J. W. JONES.

Book-Binders' Dry-Press and Sheet-Tie.

No. 204,741. Patented June 11, 1878.

Fig. 1.

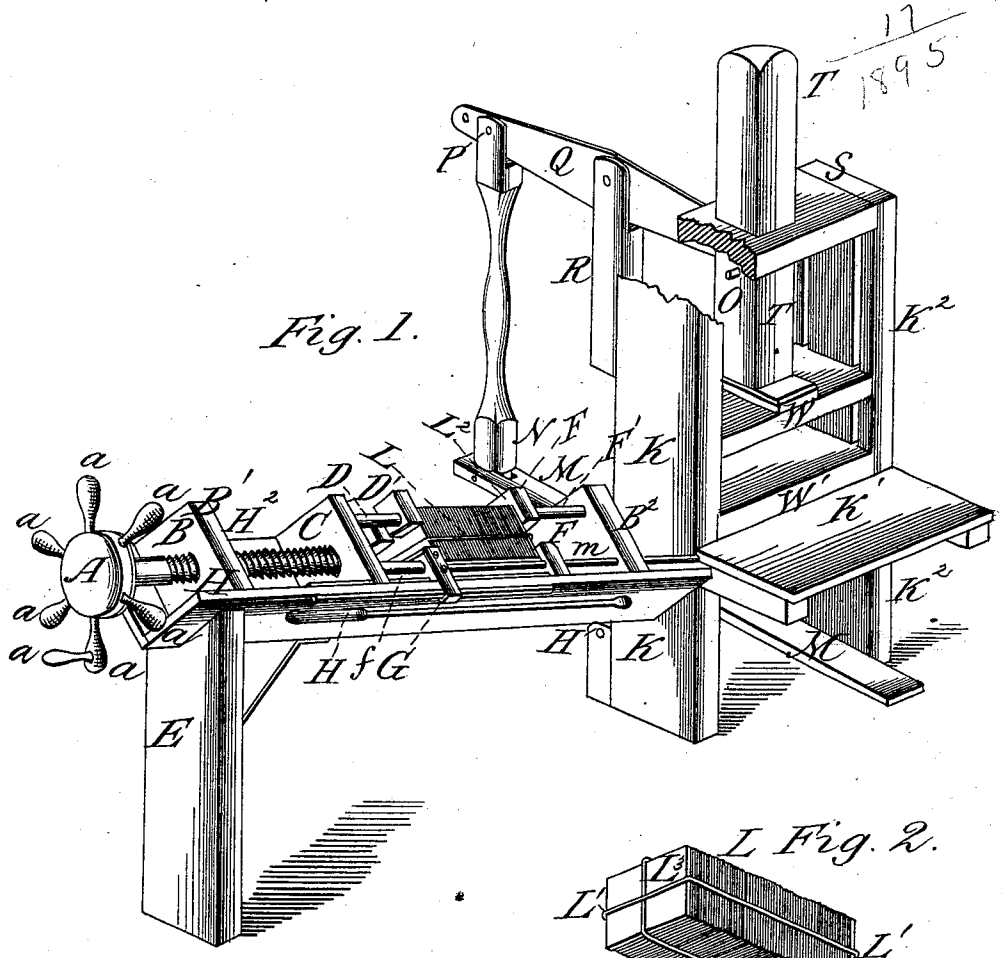


Fig. 2.

Fig. 4.

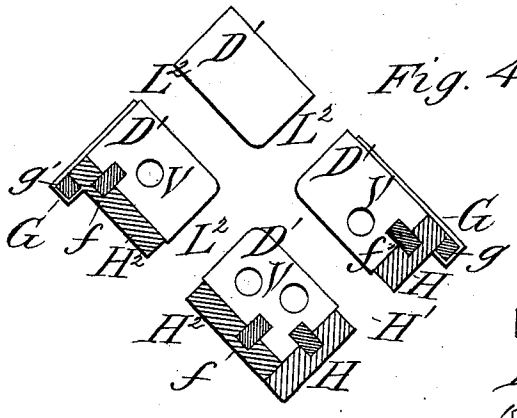
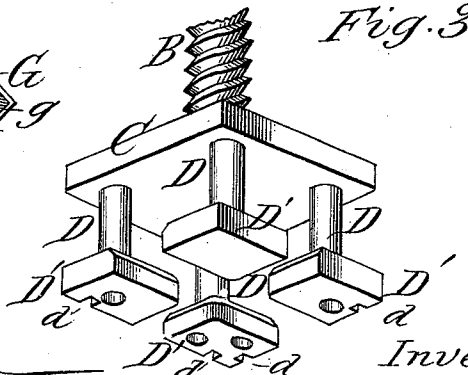


Fig. 3.



Attest:

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IMPROVEMENT IN BOOK-BINDER'S DRY-PRESS AND SHEET-TIE.

Specification forming part of Letters Patent No. **204,741**, dated June 11, 1878; application filed October 24, 1877.

To all whom it may concern:

Be it known that I, JOSHUA W. JONES, of the city of Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented a new and useful Improvement in Book-Binder's Dry-Press and Sheet-Tie, which improvement is fully set forth in the following specification and accompanying drawing, in which—

Figure 1 is a perspective view of my invention, exhibiting a bundle of sheets in the press tied and ready for removal therefrom. Fig. 2 is a perspective view of a bundle of sheets tied and ready for setting aside, as by my process of treating printed papers or sheets to remove therefrom the indentations of types. Fig. 3 is a perspective view of my divided press plunger or follower. Fig. 4 is a cross-sectional view of my press-frame and the divided follower applied thereto, the view being taken at indicated line *x*, Fig. 1.

The object of my invention is, first, to furnish a bulk-compressor device, to be used to prepare the matter properly before it is inserted in the dry-press proper, thus saving time or repeated travel by the latter, before the operation of tying; second, to furnish a dry-press proper in which the compressing parts or heads—that is, the base and plunger—are constructed dividedly, or with ways through them, to afford access through them to readily insert and manipulate the twine, and to tie the bundles of paper while held compressed, thus securing the bundle together by a powerful tie, which, when they are removed from the press, retains its force *ad libitum;* third, a press-frame, having sides peculiarly set and arranged, and provided with longitudinal slots therein corresponding with the ways in the press-heads, above referred to, and for the same purpose, as well as to rightly lodge and center the paper with relation to the middle of the press-heads; fourth, certain ledges in the said press-frame and guides on the plunger thereof, to properly center different-sized sheets in press to secure the tie at the middle of the bundles both ways; fifth, a new process for treating printed and folded sheets of paper in dry-pressing, consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles, with end boards thereon; then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete the dry-pressing.

My bulk-compressor (shown at right of Fig. 1 in drawing) consists of uprights K K^2, transverse parts K^1 S W′, the treadle M, connected by link N P to lever Q, which, by being pivoted to bracket R, operates the plunger T W, to which it is also pivoted. The folded sheets, which are swelled or large at their heads when first folded, are placed upon the base W′ and smashed—that is, the swell is taken out of them—by the plunger W, to bring the bulk into manageable compass for ready insertion into the dry-press and sheet-tie proper, so that about five hundred folded sheets may be pressed and tied at one operation, that number of sheets being usually put into one bundle. The said compressor device is therefore connectedly arranged with or near to the said dry-press device, that work may be readily transferred from the former into the latter.

The left part of Fig. 1 in drawing represents my improved dry-press and sheet-tie device.

The operations of dry-pressing and sheet-tying are accomplished by the same device. It consists of a bed, H H^2, mounted upon uprights E and K, in such manner that it has a downward inclination from the former to the latter upright, as shown in Fig. 1, and the sides of said bed H H^2 are set laterally inclined, trough form, so that the folded paper may securely lodge and carry therein while being operated on. The sides H and H^2 of said bed are longitudinally slotted at H^1, to correspond with the open ways L^2 L^2 of the press-heads, as shown in Fig. 4, to afford access to the work while in the press to tie into bundles, as shown in Figs. 1 and 2.

In the trough of said bed H H^2 are firmly attached thereto the blocks B^1 B^2, in position as shown. Block B^2 is the base of the divided head F F F′, constructed with openings or ways L^2, similar to the plunger-head shown in Figs. 3 and 4. The divisions F F of said head are supported, either on pedestals F′ or on the frames H and H^2, at suitable distance from base B^2, to enable the operator to pass the hand between said parts while applying the tie.

Block E^1 is, in the present illustration, shown to be a stationary nut, in which the screw B serves to operate the plunger or follower C D D′, which is connected by swivel to said screw, and the screw is provided with handles *a a′* about its head A. It is, however, evident that said follower may be actuated by other mechanical means; also, that two such followers may be made to act in conjunction. I do not therefore limit myself to screw-power, nor to a single follower, as in practice both heads of the press may be made movable, and other than screw-power may be employed, the more definite limits of my invention being in the make of the heads, they being slotted or thorough-channeled by cross-ways L^2 L^2, corresponding with slots H^1 of the bed.

The follower or plunger-head shown in Fig. 3 consists of the base C, pedestals D, and bearing-divisions D′, disposed oppositely about the central cross-ways L^2 L^2, as shown, the plan being similar to that of the stationary or opposite head B^2 F′ F; and the bundle of sheets L is inserted between said heads, as shown in Fig. 1, it being cross-tied over end boards L^3 by twine L^1, as shown in Fig. 2.

It may be noticed that the bodies or bundles of the folded sheets are so located in the press-trough H H^2 that the middle part of the ends of said bundles may come under or opposite the middle part of the press-heads—that is, in right position before the ways L^2 L^2—to secure the tie over the middle of bundles both ways.

When large work is being pressed and tied, no special adjustment of the press is needed to locate the work centrally, as described; but when intermediate and small-sized work is operated on, it is kept properly distanced from the press-sides H H^2, either by removable ledges *f* lodged in grooves in said sides H H^2, as shown, or by sliding adjustable rods *m*, removably attached to the plunger-divisions D′ at *v*, and allowed to pass freely through the parts F, B^2, and K. (Shown in Fig. 1.) That said plunger D D′ C may not be sprung out of its true line of travel, owing to the pile of folded sheets canting, it is stayed laterally to the press-sides H H^2 by clips G G, made to embrace and slide along them, as shown in Figs. 1 and 4.

In my improved process of dry-pressing, the end boards on the bundles referred to are shown in Fig. 2 in position on the bundle, immediately under or subject to the tie. They are used on the ends of the bundle of the paper under treatment to distribute the pressure over the whole area of the ends of the bundle, and also to prevent cutting or marring of the paper by the twine or other tying material. Said end boards are made of any suitable material affording strength and rigidity at little cost, and of suitable size to nearly match the size of the folded work.

Besides the advantage attained by my improvement in rendering dry-pressing speedier, less laborious, and less expensive than by the processes heretofore employed, it also makes the work more convenient to handle and rank up until required for binding, and avoids the not infrequent mishap of tumbled and scattered work on the floor of the bindery, and consequently lessens the risk from fire.

Having thus described my invention, what I desire to secure by Letters Patent is embraced in the following claims:

1. In a printer's and book-binder's dry-press and sheet-tie, the compressing-heads C D D′ and B^2 F′ F, constructed with cross-ways L^2 L^2, centrally arranged through them, substantially as and for the purposes herein set forth.

2. The inclined press-bed H H^2, provided with longitudinal slots H^1 H^1 in its sides, in combination with the press-heads B^2 F′ F and C D D′, having through them the cross-ways L^2 L^2, correspondingly arranged with said slots, substantially as and for the purpose set forth.

3. The press-head C D D′, connected by swivel with screw B A *a a′*, and made to travel as a plunger in the nut or block B^1, in combination with bed H H^2 and clips G G, substantially as and for the purpose set forth.

4. In combination with the dry-press bed H H^2, the device of a set of removable ledges, *f*, or a set of adjustable guide-rods, *m*, arranged as and for the purpose set forth.

5. The process herein described for treating folded printed sheets of paper in dry-pressing, the same consisting of subjecting a collection of such sheets to pressure without the use of fuller-boards, and while under such pressure tying them into compact bundles with end boards, then removing them immediately from the press, and allowing them to remain tied sufficiently long to fix and complete dry-pressing.

In testimony that I claim the foregoing as my invention I have hereunto set my hand and seal this 20th day of October, 1877.

JOSHUA W. JONES. [L. S.]

Witnesses:

THOMAS MCCAMANT,

W. H. SMITH.