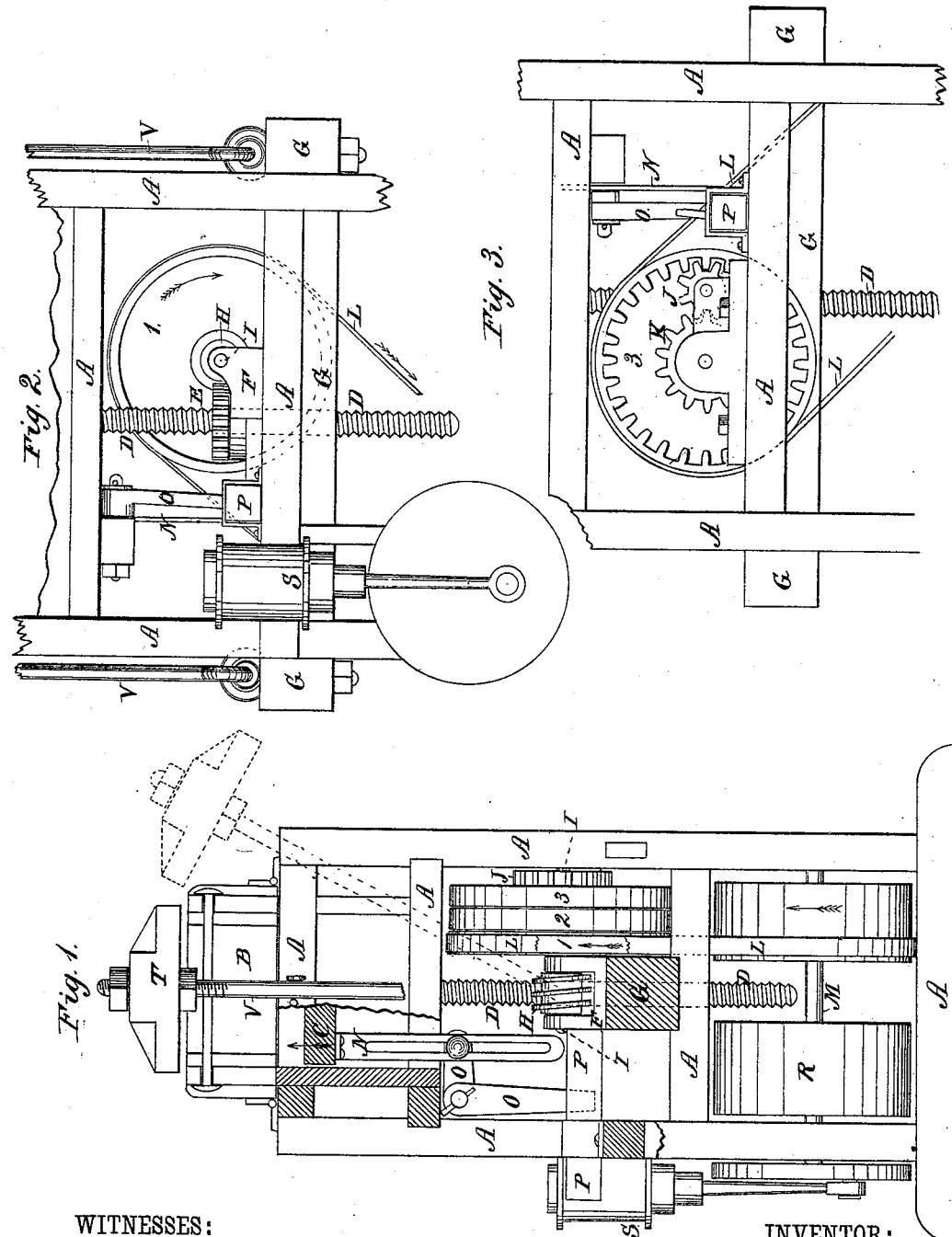


G. COOPER.
Cotton-Press.

No. 217,776.

Patented July 22, 1879.



WITNESSES:

W. W. Hollingsworth
Amos M. Hart

INVENTOR:

Geo. Cooper
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ATTORNEYS.

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Fig. 4.

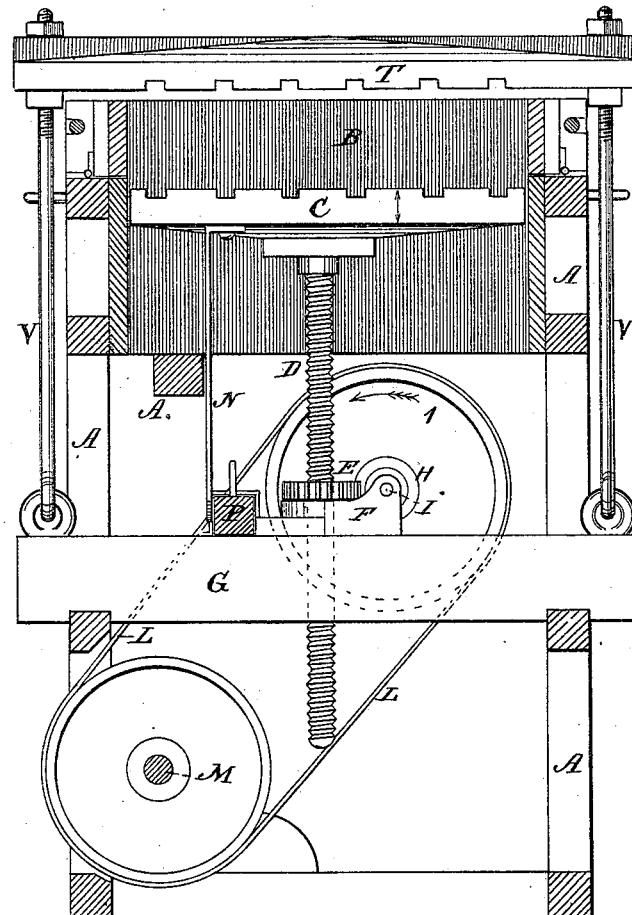
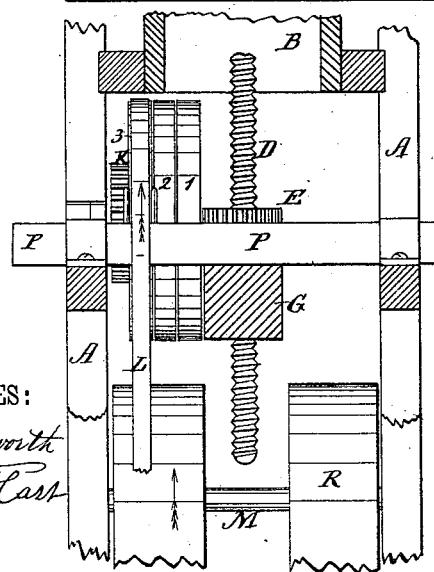


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE COOPER, OF AUGUSTA, GEORGIA.

IMPROVEMENT IN COTTON-PRESSES.

Specification forming part of Letters Patent No. 217,776, dated July 22, 1879; application filed June 10, 1879.

To all whom it may concern:

Be it known that I, GEORGE COOPER, of Augusta, in the county of Richmond and State of Georgia, have invented a new and Improved Cotton-Press; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention is an improvement in the class of cotton-presses whose followers are operated by a screw or screws, and are provided with an automatic mechanism for shifting the driving-belt, and thus arresting the follower either in its ascent or descent.

The invention consists in the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is in part a vertical section and in part an end elevation of my improved press. Figs. 2 and 3 are opposite side elevations of a portion of the press. Fig. 4 is a vertical section on line *x x*, Fig. 1. Fig. 5 is a cross-section on line *y y*, Fig. 4.

A and B, respectively, indicate the frame and press-box of the machine. These parts may be constructed of wood; but the others, hereinafter named, and which are movable, are constructed of metal. The follower C works from below, and is rigidly attached to the head of the vertical screw D. The latter works in a rotating nut, E, and passes through the casting F and transverse beam G of frame A. The said nut has a toothed periphery to adapt it to mesh with the worm H of the horizontal shaft I, and rests on the casting F, which also constitutes one of the bearings of said shaft I.

It is evident that by rotating the gear-nut E in one direction or the other, the screw D will be worked up or down correspondingly. Such rotation is imparted primarily by the worm-shaft I, and for operating the latter I employ the following-described means or mechanism: Three plain pulleys (designated by the numerals 1 2 3) are mounted on the shaft I side by side. The pulley 1 is keyed fast on the shaft, and the other two, 2 and 3, are loose thereon. The middle pulley, 2, is an idler, and serves the usual purpose of such. The outer pulley, 3, has an internally-toothed rim, and meshes with the gear K, which, in

turn, meshes with the pinion J, keyed on the worm-shaft I. Said gear K rotates on a stationary journal projecting from the outer bearing of shaft I. The open driving-belt L is shown running on the inner pulley, 1, and hence when the driving-shaft M is rotated, as indicated by the arrow, Fig. 1, the said pulley and shaft I will rotate in the same direction, thereby causing the worm H to turn the gear-nut E and work the screw D, so as to force the follower C upward.

By shifting the belt L to the idle-pulley 2, the motion of worm-shaft, gear-nut, and follower will necessarily be arrested; and by shifting the belt to the pulley 3, as shown in Fig. 5, the intermediate reversing-gear, K, will cause the worm-shaft I to rotate backward or in the opposite direction, thereby working the screw and follower down.

To shift the belt automatically, I employ a slotted plate or bar, N, an elbow-lever, O, and shipper P. The slotted plate N is attached to and pendent from the follower C. The elbow-lever O is pivoted at its angle to the frame A, and one end enters a slot in the horizontal shipper P, while the other end has a stud or arm that enters the slot of plate N.

By this arrangement, when the follower C has reached the assigned limit of its upward movement, the plate N (which necessarily travels with the follower) will raise the horizontal arm of the elbow-lever O, and shift the bar P to the left, thereby moving the band L from pulley 1 to the idler 2, which automatically arrests the operation of the worm-shaft, gear-nut, screw, and follower.

To work the screw D down, and thereby lower the follower, the shipper P is pushed still farther to the left, Fig. 5, to carry the belt from the idler 2 to the loose-gearred pulley 3, which reverses the worm-shaft I and gear-nut E, and quickly runs the follower down again. When the limit of such movement of the follower is reached, the stud of lever O strikes the upper wall of the slot in plate N, which bears down the horizontal arm of the lever and shifts the bar P to the right, thus carrying the belt L back to the middle or idle pulley, 2, so that the follower at once comes to rest.

To start the follower upward again, the

shipper P is drawn manually to the right, thus shifting the belt to the fast pulley 1, as before. Thus the operation goes on, the devices constituting the stop-motion arresting the upward and downward movement of the follower alternately, and then the motion of the screw is reversed to effect a corresponding change in the action of the follower.

The driving-shaft M has a pulley, R, for the belt of a gin, (not shown,) so that the latter may be operated simultaneously with the press and by the same motor.

To rotate the driving-shaft, I employ the engine S; but it may be operated by hand-crank.

The cap or top T of the press-box B is attached to combined tension and supporting rods V, which are suitably hinged to the ends of the beam G. This adapts the cap T to be swung laterally off from the press-box B into the position shown in dotted lines, Fig. 1, so

as to leave the press-box entirely open and freely accessible for the purpose of filling it with cotton easily and expeditiously. The cap-piece T is held in its normal or working position by guide-pins b, which are inserted in the press-box on each side of the rods V. One of each pair of said pins is necessarily detachable to allow the cap T to be thrown over on its hinged supports.

What I claim is—

In a cotton-press, the fixed pulley 1, the loose internally-toothed pulley 3, the pinion J and worm-shaft I, and the intermediate or reversing gear, K, in combination with the idler 2, driving-belt L, shipper P, lever O, slotted plate N, follower C, screw D, and gear-nut E, as shown and described.

GEORGE COOPER.

Witnesses:

JACOB J. MOORE,
ALEX. PHILIP.