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	8	0	1	0	0	1	8	2	1	0	5
32	1	8	2	0	11	8	1	9	0	0	11	13
34	1	9	0	0	11	2	1	9	2	0	11	6
36	1	9	2	0	10	12	1	10	0	0	11	0
38	1	10	0	0	10	7	1	10	2	0	10	10
40	1	10	2	0	10	2	1	11	0	0	10	5
42	1	11	0	0	9	15	1	11	2	0	10	0

	At 1s. 9d.						At 1s. 9½d.					
	per lb.			per spy.			per lb.			per spy.		
	s.	d.	f.	s.	d.	16	s.	d.	f.	s.	d.	16
30	1	9	0	1	0	9	1	9	2	1	0	14
32	1	9	2	1	0	1	1	10	0	1	0	6
34	1	10	0	0	11	10	1	10	2	0	11	15
36	1	10	2	0	11	4	1	11	0	0	11	8
38	1	11	0	0	10	14	1	11	2	0	11	2
40	1	11	2	0	10	9	2	0	0	0	10	13
42	2	0	0	0	10	4	2	0	2	0	10	8

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 3s.					At 3s. 3d.					At 3s. 6d.					At 3s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
80	1	6½	0	4	3	1	9½	0	4	13	2	0½	0	5	8	2	3½	0	6	3
82	1	7	0	4	3	1	10	0	4	13	2	1	0	5	8	2	4	0	6	3
84	1	7½	0	4	3	1	10½	0	4	13	2	1½	0	5	8	2	4½	0	6	2
86	1	8	0	4	3	1	11	0	4	13	2	2	0	5	7	2	5	0	6	1
88	1	8½	0	4	3	1	11½	0	4	13	2	2½	0	5	7	2	5½	0	6	0
90	1	9	0	4	3	2	0	0	4	13	2	3	0	5	6	2	6	0	6	0
92	1	10	0	4	5	2	1	0	4	14	2	4	0	5	8	2	7	0	6	1
94	1	11	0	4	6	2	2	0	5	0	2	5	0	5	9	2	8	0	6	2
96	2	0	0	4	8	2	3	0	5	1	2	6	0	5	10	2	9	0	6	3
98	2	1	0	4	9	2	4	0	5	2	2	7	0	5	11	2	10	0	6	4
100	2	2	0	4	11	2	5	0	5	4	2	8	0	5	12	2	11	0	6	5
102	2	3	0	4	12	2	6	0	5	4	2	9	0	5	13	3	0	0	6	5
104	2	4	0	4	13	2	7	0	5	6	2	10	0	5	14	3	1	0	6	6
106	2	5	0	4	15	2	8	0	5	7	2	11	0	5	15	3	2	0	6	7
108	2	6	0	5	0	2	9	0	5	8	3	0	0	6	0	3	3	0	6	8
110	2	7	0	5	1	2	10	0	5	9	3	1	0	6	1	3	4	0	6	8
112	2	8	0	5	2	2	11	0	5	10	3	2	0	6	2	3	5	0	6	9
114	2	9	0	5	3	3	0	0	5	11	3	3	0	6	2	3	6	0	6	10
116	2	10	0	5	4	3	1	0	5	12	3	4	0	6	3	3	7	0	6	11
118	2	11	0	5	5	3	2	0	5	13	3	5	0	6	4	3	8	0	6	11
120	3	0	0	5	6	3	3	0	5	14	3	6	0	6	5	3	9	0	6	12
122	3	2	0	5	9	3	5	0	6	0	3	8	0	6	8	3	11	0	6	15
124	3	4	0	5	13	3	7	0	6	4	3	10	0	6	11	4	1	0	7	2
126	3	6	0	6	0	3	9	0	6	7	4	0	0	6	14	4	3	0	7	4
128	3	8	0	6	3	3	11	0	6	9	4	2	0	7	0	4	5	0	7	7
130	3	10	0	6	5	4	1	0	6	12	4	4	0	7	3	4	7	0	7	10
132	4	0	0	6	8	4	3	0	7	0	4	6	0	7	6	4	9	0	7	12
134	4	2	0	6	11	4	5	0	7	2	4	8	0	7	8	4	11	0	7	15
136	4	4	0	6	14	4	7	0	7	4	4	10	0	7	11	5	1	0	8	1
138	4	6	0	7	0	4	9	0	7	7	5	0	0	7	13	5	3	0	8	3
140	4	9	0	7	5	5	0	0	7	11	5	3	0	8	1	5	6	0	8	8
142	5	0	0	7	10	5	3	0	8	0	5	6	0	8	6	5	9	0	8	12
144	5	3	0	7	14	5	6	0	8	4	5	9	0	8	10	6	0	0	9	0
146	5	6	0	8	2	5	9	0	8	8	6	0	0	8	14	6	3	0	9	4
148	5	9	0	8	6	6	0	0	8	12	6	3	0	9	2	6	6	0	9	8
150	6	0	0	8	10	6	3	0	9	0	6	6	0	9	6	6	9	0	9	12
152	6	3	0	8	14	6	6	0	9	4	6	9	0	9	9	7	0	0	10	0
154	6	6	0	9	2	6	9	0	9	8	7	0	0	9	13	7	3	0	10	3
156	6	9	0	9	6	7	0	0	9	11	7	3	0	10	0	7	6	0	10	6
158	7	1	0	9	11	7	4	0	10	0	7	7	0	10	6	7	10	0	10	11

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 3s.					At 3s. 3d.					At 3s. 6d.					At 3s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
160	7	5	0	10	0	7	8	0	10	6	7	11	0	10	11	8	2	0	11	0
162	7	9	0	10	5	8	0	0	10	11	8	3	0	11	0	8	6	0	11	5
164	8	1	0	10	10	8	4	0	11	0	8	7	0	11	4	8	10	0	11	10
166	8	6	0	11	1	8	9	0	11	6	9	0	0	11	11	9	3	1	0	0
168	8	11	0	11	8	9	2	0	11	12	9	5	1	0	2	9	8	1	0	7
170	9	4	0	11	14	9	7	1	0	3	9	10	1	0	8	10	1	1	0	13
172	9	9	1	0	4	10	0	1	0	9	10	3	1	0	14	10	6	1	1	3
174	10	2	1	0	10	10	5	1	0	15	10	8	1	1	4	10	11	1	1	8
176	10	7	1	1	0	10	10	1	1	4	11	1	1	1	9	11	4	1	1	14
178	11	0	1	1	5	11	3	1	1	10	11	6	1	2	0	11	9	1	2	4
180	11	5	1	1	11	11	8	1	2	0	11	11	1	2	5	12	2	1	2	10
182	11	10	1	2	0	12	1	1	2	5	12	4	1	2	10	12	7	1	2	15
184	12	3	1	2	6	12	6	1	2	11	12	9	1	3	0	13	0	1	3	4
186	12	8	1	2	11	12	11	1	3	0	13	2	1	3	4	13	5	1	3	8
188	13	1	1	3	0	13	4	1	3	5	13	7	1	3	9	13	10	1	3	14
190	13	6	1	3	5	13	9	1	3	10	14	0	1	3	15	14	3	1	4	3
192	13	11	1	3	10	14	2	1	3	15	14	5	1	4	3	14	8	1	4	8
194	14	5	1	4	0	14	8	1	4	5	14	11	1	4	9	15	2	1	4	14
196	14	11	1	4	8	15	2	1	4	12	15	5	1	5	1	15	8	1	5	5
198	15	5	1	4	13	15	8	1	5	1	15	11	1	5	6	16	2	1	5	10
200	15	11	1	5	3	16	2	1	5	8	16	5	1	5	12	16	8	1	6	0
202	16	7	1	5	12	16	10	1	6	0	17	1	1	6	4	17	4	1	6	8
204	17	3	1	6	4	17	6	1	6	8	17	9	1	6	12	18	0	1	7	0
206	17	11	1	6	12	18	2	1	7	0	18	5	1	7	4	18	8	1	7	8
208	18	7	1	7	4	18	10	1	7	8	19	1	1	7	13	19	4	1	8	0
210	19	3	1	7	12	19	6	1	8	0	19	9	1	8	5	20	0	1	8	8
212	19	11	1	8	4	20	2	1	8	8	20	5	1	8	13	20	8	1	9	1
214	20	7	1	8	12	20	10	1	9	0	21	1	1	9	4	21	4	1	9	8
216	21	3	1	9	4	21	6	1	9	8	21	9	1	9	12	22	0	1	10	0
218	21	11	1	9	11	22	2	1	9	15	22	5	1	10	3	22	8	1	10	7
220	22	7	1	10	3	22	10	1	10	7	23	1	1	10	10	23	4	1	10	15
222	23	5	1	10	12	23	8	1	11	0	23	11	1	11	4	24	2	1	11	8
224	24	3	1	11	5	24	6	1	11	9	24	9	1	11	13	25	0	2	0	1
226	25	1	2	0	0	25	4	2	0	3	25	7	2	0	7	25	10	2	0	11
228	25	11	2	0	8	26	2	2	0	12	26	5	2	1	0	26	8	2	1	5
230	26	9	2	1	1	27	0	2	1	5	27	3	2	1	9	27	6	2	1	13
232	27	7	2	1	10	27	10	2	1	14	28	1	2	2	2	28	4	2	2	5
234	28	5	2	2	4	28	8	2	2	8	28	11	2	2	11	29	2	2	2	15
236	29	3	2	2	12	29	6	2	3	0	29	9	2	3	3	30	0	2	3	7
238	30	1	2	3	4	30	4	2	3	8	30	7	2	3	12	30	10	2	4	0

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 4*s.*					At 4*s.* 3*d.*					At 4*s.* 6*d.*					At 4*s.* 9*d.*				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16
80	2	6½	0	6	14	2	9½	0	7	8	3	0½	0	8	3	3	3½	0	8	14
82	2	7	0	6	13	2	10	0	7	8	3	1	0	8	2	3	4	0	8	13
84	2	7½	0	6	12	2	10½	0	7	6	3	1½	0	8	0	3	4½	0	8	11
86	2	8	0	6	11	2	11	0	7	5	3	2	0	8	0	3	5	0	8	9
88	2	8½	0	6	10	2	11½	0	7	4	3	2½	0	7	14	3	5½	0	8	8
90	2	9	0	6	9	3	0	0	7	3	3	3	0	7	13	3	6	0	8	6
92	2	10	0	6	10	3	1	0	7	4	3	4	0	7	13	3	7	0	8	6
94	2	11	0	6	11	3	2	0	7	4	3	5	0	7	14	3	8	0	8	7
96	3	0	0	6	12	3	3	0	7	5	3	6	0	7	14	3	9	0	8	7
98	3	1	0	6	13	3	4	0	7	5	3	7	0	7	14	3	10	0	8	8
100	3	2	0	6	13	3	5	0	7	6	3	8	0	7	15	3	11	0	8	8
102	3	3	0	6	14	3	6	0	7	7	3	9	0	7	15	4	0	0	8	8
104	3	4	0	6	15	3	7	0	7	8	3	10	0	8	0	4	1	0	8	8
106	3	5	0	7	0	3	8	0	7	8	3	11	0	8	0	4	2	0	8	8
108	3	6	0	7	0	3	9	0	7	8	4	0	0	8	0	4	3	0	8	8
110	3	7	0	7	0	3	10	0	7	8	4	1	0	8	0	4	4	0	8	8
112	3	8	0	7	1	3	11	0	7	9	4	2	0	8	0	4	5	0	8	8
114	3	9	0	7	2	4	0	0	7	9	4	3	0	8	1	4	6	0	8	8
116	3	10	0	7	3	4	1	0	7	10	4	4	0	8	1	4	7	0	8	9
118	3	11	0	7	3	4	2	0	7	10	4	5	0	8	1	4	8	0	8	9
120	4	0	0	7	2	4	3	0	7	9	4	6	0	8	0	4	9	0	8	7
122	4	2	0	7	6	4	5	0	7	13	4	8	0	8	4	4	11	0	8	11
124	4	4	0	7	8	4	7	0	8	0	4	10	0	8	7	5	1	0	8	14
126	4	6	0	7	11	4	9	0	8	2	5	0	0	8	9	5	3	0	9	0
128	4	8	0	7	14	4	11	0	8	4	5	2	0	8	12	5	5	0	9	2
130	4	10	0	8	0	5	1	0	8	8	5	4	0	8	14	5	7	0	9	4
132	5	0	0	8	3	5	3	0	8	9	5	6	0	9	0	5	9	0	9	6
134	5	2	0	8	5	5	5	0	8	11	5	8	0	9	2	5	11	0	9	8
136	5	4	0	8	8	5	7	0	8	14	5	10	0	9	4	6	1	0	9	11
138	5	6	0	8	10	5	9	0	9	0	6	0	0	9	6	6	3	0	9	12
140	5	9	0	8	14	6	0	0	9	4	6	3	0	9	10	6	6	0	10	0
142	6	0	0	9	2	6	3	0	9	3	6	6	0	9	14	6	9	0	10	4
144	6	3	0	9	6	6	6	0	9	12	6	9	0	10	2	7	0	0	10	8
146	6	6	0	9	10	6	9	0	10	0	7	0	0	10	6	7	3	0	10	12
148	6	9	0	9	14	7	0	0	10	3	7	3	0	10	9	7	6	0	11	0
150	7	0	0	10	1	7	3	0	10	7	7	6	0	10	13	7	9	0	11	3
152	7	3	0	10	5	7	6	0	10	10	7	9	0	11	0	8	0	0	11	6
154	7	6	0	10	8	7	9	0	10	14	8	0	0	11	3	8	3	0	11	9
156	7	9	0	10	12	7	0	0	11	1	8	3	0	11	7	8	6	0	11	12
158	8	1	0	11	0	7	4	0	11	6	8	7	0	11	12	8	10	1	0	1

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 4*s.*					At 4*s.* 3*d.*					At 4*s.* 6*d.*					At 4*s.* 9*d.*				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb		per spy.		
	s.	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16
160	8	5	0	11	6	8	8	0	11	11	8	11	1	0	0	9	2	1	0	6
162	8	9	0	11	11	9	0	1	0	0	9	3	1	0	5	9	6	1	0	11
164	9	1	1	0	0	9	4	1	0	4	9	7	1	0	10	9	10	1	1	0
166	9	6	1	0	6	9	9	1	0	11	10	0	1	1	0	10	3	1	1	5
168	9	11	1	0	12	10	2	1	1	1	10	5	1	1	6	10	8	1	1	11
170	10	4	1	1	2	10	7	1	1	7	10	10	1	1	12	11	1	1	2	1
172	10	9	1	1	8	11	0	1	1	13	11	3	1	2	2	11	6	1	2	7
174	11	2	1	1	14	11	5	1	2	3	11	8	1	2	8	11	11	1	2	12
176	11	7	1	2	2	11	10	1	2	8	12	1	1	2	13	12	4	1	3	2
178	12	0	1	2	9	12	3	1	2	14	12	6	1	3	2	12	9	1	3	8
180	12	5	1	2	14	12	8	1	3	3	12	11	1	3	8	13	2	1	3	13
182	12	10	1	3	3	13	1	1	3	8	13	4	1	3	13	13	7	1	4	1
184	13	3	1	3	8	13	6	1	3	15	13	9	1	4	2	14	0	1	4	7
186	13	8	1	3	14	13	11	1	4	2	14	2	1	4	7	14	5	1	4	12
188	14	1	1	4	3	14	4	1	4	8	14	7	1	4	12	14	10	1	5	0
190	14	6	1	4	8	14	9	1	4	12	15	0	1	5	0	15	3	1	5	5
192	14	11	1	4	12	15	2	1	5	1	15	5	1	5	5	15	8	1	5	10
194	15	5	1	5	2	15	8	1	5	7	15	11	1	5	11	16	2	1	6	0
196	15	11	1	5	10	16	2	1	5	14	16	5	1	6	3	16	8	1	6	7
198	16	5	1	5	14	16	8	1	6	3	16	11	1	6	7	17	2	1	6	12
200	16	11	1	6	4	17	2	1	6	8	17	5	1	6	13	17	8	1	7	1
202	17	7	1	6	13	17	10	1	7	1	18	1	1	7	5	18	4	1	7	10
204	18	3	1	7	5	18	6	1	7	9	18	9	1	7	14	19	0	1	8	2
206	18	11	1	7	13	19	2	1	8	1	19	5	1	8	5	19	8	1	8	10
208	19	7	1	8	5	19	10	1	8	9	20	1	1	8	13	20	4	1	9	2
210	20	3	1	8	13	20	6	1	9	1	20	9	1	9	5	21	0	1	9	9
212	20	11	1	9	5	21	2	1	9	9	21	5	1	9	13	21	8	1	10	1
214	21	7	1	9	12	21	10	1	10	0	22	1	1	10	4	22	4	1	10	8
216	22	3	1	10	4	22	6	1	10	8	22	9	1	10	12	23	0	1	11	0
218	22	11	1	10	11	23	2	1	10	15	23	5	1	11	3	23	8	1	11	7
220	23	7	1	11	2	23	10	1	11	6	24	1	1	11	10	24	4	1	11	14
222	24	5	1	11	12	24	8	2	0	0	24	11	2	0	3	25	2	2	0	8
224	25	3	2	0	5	25	6	2	0	9	25	9	2	0	13	26	0	2	1	1
226	26	1	2	0	15	26	4	2	1	2	26	7	2	1	6	26	10	2	1	10
228	26	11	2	1	9	27	2	2	1	12	27	5	2	1	15	27	8	2	2	3
230	27	9	2	2	0	28	0	2	2	4	28	3	2	2	8	28	6	2	2	12
232	28	7	2	2	9	28	10	2	2	13	29	1	2	3	0	29	4	2	3	4
234	29	5	2	3	2	29	8	2	3	6	29	11	2	3	10	30	2	2	3	13
236	30	3	2	3	11	30	6	2	3	14	30	9	2	4	2	31	0	2	4	5
238	31	1	2	4	3	31	4	2	4	7	31	7	2	4	10	31	10	2	4	14

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 5*s.*					At 5*s.* 3*d.*					At 5*s.* 6*d.*					At 5*s.* 9*d.*				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16	*s.*	*d.*	*s.*	*d.*	16
80	3	6½	0	9	9	3	9½	0	10	4	4	0½	0	10	15	4	3½	0	11	9
82	3	7	0	9	7	3	10	0	10	1	4	1	0	10	12	4	4	0	11	7
84	3	7½	0	9	5	3	10½	0	10	0	4	1½	0	10	10	4	4½	0	11	4
86	3	8	0	9	3	3	11	0	9	13	4	2	0	10	8	4	5	0	11	1
88	3	8½	0	9	2	3	11½	0	9	11	4	2½	0	10	5	4	5½	0	10	15
90	3	9	0	9	0	4	0	0	9	10	4	3	0	10	3	4	6	0	10	13
92	3	10	0	9	0	4	1	0	9	9	4	4	0	10	2	4	7	0	10	12
94	3	11	0	9	0	4	2	0	9	9	4	5	0	10	2	4	8	0	10	12
96	4	0	0	9	0	4	3	0	9	9	4	6	0	10	2	4	9	0	10	11
98	4	1	0	9	0	4	4	0	9	9	4	7	0	10	2	4	10	0	10	10
100	4	2	0	9	0	4	5	0	9	9	4	8	0	10	1	4	11	0	10	10
102	4	3	0	9	0	4	6	0	9	8	4	9	0	10	1	5	0	0	10	9
104	4	4	0	9	0	4	7	0	9	8	4	10	0	10	0	5	1	0	10	9
106	4	5	0	9	0	4	8	0	9	8	4	11	0	10	0	5	2	0	10	8
108	4	6	0	9	0	4	9	0	9	8	5	0	0	10	0	5	3	0	10	8
110	4	7	0	9	0	4	10	0	9	8	5	1	0	10	0	5	4	0	10	8
112	4	8	0	9	0	4	11	0	9	8	5	2	0	10	0	5	5	0	10	8
114	4	9	0	9	0	5	0	0	9	8	5	3	0	10	0	5	6	0	10	8
116	4	10	0	9	0	5	1	0	9	8	5	4	0	10	0	5	7	0	10	8
118	4	11	0	9	0	5	2	0	9	8	5	5	0	10	0	5	8	0	10	6
120	5	0	0	8	15	5	3	0	9	6	5	6	0	9	13	5	9	0	10	4
122	5	2	0	9	2	5	5	0	9	9	5	8	0	10	0	5	11	0	10	8
124	5	4	0	9	4	5	7	0	9	12	5	10	0	10	3	6	1	0	10	9
126	5	6	0	9	7	5	9	0	9	14	6	0	0	10	4	6	3	0	10	11
128	5	8	0	9	9	5	11	0	10	0	6	2	0	10	7	6	5	0	10	13
130	5	10	0	9	11	6	1	0	10	2	6	4	0	10	8	6	7	0	10	15
132	6	0	0	9	13	6	3	0	10	4	6	6	0	10	10	6	9	0	11	0
134	6	2	0	9	15	6	5	0	10	5	6	8	0	10	12	6	11	0	11	2
136	6	4	0	10	1	6	7	0	10	7	6	10	0	10	14	7	1	0	11	4
138	6	6	0	10	3	6	9	0	10	9	7	0	0	11	0	7	3	0	11	6
140	6	9	0	10	6	7	0	0	10	12	7	3	0	11	3	7	6	0	11	9
142	7	0	0	10	10	7	3	0	11	0	7	6	0	11	6	7	9	0	11	12
144	7	3	0	10	14	7	6	0	11	4	7	9	0	11	10	8	0	1	0	0
146	7	6	0	11	1	7	9	0	11	7	8	0	0	11	13	8	3	1	0	3
148	7	9	0	11	5	8	0	0	11	11	8	3	1	0	0	8	6	1	0	6
150	8	0	0	11	8	8	3	0	11	14	8	6	1	0	4	8	9	1	0	10
152	8	3	0	11	12	8	6	1	0	1	8	9	1	0	7	9	0	1	0	12
154	8	6	0	11	15	8	9	1	0	4	9	0	1	0	10	9	3	1	1	0
156	8	9	1	0	2	9	0	1	0	8	9	3	1	0	13	9	6	1	1	2
158	9	1	1	0	7	9	4	1	0	12	9	7	1	1	1	10	0	1	1	7

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 5s.				At 5s. 3d.				At 5s. 6d.				At 5s. 9d.			
	per lb.		per spy.		per lb.		per spy.		per lb.		per spy.		per lb.		per spy.	
	s.	d.	s. d.	16	s.	d.	s. d.	16	s.	d.	s. d.	16	s.	d.	s. d.	16
160	9	5	1 0	11	9	8	1 1	0	9	11	1 1	6	10	2	1 1	12
162	9	9	1 1	0	10	0	1 1	5	10	3	1 1	11	10	6	1 2	0
164	10	1	1 1	4	10	4	1 1	10	10	7	1 1	15	10	10	1 2	4
166	10	6	1 1	10	10	9	1 2	0	11	0	1 2	5	11	3	1 2	10
168	10	11	1 2	0	11	2	1 2	5	11	5	1 2	11	11	8	1 3	0
170	11	4	1 2	6	11	7	1 2	11	11	10	1 3	0	12	1	1 3	5
172	11	9	1 2	12	12	0	1 3	1	12	3	1 3	6	12	6	1 3	11
174	12	2	1 3	1	12	5	1 3	6	12	8	1 3	11	12	11	1 4	0
176	12	7	1 3	7	12	10	1 3	12	13	1	1 4	0	13	4	1 4	5
178	13	0	1 3	12	13	3	1 4	1	13	6	1 4	6	13	9	1 4	11
180	13	5	1 4	1	13	8	1 4	6	13	11	1 4	11	14	2	1 5	0
182	13	10	1 4	6	14	1	1 4	11	14	4	1 5	0	14	7	1 5	4
184	14	3	1 4	12	14	6	1 5	0	14	9	1 5	5	15	0	1 5	9
186	14	8	1 5	0	14	11	1 5	5	15	2	1 5	9	15	5	1 5	14
188	15	1	1 5	5	15	4	1 5	10	15	7	1 5	14	15	10	1 6	3
190	15	6	1 5	10	15	9	1 5	14	16	0	1 6	3	16	3	1 6	8
192	15	11	1 5	14	16	2	1 6	3	16	5	1 6	8	16	8	1 6	12
194	16	5	1 6	4	16	8	1 6	9	16	11	1 6	13	17	2	1 7	1
196	16	11	1 6	11	17	2	1 7	0	17	5	1 7	4	17	8	1 7	9
198	17	5	1 7	0	17	8	1 7	4	17	11	1 7	9	18	2	1 7	13
200	17	11	1 7	5	18	2	1 7	10	18	5	1 7	14	18	8	1 8	2
202	18	7	1 7	14	18	10	1 8	2	19	1	1 8	6	19	4	1 8	11
204	19	3	1 8	6	19	6	1 8	10	19	9	1 8	15	20	0	1 9	5
206	19	11	1 8	14	20	2	1 9	2	20	5	1 9	6	20	8	1 9	10
208	20	7	1 9	6	20	10	1 9	10	21	1	1 9	14	21	4	1 10	2
210	21	3	1 9	14	21	6	1 10	2	21	9	1 10	6	22	0	1 10	10
212	21	11	1 10	5	22	2	1 10	9	22	5	1 10	13	22	8	1 11	2
214	22	7	1 10	12	22	10	1 11	0	23	1	1 11	4	23	4	1 11	8
216	23	3	1 11	4	23	6	1 11	8	23	9	1 11	12	24	0	2 0	0
218	23	11	1 11	11	24	2	1 11	15	24	5	2 0	5	24	8	2 0	7
220	24	7	2 0	2	24	10	2 0	6	25	1	2 0	10	25	4	2 0	14
222	25	5	2 0	11	25	8	2 1	0	25	11	2 1	3	26	2	2 1	8
224	26	3	2 1	4	26	6	2 1	8	26	9	2 1	12	27	0	2 2	0
226	27	1	2 1	14	27	4	2 2	2	27	7	2 2	5	27	10	2 2	9
228	27	11	2 2	7	28	2	2 2	11	28	5	2 2	15	28	8	2 3	2
230	28	9	2 3	0	29	0	2 3	3	29	3	2 3	8	29	6	2 3	11
232	29	7	2 3	8	29	10	2 3	12	31	1	2 4	0	30	4	2 4	3
234	30	5	2 4	1	30	8	2 4	4	30	11	2 4	8	31	2	2 4	12
236	31	3	2 4	9	31	6	2 4	13	31	9	2 5	0	32	0	2 5	4
238	32	1	2 5	2	32	4	2 5	5	32	7	2 5	9	32	10	2 5	12

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 6s.					At 6s. 3d.					At 6s. 6d.					At 6s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb		per spy.			per lb		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
80	4	6½	1	0	4	4	9½	1	0	15	5	0½	1	1	10	5	3½	1	2	4
82	4	7	1	0	3	4	10	1	0	13	5	1	1	1	9	5	4	1	2	4
84	4	7½	0	11	14	4	10½	1	0	8	5	1½	1	1	3	5	4½	1	1	13
86	4	8	0	11	12	4	11	1	0	5	5	2	1	1	0	5	5	1	1	10
88	4	8½	0	11	10	4	11½	1	0	4	5	2½	1	0	14	5	5½	1	1	8
90	4	9	0	11	6	5	0	1	0	0	5	3	1	0	9	5	6	1	1	3
92	4	10	0	11	5	5	1	0	11	15	5	4	1	0	8	5	7	1	1	2
94	4	11	0	11	4	5	2	0	11	14	5	5	1	0	8	5	8	1	1	0
96	5	0	0	11	4	5	3	0	11	13	5	6	1	0	6	5	9	1	0	15
98	5	1	0	11	3	5	4	0	11	12	5	7	1	0	5	5	10	1	0	14
100	5	2	0	11	3	5	5	0	11	11	5	8	1	0	4	5	11	1	0	12
102	5	3	0	11	2	5	6	0	11	10	5	9	1	0	3	6	0	1	0	11
104	5	4	0	11	1	5	7	0	11	9	5	10	1	0	2	6	1	1	0	10
106	5	5	0	11	0	5	8	0	11	8	5	11	1	0	1	6	2	1	0	9
108	5	6	0	11	0	5	9	0	11	8	6	0	1	0	0	6	3	1	0	8
110	5	7	0	11	0	5	10	0	11	8	6	1	1	0	0	6	4	1	0	7
112	5	8	0	10	15	5	11	0	11	7	6	2	0	11	14	6	5	1	0	6
114	5	9	0	10	14	6	0	0	11	6	6	3	0	11	14	6	6	1	0	5
116	5	10	0	11	0	6	1	0	11	8	6	4	0	11	15	6	7	1	0	5
118	5	11	0	10	13	6	2	0	11	4	6	5	0	11	12	6	8	1	0	3
120	6	0	0	10	12	6	3	0	11	2	6	6	0	11	10	6	9	1	0	0
122	6	2	0	10	12	6	5	0	11	5	6	8	0	11	12	6	11	1	0	4
124	6	4	0	11	0	6	7	0	11	8	6	10	0	11	15	7	1	1	0	6
126	6	6	0	11	2	6	9	0	11	9	7	0	1	0	0	7	3	1	0	7
128	6	8	0	11	4	6	11	0	11	11	7	2	1	0	1	7	5	1	0	8
130	6	10	0	11	6	7	1	0	11	12	7	4	1	0	3	7	7	1	0	10
132	7	0	0	11	8	7	3	0	11	14	7	6	1	0	4	7	9	1	0	11
134	7	2	0	11	8	7	5	0	11	15	7	8	1	0	5	7	11	1	0	12
136	7	4	0	11	10	7	7	1	0	0	7	10	1	0	7	8	1	1	0	13
138	7	6	0	11	12	7	9	1	0	2	8	0	1	0	8	8	3	1	0	14
140	7	9	0	11	15	8	0	1	0	5	8	3	1	0	8	8	6	1	1	1
142	8	0	1	0	3	8	3	1	0	8	8	6	1	0	15	8	9	1	1	5
144	8	3	1	0	6	8	6	1	0	10	8	9	1	1	2	9	0	1	1	8
146	8	6	1	0	9	8	9	1	0	15	9	0	1	1	5	9	3	1	1	11
148	8	9	1	0	12	9	0	1	1	2	9	3	1	1	8	9	6	1	1	14
150	9	0	1	1	0	9	3	1	1	5	9	6	1	1	11	9	9	1	2	0
152	9	3	1	1	2	9	6	1	1	8	9	9	1	1	14	10	0	1	2	3
154	9	6	1	1	5	9	9	1	1	11	10	0	1	2	0	10	3	1	2	6
156	9	9	1	1	8	10	0	1	1	14	10	3	1	2	3	10	6	1	2	8
158	10	1	1	1	12	10	4	1	2	2	10	7	1	2	8	10	10	1	2	11

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 6s.					At 6s. 3d.					At 6s. 6d.					At 6s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
160	10	5	1	2	1	10	8	1	2	6	10	11	1	2	12	11	2	1	3	1
162	10	9	1	2	5	11	0	1	2	10	11	3	1	3	0	11	6	1	3	5
164	11	1	1	2	9	11	4	1	2	15	11	7	1	3	4	11	10	1	3	9
166	11	6	1	3	0	11	9	1	3	4	12	0	1	3	8	12	3	1	3	13
168	11	11	1	3	5	12	2	1	3	10	12	5	1	4	0	12	8	1	4	4
170	12	4	1	3	10	12	7	1	4	0	12	10	1	4	4	13	1	1	4	10
172	12	9	1	4	0	13	0	1	4	5	13	3	1	4	10	13	6	1	4	15
174	13	2	1	4	5	13	5	1	4	10	13	8	1	4	15	13	11	1	5	4
176	13	7	1	4	10	13	10	1	5	0	14	1	1	5	4	14	4	1	5	9
178	14	0	1	5	0	14	3	1	5	4	14	6	1	5	9	14	9	1	5	14
180	14	5	1	5	5	14	8	1	5	9	14	11	1	5	15	15	2	1	6	3
182	14	10	1	5	9	15	1	1	5	14	15	4	1	6	3	15	7	1	6	8
184	15	3	1	5	14	15	6	1	6	3	15	9	1	6	8	16	0	1	6	12
186	15	8	1	6	3	15	11	1	6	8	16	2	1	6	12	16	5	1	7	0
188	16	1	1	6	8	16	4	1	6	12	16	7	1	7	0	16	10	1	7	5
190	16	6	1	6	12	16	9	1	7	0	17	0	1	7	5	17	3	1	7	10
192	16	11	1	7	0	17	2	1	7	5	17	5	1	7	9	17	8	1	7	14
194	17	5	1	7	6	17	8	1	7	10	17	11	1	7	15	18	2	1	8	3
196	17	11	1	7	13	18	2	1	8	1	18	5	1	8	6	18	8	1	8	11
198	18	5	1	8	1	18	8	1	8	6	18	11	1	8	10	19	2	1	8	14
200	18	11	1	8	7	19	2	1	8	11	19	5	1	9	0	19	8	1	9	4
202	19	7	1	8	15	19	10	1	9	3	20	1	1	9	8	20	4	1	9	12
204	20	3	1	9	7	20	6	1	9	11	20	9	1	10	0	21	0	1	10	3
206	20	11	1	9	15	21	2	1	10	3	21	5	1	10	7	21	8	1	10	11
208	21	7	1	10	6	21	10	1	10	11	22	1	1	10	15	22	4	1	11	3
210	22	3	1	10	14	22	6	1	11	2	22	9	1	11	6	23	0	1	11	11
212	22	11	1	11	6	23	2	1	11	10	23	5	1	11	14	23	8	2	0	2
214	23	7	1	11	13	23	10	2	0	0	24	1	2	0	5	24	4	2	0	9
216	24	3	2	0	4	24	6	2	0	8	24	9	2	0	12	25	0	2	1	0
218	24	11	2	0	11	25	2	2	0	15	25	5	2	1	3	25	8	2	1	6
220	25	7	2	1	2	25	10	2	1	5	26	1	2	1	10	26	4	2	1	13
222	26	5	2	1	11	26	8	2	1	15	26	11	2	2	3	27	2	2	2	6
224	27	3	2	2	4	27	6	2	2	8	27	9	2	2	12	28	0	2	3	0
226	28	1	2	2	13	28	4	2	3	1	28	7	2	3	5	28	10	2	3	8
228	28	11	2	3	6	29	2	2	3	10	29	5	2	3	14	29	8	2	4	0
230	29	9	2	3	11	30	0	2	3	15	30	3	2	4	3	30	6	2	4	7
232	30	7	2	4	8	30	10	2	4	11	31	1	2	4	15	31	4	2	5	2
234	31	5	2	5	0	31	8	2	5	4	31	11	2	5	8	32	2	2	5	11
236	32	3	2	5	8	32	6	2	5	11	32	9	2	6	15	33	0	2	6	2
238	33	1	2	6	0	33	4	2	6	4	33	7	2	6	8	33	10	2	6	11

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 7s.					At 7s. 3d.					At 7s. 6d.					At 7s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb.		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
80	5	6½	1	3	0	5	9½	1	3	10	6	0½	1	4	5	6	3½	1	5	0
82	5	7	1	2	14	5	10	1	3	9	6	1	1	4	4	6	4	1	4	14
84	5	7½	1	2	8	5	10½	1	3	2	6	1½	1	3	11	6	4½	1	4	4
86	5	8	1	2	4	5	11	1	2	14	6	2	1	3	8	6	5	1	4	2
88	5	8½	1	2	2	5	11½	1	2	12	6	2½	1	3	5	6	5½	1	4	0
90	5	9	1	1	13	6	0	1	2	6	6	3	1	3	0	6	6	1	3	10
92	5	10	1	1	11	6	1	1	2	4	6	4	1	2	14	6	7	1	3	8
94	5	11	1	1	9	6	2	1	2	3	6	5	1	2	12	6	8	1	3	5
96	6	0	1	1	8	6	3	1	2	1	6	6	1	2	10	6	9	1	3	3
98	6	1	1	1	6	6	4	1	2	0	6	7	1	2	8	6	10	1	3	1
100	6	2	1	1	5	6	5	1	1	14	6	8	1	2	6	6	11	1	3	0
102	6	3	1	1	4	6	6	1	1	12	6	9	1	2	6	7	0	1	2	15
104	6	4	1	1	2	6	7	1	1	11	6	10	1	2	3	7	1	1	2	11
106	6	5	1	1	1	6	8	1	1	9	6	11	1	2	1	7	2	1	2	10
108	6	6	1	1	0	6	9	1	1	8	7	0	1	2	0	7	3	1	2	8
110	6	7	1	0	15	6	10	1	1	7	7	1	1	1	15	7	4	1	2	6
112	6	8	1	0	14	6	11	1	1	5	7	2	1	1	13	7	5	1	2	5
114	6	9	1	0	13	7	0	1	1	6	7	3	1	1	14	7	6	1	2	5
116	6	10	1	0	12	7	1	1	1	4	7	4	1	1	12	7	7	1	2	3
118	6	11	1	0	11	7	2	1	1	2	7	5	1	1	9	7	8	1	2	0
120	7	0	1	0	8	7	3	1	1	0	7	6	1	1	6	7	9	1	1	14
122	7	2	1	0	11	7	5	1	1	2	7	8	1	1	9	7	11	1	2	0
124	7	4	1	0	12	7	7	1	1	3	7	10	1	1	10	8	1	1	2	1
126	7	6	1	0	14	7	9	1	1	4	8	0	1	1	11	8	3	1	2	2
128	7	8	1	0	15	7	11	1	1	5	8	2	1	1	12	8	5	1	2	5
130	7	10	1	1	0	8	1	1	1	7	8	4	1	1	14	8	7	1	2	4
132	8	0	1	1	1	8	3	1	1	8	8	6	1	1	14	8	9	1	2	5
134	8	2	1	1	2	8	5	1	1	8	8	8	1	1	15	8	11	1	2	5
136	8	4	1	1	4	8	7	1	1	10	8	10	1	2	0	9	1	1	2	7
138	8	6	1	1	5	8	9	1	1	11	9	0	1	2	1	9	3	1	2	8
140	8	9	1	1	8	9	0	1	1	14	9	3	1	2	4	9	6	1	2	10
142	9	0	1	1	11	9	3	1	2	1	9	6	1	2	7	9	9	1	2	13
144	9	3	1	1	14	9	6	1	2	4	9	9	1	2	10	10	0	1	3	0
146	9	6	1	2	1	9	9	1	2	7	10	0	1	2	12	10	3	1	3	3
148	9	9	1	2	4	10	0	1	2	9	10	3	1	2	15	10	6	1	3	5
150	10	0	1	2	6	10	3	1	2	12	10	6	1	3	2	10	9	1	3	8
152	10	3	1	2	9	10	6	1	2	15	10	9	1	3	4	11	0	1	3	10
154	10	6	1	2	11	10	9	1	3	1	11	0	1	3	7	11	3	1	3	12
156	10	9	1	2	14	11	0	1	3	4	11	3	1	3	9	11	6	1	3	15
158	11	1	1	3	0	11	4	1	3	6	11	7	1	3	12	11	10	1	4	1

YARN SOLD AT A PRICE FOR NO. 120.

No.	At 7s.					At 7s. 3d.					At 7s. 6d.					At 7s. 9d.				
	per lb.		per spy.			per lb.		per spy.			per lb.		per spy.			per lb		per spy.		
	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16	s.	d.	s.	d.	16
160	11	5	1	3	6	11	8	1	3	12	11	11	1	4	1	12	2	1	4	6
162	11	9	1	3	11	12	0	1	4	0	12	3	1	4	5	12	6	1	4	11
164	12	1	1	3	14	12	4	1	4	4	12	7	1	4	9	12	10	1	4	14
166	12	6	1	4	3	12	9	1	4	8	13	0	1	4	13	13	3	1	5	2
168	12	11	1	4	9	13	2	1	4	15	13	5	1	5	4	13	8	1	5	9
170	13	4	1	4	15	13	7	1	5	4	13	10	1	5	9	14	1	1	5	14
172	13	9	1	5	4	14	0	1	5	9	14	3	1	5	14	14	6	1	6	3
174	14	2	1	5	9	14	5	1	5	14	14	8	1	6	3	14	11	1	6	8
176	14	7	1	5	14	14	10	1	6	3	15	1	1	6	8	15	4	1	6	13
178	15	0	1	6	3	15	3	1	6	8	15	6	1	6	13	15	9	1	7	2
180	15	5	1	6	8	15	8	1	6	13	15	11	1	7	1	16	2	1	7	6
182	15	10	1	6	12	16	1	1	7	0	16	4	1	7	5	16	7	1	7	10
184	16	3	1	7	1	16	6	1	7	6	16	9	1	7	10	17	0	1	8	0
186	16	8	1	7	5	16	11	1	7	10	17	2	1	7	15	17	5	1	8	3
188	17	1	1	7	10	17	4	1	7	14	17	7	1	8	3	17	10	1	8	8
190	17	6	1	7	14	17	9	1	8	3	18	0	1	8	8	18	3	1	8	12
192	17	11	1	8	2	18	2	1	8	7	18	5	1	8	11	18	8	1	9	0
194	18	5	1	8	8	18	8	1	8	12	18	11	1	9	0	19	2	1	9	5
196	18	11	1	8	15	19	2	1	9	3	19	5	1	9	8	19	8	1	9	12
198	19	5	1	9	3	19	8	1	9	8	19	11	1	9	12	20	2	1	10	0
200	19	11	1	9	4	20	2	1	9	12	20	5	1	10	0	20	8	1	10	5
202	20	7	1	10	0	20	10	1	10	4	21	1	1	10	8	21	4	1	10	13
204	21	3	1	10	8	21	6	1	10	12	21	9	1	11	0	22	0	1	11	4
206	21	11	1	10	15	22	2	1	11	3	22	5	1	11	8	22	8	1	11	12
208	22	7	1	11	8	22	10	1	11	11	23	1	2	0	0	23	4	2	0	3
210	23	3	1	11	15	23	6	2	0	3	23	9	2	0	7	24	0	2	0	11
212	23	11	2	0	6	24	2	2	0	10	24	5	2	0	14	24	8	2	1	2
214	24	7	2	0	13	24	10	2	1	1	25	1	2	1	5	25	4	2	1	9
216	25	3	2	1	4	25	6	2	1	8	25	9	2	1	12	26	0	2	2	0
218	25	11	2	1	11	26	2	2	1	14	26	5	2	2	2	26	8	2	2	6
220	26	7	2	2	1	26	10	2	2	5	27	1	2	2	9	27	4	2	2	13
222	27	5	2	2	10	27	8	2	2	14	27	12	2	3	2	28	2	2	3	6
224	28	3	2	3	3	28	6	2	3	8	28	9	2	3	11	29	0	2	3	15
226	29	1	2	3	12	29	4	2	4	0	29	7	2	4	4	29	10	2	4	8
228	29	11	2	4	5	30	2	2	4	9	30	5	2	4	12	30	8	2	5	0
230	30	9	2	4	10	31	0	2	4	14	31	3	2	5	2	31	6	2	5	6
232	31	7	2	5	6	31	10	2	5	9	32	1	2	5	13	32	4	2	6	1
234	32	5	2	5	15	32	8	2	6	2	32	11	2	6	6	33	2	2	6	10
236	33	3	2	6	6	33	6	2	6	10	33	9	2	6	13	34	0	2	7	1
238	34	1	2	6	15	34	4	2	7	2	34	7	2	7	6	34	10	2	7	9

WILLIAM HUSSEY'S (Esq.) Prices.

	S.	D.		S.	D.		S.	D.
100	4	2	134	6	2	168	10	11
102	4	3	136	6	4	170	11	4
104	4	4	138	6	6	172	11	9
106	4	5	140	6	9	174	12	2
108	4	6	142	7	0	176	12	7
110	4	7	144	7	3	178	13	0
112	4	8	146	7	6	180	13	5
114	4	9	148	7	9	182	13	10
116	4	10	150	8	0	184	14	3
118	4	11	152	8	3	186	14	8
120	5	0	154	8	6	188	15	1
122	5	2	156	8	9	190	15	6
124	5	4	158	9	1	192	15	11
126	5	6	160	9	5	194	16	5
128	5	8	162	9	9	196	16	11
130	5	10	164	10	1	198	17	5
132	6	0	166	10	6	200	17	11

Glasgow, 1st May, 1824.

BENJAMIN GRAY'S (Esq.) List, Late Ancoats, Manchester.

	S.	D.		S.	D.		S.	D.
100	4	2	142	7	0	184	14	3
102	4	3	144	7	3	186	14	8
104	4	4	146	7	6	188	15	1
106	4	5	148	7	9	190	15	7
108	4	6	150	8	0	192	16	1
110	4	7	152	8	3	194	16	7
112	4	8	154	8	6	196	17	1
114	4	9	156	8	9	198	17	7
116	4	10	158	9	1	200	18	1
118	4	11	160	9	5	202	18	9
120	5	0	162	9	9	204	19	5
122	5	2	164	10	1	206	20	1
124	5	4	166	10	6	208	20	9
126	5	6	168	10	11	210	21	5
128	5	8	170	11	4	212	22	1
130	5	10	172	11	9	214	22	9
132	6	0	174	12	2	216	23	5
134	5	2	176	12	7	218	24	1
136	6	4	178	13	0	220	24	9
138	6	6	180	13	5	222	25	7
140	6	9	182	13	10	224	26	5

Glasgow, 1st May, 1824, Watson & Young, Agents.

INDEX.

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