

## New Inventions.

## Improvements in Machinery for Making Cotton Batting.

Mr. Alonzo Arnold, of Norwalk, Conn., has made a most excellent improvement in machinery for making webs of cotton batting, for which he has taken measures to secure a patent, and which will no doubt revolutionize the manufacture of this useful article. Cotton wadding is made by having one continuous web, called warp, of cotton passing from the cards, and section webs called weft, laid on the top, all along, breadth after breadth. The wefting is the new feature. By the old process, the cross or wefts, were carried along at right angles by hooks and dropped regularly on the warp. This was a troublesome plan, and Mr. Arnold has ingeniously superseded it, by a very simple and scientific one. He employs an endless apron and carries his section cross bats along on it. But the question will be asked, how can the endless apron carry a loose bat face downward and drop it, as he must do in an instant, at the right moment? This he does by having a thin hollow box between the two sides of the revolving apron; and by having the under face of this box perforated and in connection with an exhaust apparatus, the weft adheres to the apron by this means, and whenever the lap is to be dropped, a cam cuts off the exhaust and opens another valve, which drops the weft on the warp in one instant by the re-action of the air.

This improvement is a very excellent one, truly and cannot fail to commend itself universally. The machinery is very simple in its operations and not liable to get out of order, we believe, if it is well constructed and carefully attended to.

## New Way to Tin Iron.

Cleanse the surface of the iron well, by scouring with weak sulphuric acid, to remove oxide, then immerse the iron in a bath composed by digesting in 17½ pints of soft water, 10½ ounces of bitartrate of potash or soda (tartaric acid, or acidulated tartaric acid, or soda cream of tartar), and then adding an aqueous solution of three quarters of an ounce of protochloride, or other soluble salt of tin. In the same proportions any other quantity may be made up. Another way to tin tacks &c., is as follows. Make up a bath composed of water 22 lbs., ammoniacal alum 17½ ozs., and protochloride of tin, or other soluble salt of the same base, 1 oz. heated to about the boiling point, dip the tacks in this for a short time when they will be well tinned. The alum employed will last for a considerable time, and when the bath is weakened by the precipitation of the tin therein contained, the addition of a small quantity of the above salts or other salts of tin will restore its action.

## Another Perpetual Motion.

The Bordeaux (French) papers have been much occupied of late, with the discussion of a new discovery which has recently been made in that city, and of which the *Guienne* gives the following account:

"The new discovery which has just been made at Bordeaux, occupies, at present, the minds of all. By means of this ingenious invention, the pressure of a man's weight can put in motion a weight of 200 kilogrammes, (about 425 lbs.) placed at the extremity of a shaft about 40 inches in length. The swiftness is double that of the rotations of the steam engine, under comparative circumstances; but this swiftness may be increased at will, for it depends upon the pressure imparted; so also, with the force, which augments in proportion to the length of the shaft and the weight placed at its extremity.

The machine in question has been inspected by a large number of scientific persons, all of whom have been surprised at the reality of this discovery. Steam, in consequence of this discovery, will be almost entirely dethroned, as a motive power. The weight of the steam-engine, with its accessories, its fuel, and the space which they occupy in ships, will be re-

placed by a weight equal to about the one-tenth of that of a single boiler, and occupying a space of 13 feet in length by six and a half in width, at the most, for machines of great power.

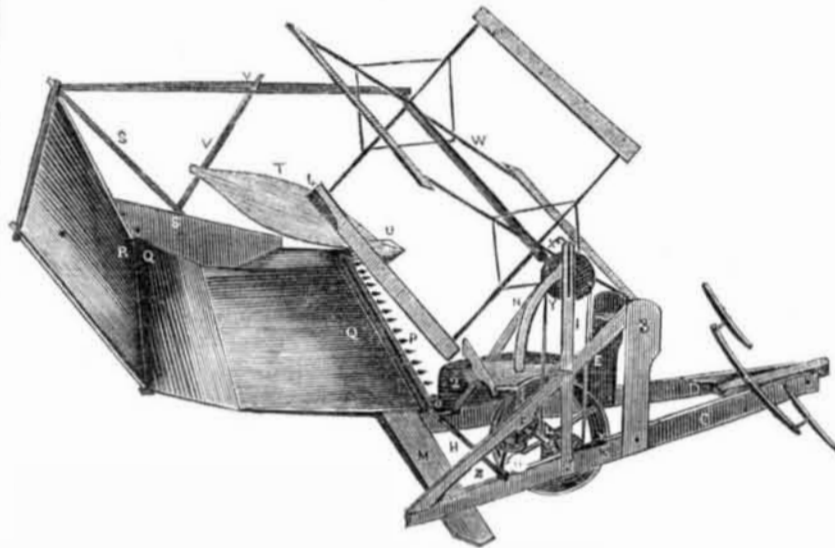
[This will no doubt throw all the electric lights into the shade. The Bordeaux papers are very fortunate in having such geniuses among them, as the inventor of the above. How scientific those gentlemen must be who have examined this machine and pronounced the days of steam numbered.

## Anthracite Glass.

Mr. E. V. White, of Honesdale, Wayne County, in this State, has succeeded in constructing a furnace by which window glass is manufactured with no other fuel than anthracite coal. The result is entirely satisfactory. Coal has never heretofore been used in any part of the world in the manufacture of glass.—[Exchange.

[This is a good joke. How do they make glass in those countries where nothing but coal is used.

## McCORMICK'S REAPER.

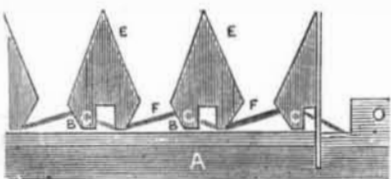


The accompanying engraving is a perspective view of the machine for reaping and harvesting grain, known by the name of McCormick's Reaper, which is derived from that of the inventor and patentee, Mr. C. H. McCormick, formerly of Virginia, but now of Chicago, Ill. The patent which Mr. McCormick secured in 1847, was contested at the last October Term of the Northern District of New York, and an injunction granted to restrain the defendants, Messrs. Seymour & Morgan of Brockport, N. Y., from making, using, or selling the same.

Figure 1 is a perspective view of the Reaper. The driver has a seat between the uprights, 3. C is the outside bearer, D the inside one. The whiffletrees are attached to the forward ends of the bearers. Y is the band; I is the reel post; K is the shipper for putting the machine in or out of gear; L is the master cog wheel and pinion; F is the wheel brace, bevel wheel, and crank pinion; G is the crank and fly-wheel; H is the driver or connecting rod; Z is the connection of but hand and finger beam; M is the finger beam; J is the raker's seat; N is the brace to the frame; 2 is the wheel board for turning the grain into the machine; O is the connection between the driver and sickle; P is the fingers and sickle—being the cutting apparatus; Q is the platform for receiving and holding the wheat; R is the canvas; S S are the side board and brace; V V are the reel bearer and brace; T is the separator board; U is the dividing iron; W is the reel; 4 is the blocks on the reel board; X Y the reel pulley.

The accompanying engraving, fig. 2, represents, on an enlarged scale, an important im-

FIG. 2.



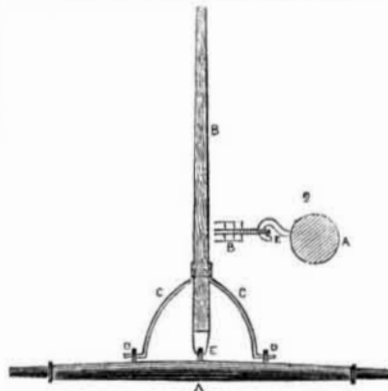
provement made by Mr. McCormick, since last harvest. The improvement relates to the cutting parts; it consists of a combination of the shoulder, C, or back angle of the "fingers," E (as patented and used in the machine) with a slightly indented and zig-zag edged sickle; by which arrangement, as seen by the figure at E F, the angle in the sickle edge is rendered so obtuse that it will, along with the finger for holding the grain to the sickle, cut the grain, &c., in the best manner, at the sloping angle of least resistance. The objections to the zig-zag edge, as used by Hussey and others,

are entirely obviated in this, and the benefits of the fingers are retained; without the angle in the finger for holding the grain to the sickle, it has been necessary to use a blade for cutting, set at such an acute angle, that it required a high velocity to make it cut. This involved a great loss of power, and was the cause of rendering the parts more liable to get out of order, as the grain was rather cut by the abrupt stroke of the blade, than with a fine natural cutting action.

By a thorough course of experimenting in cutting grass that was lying in a bad condition, Mr. McCormick believes, and says, that he has now secured the best possible arrangement and combination for cutting both grain and grass; and at the same time the most simple and durable one. He intends to have 1500 of them ready manufactured for the next harvest. The cost of these machines is from \$75 to \$125, and one will cut from 12 to 20 acres of grain per day. One machine will be exhibited at the World's Fair. They cut the grain of an even height, and the fields look well that have fallen beneath its operations. Either two or four horses may be employed.

More information may be obtained by letter addressed to Mr. McCormick, at Chicago, Illinois.

## Improvement in Attaching the Pole to the Axle of Wagons and Carriages.



This improvement is the invention of Mr. Thomas Ring, of Worthington Mass., who has taken measures to secure a patent for the same. The improvement consists in extending the pole back and connecting it to the axle as well as the hounds, whereby a great strain is taken off the hounds or elliptic braces.

The accompanying engraving is a plan view. A is the axle; B is the pole of the carriage; C C are the hounds; D D are eyes in the axle through which hooks in the hounds are inserted; E is an eye in the end of the pole, B, into which a hook on the axle, A,

catches. The small transverse section, fig. 2, shows the hook, axle, and carriage pole, B,—the same letters in one referring to similar parts in the other figure. The engraving shows the improvement so plainly, that it is needless to say but little more about it. The common way of attaching the pole to the carriage, is just to have the end of it come between the hounds, C C, and then coupling them together by a bolt passing through. By extending the pole to the axle, the strain is in a great measure equalized between the axle and the hounds. This improvement is very suitable to small carriages, such as those now made so extensively for children. The principle of the improvement is in extending the pole and combining it with the axle, as represented, or in any similar manner.

More information may be obtained by letter addressed to Mr. Ring.

## New Electro-Chemical Telegraph.

Recent and wonderful improvements in the transmission of messages by the electric telegraph have recently been exhibited in France. The instrument is the invention of Mr. Bain, and called an electro-chemical telegraph, and conveys its message in the very handwriting of the persons who send them! It claims to have great advantages over the electro-magnetic telegraphs in general use. While the latter transmit dispatches at an average rate of eight words per minute for each conducting wire, this new invention can transmit from 250 to 400 words per minute. A committee of the French Legislative Assembly, at the head of which was the celebrated astronomer, Le Verrier, was appointed to investigate the merits of this invention. They caused the experiments to be repeated in their presence. A message consisting of several thousand words was transmitted to Lille and back, along a single wire (the wire being united at Lille so as to carry back the message), at the rate of about 1,500 letters, or nearly 400 telegraphic words per minute. The committee reported favorably of the project, and the government ordered a set of apparatus to be constructed, to be placed in the first instance on the line between Paris and Calais. This line was completed in the early part of the last month, and their performance was witnessed by the correspondent of a London journal, from whose account of the discovery we gather our information. His own dispatch, which would occupy about a column of our paper, was transmitted and written by the apparatus in his presence at the rate of 1,200 letters per minute. The characters were perfectly distinct, and the dispatch was read from them also in his presence.

## Improvement in Endless R. R. Horse Power.

Mr. Cyrus Avery, of Tunkhannock, Wyoming Co., Pa., has invented a very excellent improvement in railroad horse power, for which he has taken measures to secure a patent. He places friction rollers on the ends of the stationary rails, at the tangents, so that the whole of the endless railroad wheels press with their peripheries on the periphery of these end rollers, at the point where the wheels change their motion, and the result is a change of motion without any sudden concussion, as the motion of the road wheels is communicated to fixed rollers, and all the friction is thrown upon their axes instead of the peripheries of the railroad wheels.

## Manufacturing in Nashville.

A company, named the Nashville Manufacturing Co., has just been organized in that city, with a large cash capital, for the purpose of engaging on a large scale in building all kinds of engines, locomotives, and other machinery, in a style equal to any in our country. It is the intention of the company to put its works in operation at an early date, and which is now delayed only for the want of a thoroughly skillful man to put at its head—to superintend the mechanical department, so as to furnish machinery, &c., for the Chattanooga Railroad, which is now nearly completed, and which is intended to connect Nashville with Charleston, Savannah, &c. It will also connect with other southern roads now in progress, and several others which have been projected.