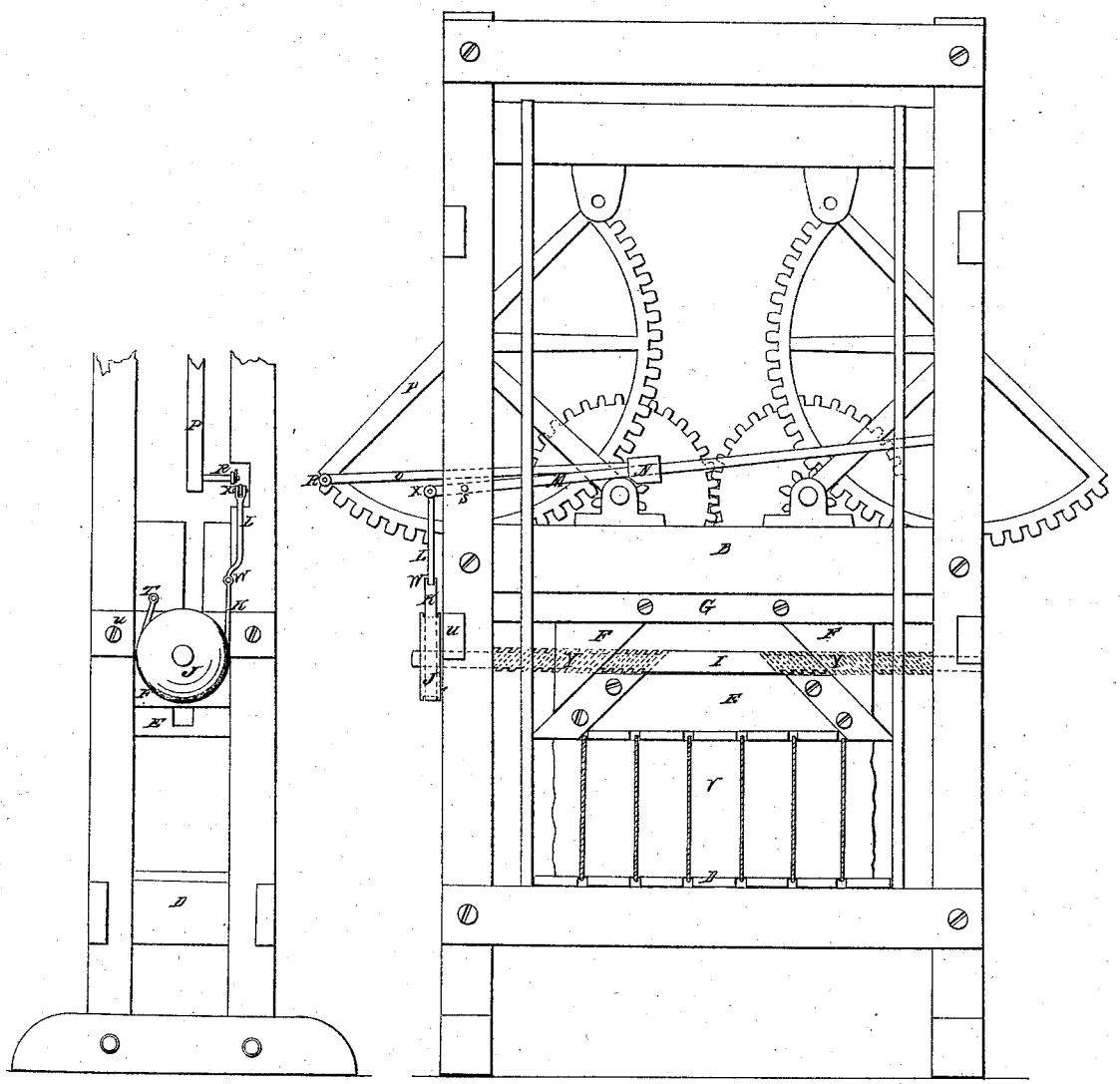
S. W. Bullock,

Cotton Press.

No. 4,110. Patented July 10, 1845.



UNITED STATES PATENT OFFICE.

S. W. BULLOCK, OF WILLIAMSBURG, NEW YORK.

IMPROVEMENT IN SELF-ADJUSTING PRESSES.

Specification forming part of Letters Patent No. **4,110**, dated July 10, 1845; antedated January 10.

To all whom it may concern:

Be it known that I, S. W. BULLOCK, of Williamsburg, county of Kings, State of New York, have invented a new and improved mode of adjusting the bed or platen of toggle-joint and other progressive power-presses; and I do hereby declare the following to be a full and exact description thereof.

The nature of my invention consists in providing a press with a loose or movable platen or bed, so as to be regulated by other parts of the press in such a manner as to exactly meet the accumulating power of the press in its operation, so that it may be termed a "self-adjusting platen."

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct my press in any of the known forms of toggle-joint or other progressive power-presses; but in order to obviate the difficulty of bringing the power of the press to bear upon different-sized bales against a fixed platen, I plane off the face of one of the beds or platens of the press, as shown at B in the accompanying drawings. I usually face it with metal in whole or in part, as shown at G. I then prepare two blocks, of wood or metal, of convenient size for the press in the form of right angles, triangles, (bevel more or less,) and place them against the beveled surface of the bed B, as shown at F F'. I then prepare a movable platen of wood or metal, or both, with the ends beveled to fit the bevel of the blocks F F, as shown at E. I then prepare a screw of suitable size and length for the press, (shown at I,) with what is termed a "right-hand thread" on one end, and a "left-hand thread" on the other end, with boxes or female screws to fit on each end. These boxes or female screws I insert in the center of the blocks F F at Y Y, and secure them by bolts or otherwise fast into the blocks F F; then place the screw I into the female screws or boxes, and secure it by common boxes at each end to the timbers U U in such a manner that it may revolve, but otherwise not move from its position. The wheel J is keyed fast onto one end of the screw I, having a groove turned in the periphery to receive the band K. One end of this band I secure to the frame of the press by a common screw-bolt, as shown at T; then pass it round the wheel J, and connect the other end to the rod L by a common bolt, as shown at W. This rod connects to the end of the lever M at X. The lever M rests also on a fulcrum at S, and extends across the press, being one size the whole length, to allow the weight N (which has a hole through it to admit the lever) to slide on it. To the weight N one end of the rod O is attached by a screw-bolt, the other end to the arm of the segment P by a bolt or pin, as shown at R.

Modus operandi.—To begin, I place a bale of cotton on the lower platen, D, as shown at V; then give motion to the press in any of the ordinary ways by animal, steam, or water-power, so that the platen or bed on which the bale V rests is made to approximate toward the platen E until the press is brought to its maximum power, which is always the same, and the platen D always brought to the same point. Now, to show the use of the movable platen, I will suppose a second bale is put in much larger in size, weight, and elasticity. Now, if the whole power of the press was exerted on the small bale, the platen E not moving, it is plain that the platens E and D cannot be brought so near together with the large bale as with the small bale, and as the platen D must come to the same point whatever the size of the bale, in order to get the power of the press fully and advantageously the platen E must rise up to make more space for the large bale. This is done by the pressure of the bale against the platen E, causing it to rise. This causes the blocks F F to slide horizontally along the bed-timber B. They cause the screw I to revolve or turn in its boxes and with it the wheel J; but while this is going on the pin R is moving in a horizontal line toward the center of the press, carrying with it the rod O and weight N, which throws an increasing load upon the lever M, which draws accordingly upon the rod L, and strap K closing tighter and tighter upon the wheel J, and consequently increasing the friction, so as to require an increasing force applied to the platen E to cause the screw I to turn in its boxes. The power of the press is continually increasing in its onward movement, and the friction on the wheel J is increased proportionally; but

if the elastic force of the bale increases in a greater ratio, it will overcome the friction of the wheel J and band K and raise the platen E until the power of the press, the friction of the wheel J and its fixtures, and the elastic force of the bale all become equal, and will so act in perfect unison until the press arrives to its maximum power. The reverse motion of the press carries back the weight N, and consequently takes the friction off the wheel J, when the platen E will fall back to its original position, when the press is ready for the next bale.

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

The discovery of the peculiar principle or feature exhibited in the accompanying drawings and specification, to wit: regulating the bed or platen of toggle-joint and other presses (to suit various-sized bales or packages) by its connection with some moving part of or connected with the press, and the holding said platen at any and all points of its range with equal power or force of resistance, as is indicated by the position and power of the press and in accordance with the size of the bale, using for that purpose any known mechanical arrangement that will produce the intended effect, as herein set forth.

S. W. BULLOCK.

Witnesses:
J. J. ROANE,
THOMAS JOHNS.