No. 842,362. PATENTED JAN. 29, 1907.

F. WAITE.

PLATEN PRINTING MACHINE.

APPLICATION FILED SEPT. 12, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

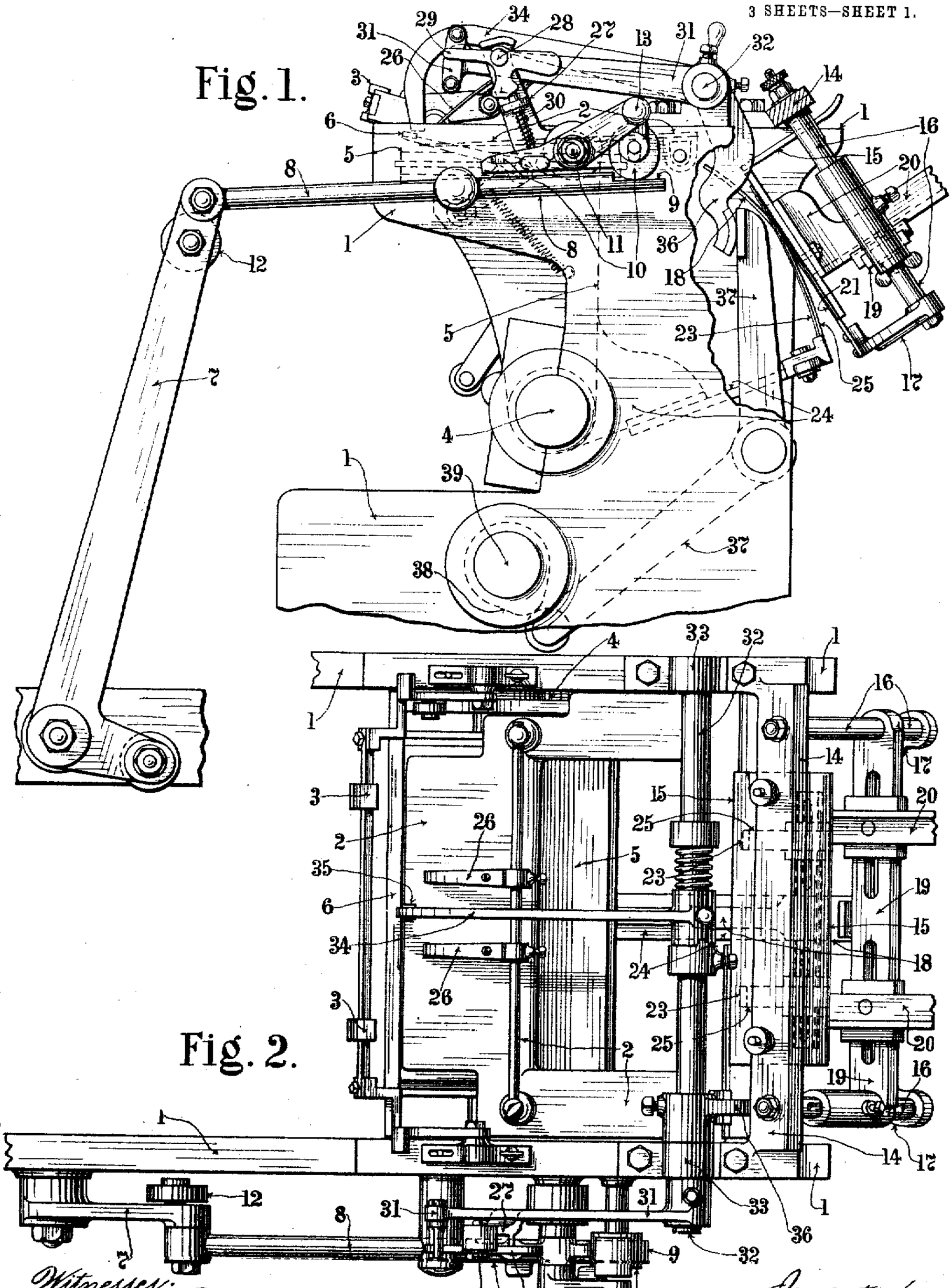

Fig. 2.

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3 SHEETS—SHEET 2.

Fig. 3.

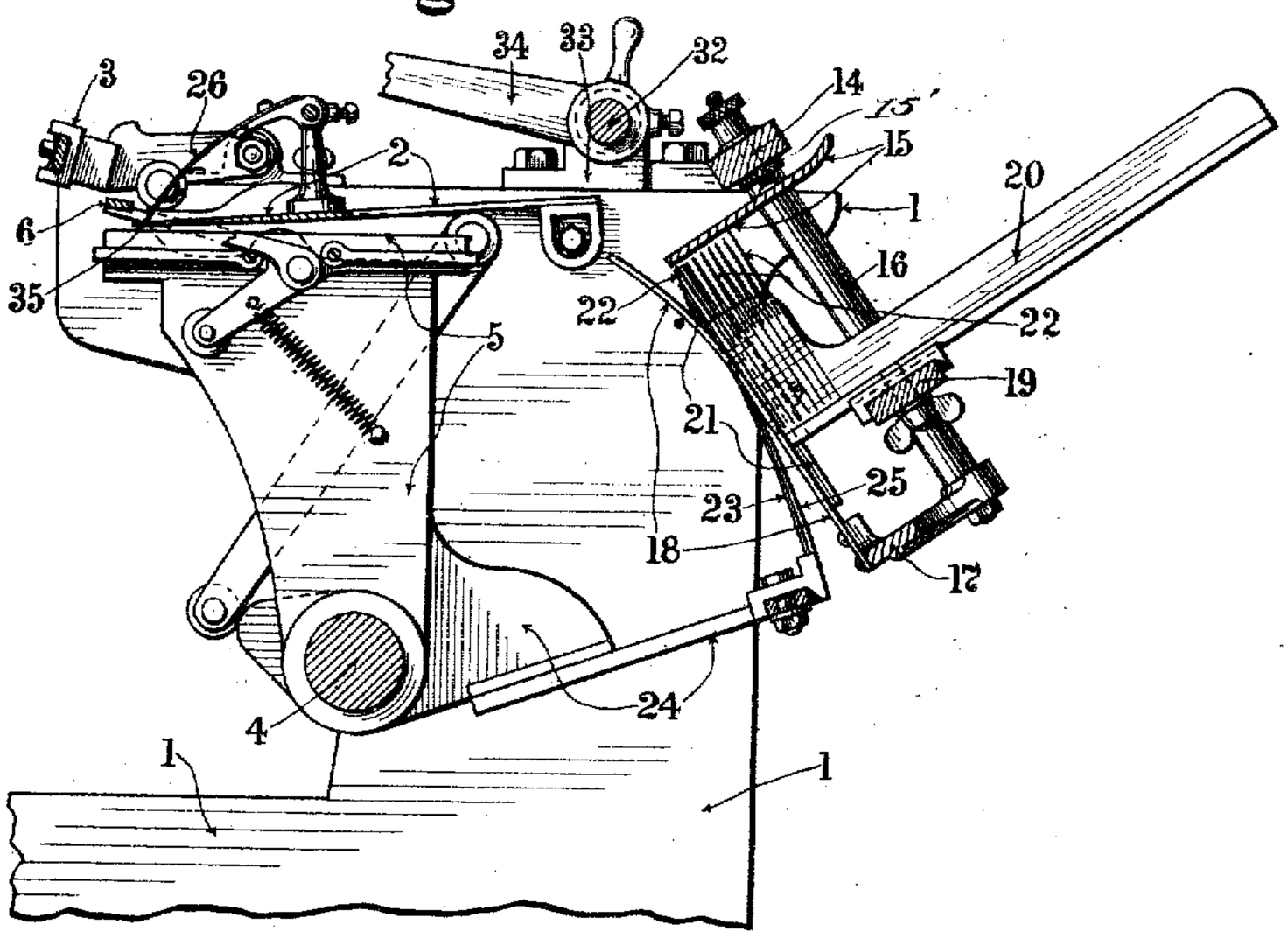
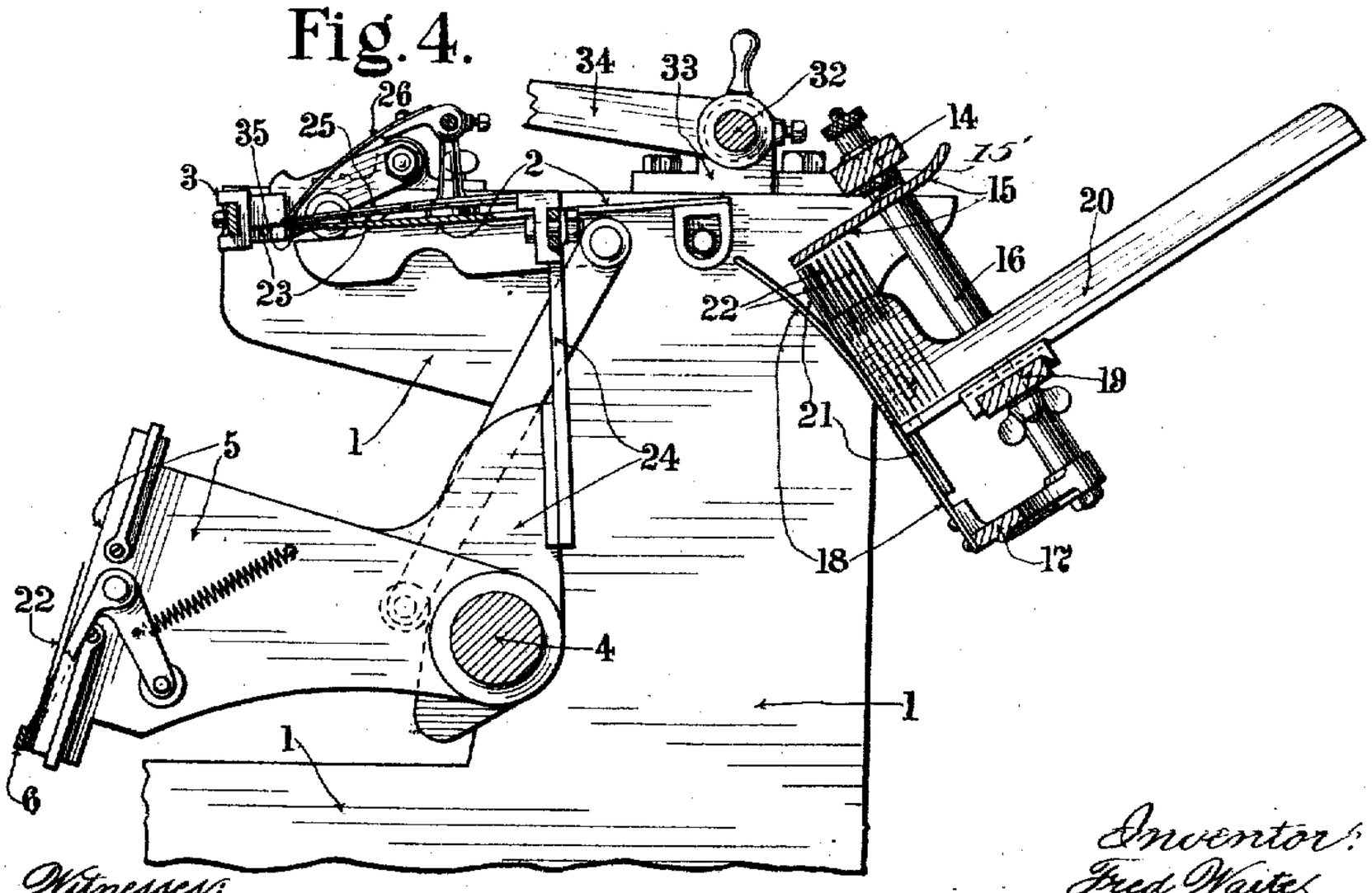


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

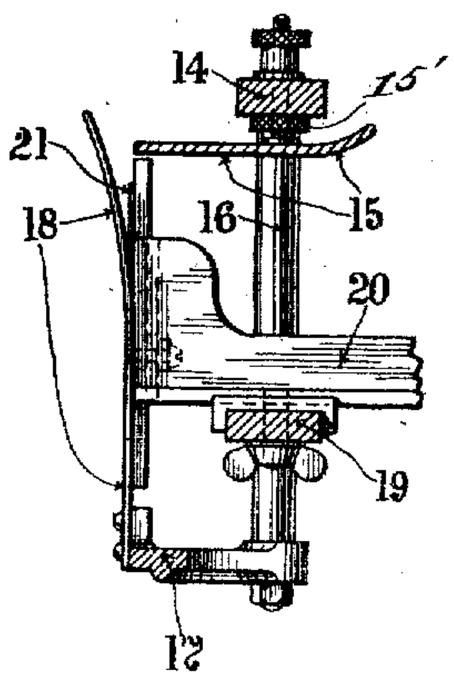
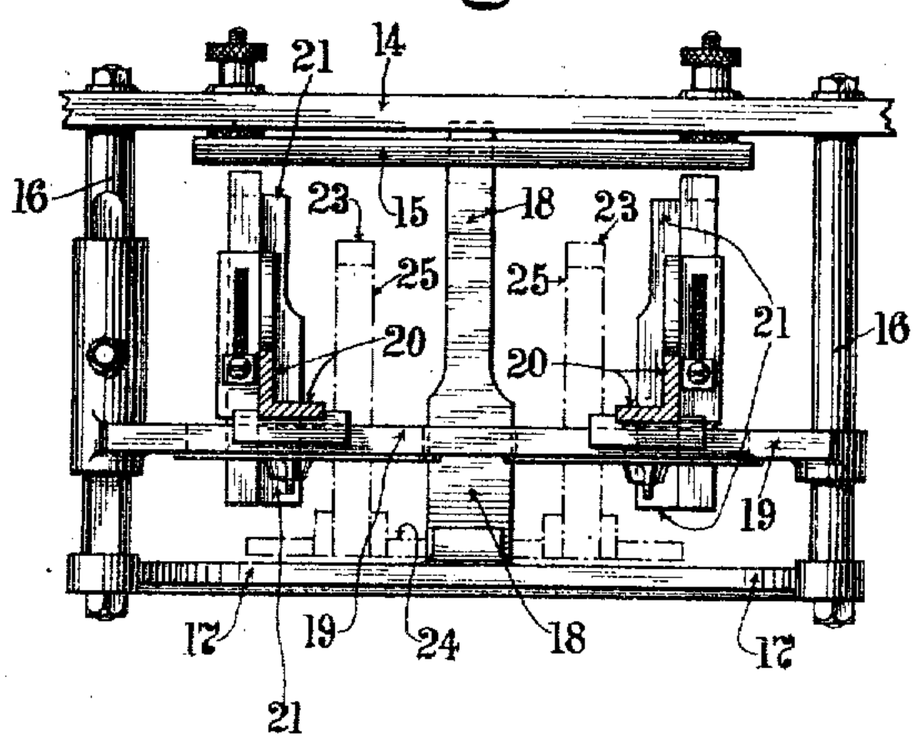


Fig. 6.



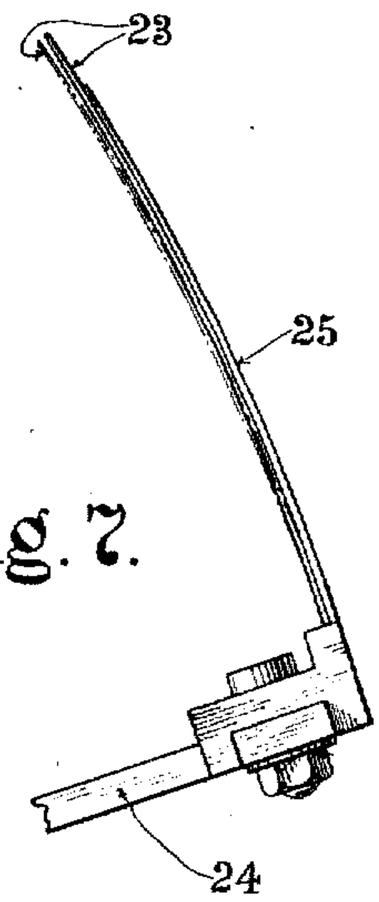


Fig. 7.

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UNITED STATES PATENT OFFICE.

FRED WAITE, OF OTLEY, ENGLAND.

PLATEN PRINTING-MACHINE.

No. 842,362. Specification of Letters Patent. Patented Jan. 29, 1907.

Application filed September 12, 1905. Serial No. 278,156.

To all whom it may concern:

Be it known that I, FRED WAITE, a subject of the King of Great Britain, residing at Otley, in the county of York, England, have invented certain new and useful Improvements in Platen Printing-Machines, and of which the following is a specification.

This invention relates to platen-machines for printing envelops; and my object is to provide such machines with an adjustable envelop-container box applicable for the reception of envelops of various sizes, means for automatically feeding the envelops singly from the said container-box onto the feed-plate, and means for automatically throwing off the impression should the feed mechanism fail to deliver an envelop onto the feed-plate.

The arrangement and combination of devices constituting my invention will be understood by describing the same with reference to the accompanying sheets of drawings, forming a part of this specification, in which similar numbers of reference indicate corresponding parts in each of the figures, wherein—

Figure 1 is a part-sectional side elevation of such parts of a platen printing-machine as are necessary to illustrate the application of my improvements, and Fig. 2 is a plan of the same. Fig. 3 is a sectional side elevation illustrating the feed mechanism taking an envelop from the container-box, and Fig. 4 is a similar view illustrating the feed mechanism in the delivery position. Figs. 5 and 6 are respectively a sectional side elevation and front end elevation of the envelop-container box detached from the machine, and Fig. 7 is a detail view drawn to an enlarged scale.

In the drawings, 1 are the side frames of the machine, 2 is the feed-plate provided with lifting end stops 3 3, 4 is the rocking shaft carrying the swinging platen 5, provided with a gripper 6, all of known construction.

7 is an oscillating arm carrying a reciprocating bar 8, formed with a shoulder 9, with which a weighted detent-lever 10, pivoted on a stud 11, may be caused to engage to stop the movement of the bar 8 and cause a roller 12 on the arm 7 to engage an inclined tappet-arm and turn an eccentric-shaft carrying the impression sufficiently to throw off the impression by simply reversing the pivoted handle 13, so as to depress the detent-lever 10 in the ordinary way.

The adjustable envelop-container box consists of a main cross-rail 14, fixed on the side frames 1 of the machine at the front end thereof, which cross-rail 14 carries on its under side a bridge-piece 15, adjustable through thumb-screws 15', while depending pillars 16 16 are fixed to the said cross-rail 14, one at each end thereof, which pillars have their lower ends connected by a cross-stay 17, to which latter is fixed a stop or rest 18, which passes upwardly in front of the foremost envelop, and on the pillars 16 16 a vertically-adjustable base-rail 19 is provided carrying two outwardly-projecting L-shaped brackets 20 20, which latter are adjustable horizontally to and away from each other on the said base-rail 19, while to the foremost edges of the L-shaped brackets 20 20 vertically-adjustable plates 21 21 are attached. By employing this construction of container-box the L-shaped brackets 20 20 may be adjusted to or away from each other to suit the width of the envelops to be received, and by adjusting the base-rail 19 on the pillars 16 16 to or away from the bridge-piece 15 the depth of the box may also be adjusted to suit the depth of the envelops to be contained therein, while the vertically-adjustable plates 21 21 may be set at the most suitable height to support the foremost envelop.

The envelop-container box just described is inclined or set at an angle to the side frames 1 of the machine, (see Figs. 1, 3, and 4,) and into this box the envelops 22 are placed side by side with the flap side of each envelop toward the address side of the envelop in front of it. The envelops 22 in the box fall by gravity against the fixed stop or rest 18, which bears against the center of the flap of the foremost envelop, while the upper edges of the envelops are located beneath the bridge-piece 15.

The automatic envelop-feed mechanism consists of a pair of springy fingers 23 23, carried on an arm 24, attached to the vibrating or swinging platen 5; which platen moves the said fingers 23 23 in an arc of a circle, so that the said fingers 23 23 are made to slide up against the flap side of the foremost envelop 22, situated in the container-box, and pass beneath the flap on each side of the stop or rest 18. The springy fingers 23 23 are each provided with a stiffening-piece 25, and as the said fingers 23 23 move in an arc of a circle they draw the top edge of the envelop engaged clear of the bridge-piece 15 and then pass the said envelop forward. Above the

platen 5 and located on the feed-plate 2 presser-fingers 26 26 are employed to bear upon the fed envelop and retain it in position on the feed-plate 2 until laid hold of by the gripper 6, which carries it away to be printed.

When the platen 5 is in the up position, the fingers 23 23 are in the down position up against the flap side of the foremost envelop, with their upper ends immediately below the edges of the flap of the envelop, (see Fig. 3,) and on the platen 5 swinging into the down position the fingers 23 23 are moved upward in an arc of a circle, which action has the effect of causing the fingers 23 23 to pass beneath the flap of the foremost envelop, draw the top edge of the said envelop clear of the bridge-piece 15, and carry such envelop forward onto the feed-plate 2, up against the stops 3 3, and beneath the presser-fingers 26 26, (see Figs. 2 and 4,) which fingers 26 26 bear upon and retain the fed envelop until it is laid hold of by the gripper 6 of the platen 5 on the latter again swinging into the up position to carry the envelop away to be printed. (See Fig. 3.) The rising of the platen 5 simultaneously lowers the fingers 23 23 ready to remove the next envelop, so that the envelops in the container-box are fed singly and automatically onto the feed-plate 2 with precision.

The construction of the springy fingers is clearly shown in the enlarged side elevation at Fig. 7, in which each finger 23 is provided with a stiffening-piece 25, as hereinbefore described. By constructing the springy fingers in this manner the fingers 23 23 themselves are rendered exceedingly flexible, so that during their downward movement against the foremost envelop they yield, as shown in broken lines at Fig. 7, while on the said fingers 23 23 engaging the foremost envelop to carry it forward the said fingers 23 23 close against their stiffening-pieces 25, as shown in full lines at Fig. 7, whereby the said fingers 23 23 are rendered perfectly rigid during their upward movement.

The automatic impression-throwing-off mechanism consists of an upstanding bracket 27, fixed on the stud 11, on which bracket at 28 is pivoted a trigger 29, which latter is normally held in the up position (see Fig. 1) by means of a spring-pin 30, carried in the bracket 27 between a depending-arm of the trigger 29 and the weighted detent lever 10, while a projecting arm of the said trigger 29 passes between the forked end of a lever 31, provided on a rock-shaft 32, situated across the machine in bearings 33, which rock-shaft 32 also carries a feeler-arm 34, extending centrally over the feed-plate 2, having its free end depending, so as to be capable of passing through an opening 35, provided in the said plate 2. The shaft 32, carrying the forked lever 31 and the feeler-arm 34 just described, is provided with a pending arm 36, through the medium of which the said shaft 32 is rocked by a pivoted bell-crank lever 37, operated by a cam 38, situated on a driven shaft 39 of the machine.

The feeler-arm 34 and forked lever 31 are simultaneously lowered by reason of their own weight and simultaneously raised through the medium of the cam 38 once for each revolution of the cam-shaft 39 to suit the intermittent feed of the envelops, so that as each envelop is fed from the container-box onto the feed-plate 2 by the springy fingers 23 23 of the swinging platen 5 the feeler-arm 34 and forked lever 31 are simultaneously lowered, so that the former comes down upon and is supported by the fed envelop, while the latter comes down into engagement with the trigger 29, but not sufficiently far to operate the latter, when the feeler-arm 34 and forked lever 31 are simultaneously raised through the medium of the operating cam mechanism, whereby the said feeler-arm 34 is lifted clear of the envelop, so as to allow the latter to be carried away by the gripper 6 on the swinging platen 5. Should the springy fingers 23 23 fail to feed an envelop onto the feed-plate 2, the feeler-arm 34 on being lowered passes through the opening 35 in the said plate 2, when the forked lever 31, which is simultaneously lowered, engages with and rocks the pivoted trigger 29, which in turn through the medium of the spring-pin 30 depresses the weighted detent-lever 10 into engagement with the shoulder 9 of the reciprocating bar 8, and so throws off the impression. After the platen 5 has passed the point at which the type-bed has actually commenced to shorten its stroke the pivoted trigger 29 is rocked back into its normal position, through the medium of the spring-pin 30, by the engaging forked lever 31 during its next upward movement, when the said weighted detent-lever 10 again assumes its disengaged position, and in this way the detent-lever 10 is operated so as to throw off the impression automatically each time an envelop fails to be fed onto the feed-plate 2.

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

1. The combination with a feed-plate of a feeding device for printing-presses comprising a container-box, a curved delivery-finger to engage the envelops between their flaps and their bodies arranged to lift them from the container-box, and a bridge above the container-box to prevent more than one envelop being delivered at a time, the curved finger operating to draw the envelops one at a time from underneath the bridge as it lifts them from their container-box.

2. In a feeding device for printing-presses, the combination of a container-box, delivery-fingers having a stiff portion and a separate

flexible portion to engage the envelops between their flaps and their bodies, and a bridge to prevent more than one envelop being delivered at a time.

3. In a platen-machine for printing envelops having a feed-plate and a swinging part, the combination with an inclined envelop-container box having its sides and base adjustable and being provided with a stop or rest adapted to bear against the center of the flap of the foremost envelop and having a bridge-piece located over the upper edges of the envelop, of a pair of springy fingers mounted on the swinging part adapted to move the said fingers in an arc of a circle to feed the envelops upwardly toward the bridge and at the same time out from underneath the bridge one at a time onto the feed-plate, and means for automatically throwing off the impression, substantially as described.

4. In a platen-machine for printing envelops, the combination with an inclined envelop-container box consisting of a main cross-rail 14 carrying an adjustable bridge-piece 15 and being provided with depending pillars 16, 16 in connection with a cross-stay 17 provided with a stop or rest 18, said pillars 16, 16 carrying a vertically-adjustable base-rail 19 provided with horizontally-adjustable L-shaped brackets 20, 20 carrying vertically-adjustable plates 21, 21, of a pair of springy fingers mounted on the swinging platen or other part adapted to move the said fingers in an arc of a circle to feed the envelops singly onto the feed-plate, and means for automatically throwing off the impression, substantially as described.

5. In a platen-machine for printing envelops having a feed-plate and presser-fingers coöperating therewith, the combination with an inclined envelop-container box having its sides and base adjustable and being provided with a stop or rest adapted to bear against the flap of the foremost envelop and having a bridge-piece located over the upper edges of the envelops, of an automatic envelop-feed mechanism consisting of a pair of springy fingers 23, 23 provided with stiffening-pieces 25 carried on an arm 24 mounted on the swinging platen or other part adapted to move the said fingers in an arc of a circle to cause them to engage the foremost envelop, draw it clear of the bridge-piece and pass it forward onto the feed-plate beneath presser-fingers, and means for automatically throwing off the impression, substantially as described.

6. In a platen-machine for printing envelops having a feed-plate, the combination with an envelop-container box and means for automatically feeding the envelops singly therefrom onto the feed-plate, of means for automatically throwing off the impression consisting of a reciprocating bar 8 formed with a shoulder 9, a pivoted weighted detent-lever 10 adapted to engage said shoulder 9 on being depressed, a rock-shaft 32 carrying a feeler-arm 34 adapted to pass through an opening 35 in the feed-plate on an envelop failing to be fed onto the said plate, a trigger 29, and a forked lever 31 on the same rock-shaft 32 adapted to operate the trigger 29 and depress the detent-lever 10 into engagement with the shoulder 9 of the reciprocating bar 8, substantially as described.

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

FRED WAITE.

Witnesses:
J. JOWETT,
VANCE E. GALLOWAY.