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RAIL-ROAD NEWS.

Allegheny Valley Railroad.

The engineers employed to survey a route for this road, from the mouth of the Mahoning to Ridgeway, have made a report that they have examined the route of the proposed road, and estimate that the whole distance by railroad, from the mouth of Mahoning to Olean, would be about 120 miles. This makes the entire length of the new road trom Pittsburg to Olean about 180 miles. They calculate on a viaduct 40 feet above low water over the Mahoning at its mouth, and another v aduct 30 feet in height over Redbank.

The Pittsburg Morning Post says that the Railroad from Pittsburg to Rochester, will soon be organized and ready for a fair commencement. The people of Rochester, and the people on the line of the proposed road in this State, have shown their approbation of this undertaking, and only ask the people of Pittsburg and Western Pennsylvania to meet them at the State line. They will do the rest.

According to Galignani, the Emperor of Russia has just ordered 6,000 carriages to be built for the different railways in his empire, in order to facilitate the conveyance of troops.

Arrowroot in Florida.

A correspondent of the Florida Sentinel writing from Dale County, in that State, gives some interesting information in regard to the manufacture of arrowroot there—a business in which he is engaged himself. The plant from which the article is made is known by the Indian name of "Comta." It is indigenous to the State, and grows throughout the pine-wood. Wherever dug, another and more valuable crop soon and spontaneously grows up. Its manufacture has been going on for seseveral years in the State; but although there are now several mills propelled by steam and water, the writer thinks the business is only in its infancy. With the establishments in operation a large number of people obtain employment in digging up the root, which is a business distinct from the grinding and manufacturing.

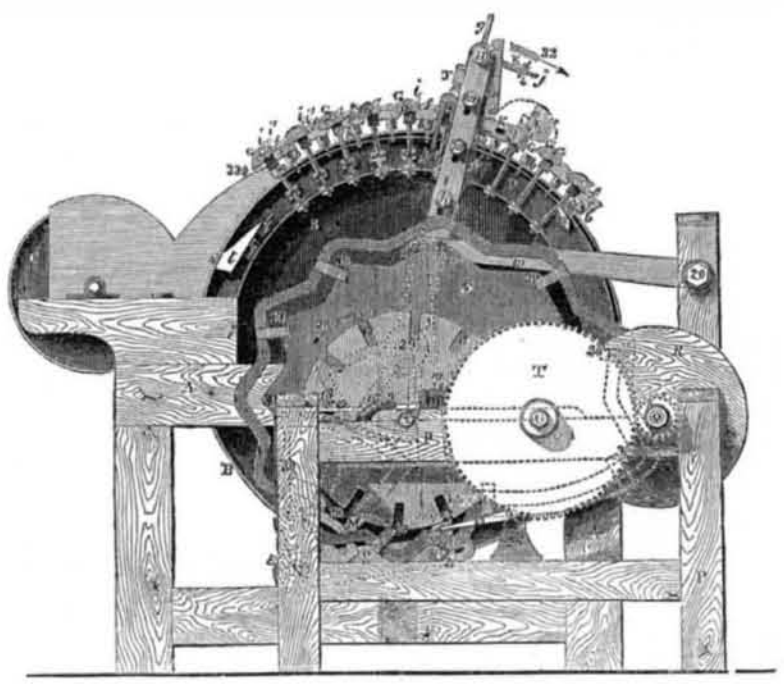
The project of transporting the celebrated Cleopetra's Needle to Hyde Park, to occupy the site of the Crystal Palace, has been renewed.

The steamship Demerara, for the West India line, which stranded on the Bristol river while on her way to Glasgow to receive her engines, had been abandoned to the underwriters. She was insured for £48,000.

This was the largest steamship ever built. Bristol seems to be a great place for making mistakes; witness the Great Britain.

The Swedish Government are about dispatching a ship on a voyage of discovery and circumnavigation with a Scientific Commission on board selected by the Royal Academy of Stockholm.

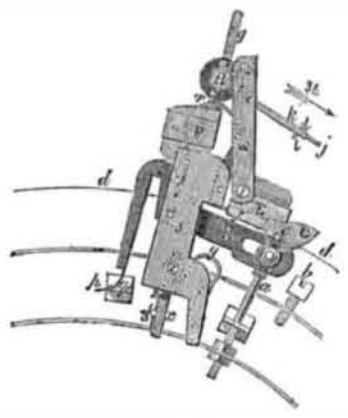
SELF-STRIPPING CARDING MACHINE.---Fig. 1.



The accompanying engravings represent the Self-Stripping Carding Machine, invented by Messrs. Charles D. Wilcox (now deceased), Jonathan P. Sti man, and Amos Stilman, all of Westerly, Washington Co., R. I. In our notices of machinery at the Fair of the Institute, our readers will recollect that we mentioned this machine particularly. Since that time measures have been taken to secure a patent for it, Mrs. Eunice Wilcox, administratrix, acting for her deceased husband.

Figure 1 is an elevation of one end of a carding machine, with the improvements attached. Figure 2 is a side view of the stripper. Fig. 3 is a plan view of the machinery which operates the stripper. Figures 4 and 5 are small parts of the machine, which will be explained hereafter. Similar letters refer to like parts. As there are a great number of peculiar movements in this machine, it will require a long description to give a definite idea of its peculiarities, and at the same time it will demand the closest attention on the part of our readers. The description, therefore, is continued on the Fourth Page.

FIG. 2.



A Self-stripping Carding Machine has been a desideratum; those in common use are stripped by hand. The carding machine represented does not differ materially from other carding machines, except in the mode of attaching the top cards. A A is the framing; B is the main cylinder: D are the arches which support the cards.

This invention relates to certain mechanical means, by which the top flat cards of a single carding machine, or of any number of carding machines, may be stripped, one after the other, in regular succession, while the machine or machines are in operation, without detaching them from the said machine or machines, and without requiring any manual aid—the operation of stripping proceeding during the whole time of carding.

E E are the top cards which are of precisely the same construction as those in common use, but are attached in a different manner, being hinged or jointed by pivots, *c c*, at each end of their front side to the standards, *a a*, which carry them; resting, when in position for operating, upon screws, *b b*, screwed in the arches, but being capable of swinging upwards and forwards, or turning over, so as to lay on the next card in front of it, and present its teeth upwards, (fig. 1), where one of the top cards is in the act of turning over, and fig. 2, where one is represented turned over, the position of the tops or backs of the other top cards being represented on the latter figure by the line, *d d*. Hanging on each of the pivots, *c c*, of the hinges at the end of the cards, is a small tumbler, G, which is divided into two parts, the outer part being visible in figures 1 and 2, and the inner part in figures 4 and 5. The outer part is of nearly elliptical form, and the inner part of nearly the same form, but has a portion of its periphery (indicated by *e* in fig. 4) concentric to the pivot, *c*, upon which it hangs, and has angular projections, *i i'* at each end of the said portion, *e*, (see figs. 4 and 5). The tumbler turns freely upon the pivot, but on being turned a certain d stance in either direction, one of the angular projections will come in contact with either the upper or under side of a part of the plate, *f*, of the hinge, which fits close up to the part *e*, and by means of these projections, the top card, to which the tumbler is attached, is turned over to present its teeth upwards for stripping, and returned to its working position.

It is presumed that the construction of the carding machine is now intelligible, and the description of the means by which the top cards are stripped, the means by which the tumblers are operated upon for turning over the cards, and the means by which the stripping apparatus is operated, will now be described.

The stripping is performed by a comb or flat card, F, which is of the same length as, and suspended above the top cards, its teeth being on its under side, inclining downwards in the same direction as those of the top cards incline upwards, when turned up. This comb is secured firmly by screwed rods, *g g*, to a bar, H, which extends across the top of the carding machine, between two sweeps or swinging arms, one on each side, I I, which are hung so as to turn freely on the ends of the shaft, 29, of the main cylinder. The screwed rods admit of the combs being adjusted at a proper height above the top cards: and it can be still further adjusted, as the sweeps, I I, are made in two parts, screwed together by screw bolts, *h*, which pass through slots in one part. In connection with the comb or stripper is a brush, *j*, which may be made of a strip of leather or any soft material, for the purpose of sweeping off the waste stripped from the top cards. This brush is attached to two arms, *k k*, which hang loosely and turn freely on the bar, H, and is confined between metal plates, *l l*, extending its whole length, which is equal to that of the cards. It is capable, by means hereafter described, of being swung or thrown upwards during the operation of stripping, and brought down into position for sweeping off the waste at a proper time.

The mechanism employed for the purpose of turning over the cards, is attached to a plate J, which is attached to the inner face of the front sweep, by screw bolts, *m m*, which pass through slots in the sweep, and admits of its sliding on the sweep; the plate itself is distinctly shown in fig. 2. A lever, K, working on a fulcrum pivot, *n*, secured in the plate, J, carries a stud, *o*, which is adjustable in a slot, and is caused by movements given to the sweep to operate on the periphery of the outer parts of the tumblers. This lever is operated upon two springs, one, *p*, of which is attached to the opposite end to that where the stud, *o*, is placed, the last named end of the lever being being bent in a hook form, and the end of the spring being bent inwards back of the lever, so as to come in contact at certain time, with studs, *q q*, placed around the front arcs of the frame of the carding machine at intervals corresponding with the distance between the top cards; the effect of these studs is to raise the end of the lever carrying the spring, and depress the stud, *o*; this depression being necessary at certain times, which will be hereafter explained, for the purpose of allowing the stud, *o*, to pass under the tumblers. The other spring, *r*, is of a hook or bow form, and is attached to the plate, J, above the lever, bearing upon the lever at the back of its hook, in a suitable manner, to raise the stud, *o*, the stud being prevented from rising too high by a projection—not shown, but easily understood—at the back of the plate, J.

The plate, J, is connected by a link, *w*, to the front arm, *k*, carrying the brush, or to a short lever or arm appended to *k*. The lower one of the screw bolts, *m*, is turned down at its end to form a stud, *z*, which extends some distance through the plate, J, and on this stud hangs a catch, *x*, which has two notches, 1, 2, in one edge at a short distance apart, either of which is capable of catching on a stationary stud, 3, secured in the sweep. A spring, *y*, is secured to the plate, which acts on the catch to keep it on the pin, and while it is so held the plate, J, will be stationary in relation to the sweep. In figure 1, the lower notch is shown on the pin, 3, that being its position during the entire operation of stripping the cards, the brush being raised, but when the cards are stripped, and the waste is to be swept away, the movement of the sweep brings the upper part of the catch, *x*, above the stud, *z*, into contact with a stop, and releases it from the pin, 3, leaving the plate, J, free to slide on the sweep; the stud, *z*, then comes in contact with the incline, *u*, (fig. 1), and in passing along it draws down the plate, J, and with it the catch. The plate, J, draws down the brush by means of the link, *w*, and by the time the brush is drawn into position for operation, the catch, *x*, passes a stop (not shown), and the spring, *y*, throws its lower part forward, and the notch, 2, which is now opposite to the pin, 3, catches

(Continued on Fourth Page.)

Self-Stripping Carding Machine.

(Continued from First Page.)

on it and holds the plate down, and keeps the brush in position for operation. The incline, *t*, is for the purpose of throwing up the brush again, the stud, *z*, passing upon it after the waste is swept from the cards; no stop is shown in connection with *t*, to release the catch as it can be dispensed with.

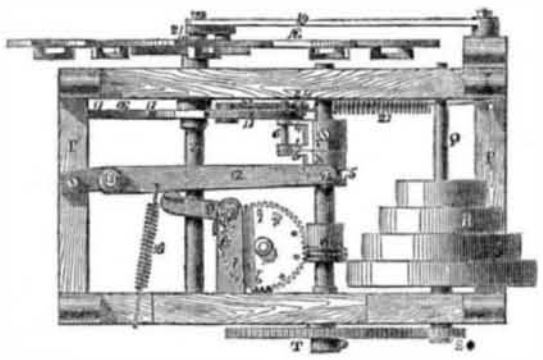
The operation of stripping, and all the operations connected with it, are performed by the movements of the sweeps, I I; the means by which these movements are produced will now be described:—

Attached to the sweeps or to their hubs are toothed sectors, L L, in dotted lines, figure 1, which gear into other toothed sectors, M M, secured upon a shaft, N, below the main cylinder; these sectors are shown. All the mechanism which has now been described requires to be attached to every carding machine to which the improvements are applied: but the remaining portion of the mechanism which is yet to be described, will serve for as many carding machines as can stand in one line, if their shafts, N, are all connected, and may serve for a still greater number by adding gearing to give the necessary motions to the shaft, N. The sectors, M M, receive their motion through a lever, O, which is secured upon their shaft, the motion being communicated to the lever by a train of mechanism upon a frame, P P, which is distinct from the frame of the carding machine; of this train of mechanism, Q, is the driving shaft, receiving motion through a band running over the pulley, R, and communicating the same through a toothed pinion, S, and wheel, T, to a shaft, U; on this shaft is secured a boss, V, having two arms, 4 4, and also an endless screw gear, W; and fitting loosely on it there is a boss, X, having one projecting arm, 5, to which, parallel with the shaft, is secured a stud, 6, which passes through holes bored in the arms, 4 4, and causes the boss, X, to revolve with the shaft; this stud, 6, when the bosses are close to each other, projects beyond the back face of the fixed boss, V. The endless screw gear, W, gears into a toothed wheel, Y, on a vertical axis; this toothed wheel carries on its upper face a number of vertical studs, 7,7, corresponding with the number of cards in the machines. Each of the studs, in its revolution with the wheel, comes in contact with a stud, 8, secured to one end of a bent lever, 9, whose fulcrum, 10, is in an arm, 11, secured to the front top rail of the frame. The opposite end of the lever to that carrying the stud, 8, bears against the side of a lever, 12, which works on a fixed fulcrum, 13, and is furnished at its end with a pin or stud, 14, which fits in a groove, 15, in the boss, X. A spring, 16, is attached to the lever, 12, and to the frame, which always keeps it forward, and slides the boss, X, on the shaft, U, so as to bring the end of the stud, 6, within the back arm of the fixed boss, V, and leave none of it projecting through excepting at such times as the studs, 7, 7, are bearing upon the stud, 8, when the tension of the spring is overcome and the lever, 12, is forced back by the bent lever, 9, so as to slide the boss, X, forward, and cause the stud, 6, to project beyond the back arm of the fixed boss. At a suitable distance from the shaft, U, and parallel with the said shaft, there is a shaft, Z, which carries a circular disc, Œ, having a number of slotted openings, 17, 17, in its periphery, the number of the said slotted openings being two more than the number of cards in the machine or machines. Upon the same shaft, Z, at the extreme back end, outside the frame, P P, there is a cam, Æ, in which there is a slot extending all round, and in this slot works a stud, 18, which is secured in one end of an arm, 19, whose opposite end is hung on a fixed pivot, 20, secured in a post of the framing. The stud, 18, is connected by a rod, 21, to a stud, 22, which is secured, but adjustable in the lever, O, on the sector shaft, N. In the slot in the cam, Æ, there are a number of undulations or steps, the number being one more than the number of cards on the machine or machines, and the said undulations or steps being of suitable form to give the required motion through the stud 18, rod, 21, stud, 22, lever, O, and sectors, M M and L L, to the sweeps to turn over or open, strip, and close every card in succession—to perform which there is one undulation or step, 30, for every card, and afterwards to return the sweep ready again for commencing operation, to perform which there is one greater undulation or step, 31; the latter undulation or step is shown by dotted lines, as are also all parts of the slot that are concealed. The cam, Æ, receives a part of a revolution every time one of the studs, 7, on the wheel, Y, comes into operation on the stud, 8, of the lever, 9, and causes the stud, 6, to move backward, as every time the stud, 6, is forced forward it is brought, by the revolution of the shaft, U, into one of the openings, 17, of the disc, and caused to give part of a revolution to the disc. In order to hold the cam steady at those times when it is not in motion, a pawl, 23, is hung on a pin, 24, in a standard, 25, below the disc, and a lever, 26, is attached to the pawl, and connects by a spring, 27, to the frame; the spring acting on the lever holds the pawl up and causes it to catch in one of the slot openings, until the stud, 6, is coming into operation on the disc; the said stud, 6, previous to entering an opening comes into contact with the lever, 26, and throwing it forward, releases the pawl, and holds it clear of the disc, until it is itself leaving the disc, when the spring, 27, is allowed to operate.

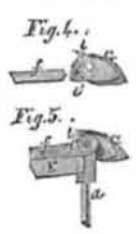
The several parts having been described, and their duties explained, we will proceed to explain the manner in which their operation is conducted.

The carding process is the same as in other

Figure 3.



carding machines, therefore it is not necessary to describe it. We will suppose the operation of stripping to commence with the first card or the one nearest the doffer. The sweeps must be brought to their most forward position, which would be to the left hand in figure 1; the cam, Æ, would then be in such a position as to bring that part of its slot marked X′, to the stud, 18. As it is only necessary that the top cards should be stripped at certain intervals—say once in fifteen minutes—the cam is not required to revolve continuously, but only to move a sufficient distance to cause one card to be stripped, at such intervals as to make each entire revolution occupy that space of time. The driving pulley revolves continuously, and so do the shafts, Q and U, and the wheel Y; but as the stud, 6, is drawn forward by the lever, 12, and spring, 16, except when a stud, 7, is in contact with the stud, 8, under the bent lever, it (the stud, 6) passes the disc, Œ, without touching it, until a stud, 7, acts on the stud, 8, and bent lever, 9, and drives back



the lever, 12, and stud, 6, after which the stud, 6, as it revolves, comes into a slot in the disc, and gives part of a revolution to it and the cam; the distance moved by the cam being just sufficient to make one undulation or step, 30, pass the stud, 18. As the first or rising part of the step passes the stud, 18, it raises it, and the rod, 21, raises the lever, O, which causes the sectors to give motion to the sweeps in the direction of the arrow, 32, in fig. 1.

As the sweep moves, it brings the stud, O, on the lever, K, in operation on the upper side of the front part of the tumbler, G, of the first top card, E, and carries it up or along it, depressing the forward end of it and bringing the angular projection, *i*, to bear under the hinge plate, *f*, causing the top card to be opened or thrown upwards. Almost as soon as the stud, O, commences running up the tumbler and depressing it, the spring, *p*, at the hooked end of the lever, K, runs over the first stud, *q*, on the arch, D, and raises that end of the lever depressing the stud, O, and causing it to throw down the tumbler still further, until at last it (the stud) turns the tumbler so far round as to turn the top card completely over with its teeth upwards and then pass under it. The turning over of the top card is illustrated in figs. 1 and 2; fig 1 showing one of the cards in the act of turning over, and fig. 2 showing it turned completely over; all the cards except the first one fall over on the next card in front; the first one falls on a screw, 33, provided to receive it. The sweep moving on after the card is turned over, carries the comb, F, past it, but owing to the inclination of the teeth it does not yet strip it. By this time the comb has passed the card, the cam has brought the stud, 18, to the top of the undulation or step, and it then causes it to descend the opposite or falling side, which depresses the rod, 21, and lever, O, causing the sectors and sweeps to return a short distance. During the return of the sweep, the comb strips the waste from the open top card, and as soon as it has passed it, the pin, O, (the spring, *p*, of the lever, K, having previously passed over the stud, *q*,) is brought into operation on the tumbler so as to make the angular projection, *i*, act on the upper side of the hinge plate and throw over or close the card. By this time the cam has turned so far, that the stud, 18, will have descended the falling side of the first step, or undulation, and at this moment the stud, 6, will, by its revolution, become free from the slot in the disc, and the disc and cam will become stationary, the stud, 7, will also work clear of the stud, 8, and the spring, 16, will draw forward the lever 12, and draw the stud, 6, forward so that it will not gear into the disc until the proper time for stripping the next card. The waste is deposited on the top of the machine, and on the backs of the cards, and should any hang in the comb it is loosened by the next top card as it passes over it the first time, preparatory to stripping it. When the next stud, 7, on the wheel, Y, acts on the stud, 8, of the bent lever, 9, the cam will make another movement and carry the pin, 18, over the next undulation or step, 30, this will bring the sweeps, I I, and their appendages, including the comb, in operation on the next card, and turn or open it, strip, and return or close it, in precisely the same manner as the first. Thus the operation proceeds, every step, 30, of the cam causing a card to be stripped, until the cards have all been acted upon, and the commencement of the long undulation or step, 31, arrives at the stud, 18. One of the studs on the wheel, Y, marked for distinction, 7′, is elongated in the direction of its revolution, so that it remains in contact with the stud, 8, on the bent lever, 9, for a considerable time, long enough to cause the stud, 6, to operate in two slots of the disc without being withdrawn forward; it being necessary to give two movements of the same length as all the others to the disc and cam, in order to carry the whole of the step, 31, past the stud 18. As the first or ascending part of the step, 31, passes the stud, it raises it, and causes the sweep to move on in the direction of the arrow, 33, and bring the catch, *x*, against the step, behind the sweep, fig. 1, to release the plate, J, and then carry the stud, *z*, down the incline, *u*, which draws down the plate, J, and brings the brush into a position for operating, as described. When the top of the step, 31, passes the stud, 18, the descending part comes into operation on it, and carries it down, depressing the rod, 21, and lever, O, and moving the sectors sufficiently to carry the sweeps back to their first described position, sweeping all the waste on to the cover of the doffer. During the latter part of this last described movement of the sweeps, the stud, *z*, travels along the incline, *t*, and raises the brush. The next movement of the cam is the same as that first described, and the succeeding operations of the machine are repetitions of those just explained.

More information may be obtained by letter addressed to the inventors.

Improvement in Railroad Cars.

We had the pleasure, a few days ago, of examining a new and beautiful car, recently put on the New York and New Haven Railroad, and constructed by Messrs. Bradley & Co., of Worcester, Mass. The improvement consists in the ventilating arrangements. The windows are so constructed that they are made to act the part of ventilators, by having two leaves, the front one is set to stand out, with its inner end forming the apex of a cone, the outside being the base. The air impinges on this window, as it is set angularly to the side of the car, and it therefore forms a partial vacuum at its outer edge. This draws the air from the inside and thoroughly ventilates the car, allowing nothing to come in from the outside. The other leaf of the window, is set behind the first leaf to sustain the current of air from the inside, to perpetuate the partial vacuum. There are ventilator cones in the roof, which prevent sparks from entering, but allow a fresh supply of air to enter the car continually. To keep railroad cars free from smoke and dust is a grand desideratum. The invention was explained to us by Mr. H. M. Paine. The improvement can be applied to the cars now in general use at a very trifling expense. We believe that upon a more extended trial than has yet been had, everything that is claimed will be accomplished, and that these cars will be almost universally adopted upon our railways.

Improved Hot-Air Register.

Mr. George Garrett, of this city (New York), has taken measures to secure a patent for an improvement in Hot-Air Registers, the nature of which improvement consists in operating the leaves of the Register by a slide, which works against one of the inner sides of the case, a horizontal screw or stud passing through an oblong slot in the slide. The leaves are placed longitudinally at the bottom of the case, and are attached to it by pins, which fit loosely in holes near the bottoms of two of the sides. These pins are placed in the centres of the leaves, so that the leaves work like Venitian blinds; each leaf has a lug on its upper surface near its ends, and a horizontal arm projects from each lug. These lugs work in two vertical slots in the slide. By moving the slide either backward or forward, the vertical slots act upon the horizontal arms, and these, being attached to the lugs on the leaves, they are entirely or partially opened or closed, as desired. A spring is attached to the slide, which bears against the side of the case, and keeps the slide, and consequently the leaves, in the desired position.

To Prevent Accidents on Railroads.

Mr. H. D. Taylor, of Newark, N. J., has taken measures to secure a patent for two improvements to prevent accidents on railroads. One relates to the construction of the cars, and the other to an improvement on the cow catcher. A frame is secured on elastic levers extending down close to the track, and on this the car is secured. The trucks are of the ordinary construction and are combined with this frame. The said frame rests on four small wheels independent of the ordinary running wheels. These small wheels are placed angularly and have broad grooved faces.—These bite upon the inner edge of the rails, therefore, although the running wheels were lifted up by an obstruction on the rails, the cars would be prevented from running off, as the small grooved wheels would still retain their hold upon the rails.

The cow catcher is so formed that it vibrates on an axis behind the front axle of the locomotive, and it has two india rubber bands on its front, which front rises or is lifted up when it meets with an obstruction, thus lifting it—the obstruction—from the track.