New Inventions.

Rotary Pump.

Jerome B. Manny, of New York City, has invented an improved rotary pump, the peculiarity of which is in constructing two of the arms of the inner revolving cylinder hollow, so that the water may flow from the center through them into the vacuum chamber, and in forming on each side of the space in the arms a vertical chambers, one of which is open at the top and the other at the bottom. In these chambers are pistons with spiral springs around their rods, which allow of their moving inward at the point of discharge, or as they alternately come in contact with an abutment on the inner periphery of the cylinder, and also serve for throwing them out again as soon as they pass the abutment. Two cams are also placed in such a manner as to cause a gradual movement of the pistons, and the edges of the inner cylinder are packed with india rubber. The inventor has applied for a patent.

Improvement in Fences.

Moses Thomson, of Henrico Co., Va., has invented an improvement in furnaces for burning tan bark, saw-dust, &c., or other varieties of fuel, and has applied for Letters Patent. The invention consists in the employment of a series of fire-chambers arranged side by side, or in any other manner, permitting them to communicate with a single flue, which communications may be closed or opened at pleasure, by means of dampers. This arrangement is for the purpose of enabling the fuel to be heated to an intense degree in a nearly air-tight chamber, and then admitting a free supply of air to promote its rapid combustion.

Reaping Machine.

Benjamin Smith, of Batavia, Ill., has invented certain improvements in reaping machines, on which he has applied for a patent. The invention consists in a new mode of elevating or depressing the sickle-bar, by means of which it is enabled to pass over any obstructions, and also in the employment of a pressure roller to prevent the grain or grass of an adjoining swath from being drawn into the fingers by the sickles. The sickle bar is also peculiarly constructed, and a friction roller is attached to the connecting rod for the purpose of diminishing friction and ensuring a steady movement of the knives.

Fire Grate.

John Winer, of Hamilton, Canada West, has applied at Washington for a patent upon an improved mode of heating air for warming apartments by the waste heat of a fire-grate. It consists in placing in the lower part of the flue or chimney, one or more layers of tubes, which communicate in the rear with the external air, and in front with a hot-air chamber, from which a pipe may pass to the room above. This strikes us as an excellent idea, and one well worth the attention of those interested.

Improved Lock.

H.J. Crygier, of New York City, has invented an improved lock, which differs from other in the use of lever guards so arranged as to be thrown into circular toothed discs, when the bolt tumbler is raised by the key, which guards are operated by the bolt tumbler, instead of being operated directly by the key. He also employs a peculiar mode of effecting the changes or of altering the position of the indices, whereby the changes can be made with greater facility. He has applied for a patent.

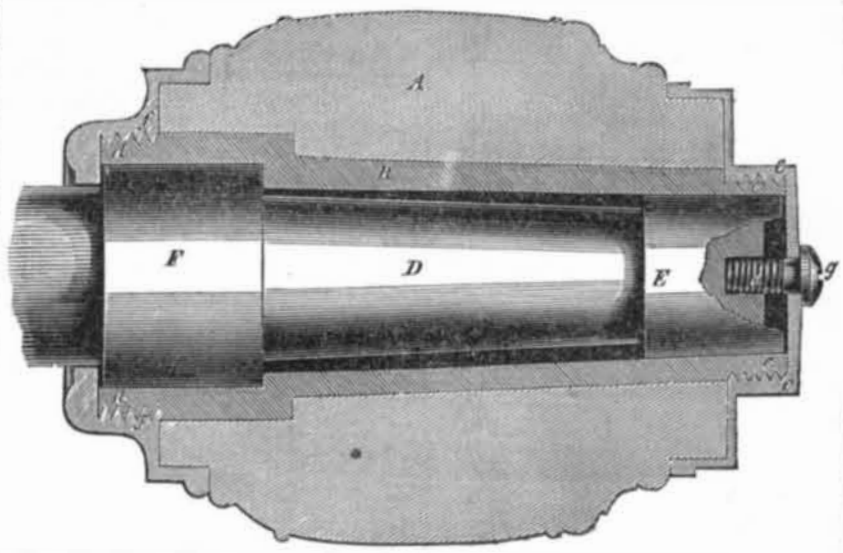
Raking Apparatus.

Cyrus Roberts, of Bellville, Ill.,, has applied for a patent upon an improved raking attachment to harvesters. The invention consists in having a rake placed underneath the platform, and so constructed and operated that its teeth shall shut down while passing in one direction, and be erected through apertures in the platform, while it is passing back. This is used in combination with a fork, which is so operated as to throw the grain quickly from the fingers.

Auxiliary Railroad Brake.

James H. Reynolds, of Olcott, N. Y., has taken measures to secure a patent for an auxiliary railroad brake. The nature of the invention consists in attaching to an ordinary truck a pair of eccentrics, which are placed upon one shaft, and so constructed that when they come in contact with the rails, the car directly over the eccentrics will be slightly elevated, the eccentrics, turning but a portion of a revolution upon the rails, are then stopped by a bar. The eccentrics, as they turn upon the rails, act upon the ordinary brake and cause the shoes to act upon the wheels of the truck before the eccentrics are stopped by the bar mentioned. This improvement is for arresting the progress of a train in a much shorter time and space than other brakes.

SECURING AXLES TO HUBS.

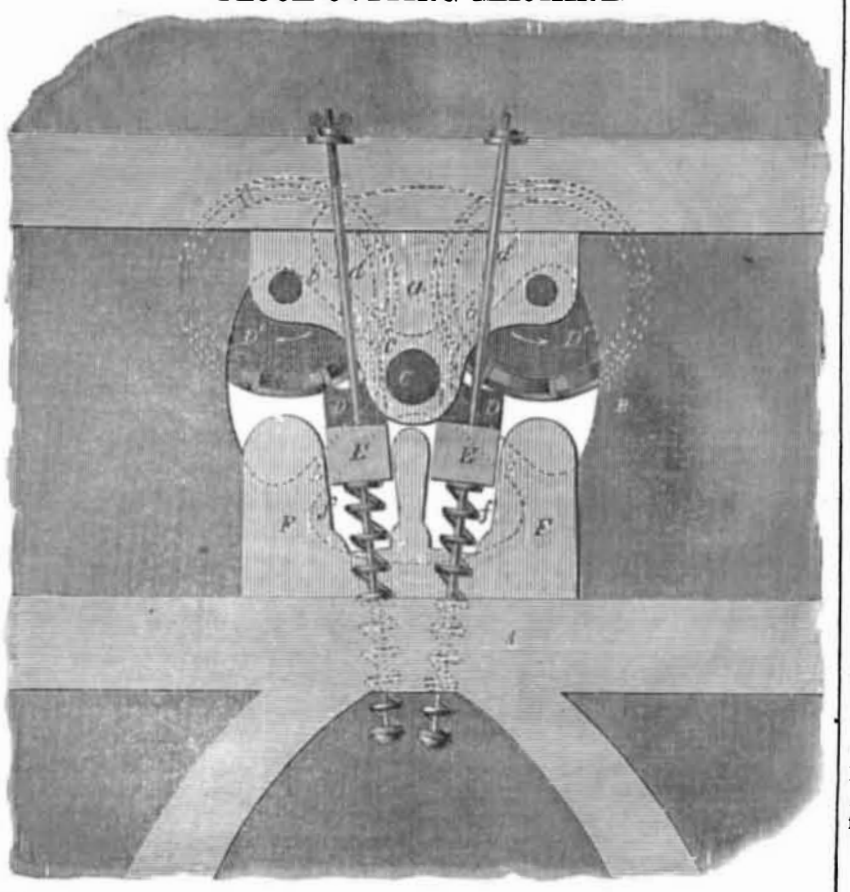


The annexed engraving is a vertical longitudinal section of an improvement in the manner of securing hubs to their axles, invented by John Lamb, of McDonough, N. Y., who has taken measures to secure a patent for the same. The axle box has a shoulder near its inner end, against which the collar of the axle bears. Each end of the axle box has a screw thread for caps to screw up the axle on the hub. There is an oil cup formed at the end of the axle, which is supplied through an opening in the cup, into which is fitted a screw stopper.

A is the hub; B is the axle box, which is secured in the hub and prevented from turning by feathers cast on it; D is the axle; E F are the collars or skeins. The skein, E, extends over the outer end of the axle, forming an oil chamber, as shown by the dark shading. The skein, F, bears against the shoulder of the box, B; *c d* are right and left hand screws formed on the ends of the box; *e f*, are right and left hand screw caps, which fit on the ends of B. These screw caps screw the box and hub firmly together; *g a* is the screw stopper which closes the hole by which the oil cup is supplied with the lubricating material. This is a very simple and good plan for securing the hub, box and axle together. It will be perfectly understood not only by those engaged in the manufacture, but any person.

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

FLOCK CUTTING MACHINE.



The annexed engraving is a vertical transverse section of an improvement in machinery for cutting or grinding woolen rags, &c., into fine flocks. The inventor is Joseph N. Pitts, of Blackstone, Mass., who has taken measures to secure a patent. The nature of the improvement consists in combining and arranging within a revolving cylinder two inward revolving rollers which have spiral cutters on their peripheries. These act in combination with one another, and with two stationary adjustable cutters or ledger blades placed beneath them, whereby the flocks are subjected to a shear cutting action. The spiral rollers have a swift motion, and they feed and cut the flocks; the large cylinder in which they revolve has a slow motion on its axis, and it thereby carries round the flocks, and continually feeds and refeeds them in between the cutting rollers, until the whole quantity which forms a batch, is reduced to the proper state of fineness.

A is a stout frame; B is a large revolving cylinder, with short stub journals secured in metallic bearings. It has a small opening in each end; *b b* are its arms, and *c* its hub; D′ D′ are the two revolving rollers with spiral knives around their peripheries; these rollers have their bearings in the metal framing, *a*, and are made to revolve very rapidly towards one another, while the large drum, B, revolves very slowly on its journals; D D are two stationary cutters or ledger blades. They are made adjustable and yielding by means of the setting screw rods, *d d*, and the coiled springs around them; these latter abut on the cups below, and the ledger blocks, E E, above.—These springs allow the stationary cutters to accommodate themselves to the amount of flocks passed betwen the spiral cutters; the screw rods regulate the distance between the stationary and revolving cutters. The stationary cutters are attached to ledgers, E E, which are capable of being raised or depressed in the slots, *f f*, of the standards, F F, which latter are secured to side pieces on the frame, A.

Operation.—The proper quantity of flocks to be operated on, are packed into the cylinder, B, through a slide door on its side, and all the knives being properly set, the machine is put in motion. The cutter rollers, D′ D′, as will readily be observed, will feed in the flocks between them, and the action of the spiral cutters in combination with the stationary ones, will be a kind of shearing cut. This machine is double acting, and by the continual operations of feeding and refeeding the flocks—turning them over by cylinder, B—as already explained, they are soon reduced to the proper fineness, when they are taken out and a new batch placed in the cylinder.

Woolen flocks are employed for a number of purposes, such as making velvet or flock paper, and beds (these are quite common in localities near woolen and satinet factories) and they are also used in the manufacture of cloth (not for its benefit) by mixing it with good wool. The manufacture of cloth from old woolen clothes, by reducing them to short wool, and mixing it with long staple, is carried on extensively in England. Woolen rags are as much an article of trade in Yorkshire as fresh wool from Australia or the mountains of Wales.

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

Western Locomotives.

We have received a letter from John Steptoe. of the firm of Steptoe & McFarlan, Cincinnati, for which he has our thanks. It relates to a short notice which appeared on page 50, wherein it states that a locomotive recently built at Chicago, is the first which has been constructed west of the Alleghenies. Mr. Steptoe informs us that he has no doubt but Anthony Harkness, of Cincinnati, has built a hundred locomotives during the past five years. Niles & Co., of the same place, have built twenty-nine during the last eighteen months; J. L. Greer, of Covington, Ky., has a large locomotive shop.—Olmstead & Co., have two shops—one in Louisville, Ky.; there is a large shop in Aurora, Ind., and one in Zanesville, Ohio.

Locomotive machine shops have increased so rapidly throughout the length and breadth of our land, that it has been impossible for us to obtain a knowledge of them by ordinary means. Unless some of the engineers inform us of the same, it cannot be expected that we can know them all. We are always happy to publish useful information about the progress of engine and machinery manufacture, and it is our earnest desire to be always correct. The paragraph referred to was taken from a Chicago paper, and as we trust little to cotemporaries for any information, we must trust them still less.

Cotton.

The frauds in ginning and packing cotton at Nashville, and other parts of Tennessee, have become so common that the principal dealers have published a caution to all ginners and packers that whatever frauds are detected, they will publish the names of all concerned, demand all costs attendant upon the fraud, and prosecute under the law.

The electro-magnetic machine described on another page has a claimant for the invention in Prof. Jacobi, of Russia.