

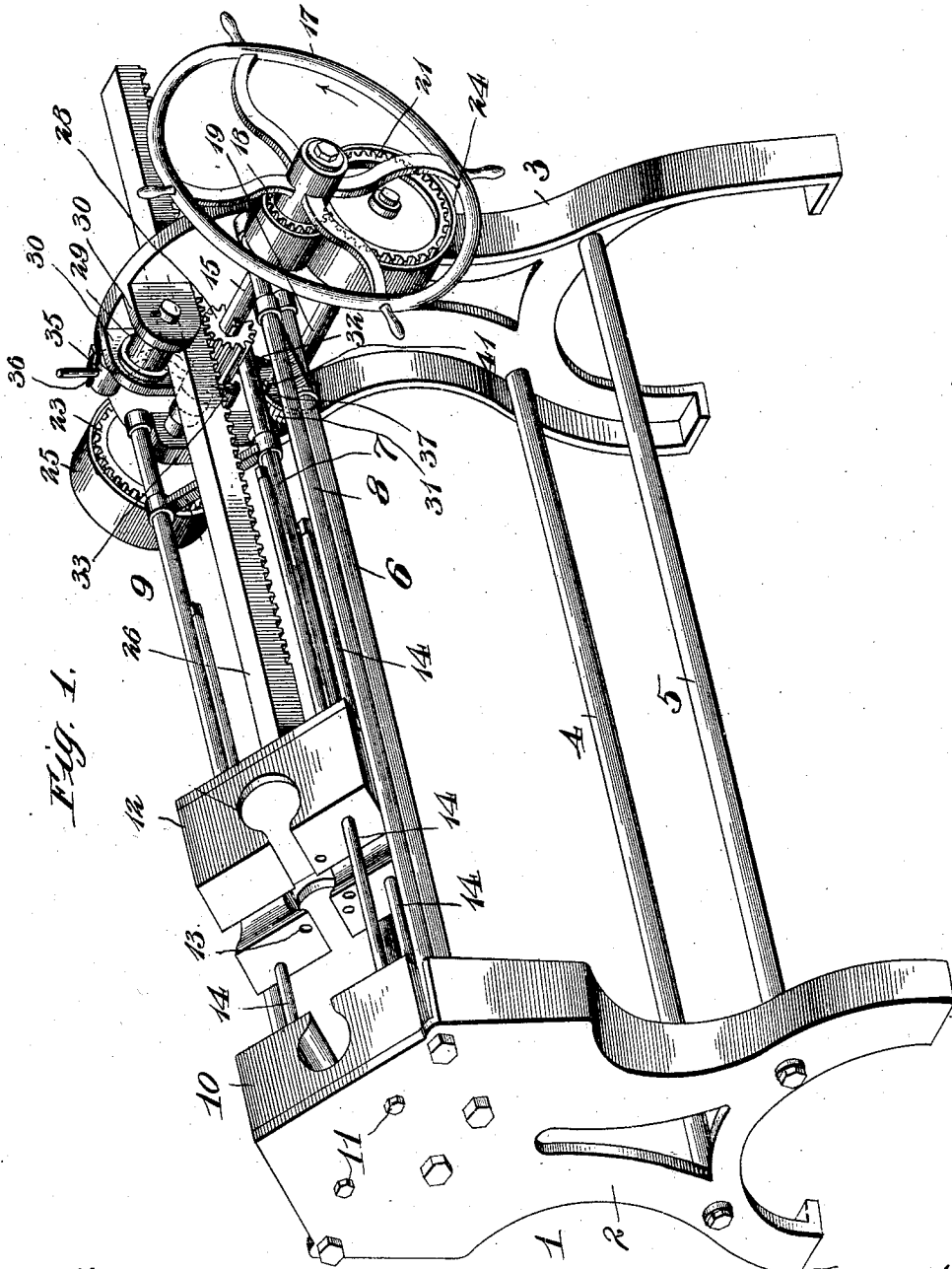
No. 857,918.

PATENTED JUNE 25, 1907.

C. F. ANDERSON
RELEASING MECHANISM FOR BUNDLING PRESSES.

APPLICATION FILED MAR. 24, 1905.

2 SHEETS—SHEET 1.



Witnesses.

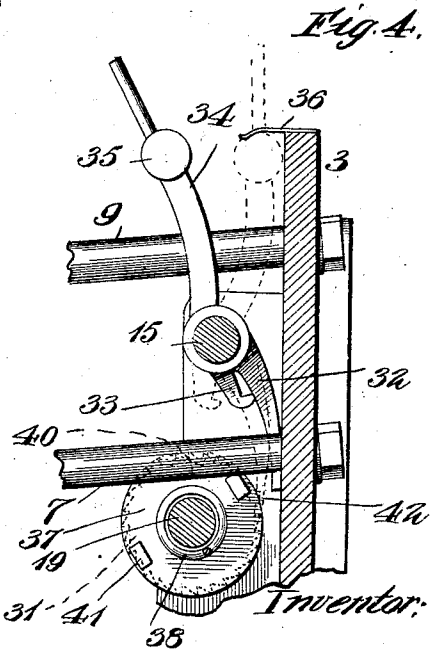
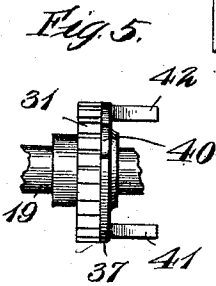
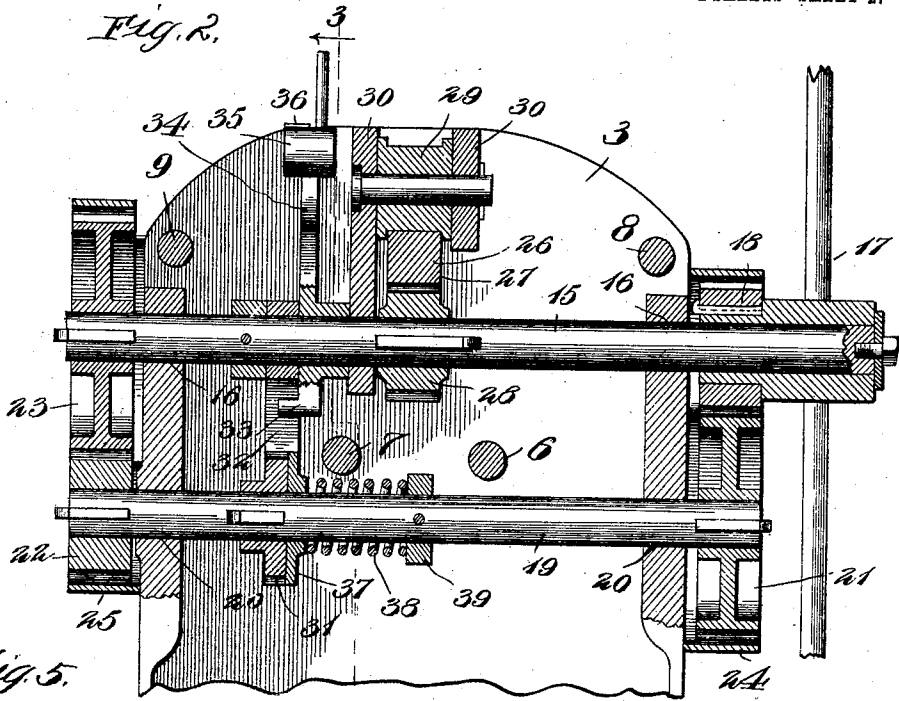
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CARL F. ANDERSON, OF CHICAGO, ILLINOIS.

RELEASING MECHANISM FOR BUNDLING-PRESSES.

No. 857,918.

Specification of Letters Patent.

Patented June 25, 1907.

Application filed March 24, 1905. Serial No. 251,789.

To all whom it may concern:

Be it known that I, CARL F. ANDERSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Releasing Mechanism for Bundling-Presses, of which the following is a specification.

This invention relates to presses for compressing folded signatures, pamphlets, loose leaves, etc., preparatory to tying them in bundles for handling or storage, and its object is the production of means in such a press for quickly and easily releasing the pressure upon the bundle.

In the accompanying drawings, Figure 1 is a perspective view of a bundling press embodying the features of my invention. Fig. 2 is a fragmental vertical section through a bundling press embodying the features of my invention, taken on the plane of the axes of the two principal shafts. Fig. 3 is a sectional view taken on dotted line 3 3 of Fig. 2, showing the pawl and the ratchet wheel for preventing rearward movement of the plunger-head. Fig. 4 is a view similar to that of Fig. 3, but showing the pawl held out of engagement with said ratchet wheel. Fig. 5 is a top plan view of said ratchet wheel and a device for keeping the pawl out of engagement with the ratchet wheel.

In the drawings, 1 refers to the supporting frame of the machine, said frame comprising, in this instance, end members 2 and 3, longitudinal bars 4 and 5 connecting the lower portions of said members, and longitudinal bars 6, 7, 8, and 9 joining the upper portions of the end members 2 and 3.

An abutment 10 is rigidly fixed in the upper end of the end member 2 by means of bolts 11. A plunger head 12, substantially identical in form and construction with the abutment 10 is slidably mounted upon the bars 6, 7, 8, and 9, and is movable longitudinally thereof by means to be later herein described. Openings 13 extending through the plunger head 12 from side to side and parallel with the rods 6, 7, 8, and 9, are adapted to receive a number of signature-supporting rods 14 (in this instance three), which rods extend through said plunger head, one end of each of said rods lying within a screw-threaded opening in the abutment 10 alined with each of the openings 13. The opposite ends of said rods are squared to receive wrenches for turning them.

The means for moving the plunger head 12 of the press toward and away from its cooperating fixed abutment 10 comprises a shaft 15 rotatably mounted in bearings 16 on the end member 3. Upon one end of the shaft 15 is rotatably (loosely) mounted a hand-wheel 17, the hub of which hand-wheel has fixed to it a pinion 18. A shaft 19 supported in bearings 20 beneath the shaft 15 has fixed upon one of its ends a spur gear 21 adapted to mesh with the pinion 18, and upon its other end a pinion 22 adapted to mesh with a spur gear 23 fixed on the end of the shaft 15 opposite to that carrying the hand wheel 17. 24 and 25 are gear casings for the gears 18 21 and 22 23, respectively. A rack bar 26 to which the plunger head 12 is fixed extends through an opening 27 in the end member 3. On the shaft 15 is fixed a pinion 28 adapted to mesh with said rack. A flanged guide roller 29 rotatably mounted in bearings 30 on the end member 3 is arranged to hold the rack bar 26 in proper relation to the pinion 28.

To prevent backward movement of the plunger head 12 when a bunch of signatures is being compressed, a ratchet wheel 31 is fixed upon the shaft 19, with the teeth of which ratchet wheel a pawl 32 pivotally mounted upon the shaft 15 is adapted to engage. The pawl is arranged to be withdrawn from engagement with the ratchet wheel 31 by means of a hook 33 also pivotally mounted upon the shaft 15 and having an upwardly extending arm 34 carrying a weight 35. A spring clip 36 fixed upon the end member 3 in position to engage the weight 35 is provided to prevent re-bounding of the arm 34 when said arm is thrown over its pivotal center toward the end member 3. (Fig. 3.)

To insure that the pawl 32 shall not engage the teeth of the ratchet wheel 31 when the plunger head 12 is being moved away from its abutment 10 to release a tied bundle, and at the same time to be ready to hold any compression movement of the plunger upon its next forward movement I mount loosely on the shaft 19 a disk 37 of a diameter equal to that of the ratchet wheel 31 and arranged to be held in frictional contact with one side of said ratchet wheel by means of a coiled spring 38 interposed between said disk and a collar 39 fixed on said shaft 19. In the periphery of the disk 37 is formed a notch 40 of sufficient depth to allow the point of the pawl 32 when lying in said notch, to engage the teeth of the ratchet

wheel 31. Two studs 41 and 42 are fixed on one side of the disk 37 at diametrically opposite points. The stud 41 is adapted to impinge upon the bar 7 in the rotation of the disk 37 to stop such rotation when the notch 40 is in position to receive the point of the pawl, and the other stud 42 is adapted to engage said bar to stop the rotation of the disk when the notch 40 has been carried out of position to receive the point of said pawl.

Assuming that the plunger head 12 is at a convenient distance from the abutment 10 and that the pawl 32 and the hook 33 are in the positions indicated by dotted lines in Fig. 4, the operation of the press is as follows: The quantity of folded signatures, books, pamphlets, or the like which it is desired to compress and tie into a bundle is placed between the plunger head 12 and the fixed abutment 10, and said plunger head moved by means of the hand-wheel 17 to compress the signatures against said abutment. The rotation of the ratchet wheel 31 during such movement of the plunger head carries the disk 37 around until the stud 41 strikes against the bar 7, in which position of the disk the point of the pawl 32 is permitted to drop into the notch 40 and engage the teeth of said ratchet wheel and thus prevent backward rotation thereof. When sufficient pressure has been applied, the operator passes cords or straps about the bundle of signatures and ties them. The bundle is now ready to be released. The operator throws the weighted arm 34 into the position shown in full lines in Fig. 4, and rotates the hand wheel a little distance in the direction to further compress the bundle in order to free the pawl 32 from the teeth of the ratchet 31 and release it to the action of said weighted arm 34. The hand wheel 17 may now be rotated rapidly in the direction to move the plunger head away from the tied bundle. At the beginning of this rotation the ratchet wheel 31 oscillates the disk 37 a little distance so that the stud 42 on said disk contacts the bar 7. The operator may now throw the arm 34 into the position shown in dotted lines in Fig. 4 in which the pawl 32 is permitted to rest upon the periphery of the disk 37 ready to drop into the notch 40 when said disk is oscillated in a contrary direction. The tied bundle is now removed from the press, a quantity of loose

signatures put into position to be compressed, and the operation repeated. Not being obliged to throw the pawl 32 out of engagement with the ratchet wheel 31, the operator is enabled to use both hands in rotating the hand wheel 17 to release the pressure upon the tied bundle upon the completion of the operation.

I claim as my invention:

1. The combination, with a ratchet wheel, of a locking pawl tending to engage said ratchet wheel to prevent its rotation; means adapted to exert a tendency to move said pawl out of engagement with said ratchet wheel; and means operated upon the rotation of said ratchet wheel to prevent said pawl from engaging said ratchet wheel.

2. The combination, with a ratchet wheel, of a stationary locking pawl tending to engage said ratchet wheel to prevent its rotation; a member arranged to move with said ratchet wheel, said member being adapted to support said pawl upon its periphery and having a notch therein adapted to permit said pawl to engage said ratchet wheel; and means for limiting the rotation of said member.

3. The combination, with a ratchet wheel, of a pawl tending to engage said ratchet wheel; means adapted to exert a tendency to move said pawl out of engagement with said ratchet wheel; a disk held in frictional contact with said ratchet wheel, said disk having a notch in its periphery; and two studs on said disk adapted to engage a fixed portion of the machine, for limiting the rotation of said disk.

4. The combination, with a ratchet wheel and a rotatable shaft on which said wheel is fixed, of a pawl adapted to engage the teeth of said wheel, a disk loosely mounted on said shaft, a spring for holding said disk in frictional contact with said ratchet wheel, said disk being adapted to support said pawl out of engagement with said ratchet wheel, and having a notch adapted to receive the point of said pawl when the latter is in engagement with the ratchet wheel; and means for limiting the rotation of said disk.

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Witnesses:

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GEORGE L. CHINDAHL.