For the Scientific American.

Argument for and against the use of Lickerins upon Cotton Cards.

Having noticed in some of your last numbers some articles by W. Montgomery, in relation to Cotton Factories, which were quite interesting to some of our manufacturers down this way—for the gentleman has written very sensibly upon the subject—has induced me to send you this paper upon a mooted question, in the hope that Mr. M. or some others of your correspondents will give their views upon the subject. If Mr. M. should notice the thing will he—if in possession of the facts—tell us whether Lickerins are used for *single cording* in England or Scotland.

Manufacturers in this country have been divided in opinion with regard to the utility of the Lickerin; some stoutly contend that they are of no sort of advantage whatever; and others admit perhaps a single point, viz. that they protect the main cylinder. There are various mills running, some with, and some without the Lickerin. A large mill at Salmon Falls, N. H. with 100 Cards *without* the Lickerin—also the Prescott Mill at Lowell, Mass., with 144 Cards. In this city the Amoskeag Manufacturing Co are running 120 cards, single carding—and the Lickerin is used. The Amoskeag Co.'s goods speak for themselves all over the country. Let us endeavor to look into this subject in the strong light of *common sense*—the best kind of sense in these matters. In order that we may arrive at a just appreciation of the argument it may be well to look into the nature of the working ot the carding machine. The object of running cotton through the card, is to separate the short fibres (waste) from the long ones, to lay them side by side and as free from dirt as possible. That is the whole it.

Those who condemn the Lickerin say "the fibres are laid straiter when the cotton is carried immediately from the feeding rollers to the cylinder, its periphery speed being so much greater than that of the Lickerin it therefore teasels the cotton from the rolls better; but, when the Lickerin is used, the cotton in being transferred from it to the cylinder, somehow or other *gets* shockingly turned topsy-turvy and is less perfect than without the Lickerin." Part of this argument may be true particularly so in factories where the Lickerin is driven at too great speed—which is the case in many places. A cylinder 36 3-4 inches diameter, 115.45 inches in circumference, or 9.62 feet, driven at 112 turns per minute, gives a periphery velocity of 17.95 feet per second. A Lickerin driven (as it is in many mills) 4 turns to one of the cylinder, 7 1-2 in diameter, 23.56 inches circumference, has a periphery velocity of 14.65 feet per second. Here we have but about 3 feet per second difference in the two cylinders. No wonder then with such adjustment of the speed, it the machine should work better with no Lickerin at all. A still worse state of things would be obtained if there were less difference between the speed of these two cylinders; the web as it comes from the doffer would look still more imperfect and cloudy, the fibres every way but straight. The jumble would be complete if both cylinders were driven the same speed. A better adjustment of the speed would be to drive the Lickerin 2.40 to one of the cylinder. Perhaps it will be said this is too slow for Lickerins. Let us look into this. Feed rolls for cards—in this country—are generally 1 3-8 inch diameter—supposing they make 3 revolutions per minute, about 3-16 inch of the length of the lap is carried through per second: thus it appears more than 8 feet of Lickerin surface is appropriated to teasel off 3-16 inch of the lap, with only 268 revolutions of the Lickerin.—If cylinders are *well balanced* they can be driven faster, say 120 or 130 and the Lickerin in proportion. But the objector may still urge that the Lickerin does not strike the cotton with sufficient violence to throw the seeds and dirt *drawn* out of the work. Very well, but we run the risk of throwing off good staple also. This is the last thing, however, that ought to be said by the stickler for "no lickers" when he is quite willing to have *all* the dirt carried *up* into the work, and *none* carried *below* by a Lickerin. It is deemed by logicians a specimen of unfair reasoning when—merely for effect—one arrays against a position an idea in which he does not believe himself. Another point of advantage in using the Lickerin is, that the cylinder does not fill so heavy with waste. Practical carders must have noticed that the *Finisher* cylinders—without Lickers—are loaded with waste much more than the *Breakers*. The cause is obvious. The periphery velocity of the cylinder being so great, the fibres are snatched from the rolls with such violence, that they are thrust down into the very roots of the teeth. Now then of course the cylinder would fill up very soon with clean cotton, matted in like felt-work and can actually be torn off in flakes. Of course it is not desirable to have the card fill up so, and with long staple and matted in so hard that no power can lift those fibres and bring them in contact with the top sheets or doffing cylinder. The very reverse of this state of things is true when a Lickerin is used. Here the fibres lie more upon the points of the teeth so by the circulation of the air between the sheets, and by the centrifugal force the fibres are readily brought into contact with the top-cards and so the process of carding goes on.

Let us recapitulate the favorable points.

1. The Lickerin protects the main cylinder from injury and preserves the keen edge longer; a thing very desirable in good carding.

2 Less waste is made for obvious reasons above stated.

3. Throws off considerable dirt that would otherwise go into the work.

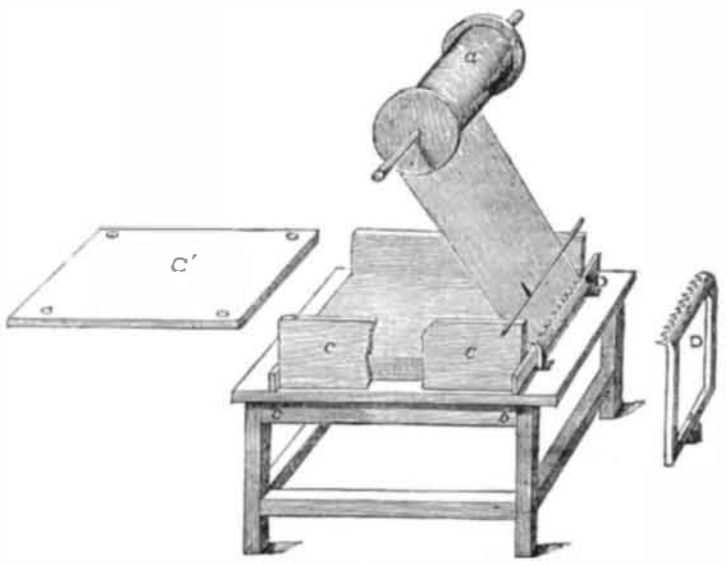
There is but one possible argument against the Lickerin, that is a supposition that the staple is laid straighter without it. But even this is not a fact when the Lickerin is driven at a proper velocity.

There can be no question but—if the above reasoning be correct—it would be an object, *as a matter of actual economy*, to use Lickerins on Finishers, for double carding.

Yours, &c. E. B M.

Manchester, Conn. May 15, 1848.

RUG WEAVING.



This engraving shows another mode from that described in No. 34, of obtaining a body of threads or yarns into a box in order to allow of a succession of slices or surfaces being cut off to form nap fabrics. It consists in what may be called a folding machine, whereby a warp either of one color or intermixed colors, according to the will of the party, and depending on the description of napped fabrics it is designed to produce.

a, is a warp roller on to which the threads are beamed. *b b*, is a table, and C, part of a box or case in which it is desired to pack a quantity of threads or yarns, and C, to the left, is the cover of the case. The warp is made fast to a rod which is at one end of the case C C, and is then drawn evenly to the opposite end of a case and a rod is then laid across the top of the warp. The warp is then taken back to the other end of the case C C, and another rod laid on till the warp is folded and the case is full, the rods being of such length as to protrude beyond the end of the case, and in order to pack the whole closely the rods are pressed down by a weighted instrument D. When a number of layers of the warp have been folded the lower rods may be successively removed to allow the layers to pack more close together, and by this means a body of threads will be packed in a box from which may be cut a succession of slices, each slice forming a napped fabric.

When an extensive surface is required to be napped, the cases may be made of such forms as will when combined together produce such shapes as required and place the patterns, or parts of the pattern, in the proper place, which arrangement will allow of tha patterns or ornamental designs (which require the most time in packing) being worked into separate boxes or cases, and the threads or yarns which are to form the ground may be in separate boxes or cases C.

Whatever may be the course pursued in obtaining bodies of yarns or threads in boxes or cases, as above explained, the fibres at the end of which may protrude, should be carefully shaved or cut off evenly, and India rubber or other suitable cement, is to be laid on to the surface of the fibres, and permitted to dry sufficiently before the ram or piston is caused to force a quantity equal to the length of the desired nap from the case C. When sufficiently dry, and on examination the cement appears to be complete over the whole surface, the piston or ram is to force out of the case or box C, a length equal to the length of the nap; when that quantity is to be cut off with a sharp knife, or other suitable instrument and the ends of the yarn which is in the case or box, are to be again coated with cement, and so on till the whole is cut up into slices, which may be afterwards applied by cement to other canvass surfaces of any shape or form desired.—Gilroy.

Talent always worth a Price.

No men are more justly entitled to fair prices, than truly qualified and competent teachers. And this, not barely because of the value they give in retnrn, but because of the great outlay of time and money necessary to prepare for their profession. Some teachers have spent a dozen years in their preparation, and have laid out many thousand dollars, a capital of time and money sufficient to have made them rich, in merchandize, or at any mechanical art. Few persons can estimate the value of things, where results are produced with ease, and in a moment. They must see the labor performed. Most can readily believe that a railroad, a canal, or a ship, is worth all the money asked for it, but they cannot understand why a painting or a statue, should be held at many thousand dollars. Nor can they be amazed that Paganini should expect twenty guineas for a single tune on the violin? A plain, but frank-hearted and sensible farmer, once called at the office of a celebrated chief justice in the South, and asked him a very important question, that could be answered in an instant, categorically—yes or no "No," was promptly returned. The farmer was well satisfied. The decision was worth to him many thousand dollars. And now the client about to retire, asked the farmer the charge for the information. "Ten dollars," replied he. "Ten dollars!" ejaculated the astonished farmer, "ten dollars, for saying no!" Do you see these rows of books, my friend? rejoined the Chief Justice; "I have spent many years in reading them, and studying their contents, to answer "No." "Right! Right!" responded the honest farmer, "right! I cheerfully pay the ten dollars."

Tricks upon Birds.

There is a singular bird they call "The Adjutant," in India. He performs the duty of a scavenger, devouring offal and punishing the whole family of snakes. He is a huge, grave, long-beaked fellow, with an air rather Dominie Sampsonish than military. Some of the English soldiers used to play sad tricks with him. He would gobble up large bones of beef, or a four-pound loaf; and when he had finished his huge meal, he would mount the highest pinnacle he could find, and stand on one leg like a mutilated statue, while it digested. The soldiers used to cleanse out shank bones of mutton, stuff them with gunpowder connected with a slow match, then throw them to the Adjutant, who swallowed them greedily; but while chuckling over his savory morsel, it would explode and blow him to atoms! Another trick upon the birds was to tie two legs of mutton together by a strong cord, leaving an interval of three or four yards and then toss the rich repast among them, which soon found their way into the stomachs of two of the most active. As long as they kept together it was all very well; but as soon as the cord tightened both became alarmed and took wing, mutually astonished at the phenomena, no doubt. A laughable tugging match then ensued in the air, each Adjutant striving to mount higher than the other, till at last they attained a great elevation. When at length the weaker bird was forced to disgorge his mutton, a new power came into play—the force of gravity—and the pendulum leg of mutton, after some ridiculous oscillations, brought the conqueror down to the earth a greatdeal faster than he wished.

Sting of a Bee.

The ingenious experiments of the celebrated Fostana, demonstrated exclusively, that the venom of the bee is strictly analagous in its nature and mode of operation, to that of the viper. The matter is a thin, diaphenous fluid, retained in vessicles so constructed that they can admit of a ready compression in the act of stinging—during which the poison liquid is forced through the hollow tube of the sting in the same way that the irritating sap of the nettle is ejected through the oculet, or stinging spines of that and other similar plants. The most efficacious remedy I have ever found for the sting of a bee, is simple chalk. As soon as you are stung, apply as much of this substance as you can take upon your thumb nail, in a moist state, and permit it to remain as long as the pain subsides. After this application there will be no soreness, and no inflammation.

China Silk Market.

Mr. Walsh, in one of his letters to the National Intelligencer from France, states that in China the principal silk market is Sou Tchou, a city of the interior, the largest perhaps in the world; for Pekin has but four millions inhabitants, while, if we may credit Mr. Hedde, who visited it, Sou Tchou has a population of five millions within its walls, and ten millions within a radius of twelve miles around. Situated on the great imperial canal, it has ten thousand bridges. Since 1718, when the missionaries quitted it no individual, until Mr. Hedde succeeded, could get ingress. He did so, disguised completely as a Chinese trader.

Velocity of Water.

The velocity which liquids acquire when issuing from an orifice, whether sideways, upwards or downwards, is equal to that which they would have acquired in falling perpendicularly from the level of the fluid to that of the orifice. When a liquid flows from a reservoir which is not replenished, but the level of which continually descends, the velocity is uniformly accelerated; so that an unreplenished reservoir empties itself through a given aperture in twice the time which would have been required for the same quantity of water to have flowed through the same aperture, had the level been kept up to the same point.