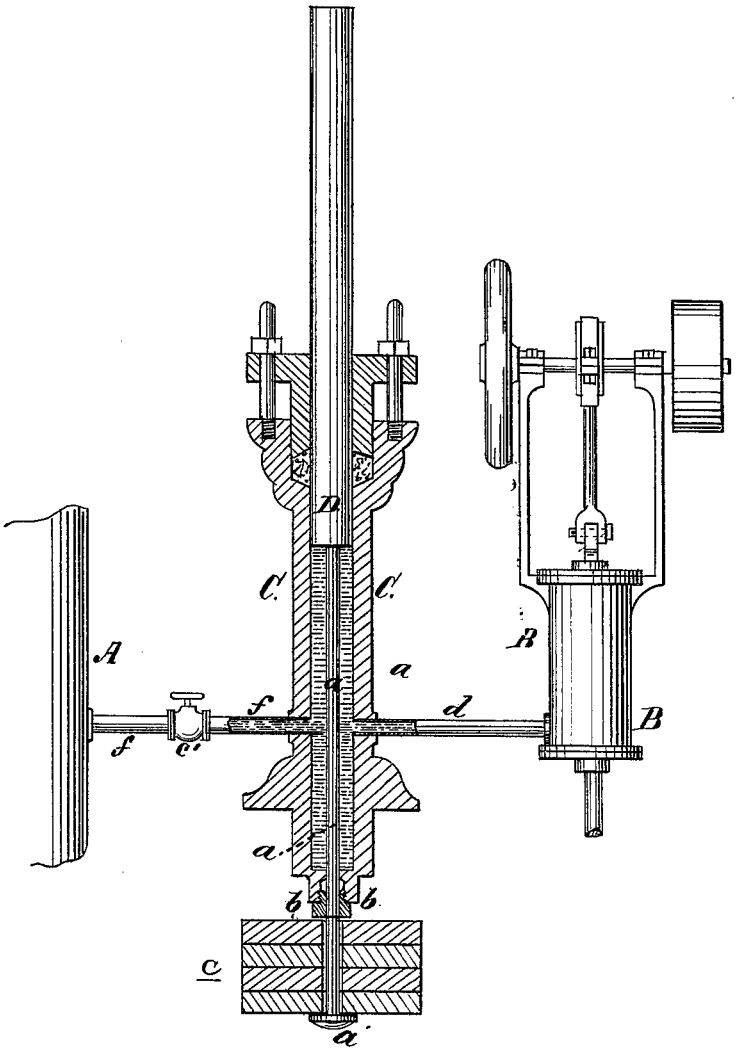
T. M. MAGUIRE.

Hydraulic-Power Accumulator.

No. 202,660. Patented April 23, 1878.



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THOMAS M. MAGUIRE, OF CORONA, NEW YORK.

IMPROVEMENT IN HYDRAULIC POWER-ACCUMULATORS.

Specification forming part of Letters Patent No. **202,660**, dated April 23, 1878; application filed January 5, 1878.

To all whom it may concern:

Be it known that I, THOMAS M. MAGUIRE, of Corona, in the county of Queens and State of New York, have invented an Improvement in Apparatus for Accumulating and Regulating Power for Hydraulic Hat-Pressing Machines, of which the following is a specification:

In that class of machines for pressing hats in which the mold is actuated by the plunger of a hydraulic press, the press itself is in actual movement only about one-sixth of the time, the remaining five-sixths being occupied in placing and removing the hats, and, inasmuch as the pump of the press has hitherto been connected directly with the cylinder of the latter, it has been necessary to employ a pump at least six times larger and stronger than would have been required if a continually-running pump, provided with means of storing up the power produced by its action while the press was quiescent, had been applied to give out its accumulated power during the movement or operation of the press. Furthermore, the excessive strain exerted upon the pump when the latter is connected directly with the cylinder, owing to the sudden and jarring manner in which the pump, under such circumstances, is necessarily worked, quickly deranges and measurably destroys the pump, and thereby involves frequent repairs and considerable expense.

The object of my invention is to obviate the drawbacks referred to; and to this end it comprises a novel mechanism, which, interposed between the pump and the hydraulic cylinder or the equivalent thereof, effectually secures the desired result.

The drawing represents a central vertical sectional view of the mechanism embraced in my invention.

At A is indicated the position of the hydraulic cylinder, which latter may be of any usual or suitable character, and furnished with the usual adjuncts for pressing hats as is familiar to those using such class of hat-pressing machines, and consequently needs no specific description here. In like manner B indicates the pump, which (aside from its location apart from the cylinder A, as hereinafter fully explained) is of the usual or any suitable construction, and therefore need not be here specifically described. C is a cylinder, which, for convenience of description, I term a "barrel," in which works a plunger or piston, D. From the lower end of this piston D extends a rod, *a*, which passes down through a suitable stuffing-box, *b*, in the lower end of the barrel C, and thence downward to any required length below the barrel. The barrel is placed in a vertical position, as shown in the drawing, and at the lower end of the rod *a* is a knob or button, *a'*, so that a weight or weights, *c*, radially slotted after the manner of weights used in platform-scales, (or otherwise adapted for attachment to the downwardly-extending outer portion of the rod *a*,) may be placed upon the lower end of the rod, as represented in the drawing. As shown in the latter, the pump B is connected with the barrel C by a pipe, *d*, and in like manner the barrel is connected with the hydraulic cylinder A by a pipe, *f*, in which is a cock, *c'*. When the hydraulic press is required to be quiescent, (as, for example, while the hats are being placed in or removed from the hat-pressing molds or devices,) the cock *c'* is turned to close the pipe *f*, whereupon the action of the pump B, which is kept running continuously, is exerted to force water into the barrel C to lift the piston D, and, of course, to lift the weights *c*. When it is required to put the hydraulic press in motion, the cock *c'* is turned to open the pipe *f*, whereupon the piston, being forced downward by the gravity of the weights *c*, forces the water from the barrel C into the cylinder A, the power accumulated by the working of the pump B while the hydraulic press was quiescent being thus given out when wanted for the sudden starting and operation of the press, so that the pump, working six times as long as it does when the pump is connected directly with the hydraulic press, need be but one-sixth the size, and is proportionally cheaper in first cost, and much more than proportionally cheaper in the expense of keeping it in good running order.

It will further be observed that the mechanism just herein described not only operates as an accumulator of power to be given out or used when required, but also as a regula-

tor, inasmuch as the ratio of power given out is directly dependent upon the gravity of the weight or weights *c*, which latter may be greater or less, as desired.

I claim as my invention

The power accumulator and regulator herein described, composed of the barrel C, piston D, rod *a*, weight or weights *c*, and pipes *d f*, for connecting the barrel with a pump and hydraulic cylinder, the whole combined and arranged for use, substantially as herein set forth.

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