

New Inventions.

Improvement in Cotton Presses.

The accompanying engravings represent an improvement in Cotton Presses, for which a patent was granted to Augustus M. Glover, of Walterboro, S. C., on the 3d of July last. Fig. 1 is an elevation of the press, and fig. 2 is a transverse section, taken through the line X X, fig. 1. Like letters indicate similar parts.

The packing of cotton is essentially different from making hay into bundles, and there is an absolute dissimilarity in the construction of the press; those small variations of device and arrangement requisite in the one case are not necessary in the other. There is a tendency to consider the press that hay may be packed in as equally applicable to packing cotton, and pressing it into such form, and while pressed so, to admit of the wrapper being sewed up, the ropes tied tightly, and the bale completed while undergoing the operation. The arrangement for keeping the wrapper clear of the platten, necessary in packing cotton, is not at all required in pressing hay. By the introduction of a roller, E, upon the side of the rack rod opposite to the rack, the platten, *a*, is guided in its movement in the box, without liability of the wrapper or bagging being either ruptured or wrinkled, as the platten is prevented from touching the wrapper by said roller projecting slightly beyond the face of the platten. This improvement is more clearly understood, and the use of the roller more apparent when the platten is at its descent and the sides of the box removed after the bale is fully compressed and is below the edge of the bale box, or that portion below the line, O O, so as to allow the roping to be tied. The guide roller, G, outside of the packing box would be of little use in keeping the platten in position.

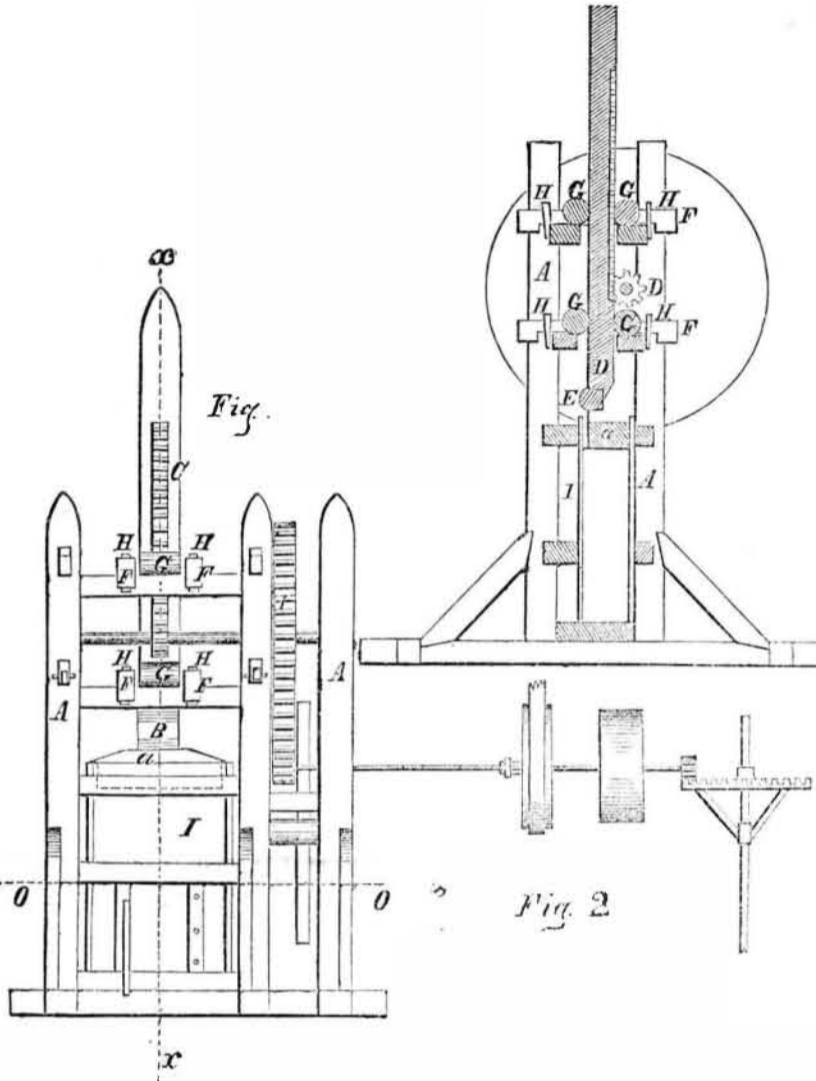
DESCRIPTION.—A A are uprights or framing with suitable cross girts. I is a box or hopper, the portion above the line, O O, being permanent, whereas that below is removable, to allow the bale to be made, and to be removed. B is a rack rod, and D a small pinion by which it is actuated. C is the rack. G G G G are guide rollers for the rack rod or piston. F F are sliding boxes or clamps for rollers G. E is a roller in the rack rod, B, at its lower end projecting slightly beyond the face of the rod, and also beyond, the platten, *a*. This platten does not occupy the whole of the space in the box, I, but leaves sufficient for the bagging or wrapper with which the box is lined, previously to introducing the loose cotton, by turning the

platen partially around upon a swivel pin when above the box, the box and platten being oblong; the change in position leaves openings for introducing cotton under the platten immediately from the gin, without removing the platten or change of position in the gear. It will be noticed that as the pitch line of the cogs passes through the center of the platten a

more perfect and even pressure of the bale is obtained, and as all tendency to interfere with the bagging or wrapper is avoided, by combining the roller, E, with the rack and pinion, a material improvement is thus obtained.

It will be noticed that this press is worked entirely inside of the gin house, or shed added thereto, and can be operated most effectually

GLOVER'S PATENT COTTON PRESS.



and conveniently by gearing the large wheel by a small pinion and shaft to the shaft of the gin band wheel by belting at pulley so that when the press is not in use or operation, it can be thrown out of gear in any common manner, and again brought into action without

stopping the horses, or it may be worked by windlass and rope around a large wheel, if preferred.

For more information respecting this improved Cotton Press, we refer our readers to an advertisement in another column.

Improvement in Pumps.

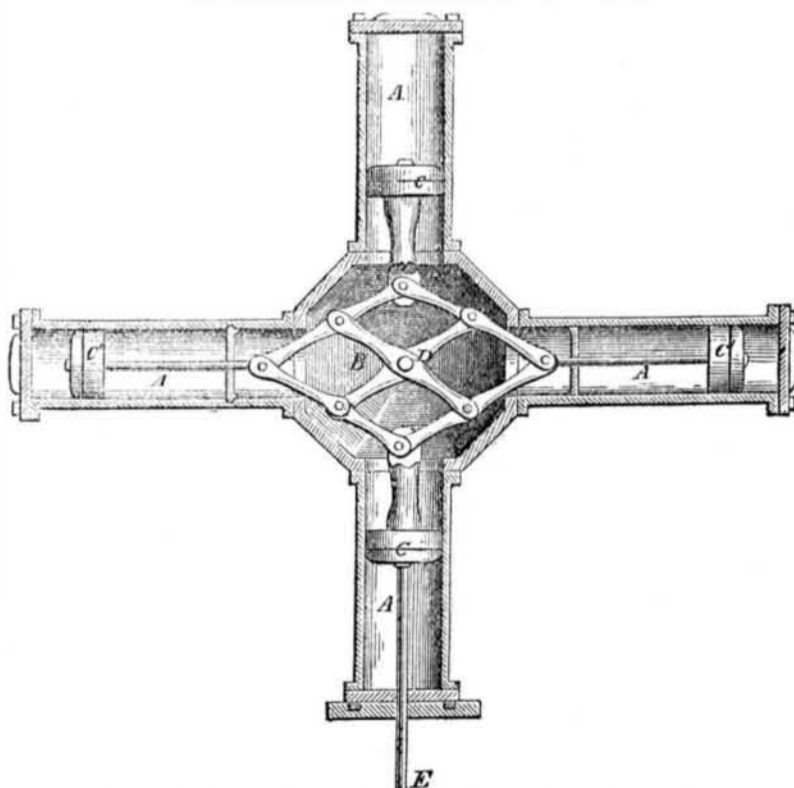
The accompanying engraving is a horizontal section of a new method of constructing and operating pumps, for which a patent was granted to Thomas J. De Yampert, of Mobile, Ala., on the 11th of last month, (Sept.)

The object embraced in this patent is to get an increased effect by the combination of two or more cylinders by a system of cross levers in a central chamber. A A A represent four cylinders united together; they may be cast in one piece, or in sections, and then bolted together. There is also a central chamber, B, which forms part of the compound pump, and answers the purpose of a cylinder. C C and C' C' are solid pistons or plungers, all connected together by rods, and a series of central angular levers connected by pins and vibrating on a central stud, D. These levers unite the pistons together and allow them to be worked by one rod, E, connected to a steam engine or any working lever.

The rods of pistons C' C', work through stuffing boxes. The inner rods of the pistons C C are thick, and act the part of partial plungers in the chamber, B, to which chamber the inner end of their cylinders are open. At the extreme ends of the cylinders there is an inlet valve communicating with a supply reservoir, and an outlet valve communicating with an air chamber through an ejection pipe. In the two cylinders, which have stuffing boxes on their inner ends, there are, also, outlet and inlet valves, so that each piston is double-acting, discharging a stream while moving in one direction, and receiving water behind it, and vice versa. In the bottom of chamber B, there is an inlet valve, and on its cover an outlet valve.

All the outlet passages of the cylinders and the one in chamber B, communicate with the air chamber through which the water is forced in a steady constant stream and discharged by a main pipe. The two pistons, C C, which have their cylinders opening into the central chamber, B, when forced inwardly will discharge

water through the outlet pipe, (not shown,) and the inlet pipe will then be closed. When these pistons are moving in a contrary direction the water will flow in through the central valve in chamber B. A partial vacuum will be formed in chamber B at the inward stroke of pistons C C, by the action of the cross levers. The



cylinders may be constructed to work by single or double action; by the latter method more valves are required, and caps must be used—but this is all the difference. By one stroke of the piston rod, E, it is evident that the levers will operate the four pistons so that all the pumps will be operated by one rod, each pair of pistons having a reciprocating motion moving contrary to the traversing pistons.

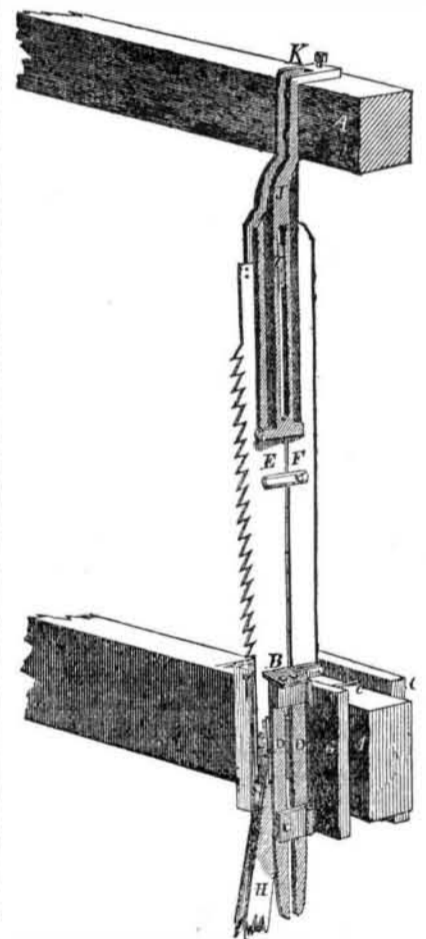
More information may be obtained by letter addressed to Mr. Yampert.

Hutchinson's Patent Mode of Hanging Saws.

This figure is a perspective view of the new mode of hanging mill saws, for which a patent was granted to Charles B. Hutchinson, of Auburn, N. Y., on the 10th of April last.

The nature of the improvement consists in the mode of holding and guiding the saws by means of a thin guide plate immediately behind and in the same plane with it, and thus following it through the log, dispensing with the fender, posts, and ways, and heavy vibrating frame. And as the plate is made thicker than the saw it also keeps it clear of the log and enables it to work steady and free.

A is the fender beam and sill of the saw mill; G are 3-inch plank. All the rest of the parts are made substantially of iron and steel. E is the saw, the same as in common use. F is the guide or protecting plate, 5 or 6 inches wide, and a trifle thicker than the saw. D D are lower guide ways secured at B. J is an upper strap and guide way, made of cast iron, in two parts, and bolted on both sides of guide plate, and of sufficient length to reach over and hook on the top of beam, A. K is a set screw for straining the plate, after it is secured to the lower end. I I are upper and lower cross heads, attached to the saw and running in the



guides. The lower one is made hollow, and may be filled with oil to feed the ways and keep them lubricated. H is the connecting rod taking hold of lower cross head and crank below. This mode of hanging saws is simple, durable, cheap, and apparently efficient, free from rack and jar. The guide plate, F, is connected at top and bottom to the beam and sill, and can be strained so tight as to disperse with the fender posts, which cannot be done with safety with the common mulley, and not at all with the gate. It can be easily applied to any mill having the gate or mulley now in use, and save power and expense in running, and do the work in a superior manner.

This improvement is on exhibition at the Fair of the American Institute in the Crystal Palace, where all those interested can see it, and judge of its merits for themselves.

Letters for more information may be addressed to Mr. Hutchinson, at Auburn.