

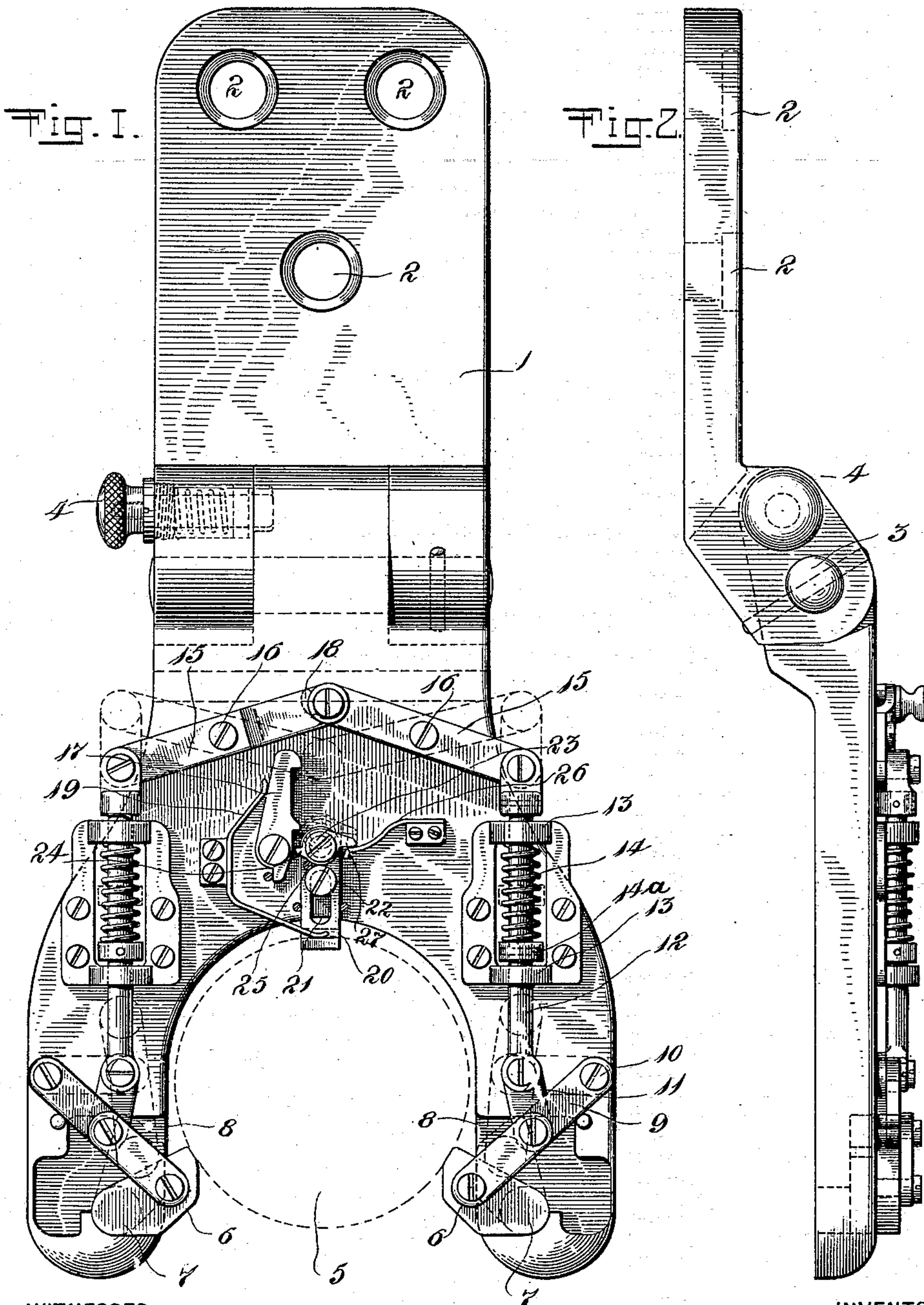
No. 637,594.

Patented Nov. 21, 1899.

E. HETT.  
PRINTING PRESS.

(Application filed Jan. 3, 1899. Renewed Aug. 19, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWARD HETT, OF NEW YORK, N. Y.

## PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 637,594, dated November 21, 1899.

Application filed January 3, 1899. Renewed August 19, 1899. Serial No. 727,854. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD HETT, of New York, (New Dorp,) in the county of Richmond and State of New York, have invented a new and useful Improvement in Printing-Presses, of which the following is a specification.

My invention relates to operating presses, and particularly to hoisting-arms for seizing and holding the ends of shafts of printing cylinders, tubes, or supports therefor for the purpose of removing such cylinders, tubes, or supports from operative position in the press or for placing them in operative position in the press.

It has for its object to provide a new and improved hoisting-arm for seizing and holding the end of the shaft of a printing-cylinder or printing-tube or the support therefor and one which is more or less automatic in operation.

It consists of the novel devices herein shown and described.

In the drawings accompanying this specification and forming part hereof I have shown and will now proceed to describe the preferred form of my improved device, similar reference characters in both figures representing corresponding parts.

Figure 1 is a front view of my improved hoisting-fork, and Fig. 2 is a side view of the same.

1 represents the fork of a hoisting-arm, adapted to be used in a printing-press for the purpose of seizing and holding the end of the shaft of a printing-cylinder or printing-tube or the support therefor preparatory to the removal of such printing cylinder, tube, or support from operative position in the press or to the introduction of the same into operative position in the press. My improved fork is secured to the end of such a hoisting-arm in any suitable manner, as by screws passing through the screw-holes 2 in the fork. My improved fork is preferably made in two pieces, an upper and a lower one, pivotally jointed on bar 3, so that the lower part can be swung upward to permit the printing cylinder, tube, or support therefor to be moved sidewise of the press. Screw 4 enables the two parts to be readily locked together or to be unlocked.

5 represents the end of the shaft of the

printing-cylinder held by my improved fork. 6 6 are movable supports for holding the end of the shaft and are pivoted at 7 and are arranged so as to be swung into recesses 8 8 in the two arms of the fork. When thus swung in, they are out of the way of the end of the shaft, which can then be removed from the fork or be inserted in place therein. As shown in Fig. 1, these supports are in their outward position adapted to hold the shaft.

For the purpose of moving the supports I arrange a toggle-joint 9, secured at one end to the fork at 10 and at the other end to support 6. At the center of the toggle-joint I pivotally secure a link 11, which link is pivotally secured to rod 12, movable vertically in bearings 13 13, secured to the fork. The spring 14, encircling rod 12 and bearing against a collar 14<sup>a</sup> on the rod, tends to force the rod downward and to force the movable support outward into the position shown by Fig. 1. A lever 15, pivoted at 16 in the fork, is pivotally secured to the upper end of each rod 12. Preferably the two levers 15 are pivotally connected together, but loosely, so as to permit the two levers considerable lateral play upon each other for a purpose presently to be described.

When it is desired to move the movable supports into the recesses to withdraw them out of the way of the shaft, the inward ends of levers 15 are pulled downward into the position shown by dotted lines in Fig. 1. This pulls arms 12 upward, straining springs 14 and bending the toggle-joint 9 and raising the supports and withdrawing them from contact with the shaft of the printing-cylinder, as clearly shown by dotted lines in Fig. 1.

I preferably provide the catch 17, which springs over a projection 18 on one of the levers 15 when the levers are shown in the dotted position of Fig. 1. The catch 17 is pressed by spring 19, so as to hold levers 15 in the position shown in dotted lines, thus holding supports 6 out of operative position.

I arrange a trip adapted preferably to be operated by the end of the shaft of a printing-cylinder when inserted between the arms of the fork for tripping catch 17 and permitting springs 14 to force the movable supports into operative position to hold the shaft. The tripping device for this purpose consists



of a sliding plate 20, normally pressed downward by one arm of spring 19. Plate 20 has an opening 21 and is adapted to slide backward and downward upon pin 22, fixed to the fork. At its upper end the plate carries a trip 23. This trip has a nose 24, which when plate 20 is forced upward strikes against a projection on the side of catch 17 and forces the catch upward off from projection 18, permitting springs 14 to throw levers 15 upward and force the movable supports outward into operative position. A stop 25 on plate 20 holds the trip rigid during this operation. When the end of a shaft is inserted between the arms of the fork, it strikes plate 20 and forces it upward, causing the trip to unlock the catch with the above result, the movable supports immediately moving outward and seizing and holding the end of the shaft. When it is desired to remove the shaft, the inner ends of levers 15 are pulled downward, thus withdrawing the movable supports from position, whereupon the shaft can be removed from the fork. Thereupon spring 19 forces plate 20 downward. In order to permit nose 24 of trip 23 to repass the projection on catch 17, I arrange trip 23 so that it can rotate slightly, permitting the parts to pass. In order to hold nose 24, however, in proper position for the next operation, a spring 26 bears against a projection 27 on the opposite side of the trip. Spring 26 is of less strength than spring 19, and hence does not prevent the downward return of plate 20 and does not prevent the slight rotary motion of trip 23 as toe 24 passes the projection on latch 17.

By means of my improved device the movable supports can be easily withdrawn from operative position and may be automatically put into operative position by the insertion of the end of the shaft itself into the arms of the fork.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a press a fork for a hoisting-arm having movable supports adapted to seize and hold the end of the shaft of a printing cylinder or tube or support therefor, spring-pressed means, for moving the movable supports, adapted normally to hold them outward in operative position, a catch for holding said means in position to hold the movable supports withdrawn or out of operative position, and a trip for releasing the catch, adapted to be operated by the end of the shaft when inserted in the fork, whereby upon the insertion of the end of a shaft in the fork the movable supports will be automatically moved outward into operative position.

2. In a press a fork for a hoisting-arm having movable supports adapted to seize and hold the end of the shaft of a printing-cylinder or tube or support therefor, spring-pressed means, for moving the movable supports, adapted normally to hold them outward in operative position, a spring-pressed catch adapted to seize said means, when moved into

the position to withdraw the movable supports out of operative position, and to hold said means in such position, a trip adapted to be struck by the end of a shaft when the latter is inserted in the fork and to be forced against the catch to cause it to release the spring-pressed means, a stop for holding the trip rigid while striking the catch, a spring to return the trip to its normal position when the shaft is withdrawn from the fork and means for permitting the trip to yield in order to permit it to pass the catch on its return, whereby upon the insertion of the end of a shaft in the fork the movable supports will be automatically moved outward into operative position and upon the removal of the shaft the trip and catch will return to their normal position.

3. In a press a fork for a hoisting-arm having movable supports adapted to seize and hold the end of the shaft of a printing cylinder or tube or support therefor, spring-pressed means, for moving the movable supports, adapted normally to hold them outward in operative position, a spring-pressed catch adapted to seize said means, when moved into the position to withdraw the movable supports out of operative position, and to hold said means in such position, a sliding plate adapted at one limit of its sliding motion to project into the space between the arms of the fork, a spring for normally pressing the plate into such projected position, a rotatable trip mounted upon the plate having a toe adapted to strike a projection upon the catch when the plate is moved upward, a stop upon the plate for holding the trip rigid as it strikes the projection upon the catch during such upward movement of the plate, whereby the catch will be forced to release the spring-pressed means, and a spring bearing against another projection upon the trip to permit the trip to rotatably yield when the toe strikes the projection of the catch on the downward return of the plate and to hold the trip in normal position at all other times, whereby upon the insertion of the end of a shaft in the fork the movable supports will be automatically moved outward into operative position and upon the withdrawal of the shaft the catch, trip and plate will return to their normal position.

4. In a press a fork for a hoisting-arm having swinging supports adapted to seize and hold the end of the shaft of a printing-cylinder or tube or support therefor, toggle-joints each secured at one end to an arm of the fork and at the other end to a movable support, a rod sliding in bearings of the arm and loosely secured to the inner end of each arm of each toggle-joint, springs adapted to force the arms downward so as to swing the supports outward into operative position, levers pivoted to the fork and secured at one end pivotally to each sliding rod and at the other end loosely secured together, a spring-pressed catch adapted to seize said levers, when they



are in the position to withdraw the swinging supports out of operative position, and to hold said levers in said position and a trip for releasing the catch adapted to be operated by the end of the shaft when inserted in the fork, whereby upon the insertion of the end of a shaft in the fork the swinging supports will be automatically moved outward into operative position.

5 5. In a press a fork for a hoisting-arm having swinging supports adapted to seize and hold the end of the shaft of a printing cylinder or tube or support therefor, toggle-joints each secured at one end to an arm of the fork and at the other end to a movable support, a rod sliding in bearings of the arm and loosely secured to the inner end of each arm of each toggle-joint, springs adapted to force the arms downward so as to swing the supports outward into operative position, levers pivoted to the fork and secured at one end pivotally to each sliding rod and at the other end loosely secured together, a spring-pressed catch adapted to seize said levers when they are in the position to withdraw the swinging supports out of operative position and to hold said levers in said position, a sliding plate adapted at one limit of its sliding motion to project into the space between the arms of

the fork, a spring for normally pressing the plate into such projected position, a rotatable trip mounted upon the plate having a toe adapted to strike a projection upon the catch when the plate is moved upward, a stop upon the plate for holding the trip rigid as it strikes the projection upon the catch during such upward movement of the plate, whereby the catch will be forced to release the spring-pressed means and a spring bearing against another projection upon the trip to permit the trip to rotatably yield when the toe strikes the projection of the catch on the downward return of the plate and to hold the trip in normal position at all other times, whereby upon the insertion of the end of a shaft in the fork the movable supports will be automatically moved outward into operative position and upon the withdrawal of the shaft the catch, trip and plate will return to their normal position.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD HETT.

Witnesses:

G. W. DONALDSON,  
EDWIN SEGER.