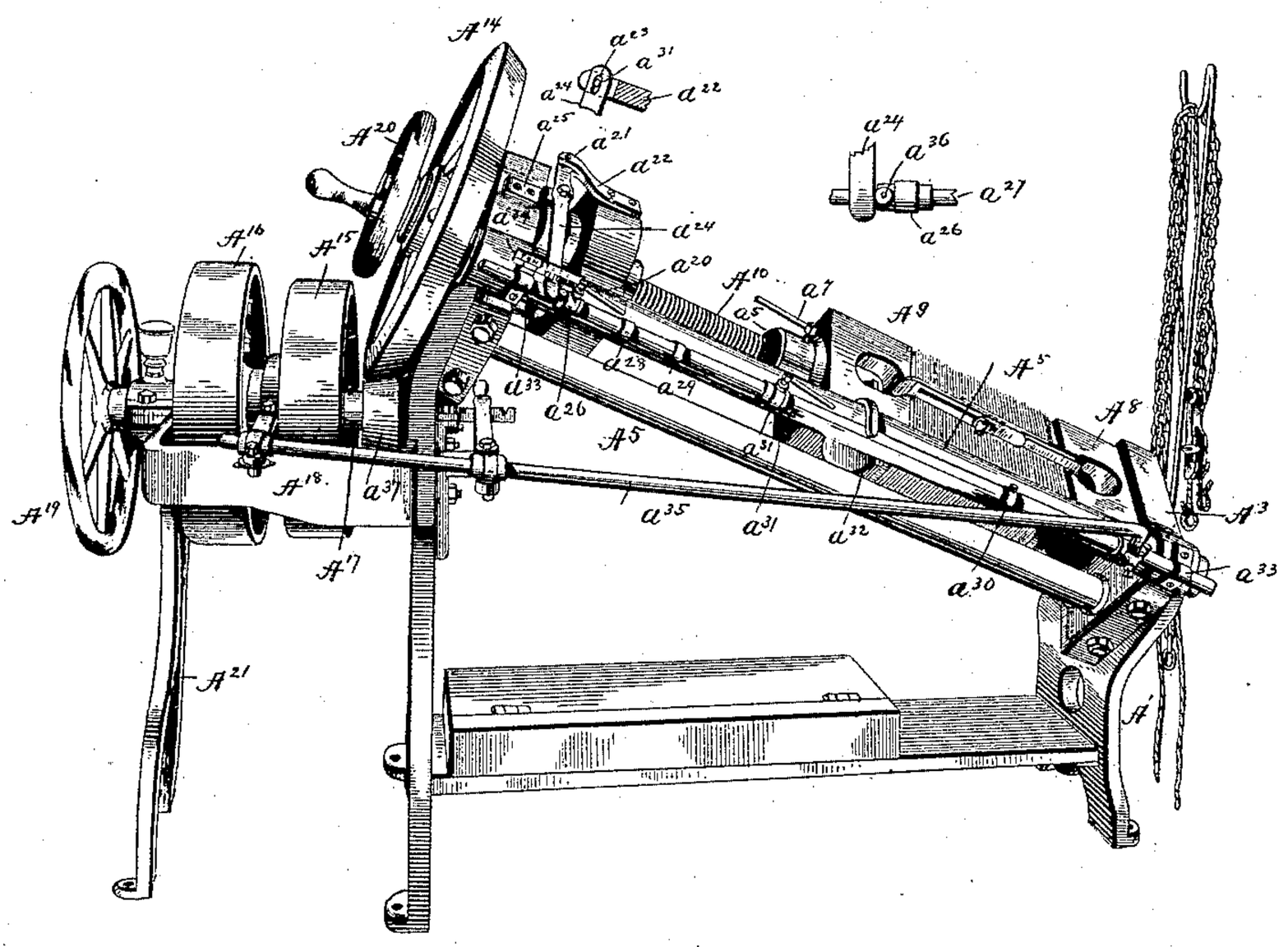
(No Model.) 2 Sheets—Sheet 1.

J. W. JONES.

DRY PRESSING, SHEET TYING, SMASHING, AND TABLETING MACHINE.

No. 452,898. Patented May 26, 1891

Fig. 1.



Witnesses:
Jas. E. Hutchinson
Geo. R. Byington

Inventor.
Joshua W. Jones,
by Hallock & Hallock
Attys.

(No Model.) 2 Sheets—Sheet 2.

J. W. JONES.

DRY PRESSING, SHEET TYING, SMASHING, AND TABLETING MACHINE.

No. 452,898. Patented May 26, 1891.

Fig. 2.

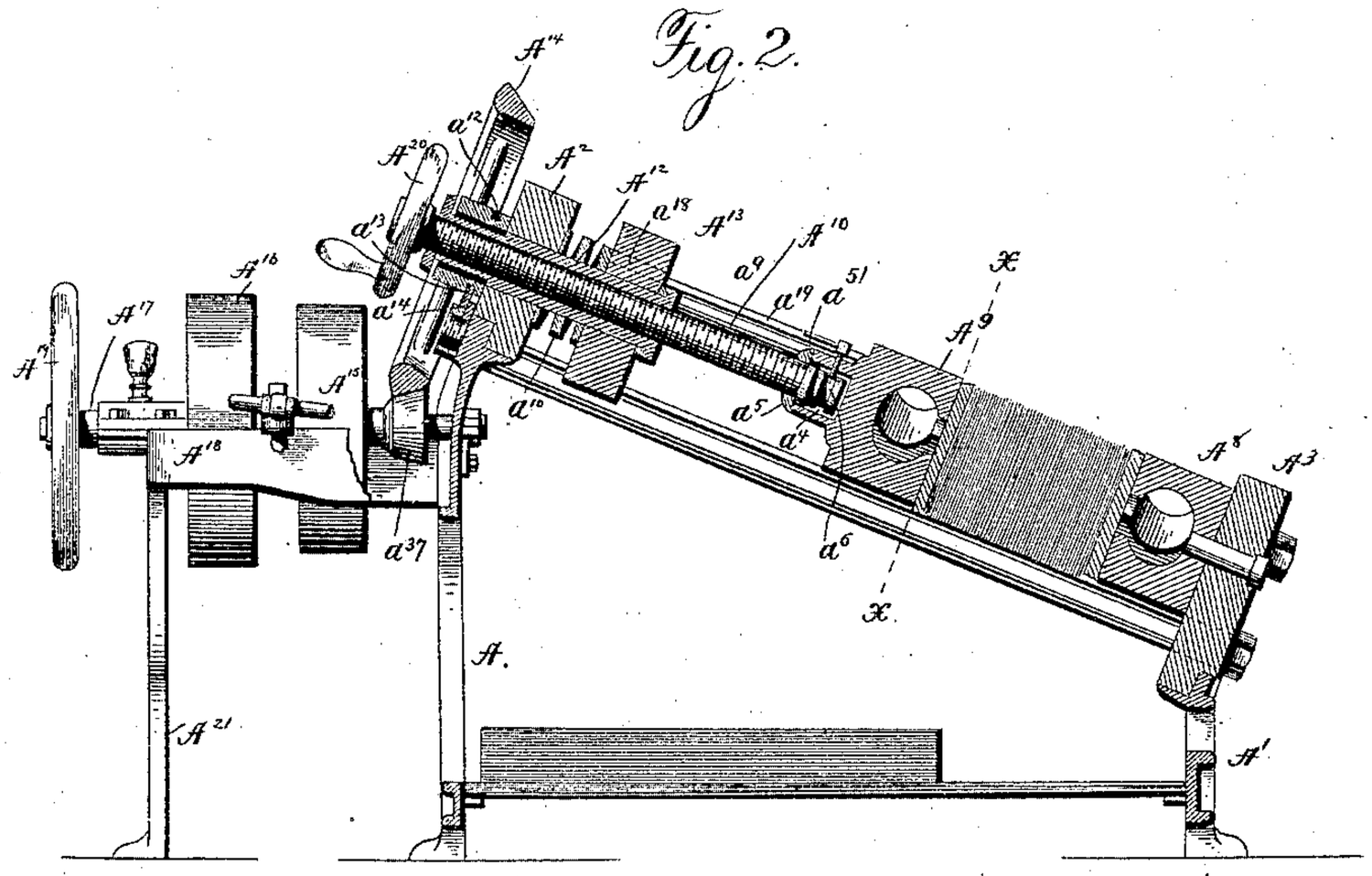


Fig. 5.

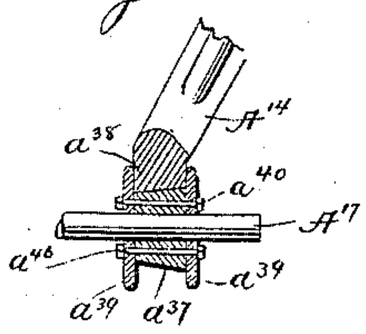


Fig. 3.

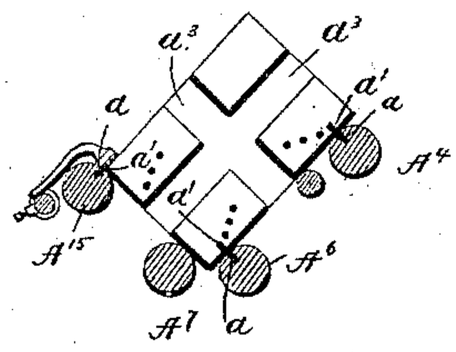


Fig. 6.

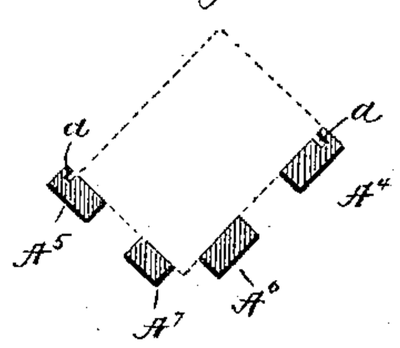


Fig. 7.

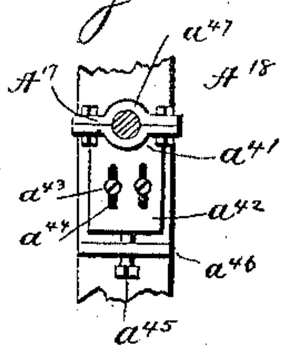
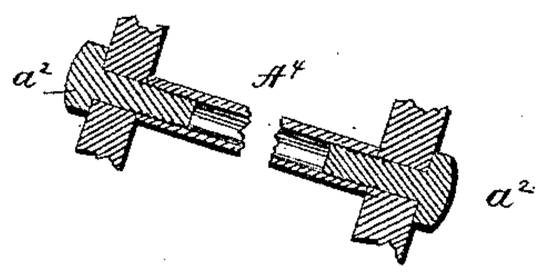


Fig. 4.



Witnesses:
Jas. E. Hutchinson.
Geo. R. Byington

Inventor.
Joshua W. Jones
by Hallock & Hallock
Attys.

UNITED STATES PATENT OFFICE.

JOSHUA W. JONES, OF HARRISBURG, PENNSYLVANIA.

DRY-PRESSING, SHEET-TYING, SMASHING, AND TABLETING MACHINE.

SPECIFICATION forming part of Letters Patent No. 452,898, dated May 26, 1891.

Original application filed July 25, 1889, Serial No. 318,605. Divided and this application filed November 25, 1889, Serial No. 331,521.

(No model.)

To all whom it may concern:

Be it known that I, JOSHUA W. JONES, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Book-Binders' and Printers' Dry-Pressing, Sheet-Tying, Smashing, and Tableting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of book-binders' and printers' dry-pressing, sheet-tying, smashing, and tableting machines shown in my application, Serial No. 318,605, and filed July 25, 1889, and of which this application is a division.

The invention in this application relates particularly to the construction of the trough, to the combination of the trough with the heads, and to minor details.

The invention therefore consists of constructions and combinations, all as will hereinafter be described in the specification, and pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view; Fig. 2, a longitudinal section; and Fig. 3, a transverse section on the line $x\,x$, Fig. 2. Figs. 4 and 6 are modifications of the form of the trough; Fig. 5, a modification of the friction-gear, and Fig. 7 a detail of a modification.

A A′ represent the standards; A^2 A^3, the head and foot plates, of heavy metal and secured to the standards A and A′, and A^4, A^5, and A^6 rods for securing the head and foot plates together and for forming the trough or bed. These rods are arranged in a rectangular position, as shown in Figs. 3 and 6, on an inclined plane, so that the foot of the machine will be lower than the head. By this means the sheets find an easier lodging and are not as liable to tilt or fall over while the trough is being filled, as they incline two ways toward the foot or lower part of the press. If desired, an additional rod A^7 may be provided to act as a bottom or rest for the sheets.

The rods A^4 and A^5 and, if desired, the rod A^6 are provided with longitudinal grooves a for the gibs a' on the compressing-heads A^8 and A^9. The rods shown in Figs. 1, 2, 3, and 6 are shown solid. In Fig. 4 I show as a substitute for the solid rods a tube secured to the heads by bolts a^2 instead of by nuts, as shown in the other figures. When tubes are used, the machine can be much lighter and at less cost than when the round rods are used. The heads are provided with crossways a^3 for the insertion of the tying devices, and the movable head A^9 has a pocket a^4 for the lower end of the pressure-screw A^{10}, by which it is moved up or down. The screw is held in place by a flange a^5, secured to the head A^9, and against which the collar a^5 rests. The screw is provided with an annular depression a^6 for a set-screw a^7, which rigidly connects the head and screw together when screwed down, and does not interfere with the rotary motion of the screw when not screwed down. This screw carries the nut or sleeve A^{12}, provided with a movable plate A^{13}, which rests against or upon an anti-friction roller a^8 on the flange a^9. A spring a^{10}, interposed between the head-plate A^2 and movable plate A^{13}, and the beveled friction-wheel A^{14}, having annular groove a^{12}, in which the ends a^{13} of the clips a^{14}, screwed to the plate A^2, project to prevent the gear-wheel from moving back and forth with the nut when the latter is moved by the screw. The movable plate A^{13} is provided with an opening a^{18} for a guide-rod a^{19}, secured to the frame and with shoulders a^{20}, which rest against the frame-rods, and an arm a^{22}, having a pin a^{21}, which passes through an elongated slot a^{23} in one end of the lever a^{24}, fulcrumed on arm a^{25}, secured to the head A^2. This lever projects beyond the frame and is arranged to engage with the shifting collar a^{26} on the sliding rod a^{27}. This rod is provided with safety-collars a^{28}, a^{29}, and a^{30} and a shifting collar a^{31}, which is operated upon by the finger a^{32} on the head A^9. The rod is held in place by keepers a^{33}, to one of which may be secured the scale a^{34}. A shifting rod a^{35} connects the rod a^{27} with the clutch mechanism placed between the friction-pulleys A^{15} and A^{16}.

The shifting collar a^{26} may be provided with a friction-roller a^{36} for the lever a^{24}, which is in contact with and reduces the wear and strain on those parts to the minimum. The

pulleys are mounted on a shaft A^{17}, journaled in the frame A^{18}, and provided at one end with a beveled friction-wheel a^{37}, which is in contact with the friction-wheel A^{14}, and at the other end with a hand-wheel A^{19}, by which motion can be imparted to the shaft when the pulleys are not used. The screw A^{10} is also provided with a hand-wheel A^{20}, by which it can be revolved when the set-screw at the other end is loosened.

The pulleys are made of different sizes, as shown, so that one will have greater leverage than the other. The pulley A^{15} is the smaller and drives the screw in such manner as to force the head A^{9} toward the head A^{8}. The pulley A^{16} is made longer, so that when the movement of the screw is reversed it will readily withdraw the head A^{9} from contact with the matter between it and the head A^{8}.

The frame A^{18} may be supported by an upright A^{21}, which is secured thereto in any suitable manner. The wheel A^{14} is provided with a flange a^{38} and the friction-wheel a^{37} with disk or plates a^{39}, which embrace the flange a^{38}, as shown in Fig. 5. These flanges are secured to the friction-wheel by means of bolts a^{40}. The shaft A^{17} is mounted upon adjustable bearings, as shown in Fig. 7. In this figure the shaft is shown resting upon a half-box a^{41}, provided with a plate a^{42}, which is secured to the frame by bolts a^{43}, passing through slots a^{44} in said plate to permit of the box being raised when either or both of the wheels A^{14} a^{37} become worn from use, and thus take up the wear. To make the adjustment positive, a set-screw a^{45} is screwed through a table or ledge a^{46}, projecting from the frame, until it comes in contact with the under side of the plate a^{42}. The half-box a^{41} is covered by a second half-box a^{47} and secured thereto, as shown.

What I claim as new is—

1. In a machine of the kind described, the combination of the head and foot plates and the rods or tubes connecting said head and foot plates and serving as a trough for holding the matter to be compressed and having spaces between the rods for the insertion of the ties.

2. In a machine of the kind described, the combination of the head and foot plates, the trough formed of rods or tubes, having the longitudinal grooves and the space between the rods for the purpose set forth, and the movable compression-block having gibs inserted in said grooves, substantially as set forth.

3. In a machine of the kind described, the combination of the sleeve, the movable plate on the sleeve and having the arm, the lever fulcrumed on the frame and having the elongated slot for the pin or said arm, and the shifting mechanism, substantially as described.

4. The combination of the sleeve, the movable head or plate on the sleeve and having the arm, the lever fulcrumed on the frame and having the elongated slot for said arm, and the shifting mechanism having the shifting collar a^{26}, provided with the friction-roller, substantially as described.

5. In a press of the kind described, the combination of the pressure-heads and the friction-pulleys of different diameters and geared to the movable pressure-head.

In testimony whereof I affix my signature in presence of two witnesses.

JOSHUA W. JONES.

Witnesses:
JOHN B. DUNKLE,
D. C. MAURER.