No. 751,873. PATENTED FEB. 9, 1904.

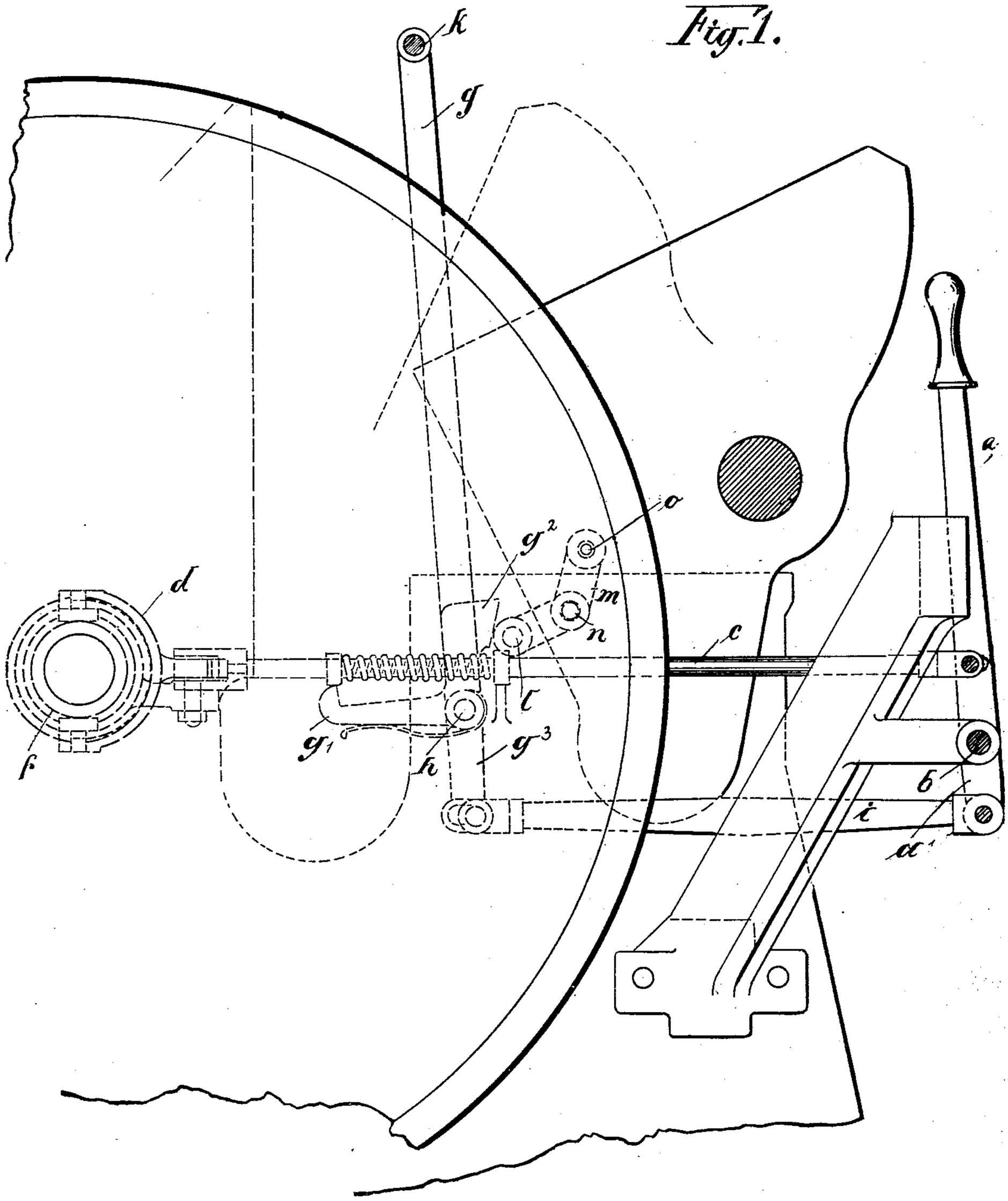
W. M. ROCKSTROH.

ENGAGING AND DISENGAGING DEVICE FOR PLATEN PRINTING PRESSES.

APPLICATION FILED APR. 16, 1902.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.



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NO MODEL. 2 SHEETS—SHEET 2.

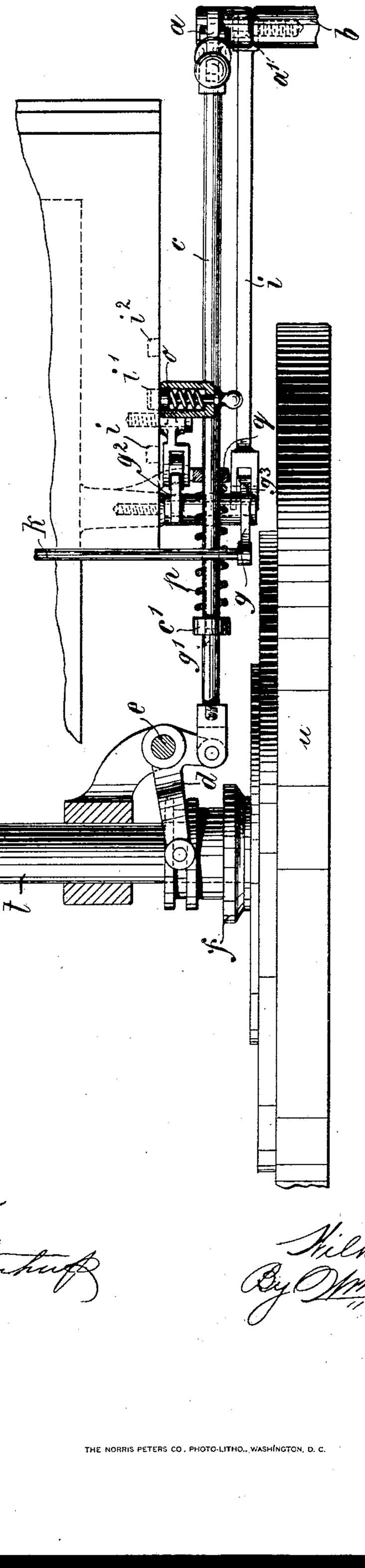

Fig. 2.

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No. 751,873. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

WILHELM MAX ROCKSTROH, OF KLEIN SEDLITZ, NEAR PIRNA, GERMANY.

ENGAGING AND DISENGAGING DEVICE FOR PLATEN PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 751,873, dated February 9, 1904.

Application filed April 16, 1902. Serial No. 103,215. (No model.)

To all whom it may concern:

Be it known that I, WILHELM MAX ROCKSTROH, a subject of the Emperor of Germany, residing at and whose post-office address is Klein Sedlitz, near Pirna-on-the-Elbe, in the Empire of Germany, have invented a new and useful Engaging and Disengaging Device for Platen Printing-Presses, of which the following is a complete specification.

The invention relates to improvements in engaging and disengaging devices for platen printing-presses; and the objects of the improvement are, first, to provide, besides the usual hand-lever for engaging and disengaging the friction-clutch of the press, a cross-bar out of reach of the platen and secured between a pair of levers, so that the friction-clutch may be controlled from two different places, and, second, to provide an arrangement of parts on the platen by means of which the friction-clutch may be disengaged automatically after each printing operation. It is advisable to so arrange the press that its friction-clutch may be engaged and disengaged from two different places, as the second device employed for this purpose, beside the usual hand-lever, will enable the workman to stop the machine immediately in case his hand is in danger to get hurt between the platen and the base or bearing plate. For this reason it is preferable to place the second device above the path of the swinging platen and at a certain distance from the base or bearing plate. Hitherto similar devices have already been proposed; but they are objectionable, for the reason that sometimes they are the only means for putting the machine into and out of movement, so that each time the workman puts the press into operation he is obliged to set his hand to the very place where the latter is in danger to be hurt, and this the more so when during the printing operation he holds with his one hand the hand-lever. It might be preferable to put the machine into and out of movement from a single place; but then it is absolutely necessary that this should be done with perfect safety, as otherwise the very mishaps are likely to occur which a safety device like that according to my invention is designed to avoid. The second device for disengaging the friction-clutch is to serve simply as a safety means, while the hand-lever on the front of the machine is as a rule employed for putting the machine into and out of operation in the usual manner.

The second improvement named above—viz., the arrangement of parts on the platen for disengaging the friction-clutch automatically after each printing operation—is of special advantage for certain works—as, for instance, large prints, gold impressions, &c.

The new device is illustrated in the accompanying drawings, in which—

Figure 1 is an elevation, and Fig. 2 is a plan.

Similar letters of reference refer to similar parts throughout the two views.

In the drawings all the known parts of the platen printing-press are omitted and only so much is shown as is necessary for the invention to be understood. The arrangement of the device is such that a single rod *c* is employed for putting the machine into and out of operation, the said rod being linked to a short arm of a forked lever *d*, which is mounted to rock on a pin *e* and engages and disengages the friction-clutch *f* of the press. The rod *c* may be actuated both from the main hand-lever *a* on the front of the machine and from a safety-lever *g*, which is arranged to project above the path of the swinging platen *s* at a certain distance from the base or bearing plate. Preferably two levers *g* are employed, between the free ends of which a cross-bar *k* is secured, which has a length in correspondence with the width of the platen *s*. The rod *c* is surrounded by a spiral spring *p*, which bears with the one end against a collar *c'* and with the other end against a suitable bearing *q* on the machine-frame, so as to press the rod *i* toward the shaft *t* and disengage the friction-clutch *f*. The main hand-lever *a* is mounted on a stud *b* to swing, and its shorter arm *a'* is linked to a connecting-rod *i*. The two levers *g* are mounted on suitable pins *h* to swing, and the one of them on the side of the friction-clutch is provided with a shorter arm g^3, the pin of which engages in a slot at the other end of the connecting-rod *i*. The

consequence of this is that the cross-bar *k* between the levers *q* is at liberty to turn through a certain angle without acting upon the connecting-rod *i*. The lever *g* (shown in the drawings) is rigidly connected not only with the said arm g^3, but also with two arms *g'* and g^2. The one arm *g'* is hook-shaped and pressed by a leaf-spring so as to snap behind the collar *c'* on the rod *c* being moved by the hand-lever *a* away from the shaft *t* (in Fig. 1 from left to right) to engage the friction-clutch *f*. Then the rod *i* will be locked and the friction-clutch remain engaged. The other arm, g^2, has a slanting face against which a roller *l* on the bell-crank lever *m* may strike. The lever *m* is mounted to swing on a pin *n*, affixed to the platen *s*, and may be placed in two different positions by means of a spring-pressed bolt *o* engaging in suitable recesses. When the bell-crank lever *m* is brought into the one position shown in Fig. 1, its roller *l* will strike against the slanting face of the arm g^2 and push off the latter, and with it also the arm *g'*, so that the latter releases the collar *c'*, whereupon the rod *c* will be pushed forward toward the shaft *t* to disengage the friction-clutch *f*. Thus after each printing operation the platen *s*, moving back, will automatically stop the machine. On the contrary, if the bell-crank lever *m* be brought into the other position its roller *l* will not touch at all upon the arm g^2, so that the machine may continue operating.

The new device is operated as follows: On moving the hand-lever *a* away from the shaft *t* (in Fig. 1 from left to right) the rod *c* will be moved in the same direction, but the connecting-rod *i* in the opposite direction. Thereby the friction-clutch *f* will be caused by the forked lever *d* to engage with the fly-wheel *u* or the driving-pulley of the printing-press, so that the latter is put into operation. At the same time the spiral spring *p* is compressed and the arm *g'* is caused to snap behind the collar *c'*, and thus secure the friction-clutch *f* in its engaged position. For stopping the machine the hand-lever *a* is moved toward the shaft *t*, so that the arm *g'* releases the collar *c'* and the rod *c* is pushed forward with the assistance of the spiral spring *p*.

The handling of the hand-lever, as described, for engaging and disengaging the friction-clutch may be effected at any moment. If, however, the hand of the workman should be in danger to get hurt between the platen and the base or bearing plate, the friction-clutch *f* will be disengaged instantly and automatically, for the reason that the hand of the workman cannot be moved toward the base or bearing plate without touching upon the cross-bar *k*. The latter will then be moved along with the hand and cause by the levers *g* the arm *g'* to release the collar *c'*, whereupon the spiral spring *p* will push forward the rod *c* to disengage the friction-clutch *f*.

If the machine is to be stopped after each printing operation, of course the bell-crank lever *m* will have to be brought by means of the bolt *o* into that position in which the roller *l* during the backward movement of the platen *s* will strike against the arm g^2 and cause the arm *g'* to release the collar *c'*. On the other hand, if the machine is not to be stopped after each printing operation the bell-crank lever *m* will have to be brought into the other position—say by turning it through an angle of ninety degrees—so that the roller *l* does not strike at all against the arm *g*.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, *I* declare that what I claim is—

1. In a platen printing-press, the combination with a friction-clutch, and a hand-lever for engaging and disengaging the friction-clutch, of a cross-bar arranged at a certain distance from the base or bearing plate for preventing the workman's hand from getting too near same, and means for so connecting said cross-bar with said hand-lever, that on the hand moving too far, the friction-clutch is automatically disengaged, substantially as set forth.

2. In a platen printing-press, the combination with a friction-clutch, of a lever engaging in the movable member of said clutch, a hand-lever, a rod linked at the one end to said lever and at the other end to said hand-lever, said rod being longitudinally pressed by a spring for disengaging said friction-clutch, an auxiliary lever mounted on a pin to rock and carrying a cross-bar at a certain distance from the base or bearing plate to prevent the workman's hand from getting too near same, a rod connecting said auxiliary lever with said hand-lever, a detent rigidly connected to said auxiliary lever and pressed by a spring to snap behind a collar on said rod for locking said friction-clutch in its engaged position and to release said collar in case of danger, substantially as set forth.

3. In a platen printing-press, the combination with a friction-clutch, of a lever engaging in the movable member of said clutch, a hand-lever, a rod linked at the one end to said lever and at the other end to said hand-lever, said rod being longitudinally pressed by a spring for disengaging said friction-clutch, a detent pressed by a spring to snap behind a collar on said rod for locking said friction-clutch in its engaged position, an arm affixed to the swinging platen and carrying a roller which is adapted to strike against a projection on said detent for disengaging said friction-clutch after each printing operation, substantially as set forth.

4. In a platen printing-press, the combination with a friction-clutch, of a lever engaging in the movable member of said clutch, a hand-lever, a rod linked at the one end to said lever and at the other end to said hand-lever, said

rod being longitudinally pressed by a spring for disengaging said friction-clutch, a detent pressed by a spring to snap behind a collar on said rod for locking said friction-clutch in its engaged position, a two-armed lever mounted to rock on the swinging platen and carrying a roller, a spring-pressed bolt for securing said two-armed lever in either of two positions, said roller being adapted in the one position to strike against a projection on said detent for disengaging said friction-clutch after each printing operation, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

WILHELM MAX ROCKSTROH.

Witnesses:

HERNANDO DE SOTO,

PAUL ARRAS.