(No Model.)

2 Sheets—Sheet 1.

J. SABOLD.

BAG BUNDLING PRESS.

No. 480,967. Patented Aug. 16, 1892.

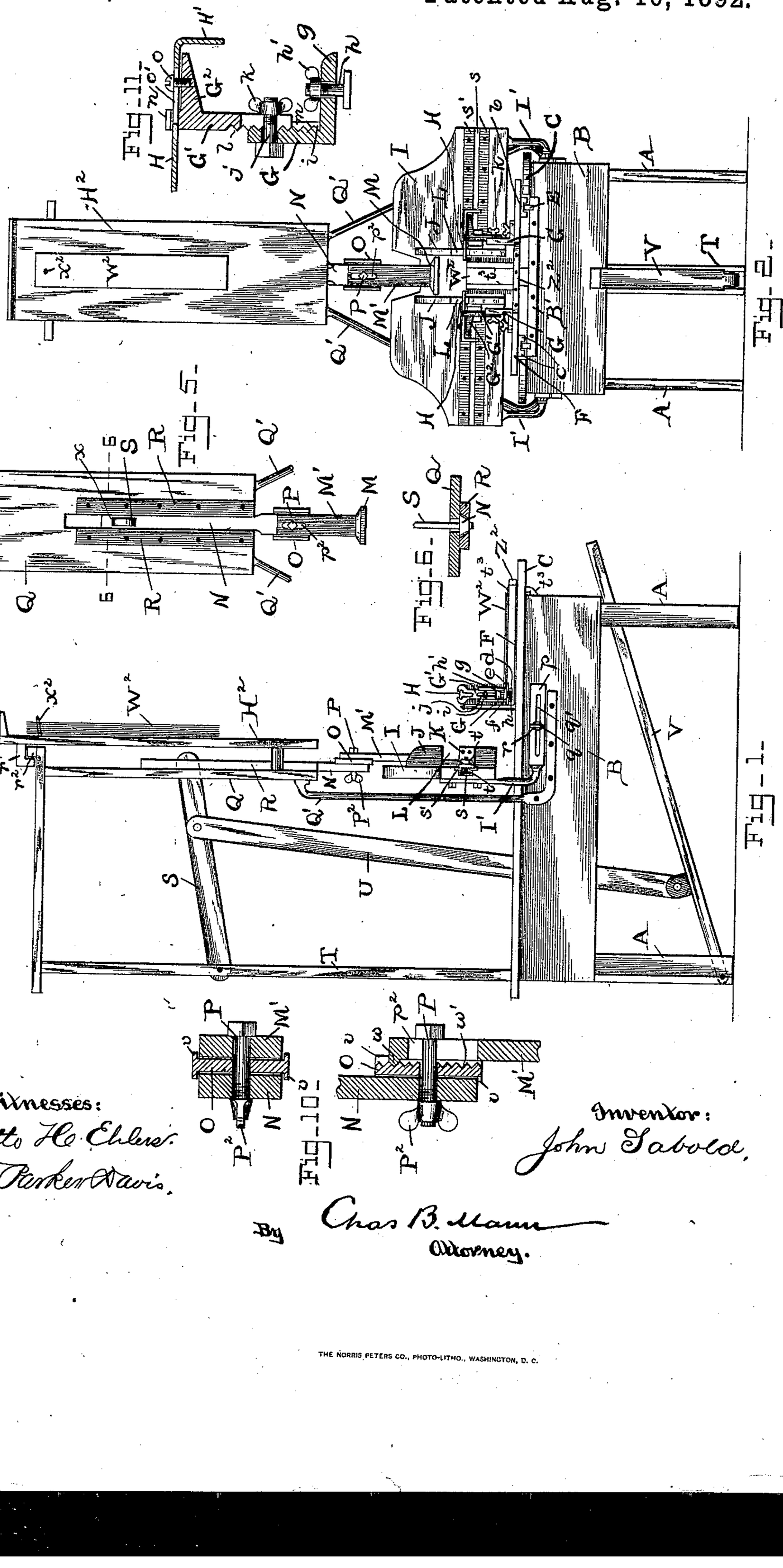

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 10.

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(No Model.)

2 Sheets—Sheet 2.

J. SABOLD.

BAG BUNDLING PRESS.

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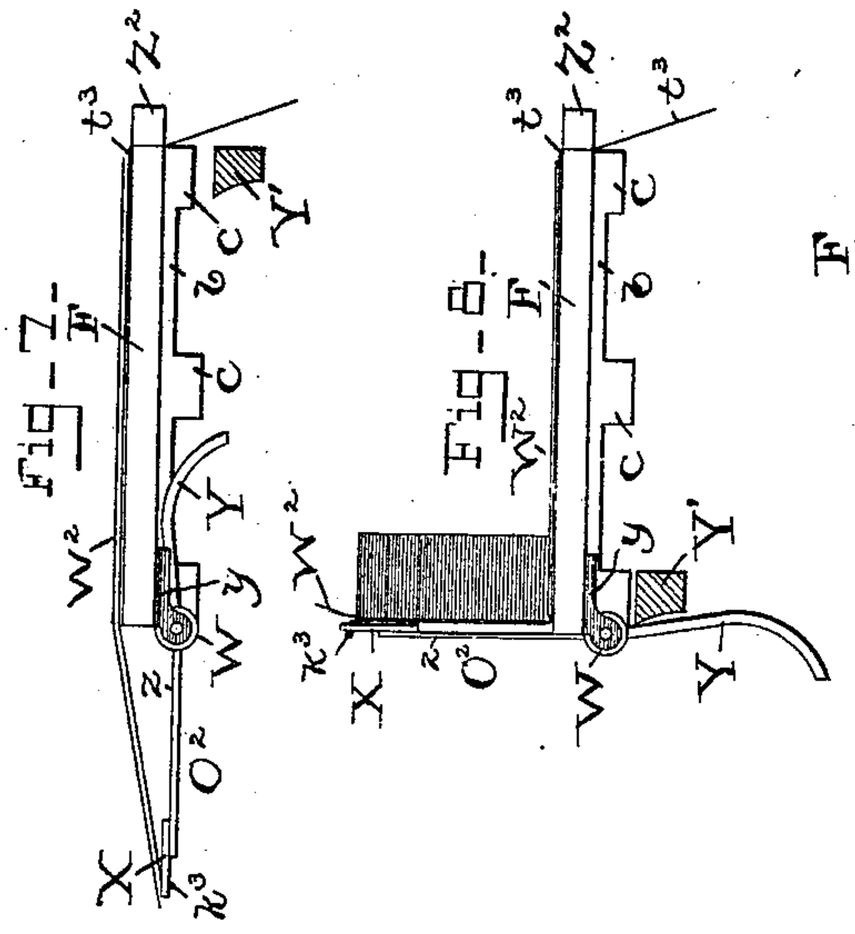

Fig. 7.

Fig. 8.

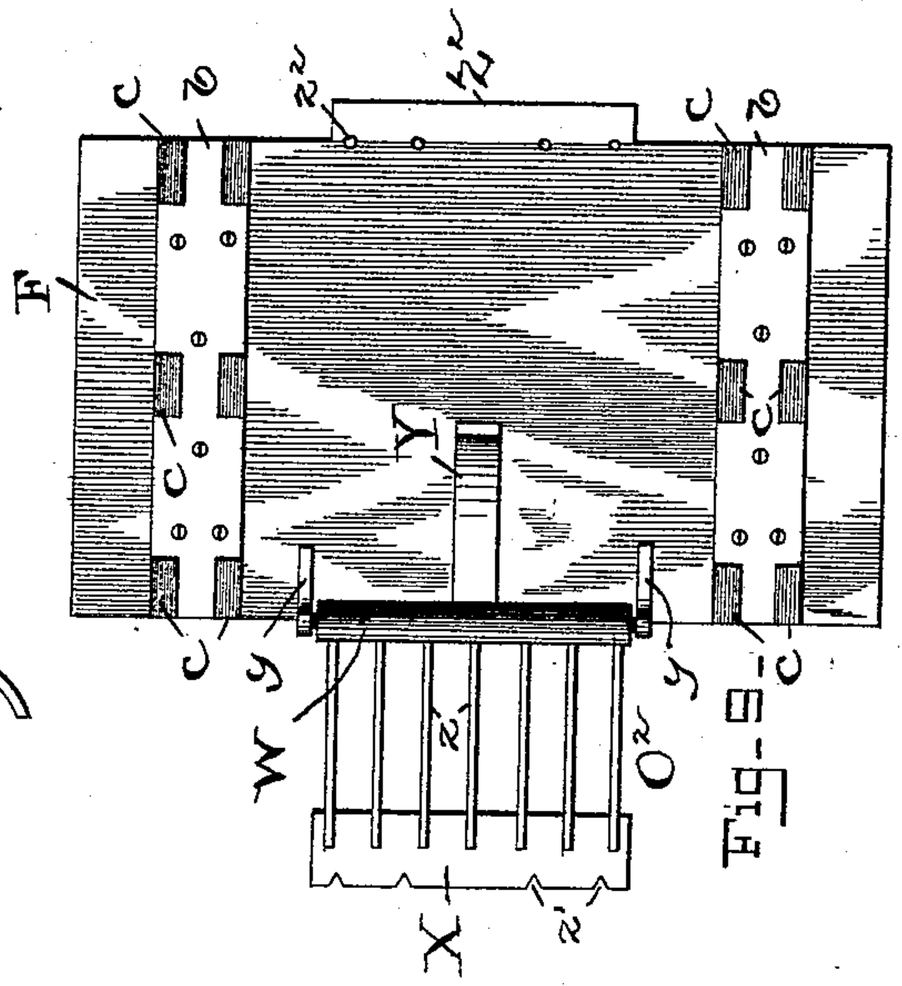

Fig. 5.

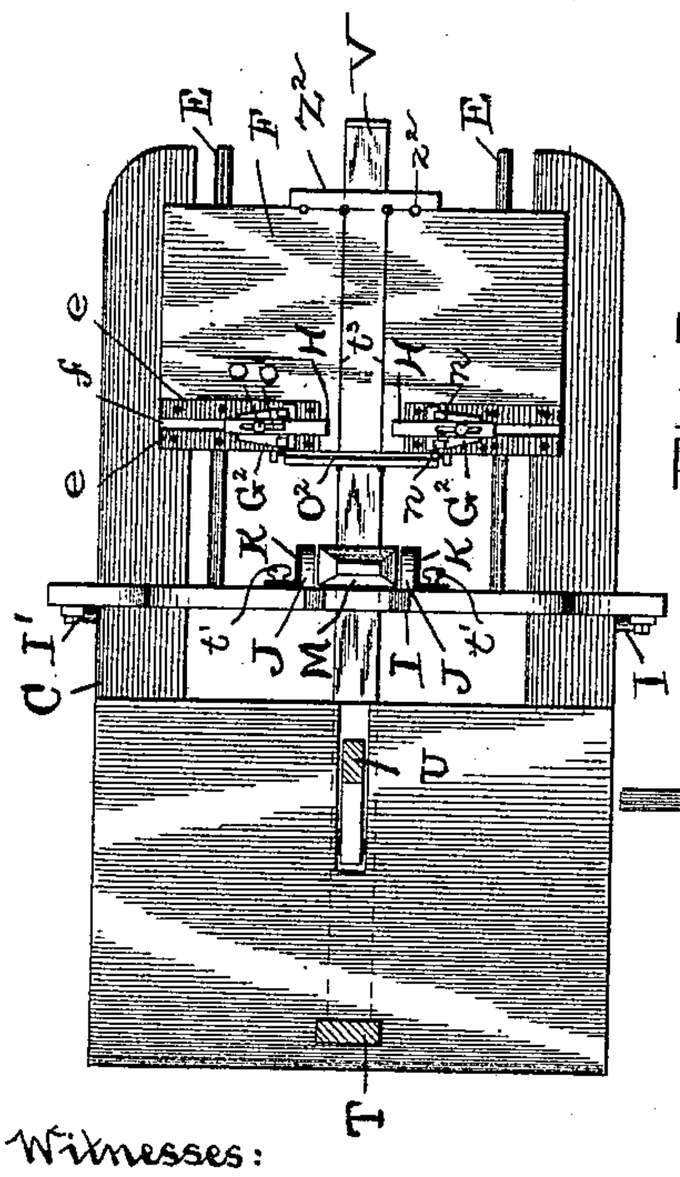

Fig. 3.

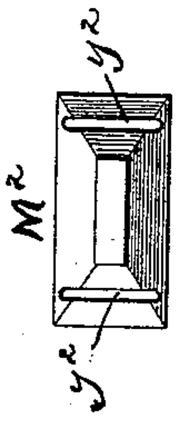

Fig. 12.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN SABOLD, OF BOYERTOWN, PENNSYLVANIA.

BAG-BUNDLING PRESS.

SPECIFICATION forming part of Letters Patent No. 480,967, dated August 16, 1892.

Application filed February 4, 1892. Serial No. 420,304. (No model.)

To all whom it may concern:

Be it known that I, JOHN SABOLD, a citizen of the United States, residing at Boyertown, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Bag-Bundling Presses, of which the following is a specification.

This invention relates to an improvement in presses for bundling paper bags; and the object is to provide a perfectly-adjustable construction which shall have combined with it automatic means to facilitate wrapping and tying the bundles as they are made.

To this end the invention consists in the novel features of construction and combinations of parts hereinafter described and claimed.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 shows a side view of the press with a bundle of bags on the sliding carriage and the latter drawn out to bring the bundle from under the plunger or follower; Fig. 2, a front end view, and Fig. 3 a top view with the parts above the follower-stem removed. Fig. 4 is a central longitudinal section with the carriage under the plunger and the press ready to act on a bundle of bags; Fig. 5, a detached front view of the plunger and connections, the wrapper-holding board being removed; Fig. 6, a cross-section on line 6 6 of Fig. 5; Fig. 7, a detail side view showing the automatic arrangement for handling the wrapper and cord, the parts being shown in their normal relation; Fig. 8, a similar view showing the action of these parts in handling the wrapper and cord or twine; Fig. 9, a bottom view of the carriage and the hinged frame which holds the wrapper and twine; Fig. 10, a vertical section and a cross-section through the stem of the plunger-head or follower and the plunger-bar where they are joined together; Fig. 11, a detail vertical section of one of the adjustable standards for holding the compressed bundle while it is wrapped and tied, and Fig. 12 a top view of a modified form of plunger-head or follower.

The supporting-stand of the press is in the form of a table having legs A, skirt B, and top C, which latter is open in the center and at the front end. This stand or table has a substantial cross-beam D at the middle, and two parallel iron rails E are arranged longitudinally of the table and which rests at their inner ends in notches in the said cross-beam and abut a plate E′, secured to the back of the cross-beam. At their forward ends these rails have offsets *a* fitting down behind the front board of the skirt B to prevent the rails from sliding forward, and said rails have projecting ends resting in notches in a plate B′, secured to the skirt. By this construction it will be seen the rails are held rigid without fastening devices.

A sliding carriage is mounted on the rails E and comprises a board F, having cleats *b* secured to its under side, which cleats have a number of pairs of depending lugs *c* to straddle the rails and constitute guides for the carriage. The front pair of lugs are short enough to pass the skirt B; but those behind them are longer and by abutting the said skirt form a stop to limit the forward movement of the carriage. Said carriage has near its back edge a crosswise groove *d* and plates *e* on opposite sides of the groove projecting over it to form a narrow slot *f*.

Standards G are mounted on the carriage and have base-plates *g*, through which extend bolts *h*, whose heads are confined in the groove *d*. The standards may be adjusted to any position by sliding them along the groove and locked by tightening thumb-screws *h′* on the bolts *h*. Each standard has a vertical extension G′ fitting between flanges *i* on the standard and slotted to receive a bolt *j*, projecting from the latter, and having a tightening thumb-screw *k*. The extension has teeth *l*, which engage similar teeth *m* on the standard, and said extension may be adjusted to suit and then locked by causing these teeth to interlock, as illustrated in Fig. 11, and tightening the thumb-screw. The extension has an arm G^2 at the top, provided with grooved guide-flanges *n* at opposite sides and a projecting bolt or stud *o*. A plate or bar H fits on top of said cross-arm G^2 and between the guide-flanges *n* and has a slot *o′*, through which the stud *o* projects. Said plate or bar has a downturned handle H′, and may be slid in and out thereby through its guides *n*, and is held straight by the stud *o*.

An upright back board I is mounted on

standards I′, which at their lower ends form plates *p*, fitting against the table-skirt B and secured thereto by bolts *q*, extending through slots *q′* in said plates and having tightening thumb-screws *r*. This construction allows longitudinal adjustment of the back board. Said back board has near its middle a crosswise groove *s*, with plates *s′* like the groove in the carriage-board, and upright side boards J are fitted against the back board and have plates K secured to them. Bolts *t* pass through said plates and have their heads confined in the groove *s*. The side boards may be adjusted to the desired position and locked by tightening thumb-screws *t′* on the bolts *t*. The side boards have gains L to receive the sliding plates or bars H of the standards on the carriage.

A plunger-head or follower M fits between the side boards J, which form a guide for it, and said head has a stem M′, which is fastened to the lower end of a plunger-bar N. A plate O is inserted between the plunger-stem and bar and has flanges *v* on each side. The stem fits between the flanges on one side and the bar N between the flanges on the opposite side, and a bolt P extends through the stem, plate, and bar and connects them securely together. This bolt passes through a slot p^2 in the stem, which is thus rendered vertically adjustable, and said stem has on its rear side a spur or tooth *w*, engaging rack-teeth *w′* on the plate O. It will be seen that this construction securely clamps the stem and bar together, and the stem is easily adjustable and may be set at the desired position by tightening a thumb-screw P^2 on the bolt P.

A board Q is supported by suitable standards Q′, secured to the table, and has vertical strips R attached to it and forming a dovetailed groove in which the plunger-bar N fits and slides. The board Q is open between said guide-strips, and the end of a lever S projects through the opening and engages in a socket *x* in the bar N. The lever S is pivoted at its rear end to a post T at the back part of the table and has connected to its middle one end of a rod U, the opposite or lower end of which connects with a treadle V beneath the table and pivoted at its rear end to the post T and projecting out in front of the table.

The carriage-board F carries a wrapper-folding device which comprises a shaft W, mounted in bearings *y*, secured to said board and projecting beyond its rear edge. This shaft carries a frame O^2, comprising a number of parallel wires or rods *z*, inserted rigidly in the shaft, and a plate X, to which the outer end of the rods are rigidly joined, said plate being notched, as at *z′*, in its outer edge. On the opposite side of the shaft a rigid downcurved arm Y projects, and is arranged to strike a stationary cam-block Y′, located at a suitable point below the carriage.

The skirt of the table is boarded up at the front end to form a box Z for containing balls of twine Z′, and the twine t^3 from said balls is carried over the front end of the table and threaded through holes z^2 in a cleat Z^2, fastened on the front end of the carriage-board F.

A board H^2 is supported above the plunger on a ledge of the plunger-bar guide-board and held in place by a cleat *r′*, which fits over a similar cleat r^2 on said ledge. This board H^2 is for holding bundle-wrappers which are stuck on a pin x^2 projecting from said board.

The operation of the press is as follows: The machine is adjusted to the size of bags to be bundled, and the twine is drawn over the carriage, knotted at the end, and fitted in the notches of the plate X, with the knots K^3 on the under side. A wrapper W^2 is pulled off the board H^2 and laid over the table on top of the twine with its rear part resting on the frame O^2, which is held out in an approximately horizontal position by the arm Y coming against the under side of the carriage-board. The carriage is slid back under the plunger, and the standards G will have position on the outside of the side boards J. The bags are now stacked up between the said side boards, and by depressing the treadle the plunger is brought down and the bags pressed to the desired degree. The standards G G′ are adjusted to the height of the compressed bundle and after the bags are pressed the plates or bars H are shoved inward with the two hands so that their ends project over the ends of the bags and hold them down in their compressed state. Now the treadle is released and the carriage drawn forward on its slides. This movement causes the arm V under the carriage to strike the cam-block Y′, and the frame O^2 is thereby thrown up to a vertical position, as shown in Fig. 8, which carries the wrapper and twine up against the rear side of the bundle. The front part of the wrapper will now be folded over and the twine cut and tied around, and the bundle is complete and ready for removal, which is effected by simply drawing out the plates or bars H by means of their handles H′. On the forward movement of the carriage the frame O^2 will fall to its horizontal position.

By the adjustable nature of the parts it is obvious bags of various sizes may be bundled in this press, and one plunger-head or follower and stem may be readily substituted for another and adjusted by means of the mechanism hereinbefore described. By means of the adjustable back board the plunger may be made to always press on the middle of the bags.

The arrangement for folding up the wrapper and twine on the rear side of the bundle is purely automatic and greatly facilitates the operation.

A press of this character made of sufficient size may be used for making up shipping-bundles of a number of smaller bag-bundles. In this case the plunger head or follower M^2 would be slotted crosswise, as illustrated in

Fig. 12, and in wrapping the bundle one wrapper would be placed on the bottom and another on the top and overlapped on each other at the side. The twine would pass through the slots y^2 in the follower and be tied over the wrappers. Twine would also be tied lengthwise around the bundle.

It is obvious steam may be employed in the operation of the press by providing suitable mechanism.

It is obvious numerous changes may be made in the construction and arrangement of the parts here shown, and hence I do not confine myself to the same, but consider I am entitled to all variations coming within the scope of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a bag-bundling press, the combination of a suitable stand, a movable carriage on which the bags are placed, a back board, side boards, a plunger to press the bags, and standards on the carriage, adjustable by means of a cross-groove in said carriage and suitable locking mechanism and having adjustable extensions with sliding plates to take over the bags and hold them compressed after the plunger has acted.

2. In a bag-bundling press, the combination of a suitable stand, a vertically-reciprocating plunger for pressing the bags, a sliding carriage which takes the bags in and out from under the plunger, a vertical back board having a cross-groove in its front side, and suitable side boards having means of engagement with said cross-groove, and devices for locking them at different adjustments.

3. In a bag-bundling press, the combination of a suitable stand, a movable carriage on which the bags are placed, a back board side boards, a plunger-head or follower fitting between the side boards and having a stem, a plunger-bar, a flanged plate between the stem and bar, and a bolt passing through the stem, plate, and bar and securing them together.

4. In a bag-bundling press, the combination of a suitable stand, a movable carriage on which the bags are placed, a back board, side boards, a plunger for pressing the bags, a holder for the bundle-wrapper, hinged to the sliding carriage, and means for throwing said holder to a vertical position upon the sliding outward of the carriage.

5. In a bag-bundling press, the combination of a suitable stand, a movable carriage on which the bags are placed, a back board, side boards, a plunger for pressing the bags, a frame hinged to the sliding carriage and supporting the bundle-wrapper, said frame having a projecting arm, and a stationary cam-block in the path of said arm, operating substantially as described.

6. In a bag-bundling machine, the combination of a suitable stand, a movable carriage on which the bags are placed, a back board, side boards, a plunger for pressing the bags, a frame hinged to the movable carriage and supporting the bundle-wrapper and tying-twine, said frame having a projecting arm and notches in its outer edge to receive the ends of the twine, and a stationary cam-block in the path of said projecting arm, operating substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN SABOLD.

Witnesses:
ISAAC F. YOST,
LEWIS P. G. FEGLEY.