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## THE MANUFACTURE OF TURKISH TOWELING FABRICS. LOOM MOTIONS.

(Continued from August issue.)

### ANOTHER REED MOTION.

Fig. 27 shows a terry loom, the mechanism of which is under the control of a dobby or Jacquard machine. The parts of the reed motion are shown in solid lines and the frame work of the loom in dotted lines. A detail drawing of a front view of the upper part of the mechanism is shown in the upper left hand corner.

The operation of the loom is thus: The position of the reed *S*, during the beating-up, is governed by the shedding mechanism through a cord *A*, which is attached to a lever *B* fulcrumed on a bracket *C*. If the reed is required to be held firmly, the cord *A* is not lifted, and then the action of the spring *D* causes the rear end of the lever *B* to be raised. The cord *E*, which is connected to this end of the lever *B* and which passes around two guide pulleys *F*, draws upon the rear extremity of a cam *G* centred at *T*, and raises the curved portion of the cam to the position shown in solid lines. Then, as the going part moves forward, an anti-friction bowl *H* (carried at the end of a lever *I* which is fulcrumed at *V* on a bracket attached to a sword *U*) passes below without touching the cam *G*, and the lever *K*, to which the link *J* is connected, occupies its normal position. The lever *K* is fixed to the stop-rod *L*, as are also the lever *M* (which presses against the lower edge of the reed) and the duck-bill *N*. In beating up the filling this duck-bill engages the under-side of the heater *O*, and the reed is held firmly in the usual manner.

When the reed is required to fall back on the first two picks, the cord *A* is raised, which lowers the rear end of the lever *B*. This action releases a sufficient length of the cord *E* to allow the curved portion of the cam *G* to fall by its own weight to the position indicated by the dotted and shaded lines. Then, as the sword *U* moves forward, the bowl *H* comes in contact with and rises on the face of the cam *G*. By means of the link *J*, this upward motion is transmitted to the lever *K*, which partially rotates the stop-rod *L*. The forward end of the duck-bill *N*, therefore, rises above the heater *O*, while the upper end of the lever *M* falls back, with the result that the lower edge of the reed moves backwardly, and the pick of filling is left a short distance from the fell of the cloth.

The extent of the backward movement of the reed may be regulated by moving the ends of the link *J* nearer to or further from the extremities of the levers *I* and *K*. Projections *P* and *Q* are used for the purpose of limiting the movement of the cam *G*. One or more springs *R* may be inserted in the length of the cord *E* in order to take up any excess movement of the shedding mechanism.

It is usually convenient to place a large quantity of yarn on the pile warp beam in order to compensate for its rapid delivery. This beam is supported by brackets at a considerable height above the line of the shed.

During the production of the terry effect the pile warp is lightly tensioned by means of adjustable weight *l*, but provision is made for increasing the tension whenever the looped formation is required to be discontinued. Thus, when the cord 2 is raised by the shedding mechanism, the other extremity of the lever

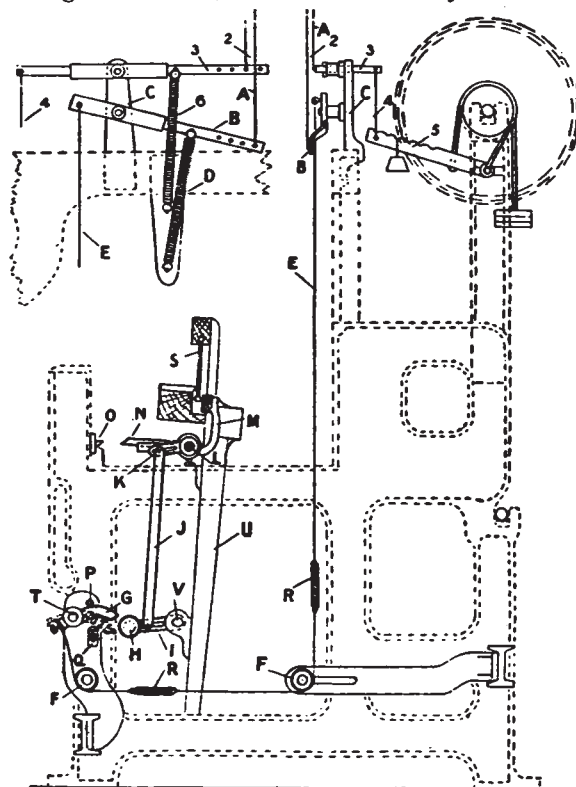


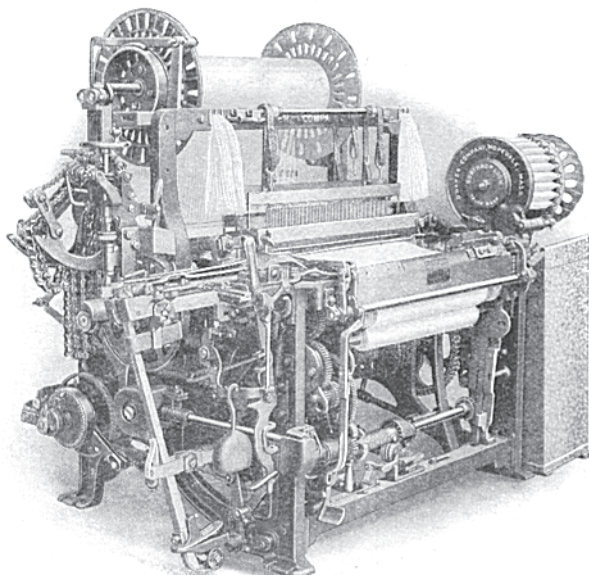
Fig. 27

3 to which the cord 4 is attached, is depressed; therefore, the beam-lever 5, to which the opposite end of the cord 4 is connected, is lowered, and additional weight is put on the pile warp beam. In the case of a towel with a border at each end, the cord 2 is left down while the terry centre is being woven, and the action of the spring 6 causes the beam-lever 5 to be raised, the additional weight thus being taken off. During the formation of the borders, however, in which the pile warp requires to be practically as heavily tensioned as the ground warp, the cord 2 is raised and the beam-lever 5 lowered all the time to produce the extra tension necessary.

### THE NORTHPROP TURKISH TOWEL LOOM.

One of the latest improvements in turkish towel weaving is the adoption of the Northrop Loom for this work, incorporating the well-known Northrop Filling Battery and other special devices constructed by the Draper Company to the weaving of these goods.

The accompanying illustration shows this loom in its perspective view, clearly showing the improved de-



THE NORTHROP TURKISH TOWEL LOOM.

tails used in the construction to adapt the Northrop loom for the weaving of turkish towels. The let-off used in the loom is their Draper Roper Let Off, which in itself was originally an adaptation of the old Bartlett Left Off, made automatic. They have adopted for this turkish towel loom their own special High Roll Take-up, using for their terry motion the Crompton & Knowles type. They also have provided their Feeler for matching the pick when the bobbin is changed.

Considered all around, the advantages of the Northrop Loom compared to regular looms is the usual advantage gained by the Northrop automatic looms, the Northrop Filling Battery combined with their Warp Stop Motion enabling the weaver to run twice as many, and frequently more than twice as many Northrop turkish towel looms, resulting in reducing the cost of weaving to a great extent to the mills, besides being the means of increasing wages to the weaver.

Production, considering scarcity of help, is one of the most important items when starting a mill, as well as to running mills, and this will be so much more the case here as well as abroad upon the close of the European war, and when automatic machinery as far as possible, will have to replace hand labor continually more and more, a feature which speaks in favor of the Northrop automatic turkish towel loom.

#### Fancy Effects.

In connection with simple terry weaves produced with one series of pile threads, *i. e.*, such as those given in Figs. 1 to 10, the only possible way to produce fancy effects consists of introducing colored warp pile threads to form stripes, whereas with such of the weaves that show pile loops on both sides of the fabric (see Weaves Figs. 11 to 20 using two series of pile threads) each side of the fabric may be colored independent of the other.

To produce more elaborate ornamentation, the pile warp-threads are then made to form loops alternately on one side of the fabric and then on the other side of

the fabric, changing in this way from face to back and back to face, over and over again, as demanded by the design.

This method of figuring may be employed either with weaves constructed with one or two series of pile threads and styles produced ranging from simple checks to most complex figures. The principle of ornamentation, in which certain pile threads form loops while others lie straight in the cloth cannot be employed, since all the pile yarn is brought from one or two warp beams, and it is therefore necessary for all the threads as come from one beam, to form either pile or ground simultaneously.

Weave Fig. 28 shows a check-effect produced with one series of pile warp, in which only every alternate square on face and back of the fabric presents loop effect, every other square presenting regular woven ground. The proportion of ground to pile warp used is as 2 to 1.

The arrangement of the warp in connection with Weave Fig. 28 is:

2 ends ground	}	× 6=18 ends
1 end pile—color #1		
2 ends ground	}	× 6=18 “
1 end pile—color #2		

Repeat in dressing 36 ends

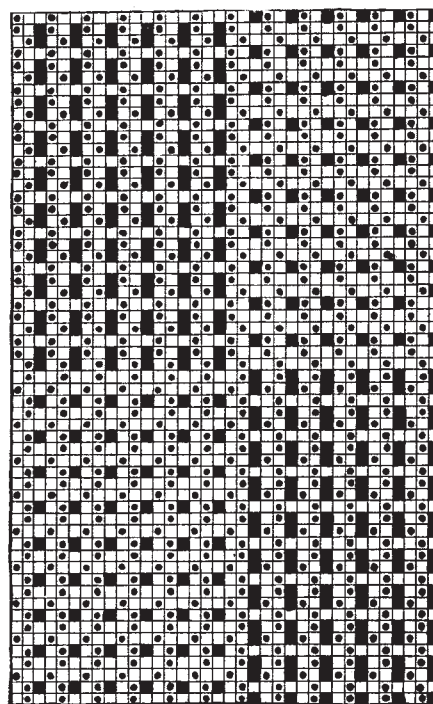


Fig. 28

The pile warp is shown by *full* type and the ground warp by *dot* type.

(To be continued.)

#### Demand for Pongees from China.

The exportation of silk pongees from China increased by over \$1,600,000 in value in the year 1915, thus recovering to a considerable degree the shortage in 1914, which was over \$2,000,000.

Silk pongees experienced a brisk demand from the United States during the year 1915 and with good shipping facilities there will be no doubt a permanent and increasing trade with American buyers.