

(No Model.)

2 Sheets—Sheet 1.

W. T. & I. E. SNOWDEN.
PRESS.

No. 566,238.

Patented Aug. 18, 1896.

Fig. 1,

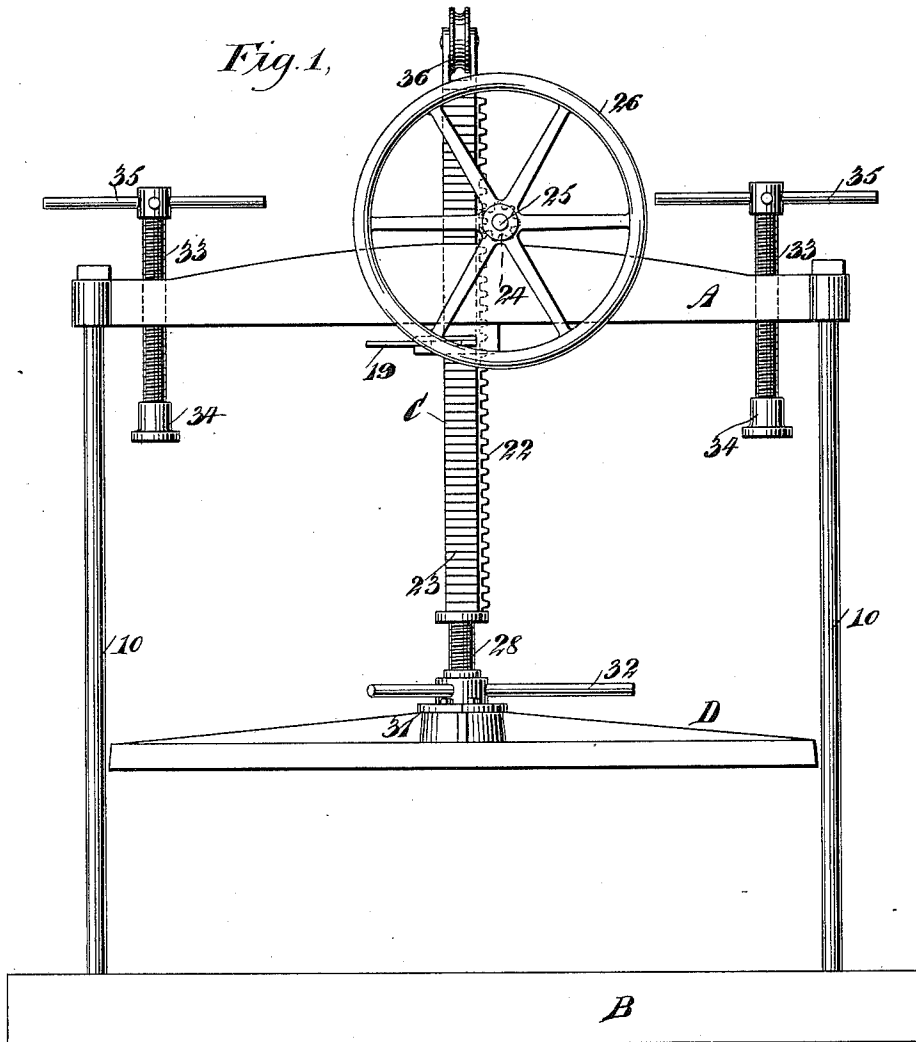
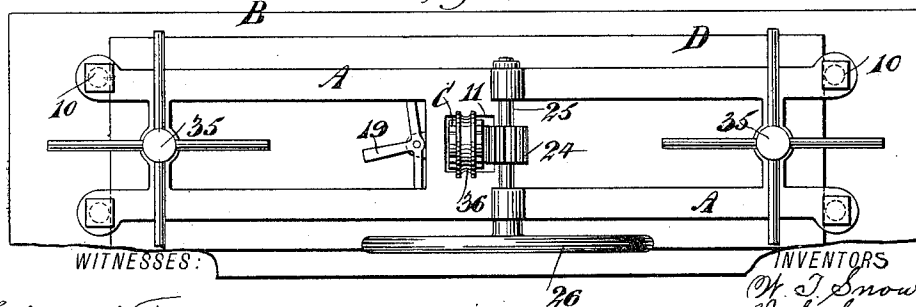


Fig. 2,



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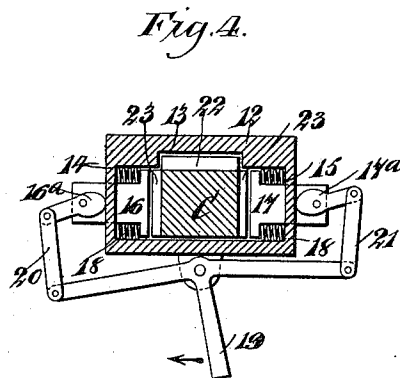
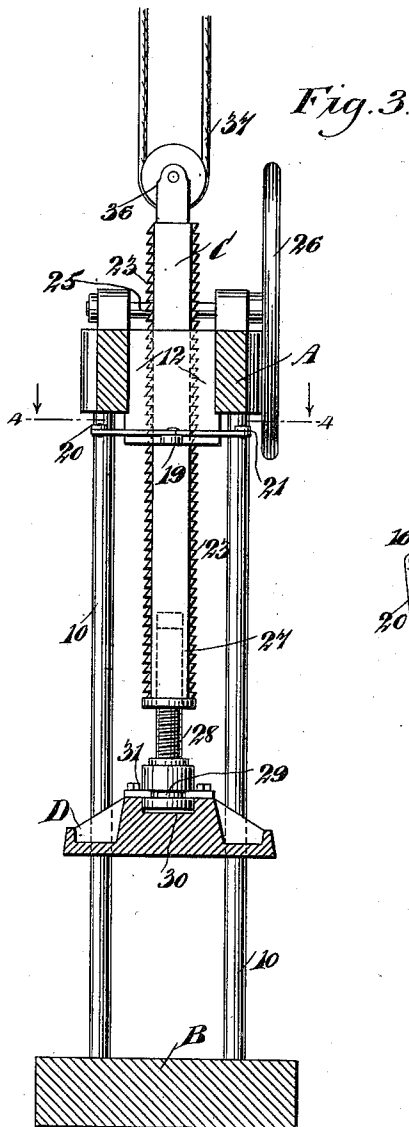
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WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM T. SNOWDEN AND IRA E. SNOWDEN, OF HUGHESVILLE, PENN-
SYLVANIA.

PRESS.

SPECIFICATION forming part of Letters Patent No. 566,238, dated August 18, 1896.

Application filed January 22, 1896. Serial No. 576,459. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM T. SNOWDEN and IRA E. SNOWDEN, of Hughesville, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Presses, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in presses, especially presses of the screw type. The object of the invention is to provide a simple and durable means for effecting a quick adjustment for different thicknesses of stock, retaining at the same time all of the advantages of an ordinary screw-press.

A further object of the invention is to provide a quickly-applied and simple locking device for the column carrying the follower, whereby the column when adjusted may be held against upward or downward movement, while the final pressure is brought to bear upon the stock through the medium of a screw.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improved press. Fig. 2 is a plan view of the same. Fig. 3 is a vertical central section taken transversely through the press, and Fig. 4 is a horizontal section taken substantially on the line 4 4 of Fig. 3.

In carrying out the invention the body A of the press is supported by standards 10 of any desired length on a suitable base B. An opening 11 is made in the central portion of the body, and a block 12 is preferably secured in this opening, extending below the under face of the body, or that which appears as a block in the drawings may be an integral portion of the body. The said block is provided with a central (preferably rectangular) opening 13, which extends through from top to bottom, and the block is furthermore provided with two interior chambers 14 and 15, one at each end, both being in communication with the central opening 13. A pawl is horizontally located in each of the said end

chambers, and these pawls are designated, respectively, as 16 and 17, being best shown in Fig. 4. Springs 18 normally act to force the pawls inward or in direction of the central opening 13, and usually the inner faces of the pawls are wider than their shank portions, whereby shoulders are formed, against which the springs 18 have bearing, and likewise against the outer walls of the chambers in which they are located. The shanks of the pawls extend loosely through the end surfaces of the block, and a cam 16^a is pivoted upon the outer portion of the pawl 16, and a corresponding cam 17^a is pivoted upon the outer end of the opposing pawl 17, as shown best in Fig. 4.

A double-membered or T lever 19 is pivoted at the central portion of its head upon a projection from the side of the aforesaid block, and a link 20 connects the end of one head member of the T-lever with a shank forming a portion of the cam 16^a, while a second link 21 connects in the same manner the opposite head member of the T-lever with the opposite cam 17^a. The pawls of the shifting-lever 19 are located below the under face of the body, as shown in Figs. 1 and 3. The cams are so formed that when in one position the said cams will bear against the outer end surfaces of the block to such an extent as to draw the pawls outward, placing the springs 18 under tension, while in the second position of the cams the inner ends of the pawls will be carried by the springs 18 practically within the central chamber 13 of the block. The cams have simultaneously a corresponding movement, and the movements of the cams are brought about by simply carrying the shank of the shifting-lever to the right or to the left as required.

A stem C is held to slide in the central chamber or opening 13 of the block, and extends above and below the bed of the press. This stem is shaped correspondingly in cross-section to the central shape of the opening 13, and is provided upon one face with teeth 22, constituting a rack, and upon two opposing faces of said stem ratchet-teeth 23 are formed, the ratchet-teeth on one side having a downward inclination, while those upon the opposite side of the stem are upwardly

inclined. These ratchet-teeth are adapted to be engaged by the pawls 16 and 17, so that the stem, or, as it may be more properly called, the "ratchet-column," may be locked in any position to which it may be vertically adjusted and held against upward or downward movement. The adjustment of the ratchet-column C is accomplished by a pinion 24 meshing with the rack 22, the said pinion being secured on a shaft 25, mounted in suitable bearings on the top of the body, as shown in Fig. 2, the said shaft being provided with a hand-wheel 26 or its equivalent, whereby it may be readily turned.

The lower end of the ratchet-column C is provided with a threaded chamber adapted to receive a screw 28, and the head of this screw is usually provided with a circular groove 29, the head being made to enter a recess 30, formed centrally in the upper portion of a follower D, and the screw-head is held to turn in the said recess ordinarily by securing the members of the split ring to the follower, the inner edges of the members entering the groove 19 in the screw-head. Arms 32 are projected from the head of the screw 28 in order that the said screw may be readily turned.

Screws 33 are located in the body, one near each of its ends, extending above and below its body, and each screw has a foot 34 swiveled at its lower end, its upper end being provided with a spoked head 35 or the equivalent thereof. At the upper end of the ratchet-column C a pulley 36 is mounted to receive a cable 37, adapted for attachment to a balance-weight, the weight being intended to balance the combined weight of the ratchet-column, the screw 28, and the follower, so that the wheel 26 will require but little power to turn it when the ratchet-column is adjusted.

In the operation of the press the shifting-lever is moved in a direction which will cause the cams 16^a and 17^a to draw the pawls 16 and 17 out of engagement with the ratchet-teeth 23. The ratchet-column may now be carried upward or downward by the manipulation of the wheel 26 to an engagement with the stock to be pressed. When the proper adjustment of the column has been made, the pawls are released from the action of their cams through the medium of the shifting-lever 19 and will immediately enter to an engagement with the aforesaid ratchet-teeth 23, locking the ratchet-column in its adjusted position. The final pressure on the stock is then given by turning the screw 28 at the bottom of the said column.

The screws 33 are brought into action when the stock is of such height as to bring the follower up near the top of the press, and when this occurs the final pressure is brought to bear at the center of the follower through the medium of the central screw 28, and at the ends of the follower through the medium of the aforesaid end screws 33.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with the frame of a press, a column having sliding movement in the said frame and provided with ratchet-teeth, a follower connected with the said column, and means, substantially as described, for counterbalancing the column and follower, of pawls adapted for engagement with the said ratchet-teeth on the column, cams controlling the movement of the said pawls, a shifting-lever controlling the movement of the said cams, and an adjusting device for the said column, as and for the purpose specified.

2. The combination, with the frame of a press, a column having sliding movement in the said frame and provided with ratchet-teeth at opposite sides and having opposite inclinations, and a follower having adjustable connection with the said column, of spring-controlled pawls adapted for engagement with the ratchet-teeth on the column, cams controlling the movement of the column in one direction, a shifting device controlling the movement of the said cams, and an adjusting device operating upon the said column to raise and lower the same, as and for the purpose specified.

3. The combination, with the frame of a press, a column having sliding movement therein and provided with ratchet-teeth upon opposite faces, the teeth being oppositely inclined, a third face of the column being provided with a rack-surface, and a follower having a screw connection with the bottom of the column, of spring-controlled pawls adapted for engagement with the ratchet-teeth of the column, a shifting device operating both pawls, a pinion engaging with the rack-surface of the column, and means, substantially as described, for rotating the said pinion, as and for the purpose set forth.

4. The combination, with the frame of a press, a counterbalanced sliding column and a follower, the latter having screw connection with the said column, of an elevating device, substantially as described, operating to raise and lower the column, ratchet-teeth formed on the said column, pawls adapted to engage with the ratchet-teeth, being normally held in contact therewith, and a shifting-lever operating both pawls in an outwardly direction, releasing them from the aforesaid ratchet-teeth, as and for the purpose specified.

5. In a press, the combination of a frame, a column having sliding movement in the frame, pawls adapted for engagement with opposite sides of the column, to hold the same in position, and a pivoted T-lever having its ends connected to the pawls and arranged when swung pivotally, to operate the same, substantially as set forth.

6. In a press, the combination of a frame,

columns having sliding movement in the frame, pawls arranged to engage opposite sides of the columns, springs arranged to move the pawls in one direction, cams arranged to move the pawls in the other direction, a pivoted lever, and connections between said lever and the cams, arranged

when said lever is swung pivotally, to actuate the cams, substantially as set forth.

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Witnesses: .

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