

# BALDWIN'S

# TEXTILE DESIGNER

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DEVOTED TO

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SPINNING, DYEING AND FINISHING

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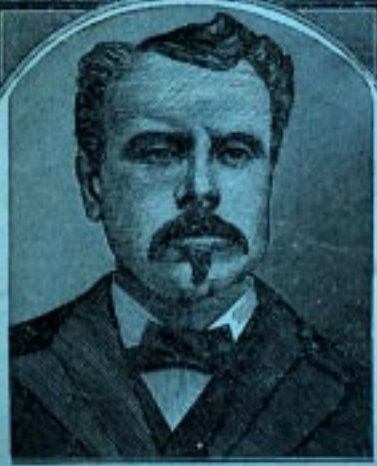
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## THE SPHERE OF TRADE JOURNALISM.

HERE are comparatively few, even among our most generous readers, who are aware of the drawbacks, difficulties and labors attendant upon the publication of a representative trade journal. The domain of politics, the news of the day, the latest crime or horror, the doings or misdoings of our legislators—state or national—or kindred topics with which the public are daily regaled, may appropriately appear in the partisan sheet, but are considered out of place in the columns of a class publication. The eternal fitness of things must be observed, and no matter how limited the field or sources of information it is expected, and justly so, that every article contained therein should have a direct or indirect bearing on the special trade whose interests it professes to represent. But to accomplish this much desired end it must not be forgotten that the path of duty is the path of safety, and that it is much more desirable to make it a channel of *collective* rather than of *individual* opinion. This is emphatically an age of progress. Improvement follow improvement in rapid succession, and in order to keep pace with the in-

creasing demands of the times, the ever unfolding developments of science or mechanism, it is essential that a channel of communication should be afforded to those who lead the vanguard of the army of progress. Discussion, investigation, deduction of experiments, based on intelligent observation and practical experience, are of priceless value in comparison to the oft reiterated opinions of an individual, no matter how able or enthusiastic. In the multiplicity of counselors there is wisdom. The broad, comprehensive theory—the greatest good to the greatest number—should be the controlling, underlying idea; and while there may, and probably will be a deal of chaff mixed with the kernels of wheat, the *sieve* may safely be placed in the hands of its readers, and the results left to their decision.

Now, there is no field of industry which affords a wider scope for intelligent investigation than the textile industry and its affiliated branches. In truth, the marvelous improvements made therein within the past fifty years amount alike to a revelation and a revolution. "Old things are passed away; all things are become new." Rip Van Winkles are at a discount, and must seek pastures new, or surrender their claims to further recognition to those upon whom the lessons of the past have not been thrown away. In the conduct then of a journal of this character, it is well to remember that its value and usefulness depends, in a great measure, on the merits as well as the character of its *selected* articles, and the judgment exercised in their selection. A sensible editor will also welcome appropriate contributions because he realizes that the productions of a dozen minds qualified to express an opinion on a subject upon which a diversity of opinion exists are of more value than the expression of a single mind. In the discussion of a mooted question each writer may arrive at the same conclusion by different processes of reasoning or experiment, and by so doing and placing them within the reach of "seekers after knowledge," open up new avenues for more extended investigation.

Of course it is not to be anticipated that every reader will be satisfied, no matter what system is adopted. Some will demand more original, others more selected matter; some a definite expression on all subjects broached, while others deprecate any statement in opposition to their one-idea theory. A difference of opinion may be expected; yet intelligent men are not so much interested in the fact that these differences exist as to learn the cause which lead to them; whether they may be traced to the premises assumed, the arguments presented, or the conclusions reached, and to accomplish this purpose the trade journal becomes a valuable, nay, an invaluable, auxiliary.

But not only is there as much care required by an editor in judiciously selecting the views of others, as in the preparation of his own, but he is supposed to trim, remodel, eliminate all objectionable features, studiously guard against expressions savoring of favoritism calculated to benefit one at the expense of another, avoid identification with rivals, or even the appearance of evil. And while this is commendable, if not essential, on the one hand, he must also remember there is such a thing as over caution, in paying too dear for the whistle; and the man who tries to please everybody, to be all things to all men, who has not the moral courage to express his convictions, and courteously maintain and defend them, will find to his chagrin that he has been following a will-o'-the-wisp, and that his cringing servility is regarded with contempt by every independent thinker. Next, there are a class of hiper-critics, who are never so happy as when picking a petty flaw; who, on looking at a "Rembrandt," would think it eminently proper to discover a fly speck, but the height of folly to expatiate on its merits; who know just enough to be a source of annoyance and illustrate the truth of the adage, that "a little learning is a dangerous thing;" who like to air their particular crotchets, and would feign pose as "an authority," even though in so doing they prove that "that which is true is not new, and that which is new is not true;" who have evidently forgotten, if they ever knew, that it is as much the duty of the true critic to point out the merits as the defects of a production; know-alls, representatives of the individual who felt satisfied that Gen. Walseley would have no difficulty in getting over the third cataract, because he had an uncle who had four cataracts, and successfully got over them all. An apropos anecdote in this connection is told of a young fellow from college, home on a vacation, who, when sitting down to dinner to a pair of ducks, remarked: "Ma, I can demonstrate mathematically that there are *three* ducks on the table." "Proceed, my son," responded the kindly parent. "Well," pointing, "there is *one* duck, and there are *two* ducks; now one and two make *three*, do they not?" "Very well done," said the father, who had been a careful listener. "Now I want you to demonstrate that *your* mathematics are correct. Give your mother the first duck, your father the second, and take all the *third* duck to yourself."

But enough in this strain. Let us make a practical application of our argument. Reader, we want *you* to bear part of this burden; to aid us in bringing BALDWIN'S TEXTILE DESIGNER up to the required standard, and in order to do so we ask your co-operation. No matter, if you have yet to make your maiden effort. The diffident suggestion is frequently more worthy of attention than the arrogant assumption. Large oaks from little acorns grow. The vegetation on the Polynesian atolls is supposed to have had its origin in a seed wafted from a passing vessel, or dropped from a bird of passage. So a simple idea, presented to the world even by the humblest agency, may become the nucleus of a system that may revolutionize the world. If you cannot develop it, somebody else may. But *break the ice*. He must be a poor apology, indeed, who never has anything of interest to communicate. Friends, manufacturers, employers and employes, contribute your quotas of practical suggestions and experience. Do your *duty* in the premises, and we will give you in return the model trade journal of the country, which will be an invaluable guide to the rising generation, and a source of profit and instruction to the operative who is never too old to learn.

#### FULLING.—OVERHEATING, ITS PREVENTATIVE.

[Written for BALDWIN'S TEXTILE DESIGNER.]

**R**ECENTLY while conversing with a superintendent of a woolen mill in regard to overheating goods while fulling, he said: "I used to have a good deal of trouble that way until I got a thermometer and told my fuller not to go above a certain heat for delicate colors." I was quite willing to confess this was something entirely new to me, yet, I had been about a fulling room for more than thirty years, and regarded myself tolerably well acquainted with the difficulties with which a fuller had to contend and the common ways of meeting them. The plan seemed much better than none at all, and the result aimed at one in which the fuller could not be other than interested, and no doubt by close watching, work was done more

satisfactory to him and better for the mill, for it is very trying to a fuller and not well for a mill to market goods with that faded and washed appearance which so readily brings a scowl to the super's face, as there comes the thought of possible rejection of the goods, and the bad name which may come therefrom to the mill; but it must have taken much time and caused much anxiety of mind to have followed this and that mill with a thermometer, every now and then in one's hand, lest the desired heat be passed which if not really starting the color, might make a little difference in the shade.

In some mills it is customary for the fuller to occasionally test the heat of the fulling mills by examining the cloth, and opening the doors of the mill should there be danger of too much heat. The objections to the two plans named, are: they require too much personal attention on the overseer, and a lack of uniformity in the results. If the fuller is busy time slips away and the mills may become heated before he is aware of it, and some things cannot be with safety delegated to hands who shrink from responsibility and are not fully equal to it, however well disposed.

Some years since, I adopted the following plan as one which required no watching after I had it well under way: I had one fulling mill with doors on the sides about 8 inches square, I fastened them back and fixed my other mills so the lids on top would not shut down by some two inches. I had a good rest from hearing about colors running and the like. This plan, will of course, retard the fulling a little, but not enough as to be very objectionable; whatever arrangement you put on to keep the cover up have it so in case you are to full dark colors it can be readily removed.

Most fullers know by a sad and bitter experience what it is to have nails, screws and the like, get into a fulling mill. I think it would be a good plan to forbid the driving of nails in a fulling room on which to hang clothes, towels and brooms; better have something done even at a little expense, rather than have the nails constantly working out and liable to get into the mills.

Before soaping or flocking the pieces, I find it well to let them run a few moments with the front doors of the fulling mill open, as once in a while a nut or something may be thrown out. Saturdays when a fuller is most at leisure, I think it well to give the fulling mills a good over-looking and anticipate any breakage which may result in delay or damage the coming week.

The seeming trifles must be well looked after in a woolen mill as they tell on the aggregate result.

FULLER.

#### WHAT IS MECHANICAL KNOWLEDGE.

**T**HE educated mechanic is the coming man in the mechanical field because he is educated. His education enables him to do things better and quicker than his uneducated brother. Education does not necessarily imply a college course, as a man who has gone through one may be much less educated for his business than the man who has only had the advantage of a few winters in common school.

True education consists in acquiring knowledge in respect to ones business, both practical and theoretical. It does not follow that the mind must remember a vast amount of detail, as any attempt at this will result in the forgetting of many important items. If the mind can only remember just so much, how then can a person reach more than a certain stage of education? The reply is, that it is accomplished by the manner of acquiring and retaining information. It should be understood that a large share of an educated mechanic's information consists of the data in his note book and his ability to find what he wants in published works. These form a part of a supplementary brain, as it were, where he can store any amount of information for future use. The principle requisite to continued acquirement of knowledge consists in making the proper separation between the matter to be kept in these two reservoirs or warehouses.

In general, it may be said that the division should be made along the line between principles, and the detailed results of principles, the former in the mind and the latter in notes. To illustrate, we may say that a man who has designed a successful machine has in his mind the principles on which it was designed, but he does not know nor is it advisable for him to try to remember

each detail of size. These are recorded on his drawings, which in this case constitute his notes, and to which he can quickly refer.

Another illustration of what should and what should not be retained in the mind may be afforded in the case of calculating speeds of machinery. When power is transmitted from a main line through a counter to a machine, it is not policy for the searcher after knowledge to find the speed of them all and the diameters of the pulleys and attempt to remember them so that they will be ready when the next case like it comes up. This is not education but a mere feat of useless memory. It would take only a little longer, but much easier to remember and be of very much more value to learn how this result is arrived at, then this information would be of service in any case where speed of machinery is concerned while the useless feat of memory would be of service only in an identical case.

There is a class of details that should be remembered rather than written down and these constitute mostly those relating to practical experience whose principles are not understood or dependent upon arbitrary action of others. Illustrations of these are peculiar or unexpected results, the quality of oil that is best in certain places or the average steam pressure carried by engineers.  
—*Wood and Iron.*

### "A ROLLING STONE GATHERS NO MOSS."

[Written for BALDWIN'S TEXTILE DESIGNER.]

**I**N all ages, from the time of King Solomon, if not for hundreds of years previously, and in all countries, proverbs have found a place in the daily intercourse of private and business life, and though very good things in their way, are liable, like other things, to be abused or misapplied. Elderly persons are specially fond of instructing the young by means of proverbs, sometimes greatly to their disadvantage. To show how the misapplication of proverbs may mar the future of promising and aspiring young persons, more especially in connection with the textile industry, we propose to quote some of the most familiar ones and give examples of the results effected by their too literal interpretation.

It is well known that operatives, as a class, are of a wandering disposition, changing from one situation to another, or from town to town and state to state, and the proverb which heads this article has, no doubt, been often applied to a young man upon leaving his native place and setting out to see a little of the world. He is told that he had far better stay where he is known; that the chances for promotion are much better in a place where he has spent his life than they would be in a strange town or city, and many other reasons are urged against his becoming a "rolling stone." All these reasons may be very plausible, and in some cases are very true, but there are other reasons why he should not stay in one place and "gather moss," if he feels disposed to roam.

The stone that is continually in motion acquires a polish, and if it possesses any value in itself will soon attract attention; whereas the stone that lies secluded and becomes moss-covered is liable to lose its identity altogether. It is hardly to be expected that a man who spends the whole of his life in one mill in a small manufacturing town, can ever be such an experienced workman as one who has traveled from place to place, working in different mills, on different goods, becoming acquainted with various methods of doing work, and gaining practical experience of such value as will fit him to occupy the best of position it is possible to obtain. Because such a one is migratory in his habits, it does not follow that he will become the restless, shiftless, penniless tramp his advisers see with their minds' eye when they try to dissuade him from setting forth from his home. The majority of our most skilled workmen, who are occupying positions of responsibility in large mills, are not those who have learned their business and spent the greatest part of their lives in them, but are those who have gathered knowledge, little by little, in various places, and have worked their way up from the lowest rung of the ladder to the highest. They are the stones that have rolled around, getting a rough place polished here, an excrescence knocked off there, a little rubbing against some other stone in another place, and so on until the beauty and brilliancy of their polish makes itself evident

to those most capable of appreciating the same, and the future of such is an honored position as the reward of their exertions.

But we would not advise every young man to leave his native place and wander forth on the world's highway. All have not the same will power and determination to push their way in spite of difficulties. All have not the same qualities that go to make up a first-class workman. Two persons may set out at the same time; may both go through the same experiences; both have the same opportunity, and yet one will attain eminence, while the other fails grievously. It is a young man's duty to consider well whether it will be any benefit to himself to become a "rolling stone." He may have the desire to go forth and make acquaintance with other places and other things, and yet circumstances may be favorable to his remaining where he is, and the prospect good if he does so remain. Such a one we would advise to stay at home, and gather diligently such "moss" as is likely to come in his way. Still there are a good number who would be much benefited by a little rolling around, even though they might have to pay for the experience gained by so doing. All stones of any value lose a little in the process of being prepared for the position destined for them to occupy, but their loss eventually becomes their gain, in the increased value placed upon them because of their form or luster. So, though experience may have to be paid for, the gain in most instances greatly affects the outlay.

There can be little doubt that the author of the above proverb had in view the temptations to thriftlessness attaching to continual change of location, and desired to warn those giving to change of the almost inevitable result of such action—poverty. At the time when this proverb was written or first spoken the means of locomotion were limited and expensive, and such advice would be apt to carry some weight with it. But in these days, when locomotion is rapid, easy, and comparatively cheap, it is almost counted an absolute necessity that one should travel, be it ever so little. Those who have been working in small mills, where the prospect of promotion is not very promising, naturally gravitate toward the towns having larger mills, where they hope to make a better living, if not to make a mark in their profession. They carry their experience with them, and while they are gaining knowledge may be able to impart some, thus benefiting the mills they visit in return for the benefit they acquire. How many men whose names are familiar to us might have been unknown in the field of manufacturing if they had not become rolling stones? Not only so in manufacturing, but in literature, science, art, politics and other spheres of public life, there are many examples of the good resulting from a little ambition on the part of some to see the world, and do what they could for its advancement and their own. The pioneers in our own profession, that of the "designer," either from choice or necessity, were mostly "rolling stones" in one sense of the term.

We would therefore say to all those who desire to avoid becoming moss-covered fossils, hidden away in some obscure corner, and who have a longing after better things, do not let the application of "a rolling stone gathers no moss" deter you from endeavoring to better your condition, for it may be that you are destined to become one of the greatest designers or superintendents the world has ever known, and only need a little confidence to set out on the road that shall lead to this fame, if not to fortune.

OLD DESIGNER.

### THE MANUFACTURE OF HAIR-CLOTH.

**T**HE model hair-cloth factory in this country is that of Mr. Henry B. Metcalf, of Pawtucket, R. I. There, somewhere in the neighborhood of a million horses' tails are annually made into cloth. These tails come from the best wild-horse market in the world, that of Russia. They are sold twice a year at the two great fairs of Irbet and Nijni Novgorod. For export they are packed in bales covered with light matting, which the peasantry make from the bast of the linden tree. These horses called upon to sacrifice their completing ornament for our convenience are the wild ones of Siberia, and every six months they are corroled and their magnificent tails banged for the market.

The width of hair-cloth is governed entirely by the length of

the tails, as the single hairs cannot be joined, none under 15 inches being used, as that makes the narrowest marketable cloth. From 15 to 50 inches the widths run. Thirty-six inches, representing yard long tails is considered a good width. The longest tail received in Pawtucket was cut from a Siberian mare and measured 65 inches. It has been kept as a curiosity and gives rise to no end of speculations as to how her equine ladyship wore it. If allowed to trail on the ground some clumsy brute would surely have put his hoof on it, to say nothing of the inconvenience afforded by brambles and thorn bushes. Perhaps it answered as apron-strings to control a wayward colt, or the Siberian Belle may have walked on her hind legs and carried her tail like a court train over her left arm, so to speak. There was no groom to weave it in a Clytie knot or plait it in a Eugenie loop tied with a ribbon, that's certain. One must hope no feminine pang of vanity was felt when the cruel scissors deprived this Sutherland sister of Siberia of her caudal if not her crowning glory.

The machinery used in making hair-cloth is very ingenious. Not many years ago a child stood at each loom and threw the hairs out one by one over the hook of the weaver's shuttle. Now the hand-loom is abolished. One bright girl can superintend ten looms where twenty hands were employed. In place of the child's monotonous labor is a tiny affair something like a steel finger and thumb, or, better, a bird's bill. It dips down, seizes a hair and places it like lightning. One almost believes the thing has a brain. When it misses the hair it dives for, it repeats the attempt two or even three times, until the particular hair is captured. A great many girls are employed in the factory and, like most New England mill operatives, they are neat, intelligent and well behaved.—*N. Y. Press.*

### THE FINISHING ROOM,—PROCESS OF OPERATIONS.

[Written for BALDWIN'S TEXTILE DESIGNER.]

#### BURLING.

**A**S every operation through which the fabric passes, is performed with a certain object in view, it becomes a matter of necessity to enquire into this object or end, to be attained, to enable us to so conduct the operation that the ultimate results will be such as to give entire satisfaction. The object to be attained by Burling is nothing more nor less than a smooth even face on the goods and for this reason, anything that will tend to unevenness or is in any way detrimental to the smoothness of the surface, must here be remedied.

Simple as the operation certainly is, it is nevertheless true, that only by the utmost care of the operatives, as well as the overseer, can good results be produced. There is no doubt that some goods require more care than others, and especially is this the case with cheap goods, where quantity is of more importance than quality, but as a general thing, even on cheap goods, it is poor policy to endeavor to make too much of a saving in this branch of finishing. A great many mill managers do not bestow upon this simple operation the consideration it certainly merits, and if they would follow up every imperfection they have to make an allowance for, they would find in a great many instances that the idea prevalent with many, that any girl is good enough for burling, even if she is not fit for anything else, is a grievous fallacy which it would be best for them to abandon at once. Why a finisher should be burdened with a class of refuse help has puzzled me very often, when it has been manifest that good help did not cost any more, but would give more and better work. Before commencing the burling, proper, let us look at the goods as they come from the weaver-room, and we find that a small ticket has been attached to each piece, which bears the number by which the piece is to be known, the style, the yards and weight. Here we have the information which a finisher in the transaction of his business is required to know, and of which he should at all times keep a correct record. But it becomes necessary that the number and also the style, designated by a number, should accompany the piece throughout the entire process, and for this reason we have it sewn on to the piece. The end of the piece which contains the ticket is the end to sew on the number and it should be sewn on the back of the piece on the left side, reading from the list inward.

Having performed this in a neat manner the piece is taken to the "Board," which is a table especially constructed for this purpose. The best burling table I have ever seen was constructed about like this: the board itself was 30 inches wide and 36 inches from the floor on the front, 43 from the floor on the back giving a good slope to work upon. Six inches from the floor, a bottom was put in and the back was boarded up within 12 inches of the top. This formed a box with the girls sitting in front, and sliding the goods into this box from their lap as they proceeded with their work. In some mills it would be thought to be too much of a good thing for the girls to let them sit down and they are therefore made to stand up; this I consider right down cruelty and the practice is abandoned more and more every year, for it commends itself, as reasonable, that girls being given a moderate degree of comfort, will work more cheerful and consequently produce more and better work. It is essential that the board be well joined and smooth so that every bunch, knot, etc., may be easily felt.

First in order is the back of the piece and every thing objectionable is removed, all knots must be drawn out carefully and cut off, leaving as much of the ends as possible, especially on goods that require considerable shrinking. On cotton warp goods the knots may be cut close and on worsteds this plan may also be adopted. Care must at all times be taken not to pull out any threads that properly belong to the fabric, but those that do not, must be removed. On heavy goods or those having a backing it very often happens, that either warp or filling, the ends will snarl up, causing a bunch, this should be carefully pulled out, and if the goods need sewing on the back, as may require, those places should be marked by the burler. A piece of chalk should be given each burler, and they should also be properly instructed, what to mark. This will be found to be a considerable saving of time in the after process and may be done here without detriment to the amount and quality of the work performed by the burler. Having gone over the back in the manner indicated the face is taken up and the process repeated with a little additional care.

Here also comes in an item of importance, this is the finish the goods are to receive and they must be burling accordingly. On a close finish, the knots should be drawn to the surface and left there for the shears to cut off, whereas on velure finish and on all face goods, the knots must be removed; they should always be cut off and never be allowed to be pulled off, as this will cause an undue lightening of the threads and they will consequently crawl back, leaving an imperfect place when goods are finished.

One of the worst troubles we have to deal with in burling is what is termed, runners. This is the result of the filling being drawn in from the side, some times as much as 6 or 8 inches. These must be removed very careful, otherwise additional work for the sewers is made which should be avoided as much as possible. It is almost impossible sometimes for the burlers to do this work without pulling out the threads that properly belong there, along with the ones that don't, and here is where the old-fashioned pointed burling irons still show their superiority over some new and thought to be improved irons. Whenever it can be done conveniently the older or more experienced hands should be given this work to do.

Having gone over the back and also the face of the piece in a careful and thorough manner, it should be folded neat and square and carried to the place designated for the goods in this state of finishing, which is, or should be, the inspector's. Each burling board should have a book, on which the burler should be required to enter the number of the piece burling, together with the date, this will enable the overseer to determine the amount of work performed by each board and also as reference if bad work should have to be located. Before closing I will say that here is the time and place to commence that system of neatness and tidiness, which go so far toward making a finishing room look as if a man was at the head of it, and a finisher in justice to himself should endeavor to have his room look as neat as it is possible for him to get it. It may be urged that all of this is a needless waste of time, but I maintain that it is not, for the very reason that it does not take any longer to do a thing right than it does to do it wrong or shiftless, and upon the principle that whatever is worth doing at all, is worth doing well.

In the next article we will consider the following processes in their order which next will be inspecting and sewing.

REAUMUR.

### A DANGEROUS SYSTEM.

THE system of working upon a credit basis obtains to a considerable extent in all parts of the world, and in all parts of the world commercial disasters are of hourly occurrence, results of a pernicious method. This fact is too often overlooked, and we would urge upon our friends in the South the utmost importance of making a thorough comparative study of the two systems of doing business in vogue—cash vs. credit—confident that a close enquiry will decide in favor of the former.

Credit is the figurative upas under whose black shadow have fallen and perished thousands of the most talented mercantile soldiers that ever measured swords with fate. Under its blighting poison, genius and ambition have been buried between sunrise and sunset, and the next day forgotten. Vain the pluck, the industry and persistent toil; like the ambushed prey under the thrilling crouch, or the stealthy tread of the panther, destruction is inevitable; money might, perchance, stand off the fatal day a little while longer, but the inexorable and unconditional oblivion would obliterate the helpless desperate, with all his illimitable abilities, and his skill, nerve and integrity would count for nothing in the unequal grapple. The omnipotent coin is a repeater of a different range, character and caliber—the twenty-five per center with this all powerful agent will welcome the wild storms and panics of the diabolical, demoniac credit king who feeds and fattens upon the victims of his infernal majesty—in the destructive path of the monstrosity the cash-before-delivery champion follows and gathers his abundant harvest and laughs to scorn the bare whisper of hard times. Out of the very upheaval and disaster he coins his popularity, his prestige, his prosperity and his unanswerable attractions, his knock-down arguments and his tremendous trip-hammers.—*The Merchant and Manufacturer.*

### THANKS TO "OLD DESIGNER."

[Written for BALDWIN'S TEXTILE DESIGNER.]

**Y**OU will please allow me a little space in the columns of your valuable paper to express my thanks to "OLD DESIGNER" for the encouraging words he gave me in answer to my article. Now I can see that I am not the only young man who has struggled hard through life to elevate myself to a high position, and the many stumbling blocks that have stood in my way, impeding and also checking even every move I made, keeping me back at the foot of the ladder.

Now then as long as "OLD DESIGNER" has met with all the difficulties that I spoke of, he must of course see that I have witnessed discouragements on all sides, and if he has that charitable feeling about him that I trust he has, he will try and give a helping hand to a poor boy whose ambition in life looks to a higher and nobler position than that of common labor; if so I trust he will give me a little light, that I may creep up to that place of importance to me. But to those I may labor for, certainly I must admit that it takes labor, patience, and good judgment to become a good designer; but others have got there, and why can't I? With a little insight into the mysteries of the art, I ought to go on rejoicing and to make a beginning, and, let me state right here, I can pick out patterns, reduce drafts, find the threads, and picks, in fact, many other little things about the art. But I fail in this, and I will state it too. Just suppose I am a designer and the superintendent comes along and says: I want such and such goods made to weigh so much finished. I do not know how to commence to lay them out. The theory is what I want, and I trust "OLD DESIGNER" will give me a plan to go by.

I have struggled hard through life without a friend to give me a helping hand. Discouragement was all around me, the dark side of the picture was always before me. When I look around me and see the young men who are progressing onward and upward, it sends a pang of sorrow and blueness through me. I have ambition, and pride, honorable, and honest, and it does seem as if such young men ought to prosper, and they will if some one will give them a helping hand to start by at the least.

"OLD DESIGNER" gave me encouragement, for when I wrote my article, my heart throbbed with pain and tears fell on my letter, and no young man to-day appreciates the kindness of others as I do, that the editor of this paper well knows, for years ago my parents passed away, leaving me to battle with the ways of the world, and a hard one too, and when I said friends were few and far between, a power of truth is in the expression. Now then, lend be a helping hand, and some day you will be rewarded by me for the kindness rendered. X.

### FINISHING.—No. 4.

[Written for BALDWIN'S TEXTILE DESIGNER.]

**N**EXT in order after burling comes the

INSPECTING AND SEWING IN.

This is very important, especially upon fancy goods, and should be attended to by a careful and trusty hand, and other things being equal, one who has some knowledge of weaving fancy goods will do the best upon this work. The goods should be very carefully inspected, and all imperfections not previously marked by the burler, that can be corrected or in any way improved by sewing in threads, should be marked; after which the sewer-in should make all the improvement possible by sewing in threads where they have been left out, fixing floats, etc., in fact anything that a skillful use of the needle can do to tend to a perfection of the goods. All work of this kind that can be done before the goods are fulled, should be attended to, as many imperfections can thus be remedied that could not be so easily in the fine drawing.

This having been completed the goods will be ready for the fulling or scouring. If they are to be scoured before fulling perhaps it would be best to have it done before the burling, and then after drying they will be clean for the burler, and the inspecting and sewing in can be more easily done. But we have put the burling before the fulling, because this is the usual order of the work, and scouring before fulling is the exception and not the rule. In some cases it is important and necessary to the best results, to scour the goods before they are fulled. While upon the greater, part, fulling in grease is the cheapest and the best. We have not the desire to discuss this matter more fully now, but the discussion of it by the adherents of the two methods would bring out many interesting facts.

If the goods are to be flocked in the fulling mills, the edges should be sewed together, with the back outward, so that when the flocks are applied they will be kept as much as possible from the face of the goods. This having been done the goods are ready for the fulling, a process that is full of interest and importance to those most familiar with it. Some mills use machines for flocking their goods, but the more common method is to flock them in the fulling mills. There are two methods of applying the flocks, called "dry" flocking and "wet" flocking, and while we hold more particularly to the latter we believe where much is to be done, it is best to combine the two. In either case the flocking is usually looked upon as a part of the fulling process and of this we shall have more to say in our next article.

MOSE.

### EFFICIENT FOREMEN.

**D**O owners and operators of mills ever think of training up men for their special business? We often see instances where a foreman leaves his employer and goes into new fields of labor, and if he is a good foreman he has left a place which under ordinary circumstances it is hard to fill, and the employer looks everywhere to find some good man to take the place of the retiring foreman. Very often he has to take up with a second or even a third-rate man and go hobbling along with poor work and bad management. Oftentimes, I have no doubt, poor managing foremen have obliged their employers to give up business on account of their poor management.

The trouble must generally be laid at the door of the employer, who seems to think the wind is always going to blow from a fair weather quarter. When the wind suddenly shifts to a stormy quarter and he finds himself without anyone to look to to manage his affairs or rally his men to their daily tasks, he must run the

gauntlet of good, bad and indifferent, till possibly, he may find a man to suit him.

I think there is a way out of this difficulty, and by the law of primogeniture employers may readily find a legal successor to their departing foreman, whether the call should be to "go up higher" or to "pass over the river with the boatman pale." In employing men this end should always be kept in view, and the rule of possibilities should be a rule that should always be studied. There is always (or nearly always) some employe who can be kept in advanced position, to be pushed gradually up to fill any position that can be found for him as necessity demands.

Perhaps locality may prevent the possibility of getting men of the right qualities to push ahead, but in the ordinary intelligent communities some man will be found who will just fill the bill, and this man wants to be looked after, and cared for, with a view to do yourself some good some time in the future. Don't ever think of doing any kindness to the man, for in being good to yourself you are of a necessity good to him, and your necessity is his opportunity. The little hints and helps you may be able to give this employe are repaid an hundred fold oftentimes, and you have some reliable, trusty hand to step into the place made vacant.

There will no doubt be a thousand if's presented to the adoption of the plan I suggest, as the *if* after all the pains I have taken this protege should seek some other firm's employment. Well, some other firm's protege may seek yours, and the thing is evened up. Let every firm employing men and needing foremen adopt this principle, and we shall soon have a stock to select from, and there will be no beating the bush to find the bird that is wanted.

Technical schools are trying to make men who will be capable of filling such positions, but a graduate of any school has to relearn in your particular business, and unless he is more than ordinarily smart, it will cost more to get the rusty notions that he has learned from some old superannated professor out of his head, than to take a new wide awake man and break him into your business. Men trained to shop work are far preferable to men trained in schools, for immediate necessities.—*The Wood Worker.*

**WINNERS OF PRIZES OFFERED IN THE "WEAVE CONTEST"**

By the Publisher of this Journal, in the Three Preceding Issues.

- 1.—Prize, JOHN LENAGHAN,  
Fall River, Mass.
- 2.—Prize, JAMES HENDRY,  
Peterborough, Ont.
- 3.—Prize, HECK DAVIS,  
East Rochester, N. H.

Mr. Lenaghan wins the race and cash prize of \$5.00, he having sent in 88 weaves of which 35 were admitted, and are as published below.

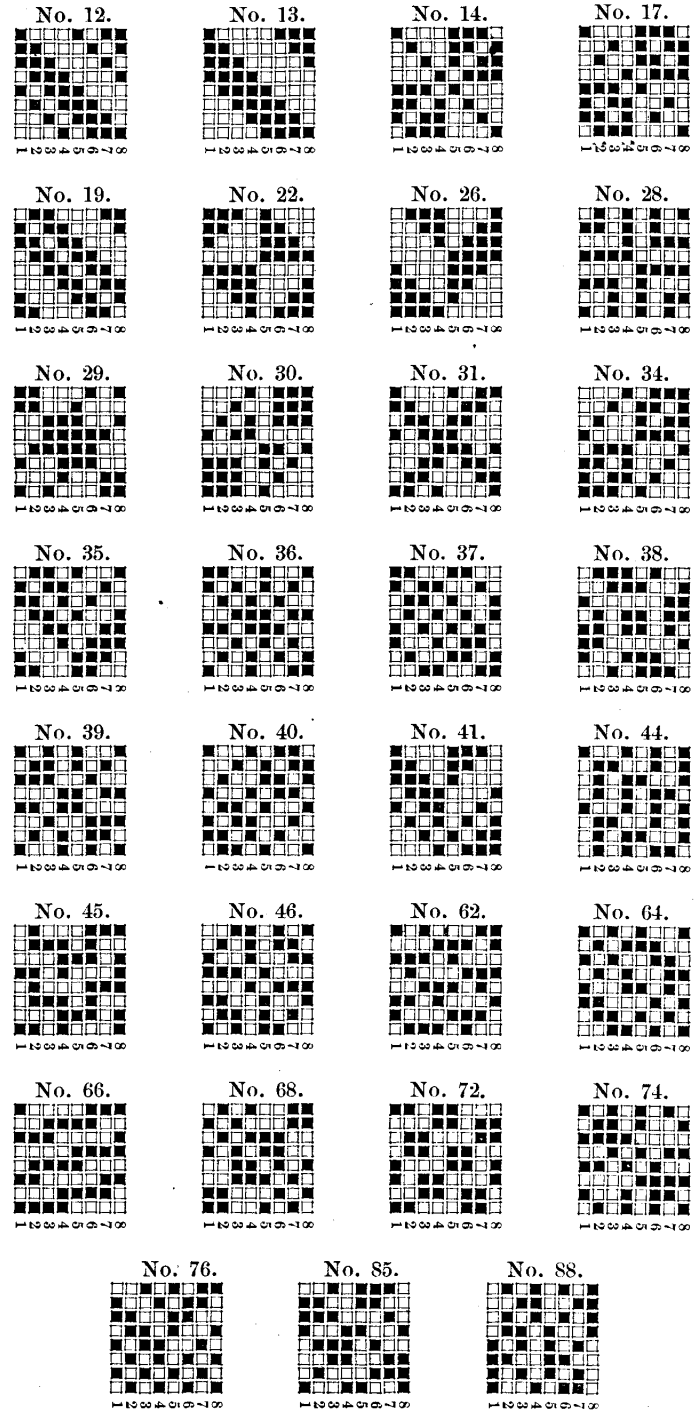
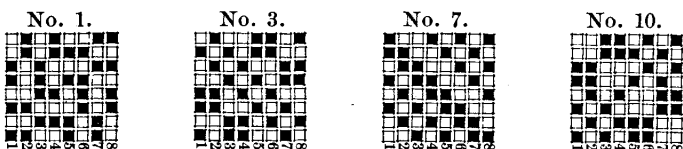
Mr. Hendry came in second in the race and wins "Baldwin's Treatise on Designing and Weaving," price \$4.00, he having sent in 42 weaves of which 28 were admitted. In justice to Mr. Hendry we would say, that his weaves were drawn up and arranged in the most systematic manner of all contestants.

Mr. Davis came in third in the race and wins one year's subscription to this journal, (\$2.) and the "Designers' Chart," price \$1.00, he having sent in 20 weaves of which 18 were admitted. It seems that Mr. Davis understood the rules, governing the contest, and followed them the best of all.

Six others were in the race, but as they requested not to be mentioned unless they were among the winners, we will not give their names or number of weaves, but will say that it was a very close thing to decide on third prize.

Rule 5, shut out a large number of weaves that were reducible. This rule seems to have been ignored by nearly all.

The following are Mr. Lenaghan's weaves, numbered as he had them, which shows their order of being admitted.



**NEW ENGLAND FACTORY LIFE, PAST AND PRESENT.**

**L**ILLIE B. CHACE WYMAN in the July *Atlantic*, writes: Eighty years ago when cotton manufacturing was in its infancy, an American mechanic would often start a little mill with a dozen employes. Among them probably his children and the children of his relatives, the youngest of whom might not be more than seven or eight years old. It was not an ideal state of affairs, but everybody shared pretty equally in its unideal conditions. For twenty or thirty years the mills grew in size and numbers, but the operatives continued to be of the same nationality and the same class as the employes. Social relations and intermarriages were not only possible but actual facts, as an investigation into the private history of some prominent manufacturing family would show. A caste feeling, however, began to develop as the profits of the employer grew greater than the wages of the employed, and the property thus acquired by some separated into classes those who a short time before had been equal neigh-



bors. It became an objection to marriage, as local traditions relate. "her" father worked for "his" father, although the youth in question might in early childhood have worked in his father's mill and might pride himself, in his successful old age, on the fact.

During this early period, it became customary for the mill proprietors to possess themselves of tracts of land about the factories, and to build thereon tenement houses, boarding houses, and frequently stores for the operatives. It was necessary that they should do so, as the sudden growth of the industry attracted into the river valleys where the mills were situated large numbers of people, who must immediately be provided with dwelling places and markets in which to purchase food. The country was young and there were no capitalists to hold the land and put up houses but the cotton manufacturers themselves, and the very men whose enterprise had called to the borders of the streams the sons and daughters of the inland farms. The standard of comfort was low. The risks of a new business must also be considered, when we scrutinize the buildings that were built at this time. They were often far inferior to those established in later days.

The equality of condition moderated slowly but steadily. Traces of it lingered nearly as long as native Americans remained in the mill in any number. I have known of one instance of a very intimate friendship existing, during the middle century, between two thoughtful women, one of whom was the mill owner's wife and the other an operative in the factory. Just such a friendship would be scarcely a conceivable possibility under existing conditions. Only philanthropic intentions could bring about even its shadow.

Difference in wealth, with its inevitable result of difference in daily habit, has already proved a barrier between employer and employed, when, after the year 1850 a greater distinction arose. The mill population slowly altered its character, and its change naturally emphasized its distinctness from the mill owners. Foreigners began to come, and the Americans who had hitherto worked in the mill rose into superior avocations, until few of the native women remained, and not many men except those who were overseers or superintendents. The next generation accentuated the change. The New England girls of this period did not go into the factory, as their mothers had gone. They sought higher employment during the interval between school and marriage. The governing class in the industry, including owners, clerks, superintendents and overseers, was now of a different race and religion from the workers, who so far as affairs were concerned had become a governed class. I do not mean that such of the men as had the right to franchise were improperly controlled in their political action. I do not believe that the manufacturers of New England are guilty of trying to unduly influence the votes of their laborers. It must also be noted, in this connection, that comparatively few of these operatives can be influenced in that way, since none of the women and few of the men are voters. When, therefore, I say they are governed by the manufacturers, I mean that the methods of their daily life and work are under control.

## HEMP, CHINESE GRASS, JUTE, AND OTHER FIBRES.

BY WILLIAM CROOKES, F. R. S.

**H**EMP is the fibre of an annual plant known as *Cannabis sativa*, originally found in Asia. It has, however, been cultivated in Europe for many centuries. This plant attains a height of from 1.3 to 2.6 metres, and, as in flax, the fibre runs through the entire length of the stem. It is both separated from the plant and bleached in a similar manner to flax, but bleaching is more difficult on account of the greater quantity of incrustating matter that surrounds the fibre. Seen through the microscope, the hempen fibres exhibit hollow cylindrical tubes, quite smooth externally, and provided at regular intervals with septa or knots, surrounded by small hairy appendices. Hemp fibre averages 1-20 to 1-30 of a millimetre in diameter. It is chiefly employed in making rope, twine, and sail cloth, and consequently is rarely dyed or bleached.

The other fibrous materials known to us may be divided into three kinds, viz., those obtained from the stems of plants, those from the leaves, and those from the nutshell.

To the first division belongs the so called Chinese grass, the

fibre of a plant included in the natural order of the *Urticaceae*, more particularly the *Boehmeria nivea*, cultivated to some extent in China. The fibre when woven to tissue constitutes the China grass cloth, but is not used to any great extent either in Europe or Asia.

Ramee hemp is made from the fibres of the *Urtica utilis*, a native of Borneo, Sumatra, Java, and some of the smaller Sunda Islands. These fibres average about 1.5 to 2.2 metres in length. They are naturally of a bright yellow-white color, readily bleached to a perfect white, but are not much used on account of an inherent stiffness, which, as far as present experience goes, cannot be removed. The natives make cordage of the fibre, but it is of inferior strength, and does not well resist the action of the sea-water.

Rhea hemp from the *Rhea tenacissima*, East Indies, is used very little even by the natives.

Jute, the fibre of the *Corchorus olitorius*, together with the other species of the same family, is, with the exception of hemp, used more largely than any of the fibres referred to; it is not, however, suitable for making cordage, as it breaks too readily, and rots under water, but is extensively used for sail and other coarse cloth. Its finer fibres are, it is stated, woven into such fabrics as poplins and mixed reps. Jute is also used by hatters, as it will take a good black dye.

Bombay hemp is the fibre derived from the *Hibiscus cannabinus*; its use is, however, very limited.

Amongst the fibres obtained from leaves, those chiefly in use are:—New Zealand flax, the fibre from the *Phormium tenax*. This fibre is very strong, especially in the crude state, but it is difficult to bleach. The plant could very well be cultivated in Europe, but as the process by which the fibre is obtained is a tedious one, and the color is a light cinnamon-brown, it is not favorably received. A gummy juice is obtained from the plant, which is beginning to be used for rendering envelopes adhesive, as paper fastened by it cannot be opened either by damping or steaming.

Several species of the *Agave* tribe yield fibres which are sometimes used, but they are not well known in Europe.

Manilla hemp is the fibre derived from the *Musa textilis*, and other species of the same family. This fibre is brought to Europe and, mixed with hemp, is made into rope, twine, sacking, &c. The leaves of the *Bromelia ananas* (the pine-apple plant) contain fibres of great comparative whiteness, but even in such countries as Mexico, where the pine-apple is so plentiful as occasionally to be used as fuel, the extraction of the fibre from the leaves is not attempted to any great extent, the difficulty of getting rid of the concomitant vegetable matter being too great, especially as cotton can be grown there, and in most of the countries where the various fibres alluded to are produced.

Coir, or cocoa-nut fibre, is obtained from the exterior shell (*Pericarpium*) of the fruit of the cocoa-nut palm. It is used in its unbleached natural state for making matting, &c.

Very little is known about the action of dyes on these fibres; some of them are never dyed; even linen (flax-fibre,) which after bleaching is pure cellulose, does not take some colors as well as cotton.

A GENTLEMAN who has contributed a great deal of interesting matter to trade journals in his particular line, says that if a man truly desires to know how deeply he is posted on any subject, let him write an article upon it. If he goes at the matter considering the world his audience, and writes nothing but what he feels will stand against all criticisms if brought to argument, he will be a much wiser man at the close of his article than when he commenced. "I can truly say," he writes, "writing has done me personally more good in understanding the true principles of our trade than if I had had a hundred lives' work in the manner generally practiced. The good derived from writing is obtained simply from the fact of making one study and originate."—*Wood and Iron*.

BALDWIN'S TEXTILE DESIGNER is the best textile journal published for the mill man. Subscription, \$2.00 per annum. Send in your order now, also get the SIX back numbers for 50 cents.



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 BRASHER FALLS, N. Y.

This office is an agency for the Patterns of E. Lehmann, Paris, France. Latest English and French Novelties in fabrics of all kinds. Orders for these samples received here.

Entered at the Brasher Falls post-office as second-class matter.

BRASHER FALLS, N. Y., JULY, 1888.

THE publisher of BALDWIN'S TEXTILE DESIGNER feels that he has the right by courtesy, of asking each and every person receiving a copy of this journal why he, individually, is not a subscriber to BALDWIN'S TEXTILE DESIGNER? This inquiry is meant to be as personal and direct as type and language can make it—as much as though he had called at this moment in person and was speaking the words here printed. What reason, my dear sir, have you for laying down this journal without a resolve to write your order for a subscription and enclose two dollars for it for one year? If you have any reason, the statement of it will be accepted as a personal favor. If there is one single reason why you should not have the journal regularly, state it. If there is not, take it. It will cost you only *two dollars*. It will bring you information no where else obtainable. Its columns are well edited and will be improved upon. It will deal with subjects in which you are interested. It will be worth many dollars to you in the course of the year.

The publisher asks not as a favor, but as a matter of mutual interest, that you enclose your order in to-day's mail for a year's subscription for BALDWIN'S TEXTILE DESIGNER.

He is thus urgent not because he imagines you value *two dollars* more than such a journal, but because of the liability all busy men are under of forgetting or omitting to do at the moment what they are willing enough to do.

Let us hear from you by next mail. Do not put off until tomorrow what ought to be done to-day.

WHAT MANUFACTURERS SAY.

A FIRM in New Hampshire, sends us their check for twelve dollars (\$12.00), and says: "Enclosed find our check for \$12.00 for which please mail regularly to our address, 6 copies of your TEXTILE DESIGNER, for ourselves and each of our overseers."

Another company writes us from Massachusetts, and says: "We enclose our check for eight dollars (\$8.00) to pay for four year's subscription to the DESIGNER. We are much pleased with your magazine, and trust you will receive the encouragement from the woolen mills you deserve."

Another one renews his subscription for a year, and says: "The TEXTILE DESIGNER is the paper for us, it not only gives a

lot of good sound matter of its own, but gives us the "cream" of other textile journals both home and abroad."

To each of the above we extend our thanks, and would say that if we are pleasing them, their actions are doubly pleasing to us.

WE received the following communication with a request to publish it, which we are pleased to do or any other matter for the benefit of the Association:

NATIONAL ASSOCIATION OF WOOLEN AND WORSTED OVERSEERS.  
 BENEFICIARY DEPARTMENT.

WEBSTER, MASS., June 11, 1888.

DEAR SIR AND BROTHER:—You are hereby notified that a beneficiary department has been added to this Association, for all members in good standing. If you wish to become a member, please forward ONE DOLLAR, to pay the first assessment, together with your full address, to the Secretary of this department. The amount of benefit will be one full assessment, or an amount not exceeding \$100. Yours respectfully,

GEO. W. BURR, Sec'y.

It is desirable to have as many members as possible, soon, to insure the first beneficiary the maximum amount as stated above.

All who find this paragraph in their paper, marked with an index hand, can take it for grantage that their subscription expires with the present number. We respectfully request the renewal of your subscription by remitting \$2.00 at your earliest convenience. Prompt payments encourages the publisher, and will enable him to add new features to the journal. Please bear this in mind, and don't forget the "hand."

WE are pleased to note the promptness of subscribers whose subscriptions expired with the last issue, nearly every one of which have renewed for six months or a year, and we feel confident that those who have not done so will in a few days. Such action on the part of subscribers, speaks plainer than words in praise of our journal; it shows that they remember the "hand," as well as the publisher, for which they have our hearty thanks.

MR. JAMES HENDRY, the subject of our portrait department this issue, is the winner of second prize in the "Weave Contest." Mr. John Lenaghan, the winner of first prize, will be presented to our readers next month. Will some one name a plan for getting up and managing a Design Contest? Readers, think this matter over and give us your ideas on the subject.

REMEMBER our free book offer on last page will be withdrawn after this month, improve the chance while good; also remember that 50 cents will pay for Jan., Feb., March, April, May and June issues until further notice. Subscriptions can commence with any issue, but be sure to state what one. Don't ask for more than one free copy for the same person.

MANUFACTURERS in want of a good Dyer, can learn of such through this office; the man is now out of employment owing to mill shutting down; he has good recommends of which we have copies in our possession.

THE secret of successful and thorough knowledge of the art of designing lies not wholly in what others may teach you, but in the taste and originality of your own ideas combined with the knowledge.

NO BOY ever yet jumped from the position of filling carrier into that of a full fledged superintendent by being told how work was done.

TO THE close observer, a great deal of what may properly be called nonsense, has been published of late in trade journals.

DOING first-class; no complaints. No use growling. Never say die.

WANTED:—A good man to represent BALDWIN'S TEXTILE DESIGNER in every mill town; write for terms and particulars, you can make money at it. Also, a good man to write a series of articles on weaving and designing; write us on the subject.

WE will send BALDWIN'S TEXTILE DESIGNER on trial for three months to any manufacturer who would like to get acquainted with it before subscribing. May we enter your name on our list? there will be no charge for the three months if you do not think it worth subscribing for.

YOUR attention is called to the clubbing rates we offer on the first page of cover. *The Boston Journal of Commerce*, is a large 16 page weekly and devoted to the Cotton, Woolen, and Iron industries, and adapted to both manufacturers and operatives. *The Merchant World*, is a 20 page weekly commercial paper, for manufacturers in keeping posted on the sale of fabrics, market reports, etc. *The Scientific American*, is a 16 page illustrated weekly, devoted more to mechanical arts and sciences.

#### BOOK NOTICES.

"THE BLUE BOOK:" A Pocket Directory of the Textile Manufacturers of the United States and Canada.

The object of this book is indicated by its title. It contains a list of the Cotton, Woolen, and Worsted Mills, Bleachers, and Print Works of the United States and Canada; gives the name of place, county, railroad, hotel, telegraph and express; name of mill, proprietor or company agents, and superintendents; class of goods made; number of cards, looms, spindles, knitting and sewing machines, boilers, water wheels, and if there is a dye-house. It is just what manufacturers and travelling agents need who have occasion to visit the mills. It also contains the addresses of new mills in process of construction and their probable date of completion. Although it contains matter sufficient to fill a large volume, yet it is gotten up in so compact form that it can readily be carried in the pocket without inconvenience. Price, bound in cloth, \$2; in leather, \$2.50. Published by, and to be had of, J. E. Palmer, No. 176 Broadway, New York.

"THE RED BOOK:"—Third Edition—A Handbook for Textile Manufacturers.

This book is indexed, alphabetically arranged and classified; gives the names of Manufacturers and Importers of Chemicals and Dyestuffs under their different specialties; Actual Manufacturers or Importers of Machinery and Manufactured Supplies; Dealers in Raw Material, Table., Calculations, useful hints and wrinkles, which will be found of value to mill men. Its aim is to place the mill superintendents in direct communication with manufacturers of supplies, thereby securing the advantages to be gained by competitive prices. Price, paper cover, \$1. Published by J. E. Palmer, No. 176 Broadway, New York.

#### QUERIES AND REPLIES

This department is for the interchange of knowledge, with and between our readers, on all questions relating to textile manufacturing. We cordially invite all to ask and answer questions through this department. Correspondents must give their name and address, also *nom de plume* if any.

##### QUERIES.

No. 13.—Please answer in your query column of next issue if Rule 5, in the "Weave Contest," shuts out all reducible weaves, and oblige a—  
SUBSCRIBER.

No. 14.—Can you give a receipt in your next issue that will color a Blue that will stand fulling and scouring, and be on the indigo-blue shade?  
PHILANDER EWELL.

##### REPLIES.

No. 13.—Yes, Rule 5 shuts out all weaves that can be reduced and admits none but such as cannot be reduced and even those must come under Rule 4.

This query came in too late for last issue, hence the reason of its appearance at this late date.—ED.

No. 14.—For 100 lbs. clean wool. First bath: 10 lbs. alum, 3½ lbs. oxalic acid, 3 lbs. tartar, ½ lb. chromate of potash. Enter wool at about 130 F.; boil 1¼ hours, and if convenient let lay in liquor a few hours then take out.

Second bath: 7 lbs. liquid logwood 51°, will dye a fair shade of blue. Enter wool about the same as in first bath, and boil to shade.  
D. W.

## PORTRAIT AND BIOGRAPHICAL DEPARTMENT.

This department is for Manufacturers, Agents, Superintendents, Designers, Overseers, and all persons engaged in the advancement of the Textile Industries. It offers to them a medium through which they can learn each others' Textile History, will promote the welfare of those who appear therein, and, be both interesting and instructive to all engaged in textile manufacturing.

Names of persons whose Portraits and Biographies have previously appeared in this department of BALDWIN'S TEXTILE DESIGNER:

Daniel A. Cook, Finisher, Providence, R. I. Everett M. Sinclair, Superintendent, East Rochester, N. H. Olin F. Ireland, Superintendent, Madison, Me. James C. Ryan, Carder, North Vassalborough, Me. Mrs. Florence E. Cory, Principal, School of Industrial Art, 124 Fifth Ave. N. Y. Elisha Allen, ex-Sup't & Designer, Winooski, Vt. A. E. Jones, Carder, Webster, Mass.

Extra copies of this issue may be had at 15 cents each. This price will be strictly adhered to for any number of copies, and to all.

[Engraved expressly for BALDWIN'S TEXTILE DESIGNER.]



JAMES HENDRY.

THE subject of this sketch, JAMES HENDRY, was born Sept. 18th 1850, in a town north of the river Tweed, called Alva, seven miles from Sterling, Scotland. When very young his parents moved to the south of Scotland where he was brought up amidst factory smoke and the hum of weavers' shuttles. At eight years of age he was often taken from school to hand in his father's warp. He was so well acquainted with the hand loom that at the age of twelve years, when he could hardly stride over the treadles, he could jump on to a loom and weave quite a bit; sometimes on eight harnesses he could be seen striding on tip-toe, for all that he was worth, to get the shed open sufficient to allow the shuttle to pass through. At the age of thirteen years he entered as an apprentice in the employ of Thompson & Sons, Aeklington Part, just over the Borders of Scotland. He had to commence with the wool in the grease, and learn to sort it into the different classes. From the wool-sorters' room he went into the card room; from the card room to the spinning room; from the spinning room to the hand loom and designing. The last three years of his apprenticeship he was kept close at the hand loom and designing under the superintendence of his father, who was for that time his apprentice master and a very strict one too.

After finishing his apprenticeship, he moved with his parents back to Galashiles, the centre of the tweed trade, where he follow-


ed the occupation of hand loom and pattern weaving for a time; in fact he has been more or less engaged in the designing department since he finished his apprenticeship.

Mr. Hendry held the position of Instructor in the South of Scotland Technical Institute, during which time he prosecuted his duties with credit to himself and to the interest and benefit of the pupils under him. In 1883 he divided the second and third prizes in an open competition for the best six designs for worsteds—for ladies' and gents' wear. This same year he was awarded a certificate from the Greschaum College, E. C. In 1884 he passed an examination with honors in practical weaving. This same year he won the Bronze Medal in a competition open to the United Kingdom. On Sept. 18th, 1884, he sailed from Liverpool, and landed in Cornwall, Ontario, (Canada) as designer for the Cornwall Manufacturing Co. After being with this company for some time, he accepted the position as designer for the Auburn Woolen Co., Peterborough, Ont., where he is now and has been during the past three years.

#### WORK THAT COUNTS.

It is one thing to work; it is another thing to do work. Yet men generally are inclined to think that they ought to have credit and ought to receive pay according to the number of hours or days they spend at a piece of work, rather than according to the work they do in a given period. A man may faithfully work all day, looking among his papers for a missing memorandum which he needs to enable him to do a piece of work for which he expects payment. It would hardly be fair, however, for him to include a charge for that day's work in his estimate of the value of his services to the man who employs him. So, again, a man may work without any system, and by his aimless methods waste five times as many hours as he uses to advantage. The work he does bears no fitting comparison with his working. In fact, the unfairest estimate a man can put upon his work is by measuring it according to the time he spends in its doing. Before a man congratulates himself on having worked hard and honestly all day, or all the week through, he would do well to stop and see whether he has done much work, or has merely been at work. And if he finds that he has little to show for his working, it behooves him to learn how to work, in order that work may be a result of his working.

#### NEW YORK TECHNICAL SCHOOL FOR GIRLS.

 Imagine that it will surprise most people to learn that there is a technical school in New York exclusively for girls, which has been in existence fourteen years, and graduated this year a class of nine hundred and twenty-four members, or more than the united members of the graduating classes of boys in all the technical schools in the western hemisphere. It is true that the sciences taught in the school are not of a very abstruse character, but they are of the sort best adapted at present to help girls to earn an honest living, and many a woman must bless the thoughtful charity by which she was put in the way of independence. There is still something strange to an American in the modern movement by which women have entered into nearly all the departments of industry and trade which was once monopolized by men. It is not many years since a young girl's face was a rather rare sight on Wall or State Street, and those that were seen generally belonged to persons who were shyly hurrying by on their way to a ferry or railway station. Now nearly every broker's or lawyer's office and merchant's counting room has its gentle, industrious bookkeepers and typewriters, and in many cases these modest and faithful assistants are intrusted with very great responsibility. All the girls who wish to be employed, however, cannot find places as bookkeepers or typewriters, and it is of much importance to the welfare of the sex to increase the number of occupations in which it can be of service. This sort of work is just what a technical school can do, and those who would like to see the weaker class of their fellow citizens placed in a position where they need not be dependent for support upon the uncertain mercies of their male relatives will do well to keep the New York example in mind.

Among the subjects taught in the school are stenography and bookkeeping, mechanical and free hand drawing, sewing by hand and machine, cutting and fitting, music, designing, as applied to textile fabrics, wall paper, tiles, and modeling. All the instruc-

tion given is free, and the salaries of the twelve teachers employed, as well as rent and other expenses, are paid by subscription, under the care of the Young Women's Christian Association. So far as the public is concerned, the education of women in all these, as well as other kindred subjects, is an unmixed advantage. Not only are thousands of intelligent persons changed from idle and very poor consumers to industrious and comparatively affluent producers, but the introduction of so much trained skill into the practice of the domestic arts must before long show itself in the development of those arts. The manufacture of wall paper in this country certainly owes to a few clever women a great part of the extraordinary artistic success which it has achieved; and to take another example, the decorative embroidery of the Associated Artists, and of Mrs. Holmes before them, give a promise for the future of American art which is hardly to be found in the painting or sculpture of the country.

If we could suggest anything which might, with advantage, be added to the curriculum of this or similar schools, it would certainly be the development of the actual practice of artistic industry in other ways besides embroidery. There is no reason, for instance, why women should not be successful in decorative painting as the Garretts and rivals are in Eng. Most women are somewhat sensitive to color, but are so persuaded of their natural gift in this direction that they scorn to learn anything about the subject, and make, in consequence, laborious attempts at decoration which, to everybody except themselves, appear painfully ignorant and bald. If the same women would get rid of the notion that heaven had already taught them a business which their brothers spend years in learning, and would, like men, make themselves acquainted with the observations of such masters as Owen Jones, Dr. Dresser, and William Morris, and study and compare the work of different ages and countries, the beautiful forms of the antique and the Renaissance, the brilliancy of the Japanese, and the ineffable coloring of the Chinese, they could, more easily than most men, acquire a resource and certainty which would make them the best and most rapid of decorators. The same sort of training would fit them for other artistic professions. We cannot say that we think the system of making designs for tiles and similar things, for indifferent workmen to carry out, is calculated to develop the highest artistic capacity or produce the most beautiful art. The highest beauty can only be added by the artist's own hands, without the intervention of mechanics, and there is just now a wide field for the use of decoration which shall be as much autographs of the designer as an easel picture could be. To take a single example, a great deal of mosaic for the adornment of buildings is now made in Venice by an association of girls of good family, who draw and color the designs, pick out the bits of glass or stone, and send them to be put in position. Although mosaic is now a rare luxury with us, it might be popularized in this way to the general advantage. There is a sort of mosaic, useful for either floors or walls, which is made by gluing the bits of marble or glass on brown paper. The paper is then sent in sheets to the place where it is to be used, and laid with the bits of marble downward, on a bed of fresh Portland cement. When the cement has set hard, the paper is washed off, and the mosaic finished by polishing with a stone. For the ornamentation of our vestibules and hearths very effective use might be made of this means. The broken bits of tile from the tile layers answer an admirable purpose for the mosaic, and give far more richness of color than can be got with marble. These might be glued on sheets by a skillful hand in such a way as to form designs of value infinitely superior to anything yet attempted in floor or permanent wall decoration, and at a price by no means extravagantly high.—*Amer. Architect.*

#### THE DEPARTMENT OF LABOR.

THE bill creating a National Department of Labor has become a law. The head of the Department of Labor will be known as the Commissioner of Labor, and his salary will be \$5,000 a year. He is to hold office four years. The duties of the commissioner are to acquire and diffuse among the people of the United States information connected with labor, in the most general and comprehensive sense of the word, and especially in relation to capital, the hours of labor, earnings of working men and wom-

en, and means of promoting their material, social, intellectual, and moral prosperity. It is especially charged to ascertain, whenever industrial changes shall make it essential, the cost of producing articles at the time dutiable in the United States in leading countries where such articles are produced, under a classification showing the different elements of cost of such articles of production; to establish a system of reports by which at intervals of not less than two years, he can tell the general condition, so far as production is concerned, of the leading industries of the country. He is also to investigate all controversies and disputes between employers and employees which may tend to interfere with the welfare of the people, and report thereon to Congress. The law virtually expands the Bureau of Labor Statistics, which is a branch of the Interior Department, into a division of the government.—*Scientific American*.

### THE PROGRESSIVE MANUFACTURER.

**I**T is surprising as we wander about the country, and visit the thousands of establishments, to notice the vast difference in the manner of conducting business in the different concerns.

Go, for instance, into some old and long-established factory or shop, where the proprietor is well along in years, and has been doing a prosperous business from which he has accumulated a goodly portion of this world's wealth, and possibly has laid the foundation for the same prosperity in the world to come. You will generally find him an easy-going, comfortable man, who cares little for the rush and bustle of a business life of to-day. He has made his money, and is even now getting a fair living from the plant.

Look about the shop or factory, and you will find the same easy-going, still plodding style. No new improvements or facilities for turning out work upon the plan of later date. It is the same old shop that it was when its proprietor started in life, and no amount of talk or reasoning could induce him to "fit up," and run the plant with the push and vim of his youthful neighbor.

He is years behind the times, and still plods on, taking everything easy, worrying about nothing, and undisturbed by the vexations of competition, market prices or numerous other things that keep the younger and more vivacious characters in a constant flurry. This was the plan upon which business was done in the years gone by, when there was less competition, and in consequence more of a demand for the productions in the country, it is not necessary to watch for every new and approved appliance with which to equip the shop and facilitate production.

Visit another shop where the proprietors are young and struggling for an existence and patronage.

Here you find everything in the way of modern appliances for the rapid and economical production of goods. Everything is done on the principle of modern Yankeeism. Every one, from the foreman to the apprentice, is rushing around wide awake, and always in a hurry. There is no time to take things easy. Competition in production and prices necessitates that every man do his best, aided by the most approved mechanical appliances that modern science and skill can produce. The proprietors are always busy, and with no time to take things easy.

This is the plan upon which all business is done to-day. Everything goes with a rush, and in order to stand anywhere, a man must enter the "go-as-you-please," or get left and find himself behind the times, and his business unprofitable and slow going.

The progressive manufacturer of to-day is the one who keeps up to the times in every respect. Competition caused by the multiplication of production and improved machinery has changed the method necessary to a successful business.

There is another thing very noticeable in these visits. This is the idea that many men have of the necessity of constant addition and necessary repairs. In the grand rush not enough care is taken of the plant itself. Shafting and machinery is put up, and beyond an occasional oiling, receives no further attention unless a break or failure to work makes it absolutely necessary.

In every large shop the time of one man whose sole business is to look after these things will be repaid in the long run in many ways. There are few shops or factories where large, heavy ma-

chinery is used, but in which too little attention is given to the loss of time and power through neglect of proper attention to the shafting required to run it. This has been partially overcome by modern improvements in boxes and hangers, but we are led to believe from what we have observed that much power is wasted through imperfect adjustments of hangers, and even in many cases the proprietors, aware that something is wrong, are unable to locate the trouble. Oil is poured on to a bearing that has become warped, or out of place, or heats, and is still kept running in this manner, while it would be both a saving of time, power, and material to have it put right and kept so.

Men are employed who are incapable of understanding the mechanism they undertake to run, they have no interest beyond the fact that they are turning out work. Something goes wrong, and they twist and yank until disgusted, and then call on the helper to do the necessary repairs. Such things are not in accordance with progressive ideas. Machinery costs money, and requires care and attention to keep it in good working order, and the man or concern who will be the most successful will not neglect the health, so to speak, of the machinery that helps to make his business a success.—A. B. GRIMES in *Manufacturer's Gazette*.

### CARDING ENGINES AND THEIR CLOTHING.

*A lecture given at East Hampton.*

BY MR. JNO. BUTTERWORTH, F. R. M. S.

**Q**F all the machines required in cotton spinning, I think the carding engine stands at the head in point of importance. The errors of all other machines in the card-room can be corrected by taking the work back to the mixing, but had work from a carding engine might as well be sold as waste, it spoils everything it touches. No machine has deviated less from the original lines upon which it was constructed, and while we are compelled to admit that improvements have been made in it allowing a greater production, these improvements cannot be said to go beyond the more accurate fitting of the principal working parts which it now receives at the hands of the maker, together with more careful clothing. Machine makers long ignored the fact that cylinders and doffers were rarely ever true when they left the lathe, till the plan of passing card fillets under an emery disc by the card maker, to render all the teeth of one uniform length, proved them to be so. Now no cylinder or doffer is considered to be true enough till it has been ground up by an emery disc. The more accurate system of blocking up unavoidable spaces, together with the gain in card wire by the more accurate making of tail ends, has lessened waste and added to the production. I am not here to-night to sing the praises of any make of card or card clothing. I only wish to raise a few queries that have passed one's mind while watching the progress of many reported improvements. It is well known that Oldham has stuck very tenaciously to the roller and clearer card, and for the great bulk of the west trade it is undoubtedly the right card to use, and, while many are changing roller and clearer cards for revolving flats, there are old firms who could not be induced to change on any account. The reason why people rush to change from the roller and clearer card to revolving flats is not far to seek, the reputed production of

#### THE REVOLVING FLAT CARD

is the great inducement. Seven hundred pounds per week is not thought by some to be too great a production for a single roller and clearer card, and 1,000 lbs. per week for a double one, but we are asked by some makers of revolving flat cards to expect 1,000 to 1,100 lbs. per week from the latter card, and are told that this card will produce cleaner, stronger, and more yarn in proportion to the roller and clearer card, (the conditions being equal) which results from the difference of carding surface between the two. The fact that the yarn is stronger, which can only result from the fibres being laid straighter, and, of course, bound more compactly together, ought to convince any one that the yarn from each card must be differently constructed, hence, is it wise in all cases to change the one to the other? Under favorable conditions, single revolving flat cards have long been capable of a production of 700 lbs. per week. I was taken to task for making this statement at a bi-annual meeting of the Manufacturers' Association, Boston,

U. S., in 1884, and I was credited with having become Americanized very soon after arriving there. I was able, however to prove my point, so I had no fear, the result was that we had some half-dozen American manufacturers over here the following summer, three of them visited me while they were over, and I understand that considerable business has been done with them in cards since the above date. I have mentioned this circumstance, because I wish to point out that the above production was from cards that were made on the old plan with a flexible bend set at three points. I see no reason why a single revolving flat card, 50 by 45, should not produce from 700 to 800 lbs. per week of good carding, out of suitable cotton, but to expect them to do so out of any class of cotton, is to expect more than they will do. I know of cases where cards have been started at 900 to 1,000 lbs., but after a few months' working, they had to be cut down to a little over 600 lbs. per week. The increased production of the revolving flat cards has been largely got out of the increased number of carding points gained by making the flats narrower, and getting a greater number to work at one time, but carding power thus gained is largely counteracted, as well as the cleaning power being much lessened, by the increased speed of the doffer. When I was learning to card I was given to understand that carding took place in any part of the carding engine where the points of the wire stood facing each other, no matter whether those points receiving the fibre stood still, moved with, or moved against, those that delivered the fibres to them. Carding, however, is increased or diminished in proportion to the speed at which the points receiving the fibre travel from those that deliver it, and when the surface speed of the doffer reaches upward of 100 feet per minute its carding power is not very great. I am favorable to any improvements in machinery that will lessen the cost of production without damaging the finished article, but I confess I am suspicious of the enormous production claimed for revolving flat cards. I do not think it is proved yet, and it will take a length of time to prove it, so we must watch and wait. If you ask what the grounds are of my doubts, I answer, it is the quality I question. I am certain that cheapening productions covers a lot of sins. I cannot reconcile clearness and straightness of fibre in a carded silver that is hurried through at the speed it has to be against that of a moderate production, and production that is gained in any department at the sacrifice of the quality of the finished article may suit the exigencies of the moment, but it is unsound policy. Three objects are aimed at in present make of revolving flat cards, first, increase of production; second, the uniform accuracy of a certain working distance of all the card wire; and third, the easy adjustments to all the working parts. The accomplishment of the first depends on the successful carrying out of the second. The third is open to question when dependence is placed on setting by dials owing to the wear and tear of the several working parts not being uniformly equal. It does not come within the scope of this paper to describe the manner in which these objects are carried out. I have not thought it necessary to go into any description of the roller and clearer card. It is well understood in Lancashire, its place in the economy of spinning is more in the production of wefts, and those who understand it will not fail to recognize its merits. I must now pass on to

#### THE QUESTION OF CARD CLOTHING,

in which there has been many changes during the last twenty-five years. I only wish I could say that every change has been an improvement. The foundation of all card clothing originally was leather, and it served its day very well, but I fear, if it was the only material used to-day, there would be loud complaints, as many of you are well aware that leather is a very variable material. The foundation of cotton cards as at present made consists of three kinds—the first is made of several layers of cotton cloth, or calico, cemented together by a flexible cement; the second is made up of cotton cloth with a layer of india rubber, all of which are cemented together with the above cement; the third is made up of woolen, cotton, and sometimes linen cloth, cemented together as before. All these cloths have their respective merits, but none of them can be exclusively recommended for every class of work. What is required in a foundation for cards is a uniform solidity during the life of the card, allowing during the same period the same flexibility to each tooth in all cards that have to cover

cylinders, doffers, rollers, and clearers, as well as flats. Takerins and feed rollers are now being largely covered with Garnet's saw tooth, which is inserted in a spiral groove cut in the roller or takerin, and is known as the metallic covering, or the inserted saw tooth. Before this mode of covering takerins and feed rollers was introduced, they were mostly covered with Ashworth's saw tooth, which was inserted in leather or strong cloth as a foundation. This was an improvement over the old plan of covering takerins, with ordinary round-wire filets that had to be ground with the rest of the card, but it was liable to the same fault that all covering has had (except metallic covering) for takerins and feed rollers, viz.:—the teeth becoming slack in the foundations, which caused them to stand back out of the vertical line in which they had been originally set, hence, instead of taking firm hold of every lock of the fibre, they let much of it go, leaving a greater bulk for the following teeth to carry forward, causing a great amount of chafing to the fibre. This was not the only evil, but it was enough to cause any real improvement to be welcomed, and I do not think many will question the metallic takerin and feed roller as now made is an important improvement upon all that has preceded it. I hardly need remind you that an entirely different foundation is required in this part of a carding engine to that of other parts. The teeth cannot be too rigidly fixed to disentangle the fibre as it is presented to them. Then, again, the Garnet tooth never requires grinding nor dressing as other parts of card do. All card wire that has to be ground should yield to any necessary pressure required in grinding a good smooth point. but the moment it had passed under the emery, the elasticity of the foundation and the wire should be such as to bring back the point of the tooth to its normal position. I may further point out that this flexibility is a great factor in enabling a card to rid itself of the dust and short fibre, during grinding operations, which have become felted between the teeth while carding. We have been told, however, from several quarters, that by adopting any of the several forms of needle pointed wire, of which so much has been said of late, both grinding and stripping would be unnecessary. I am prepared to believe that if ever a true needle point can be made in fine, as well as it is done in coarse wire, less stripping will then be required, and grinding will be unnecessary. All changes that have been made in the form of the card tooth during the last twenty years have been carried out with a view of accomplishing the same results that would be gained if a true needle point could be made, and it would seem a pity that the very modes adopted to produce several imitations of the needle point render abortive the accomplishment of the object intended, which I shall no doubt be able to show.

(To be continued.)

#### DRINK HABIT—EVILS RESULTING THEREFROM.

[Written for BALDWIN'S TEXTILE DESIGNER.]

I am sometimes called upon to preside at temperance meetings and am so well pleased with "D's" thoughts in the last number of the TEXTILE DESIGNER, that I am quite sure if he should be present at a meeting where I had the post of honor, he would be pressed into service or have a chance to confess that he could address an audience best when out of sight.

The progression of the drink habit and the evils resulting therefrom, both to the user and those dependent upon him, were well alluded to and should be productive of thought for all, and more especially for those who desire to become overseers in mills.

My first position in a woolen mill, that of second hand in a shearing room, came by reason of a lay off by one who had been drinking to excess. He was a young man of much promise so far as promotion in the mill was concerned, was naturally a mechanic, could put a shear in order without unnecessary delay, took pride in his work, and was all that could be desired, except now and then, would be incapable of attending to his work, would be, to express it in the term of these latter days, "sick." Living with him in the same town, and personally acquainted for many years, I watched his course. His record was like that of many others. Positions would be obtained through the kindly influence of friends and an earnest desire shown to begin a better life, but it seemed too late for him quite early. Old

associates and bad associations had a firm hold of him, his will power weakened, and step by step he went down until he was unable to obtain even the most menial employment. The last time I saw him was some three years since, when he came into a store and begged with drunken earnestness for a peanut. A year and a half ago there was, (although it seems hard to write it,) a feeling of relief to many when the grave closed over him, as Henry Ward Beecher once said, "the last thing a man can do is to die."

When he was himself he was a kind and genial man, had many warm friends to serve him, one by one they were forced from him, and only his two sisters could be claimed in the hour of his death.

Some years since the mill was in need of a fuller and gigger and I well remember the pleased look the superintendent had as he came one day with a man for me to talk with. I gladly entered into conversation with him and found he had had much experience and in some first class mills. I wondered why a man who had been about a finishing room for so many years should be asking for a subordinate position. I asked about his habits and was pleased with his answer, and soon thought we had a valuable man, until one day he went down town to make some purchases which could not well be made in the evening. As he was gone some time, I went to his house and found him just ready to fall from his chair. A more pitiable sight I never saw than when he looked up to me with the hot tears falling with "I could not help it!" "I could not help it!" He had shown himself to be so competent that not only for his sake but for that of the mill, I desired to see him a reformed man. I labored hard for months, and only gave him up when one day, (and it seems laughable as I think of it although I felt sadly at the time,) he stopped every gig and mill and took all hands out for a treat. He was mastered by trying to drink moderately, and died a drunkard.

With a good many years experience in woolen mills, and interested in temperance work, I could fill a whole number of the TEXTILE DESIGNER with cases, the teachings of which would be the same as those I have sited.

Leaving out the moral and religious part to be considered, I am sure it pays for young men who want to get on in the mill, not to chain themselves down to a habit which hampers so many from succeeding as overseers. As some one wrote in a recent paper for the TEXTILE DESIGNER, important hands in a woolen mill are not sought for in saloons, and other doubtful places. Don't begin with the cup and I am sure you will not have to say with heartfelt sorrow, "I could not help it!" "I could not help it!"

FINISHER.

### MANUFACTURERS' HARD SOAPS, THEIR ADULTERATIONS AND REAL COMMERCIAL VALUE.

BY W. J. MENZIES.

(Continued from page 81.)

The following are a few calculations of cost of various qualities of soap, made by cold process with tallow and different oils:—

#### HARD NEUTRAL SOAP.

150 pounds tallow at 7 cents per pound.....	\$10.50
20 pounds 98 per cent. powdered caustic soda at 6 cents per lb.	1.20
90 pounds or nine gallons soft water.....	0.00

260 pounds of soap costing ..... 11.70  
or say equal to about 4½ cents per pound.

#### HARD STRONG SCOURING SOAP.

120 pounds tallow at 7 cents per pound.....	8.40
20 pounds 98 per cent. powdered caustic soda at 6 cts. per lb.	1.20
70 pounds or seven gallons soft water.....	0.00

210 pounds of soap costing ..... 9.60  
or say equal to about 4½ cents per pound.

#### ORDINARY SOAP WITH COTTON SEED OIL.

100 pounds tallow at 7 cents per pound.....	7.00
40 pounds of cotton seed oil at 5 cts. per lb. (40 cts. per gal.)	2.00
20 pounds 98 per cent. powdered caustic soda at 6 cts. per lb.	1.20
80 pounds or eight gallons soft water.....	0.00

240 pounds of soap costing ..... 10.20  
or say equal to about 4½ cents per pound.

The above is a good servicable soap, lathering freely. If cotton seed oil alone is taken, reduce the quantity of water to six gallons; an excellent soap will be thus produced, but it does not set quite hard when cotton seed oil only is used.

#### PALM OIL SOAP.

100 pounds of palm oil at 6 cents per pound.....	\$6.00
40 pounds of cotton seed oil at 5 cents per pound.....	2.00
20 pounds 98 per cent. powdered caustic soda at 6 cts. per lb.	1.20
80 pounds or eight gallons soft water.....	0.00

280 pounds of soap costing ..... 9.20  
or equal to about 3 2-7 cents per pound.

Palm oil alone can be taken, but unless bleached the color is rather high, which unfits it for some purposes

#### COCOA NUT OIL SOAP.

140 pounds cocoa nut oil at 7 cents per pound.....	\$9.80
20 pounds 98 per cent. powdered caustic soda 6 cts. per lb.	1.20
90 pounds or nine gallons soft water.....	0.00

250 pounds of soap costing ..... 11.00  
or equal to about 4 2-5 cents per pound.

This is a perfectly white hard soap that lathers very freely, and is a good soap for washing silk and fine articles. If required quite neutral take 150 pounds of cocoa nut oil instead of 140 pounds.

It will be seen from the above calculations that about seven-eighths of the cost of pure hard soap consists of the oil or tallow used in its manufacture, the alkali on an average being less than one-eighth part of the cost. The labor—Particularly with the cold process—forms a very small item; it will be evident, therefore, how cheap soap can be made by keeping out the oil or tallow, and adding rosin with silicate of soda, to get in an excess of water. The following are the materials used in the composition of a good commercial yellow soap, and which will give the consumer some idea of the real value of such soap:—

30 pounds tallow (adding 1½ lbs. for glycerine lost.)..	at 7c.	\$2.20
10 pounds palm oil (adding 1 lb. for glycerine lost.)..	6c.	0.66
20 pounds rosin (adding 4 lbs. lost in spent lyes.)....	1c.	0.24
10 pounds liquid silicate soda.....	1½c.	0.15
50 pounds weak lye made from common caustic soda...	½c.	0.25

120 pounds yellow soap costing ..... 3.50  
or about 2 7-8 cents per pound.

As before mentioned the above is a specimen of about the composition of a good yellow soap as sold to consumers. It is easy to calculate the cost of the common qualities by reducing the quantity of tallow or oil, which are the expensive ingredients, and increasing the quantity of rosin, silicate and water.

In concluding these remarks on hard soaps, I would point out that dry soap, or soap powder, often bought by manufacturers for scouring purposes, is even far more adulterated than common soap, as it is simply a mixture of about ten to 20 per cent. of soap with the ballance sal soda and glauber salts. The following is about a fair specimen of a "good quality," of washing powder:—

20 pounds of soap according to previous recipe, 3c. per lb.	\$0.60
50 pounds of soda crystal	1c. " 0.50
30 pounds of glauber salts	¾c. " 0.22

100 pounds of washing powder costing ..... 1.32

These dry soaps are generally sold at a price equal to about fifty or one hundred per cent. above their *real* value, based on the quantity of soap and sal soda they contain. It is often the custom to use liquid ammonia with these dry soaps, as it is supposed to neutralize the effect of the soda used, especially in scouring wool. This, however, is quite a mistake, as it does not do so. Ammonia is undoubtedly a good scourer but a very expensive one, the liquid ammonia generally containing only five or six per cent. of actual ammonia. As far as wool is concerned, pearl ash is better for the purpose, and relatively much cheaper.

From the above particulars it will be quite evident that consumers of soap will consult their own interests by making their own soap, as well as dry soaps or other scouring mixtures.

The adulterations and real cost of potash soaps, which *always* should be used for washing woolens, will be shown in my next article.



**LATEST NOVELTIES.**

*Continued from page 83.*

[Under this heading we shall publish in each issue numerous designs of the latest novelties in the line of Fancy Cassimeres, Worsteds, Cheviots, Dress Goods, Cloakings, etc., the most of which will be taken from actual samples of the latest French and English patterns, which we will be regularly supplied with from the pattern house of E. Lehmann, Paris. In the examination of these designs for publication, we give the number of threads in the warp, the kind of yarns, and the picks per inch as shown by the finished goods; and in most cases give the width to lay in the reed.

We deem it unpracticable to attempt to give directions as to the size of yarns and other particular details, for the reason that probably not one mill in twenty would have the stock or facilities to produce them as given. We have, therefore, left that part for the superintendent, designer or boss weaver to arrange to his own liking and as will be adaptable to his stock. The basis as to the number of threads in warp, picks per inch, weaves and drawing-in drafts can be relied upon as correct: bearing in mind to commence in all cases to draw in as the threads are laid down in the dressing pattern, and in the drawing-in draft each black character (■) represents a thread to be drawn on the harness No. it stands in line with. Single width goods is the standard adopted in each instance.

If special information should be desired on any of these designs, it will be given under the heading of "Queries and Replies," in the next issue; or, if a private answer is desired, enclose postage for reply, and all such communications will receive our careful attention providing, however, that those requiring such information are on our subscription list.—Ed.]

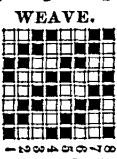
**PATTERN No. 92.**

This pattern represents a common stripe for trouserings; made of medium stock and a good thing for small country mills to make.

**WARP PATTERN.**

- 4 light gray (20 black to 80 white).
- 6 dark brown.
- 4 light gray. } 20 threads
- 4 dark brown. }
- 6 dark brown.

36 threads in pattern; 1152 in warp.  
Reed, No. 8, 4 threads in a dent.  
Filling, black; 36 picks per inch.



**PATTERN No. 93.**

A fancy oblong-check for suitings; made of pretty fair stock, and good thing for small mills to run on.

**WARP PATTERN.**

- 1 dark brown.
- 1 dark red.
- 10 light gray (10 black to 90 white).

12 threads in pattern; 1248 in warp.  
Reed, No. 9, 4 threads in a dent.

**FILLING PATTERN.**

- 2 light gray (same as in warp).
- 13 dark brown.

15 threads in pattern; 40 picks per inch.

**WEAVE.**

The same as No. 92.

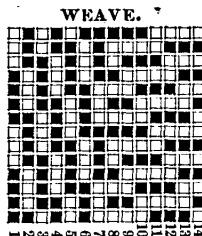
**PATTERN No. 94.**

A fancy worsted stripe for trouserings.

**WARP PATTERN.**

- 15 black, 2-60's.
- 1 seal bro., 2-60's with wht. silk. } 48
- 1 seal brown, 2-60's. } thrs.
- 1 seal bro., 2-60's with wht. silk. }

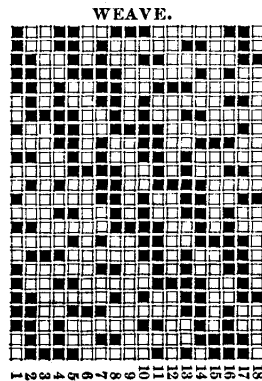
63 thrs. in pattern; 3024 in warp.  
Filling, seal brown, 2-60's; 100 picks.



**PATTERN No. 95.**

A fancy double diagonal; will make a good thing for suitings either in worsted or fine woolen yarns; warp one color, and filling another or both the same.

Warp, 2700 threads. No. 12 reed; 60 picks per inch.



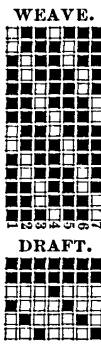
**PATTERN No. 96.**

A combination stripe in worsted yarns, designed for trouserings.

**WARP PATTERN.**

- 14 black.
- 7 dark purple.

21 threads in pattern; 3234 in the warp.  
Filling, black, 75 picks per inch.



**PATTERN No. 97.**

A fancy worsted, basket effect and stripe composed of a corkscrew weave, the filling pattern being produced by the reversing of the weave, thus producing the effect. It is a handsome thing for suitings.

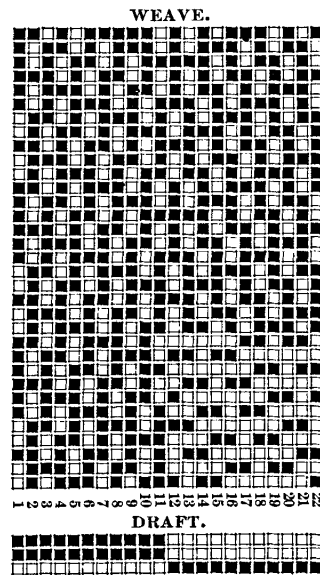
**WARP PATTERN.**

- 1 black worsted & red silk. } 11 threads.
- 1 black worsted. }
- 1 black worsted & red silk. }
- 22 black worsted.
- 1 black worsted & green silk. } 11 thrs.
- 1 black worsted. }
- 1 black worsted & green silk. }
- 22 black worsted.

66 threads in pattern; 2640 in the warp.  
Reed, No. 16, 5 threads in a dent.

**FILLING PATTERN.**

The same as warp pattern, commencing with 22 black threads first. 90 picks.

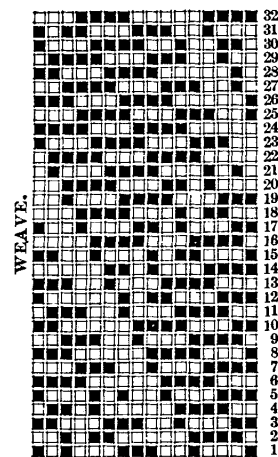


**PATTERN No. 98.**

A very tasty diamond effect for suitings; although it requires 32 harnesses to weave it according to sample, and worsted yarns, yet, we cannot see why the effect would not be very good if the weave was transposed and wove with 16 harnesses, warp method running as filling and filling as warp, with fine woolen yarns.

Warp, 1800 threads of smoke drab; draw into No. 12½ reed, 4 threads in a dent.

Filling, 1 black, and 1 brown, 72 picks.



**PATTERN No. 99.**

A fancy thing for ladies' dress goods; made as follows: dress 18 threads of single blue worsted, and 2 threads of black cord made 6-ply from same size of yarn as that used in warp and twisted very hard and smooth. Calculate for 48 threads per inch finished goods. In reeding put one cord in a dent, fine threads two in a dent.

Filling pattern, the same as warp; with 40 picks per inch.





**PATTERN No. 100.**

A fancy check for suitings, the weave giving it a zigzag appearance and is a good thing to make with common woolen yarns.

**WARP PATTERN.**

- 23 dark brown.
- 1 red and green D. & T., each 6 run.
- 23 black.
- 1 orange and green D. & T., each 6 run.

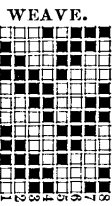
48 threads in pattern; 1344 in warp, of 3 run for single yarn.

Reed, No. 9½, 4 threads in a dent.

**FILLING PATTERN.**

- 1 green and red D. & T., each 6½ run.
- 23 dark blue, 3¼ run.
- 1 red and orange D. & T., each 6½ run.
- 23 black, 3¼ run.

48 threads in pattern; 50 picks per inch.



**PATTERN No. 101.**

A light weight fancy worsted for suitings; it being wove with 23 harnesses and 46 bars of chain, carries it out to a perfect repeat, thus avoiding the over-shot of three threads as is usually the case in this style of weaving.

**WARP PATTERN.**

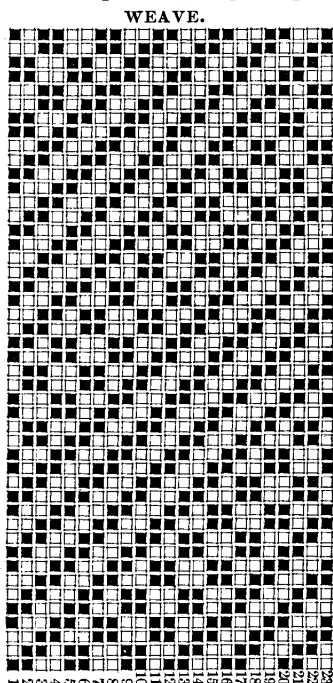
- 1 black worsted and blue silk.
- 1 black worsted.
- 1 black worsted and orange silk.
- 1 black worsted.

4 threads in pattern; 1840 in warp.

**FILLING PATTERN.**

- 1 black worsted and orange silk.
- 3 black worsted.

4 threads in pattern; 60 picks per inch.

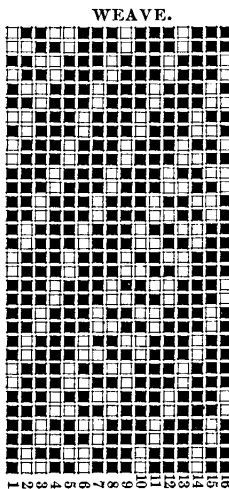


**PATTERN No. 102.**

A fancy three-cord diagonal, and as it produces a warp face, is a good thing for

using good stock in the warp, and a cheap grade in the filling. It can be made in any color desired or used for piece-dye.

Warp, 2400 threads; draw into No. 16 reed, 4 threads in a dent. Put in all the pick it will take.

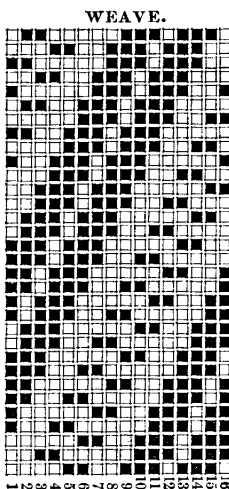


**PATTERN No. 103.**

This represents a fancy two-cord diagonal with warp and filling showing equal on the face, and is a good thing for worsted coatings.

Warp, 2400 threads, black worsted.

Filling, either dark blue or seal brown; would also look well run in pick and pick, 75 picks per inch.



**PATTERN No. 104.**

A handsome stripe effect for suitings and a good thing to make with common woolen yarns, as follows:

**WARP PATTERN.**

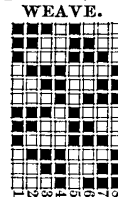
- 1 thread brown.
- 1 " green.
- 2 " brown.
- 4 " gray (60 wht. to 40 blk.)
- 4 " brown.
- 4 " gray (60 wht. to 40 blk.)

16 threads in pattern; 1920 in warp of 3½ run. No. 13½ reed, 4 threads in a dent.

**FILLING PATTERN.**

- 3 black.
- 3 brown.
- 1 black.
- 1 green.
- 1 black.
- 3 brown.

12 threads in pattern; 66 picks of 4 run.



N. B.—This office has the agency for the patterns of E. LEHMANN, Paris. Packages of 200 assorted samples of the latest Designs sent on receipt of \$7.50.

The wool clip of Southern Utah, this year, will exceed that of last season by 5000,000 pounds, and will probably reach 4,000,000 pounds.

A great deal of talent is lost in the world for the want of a little courage. Every day sends to their graves a number of obscure men who have only remained obscure because their timidity has prevented them from making a first effort.

A large steel company in Chicago has decided to substitute crude petroleum for coal. This oil will be used as fuel for thirty-six large boilers, and if everything goes well an attempt will be made to use the oil in the heating of ingots and blooms. The oil will be forced into tanks and supplied to the boilers by the force of gravity.

In a carefully compiled table of labor statistics in the United States, France, England and Germany, it appears that labor of all kinds, skilled and unskilled, is paid over one hundred per cent. more in the United States than in any of the other countries named. In some cases—notably in the wages of women—the difference is over three hundred per cent. in favor of the United States.

**HOW CALICO GOT ITS NAME.**

The derivation of this word is very interesting as of such an ancient date is its origin. Mrs. Leonowens says in her "Travels in India" that in the year 1498, just ten months and two days after leaving the port at Lisbon, Vasco da Gama landed on the coast of Malabar at Calicut, or more properly Kale Rhoda, "City of the Black Goddess." Calicut was at that period not only a very ancient seaport, but an extensive territory, which, stretching along the western coast of Southern India, reached from Bombay and the adjacent islands to Cape Comorin. It was at an early period so famous for its weaving and dyeing of cotton cloth that its name became identified with the manufactured fabrics, whence the name calico. It is now generally admitted that this ingenious art originated in India in remote ages, and from that country found its way to Egypt. It was not until the middle of the 17th century that calico printing was introduced into Europe. A knowledge of the art was acquired by some of the servants of the Dutch East India company and carried to Holland, whence it was introduced in London in 1676. It is surprising for grown-up children, as well as our young folks, to learn that "Pliny as early as the first century mentions in his natural history that there existed in Egypt a wonderful method of dyeing cloth." Calico cannot be despised when it boasts of such antiquity. The shoddy make-up of the present day may look down with contempt upon the calico dress, but what kind of lineage has it? the calico can proudly ask.

### COLORING AND BLENDING.

**A**SSUMING that the principles which should be observed in the blending of textile fibres to be fully understood so far as solidity and proportions are concerned, and taking the examples of mixtures produced by simple black and white, the student may proceed to still further variations in order to gain different effects in shades. For instance, four parts white, two black and half crimson. The tone given to this mixture by the latter item resembles a kind of an iron gray. While it is easy to understand that, were not the proportions strictly accurate as to the lengths of staple, or were they to vary in succeeding blends, the same ratio of parts would result in varying effects as to the hue imparted. Again, say four white, three black, and one yellow; four white, four black, and one yellow; three white, three black, half yellow; four black, two white, and half scarlet. From these examples, it will be seen how the black and white have been varied in the gray, in order to provide the proper foundation for the reception of the lively colors yellow and scarlet. No doubt that before these particular results were obtained, because they are practical compounds, several experiments would have been tried and modifications made as to the amount of black, white, yellow, and scarlet before the ideal was realized. For the student who is anxious to succeed in this direction, and it is an all important one, and becoming more so in obtaining choice effects in fabrics composed of mixture yarns, he may experiment with great advantage upon small portions of materials at a small cost and not much labor, except to the extent which he may go in gaining all the diversity possible.

It would be wisest to begin with the mixtures from black and white, say in eight parts given in our last issue, starting with seven parts black and one white, six black and two white, and so on, so as to obtain seven graduated shades, which afford better scope for inspection. If animal wool be not procurable or too costly, a few pounds of white cotton wool will supply a good substitute, one ounce of which will contain many fibres and a little weight suffice for the experiment. There are small bottles of dyes to be obtained, of any shade required, and as many lots dyed to as many shades as intended to be applied. However, take 1 lb. of white cotton and dye one-half black, weighed in small scales; after drying by a moderate heat and allowed to cool, operations may begin by taking any proportionate parts in ounces or half ounces, as most handy, and forming a mixture of them by means of large hand cards, combing the wool in all directions until an even effect is obtained. No oil must be used with the cotton in this process, which has the effect of deadening the fibre to some extent, and interferes with their free working. After sufficient work, strip off the wool from the cards and flatten as evenly in substance as possible, and then place beneath a cold pressure for some hours. When sufficiently firm, cut into square or round "bats" of about 2 in. diameter, and in the case of a gradation of shades, gum them upon a sheet of brown paper in their relative order, from the lightest to the darkest, or *vice versa*. Of course, when off the same materials and in regular proportions, there should be an equal depth of shade between each sample, and should intermediates be required between any two, it is an easy calculation, in simply black and white, to gain the desired result.

This is a profitable as well as a practical exercise, as it is attended by an educational influence as to the distinctive character of the different shades and how each is modified by its contact with others of a contrary complexion, and the character of the ensemble in mutual association. It should be understood that the brightest mixtures are obtained from black and white when they are pure in their respective compositions, and not changed with opposing hues among themselves, and especially when a fancy shade is added to them, when the latter is better able to render its complementary shade visible among its associates. To illustrate this matter more fully, place a gray thread composed of equal parts of black and white upon a sheet of white paper some 3 in. or 4 in. in length or square, and a long the side of it place a red thread, the complementary shade of red being green, the gray will appear tinged with green, or appear as a greenish gray. Again, substitute the red for the green in contact with the same gray, and the latter will assume a bronzed appearance, or approaching a brown gray, be-

cause reciprocally red is complementary to green. Yellow, placed by the side of the same gray will cast its shade of complementary violet upon it, and the reverse by changing the shades in contact and so on with all the primary shades; that is, supposing that the black and white and fancy colors be pure in their composition and any foreign color be absent from them, which affect the reflection of all. These examples are in accordance with the teaching of M. E. Chevreul, and which may be confirmed by the experiments now referred to. From this, it will appear that the successful blending of mixtures for certain effects demands an acquaintance with the sciences of color, with all the varied influences which heighten or deepen, or modify each other when brought into juxtaposition.

For instance, as per the authority just mentioned, a bluish gray will appear still more so when placed in contact with orange because blue is the shade cast off by the orange, so that if the gray is not required to be too blue, less blue must be added to the gray when intended to be accompanied with orange, and the same with regard to other combinations. Although we are now speaking of threads being placed in contact, yet the same principle will hold good with respect to the fibres intended for mixtures, that some knowledge is required as to how one and all will influence each other in their association. It may be remarked, again, that mere proportions as to weight and length of staple are not sufficient of themselves to determine the kind of mixture for which one is aiming, but that proportions must be governed by the character of the composition desired, the influence of the various factors which are required to make it. It is one thing to produce a mixture from known proportions and given shades by recipe, when all the particulars are the same and from the same lots of materials, which is but mechanical, and it is quite another to concoct a given shade when those particulars are not known, and with different materials, and with no knowledge of the power of colors brought into combination, particularly as to the amount of lively shades to be admitted for an ideal relief. We will give a few examples of pretty mixtures produced by small portions of fancy colors, which are now represented before us in bats—viz: five parts black, half orange, half crimson; six black, one orange, one crimson; six claret, one orange, one lilac; six brown, one orange; three drab, three brown, half crimson; four white, three brown, half orange, half crimson; three drab, three white, one orange; four white, two drab, one crimson. These carefully manipulated, according to the principles laid down for blending, will produce a range of mixtures of good value, and may be used in many ways, according to design.—*Textile Manufacturer.*

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