2 Sheets—Sheet 1

J. W. JONES.

Pressing-Machine and Sheet-Tie.

No. 212,947. Patented Mar. 4, 1879.

Fig. 1.

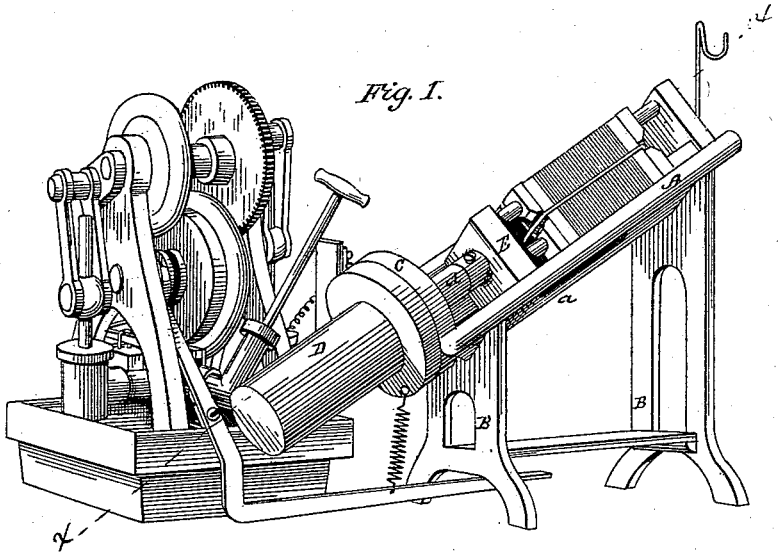
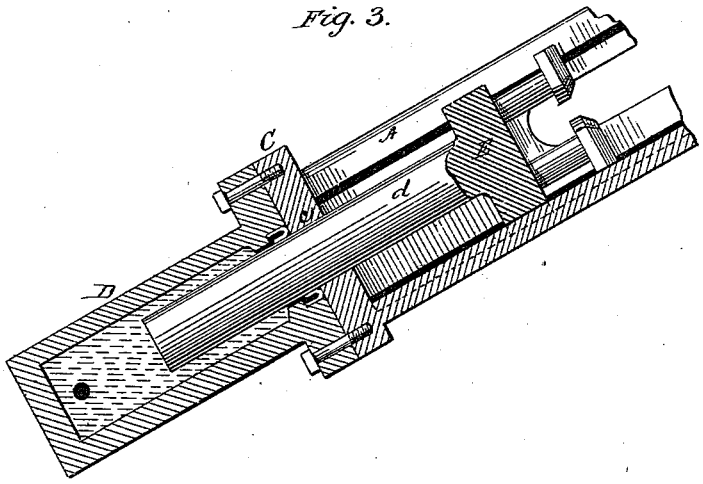


Fig. 3.



Attest:
Rich'd V. Evans
W. F. Morrell

Inventor:
Joshua W. Jones
per attys
A. H. Evans Nes.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

2 Sheets—Sheet 2.

J. W. JONES.

Pressing-Machine and Sheet-Tie.

No. 212,947. **Patented Mar. 4, 1879.**

Fig. 2

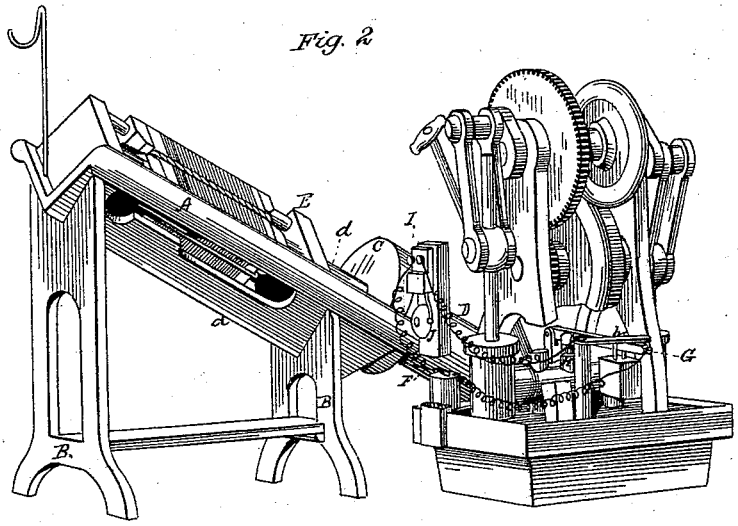


Fig. 4.

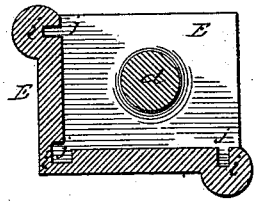


Fig. 5.

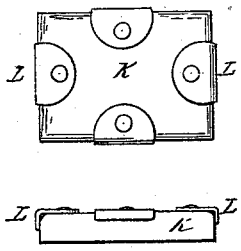
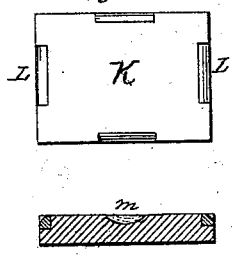


Fig. 6.



Attest:

Clarence Poole

W. H. Morrell.

Inventor:

Joshua W. Jones

per attys A. H. Evans & Co

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE

JOSHUA W. JONES, OF HARRISBURG, PENNSYLVANIA.

IMPROVEMENT IN PRESSING-MACHINES AND SHEET-TIES.

Specification forming part of Letters Patent No. **212,947**, dated March 4, 1879; application filed December 17, 1878.

To all whom it may concern:

Be it known that I, JOSHUA W. JONES, of the city of Harrisburg, State of Pennsylvania, have invented certain Improvements in Pressing-Machines and Sheet-Ties for Printers, Book-Binders, and others, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a pressing-machine, in perspective, with my improvements attached. Fig. 2 shows a rear view of same, with portions broken away. Fig. 3 represents a section through *x x* of Fig. 1. Fig. 4 is a cross-section of trough and piston, with the follower fitting the former. Figs. 5 and 6 show my improved end boards.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

The object of my invention is to furnish a more complete and powerful pressing-machine; and it is an improvement on Patent No. 204,741, issued to me on the 11th day of June, 1878.

It consists in the several combinations of devices hereinafter described and claimed.

The press-box or trough A is made rectangular at *a*, and rests on supports B at an inclination with the floor. The lower end of the box A is closed by circular plate C, rigidly secured thereto, to which is bolted or fastened the head of the hydraulic cylinder D.

The plate C has a central opening, *c*, for the passage of the piston *d* in its movement against the follower E. This follower or plunger in my former patent is operated by a screw moving through a stationary nut.

Although the device with screw-power referred to answered the purpose intended sufficiently well to prove the superior merit of my new process of what is technically termed "dry-pressing," which term includes, by virtue of my process, matter dry or wet from the printing-press, as such has been very successfully treated without what is termed "offsetting," yet hydraulic power is preferable in some cases. Therefore by use of hydraulic pressure, as in my present application, the capacity of my machine is increased in power, rapidity of execution, and in regularity of operation, and canting of the material while it is being pressed is less likely to occur.

I am aware of the application of hydraulic power to presses in the old state of the art, where fuller-boards were employed between sheets, and work being pressed had to remain a number of hours in the press to be perfectly done. I therefore do not claim such application, broadly, but only in connection with my process of dry-pressing, and with a press specially adapted, as hereinafter claimed.

To render my pressing-machine the more complete, I have attached an automatic alarm to tell exactly when the required pressure has been obtained. It is accomplished by a short galvanic circuit, F, of the ordinary kind, to be closed or opened by the rising or falling of the long arm of the lever G passing over the safety-valve H, as shown in Fig. 2. The lever G is graduated like the beam of a pair of steelyards, and has a poise of sufficient weight to counterbalance the water-pressure.

The lever being adjusted to the desired pressure, and the circuit being open, the water is admitted, and the piston-rod or ram *d* moves against the follower E, and my pressing-machine proceeds to perform its functions. When the required pressure is reached the lever G has been raised to the switch *h*, and the circuit being thus closed the magnet I causes the bell J to strike the alarm in the usual manner of electric bells.

After the pressed matter has been properly secured by tying, the hydraulic pressure is quickly removed, and the ram *d* withdrawn, and the follower E released.

By this simple means of applying the hydraulic pressure I obtain a very efficient pressing-machine for the purposes intended, and by the combination with the electric alarm, as described, I protect my pressing-machine against accidents, which would be liable to occur from the application of hydraulic pressure to a machine of this kind.

The application of hydraulic pressure to my pressing-machine necessitates additional guards against the possible canting of the material being pressed. Hence I construct the press-box or trough A with the longitudinal grooves *i i i*, as shown in cross-section in Fig.

4, and the follower E is constructed with guides *j j j*, fitting snugly in the longitudinal grooves, whereby the follower is held down steadily to its work during the process of pressing, and avoids the danger of canting.

My improved end boards or pieces K employed on the tied bundles I make with rounded outer edges of hard wood or of metal clips L, to prevent the cutting or marring of the parts sustaining the stored-up pressure in the tied bundles, the action of which would cut the cord if said edges were not rounded, and in the other case the cord would mar or dent even the rounded edges of soft wood if not protected by said clips or by inserted bits of hard wood or their equivalent at points where the cord applies.

To facilitate the operation of tying the bundles, I make said end boards, or at least one of the pair of pieces, with recesses therein, as shown at *m* in Fig. 6, whereby the operator is better enabled to pass the cord under tautly and quickly.

Having thus explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pressing-machine for printers, bookbinders, and others, the combination of the press box A, provided with the grooves *i*, and follower E, provided with the guides *j j j*, substantially as described, with the piston-rod or ram *d*, operated by hydraulic pressure in the cylinder D, attached to the press-box, substantially as and for the purpose set forth.

2. A pressing-machine for compressing such matter as paper powerfully into compact packages, operated by hydrostatic pressure, in combination with an electric alarm, to indicate when a certain pressure is reached, substantially as and for the purpose set forth.

3. The end pieces K, provided with the reenforce L and with the recess *m*, substantially as and for the purpose described.

JOSHUA W. JONES. [L. S.]

Attest:
WILLIAM B. HART,
THEOPHILUS WEAVER.