

No. 745,372.

PATENTED DEC. 1, 1903.

W. P. NORTHCOTT & H. B. MOUNSEY.
LOOSE LEAF BINDER.

APPLICATION FILED APR. 16, 1903.

NO MODEL.

Fig. 1.

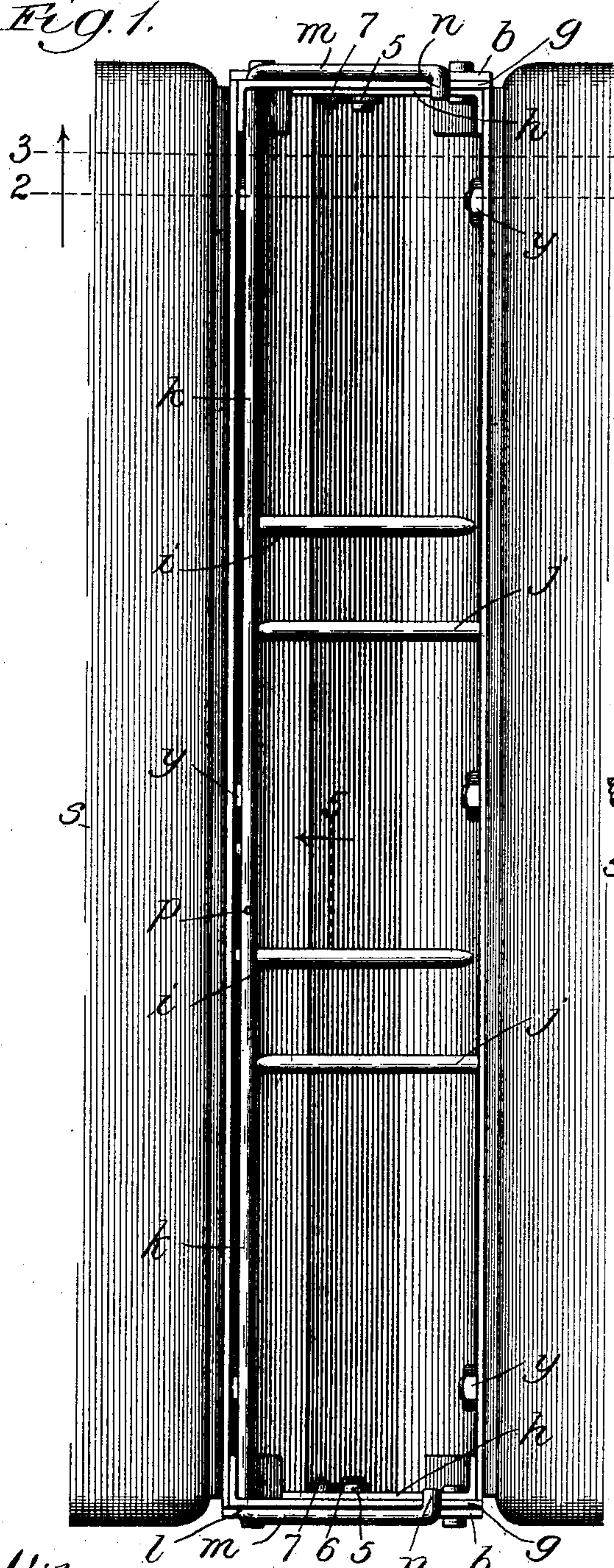


Fig. 2.

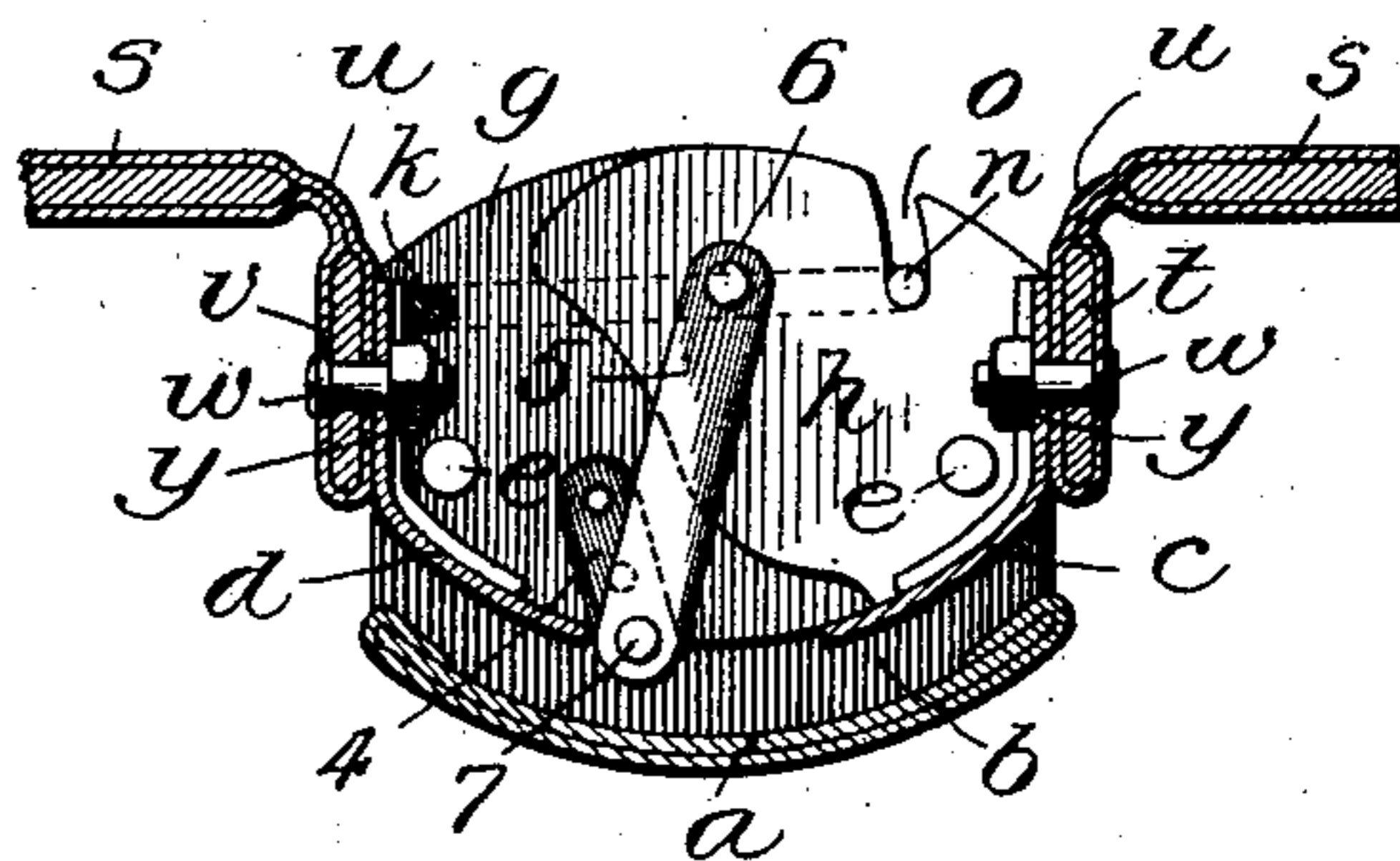


Fig. 3.

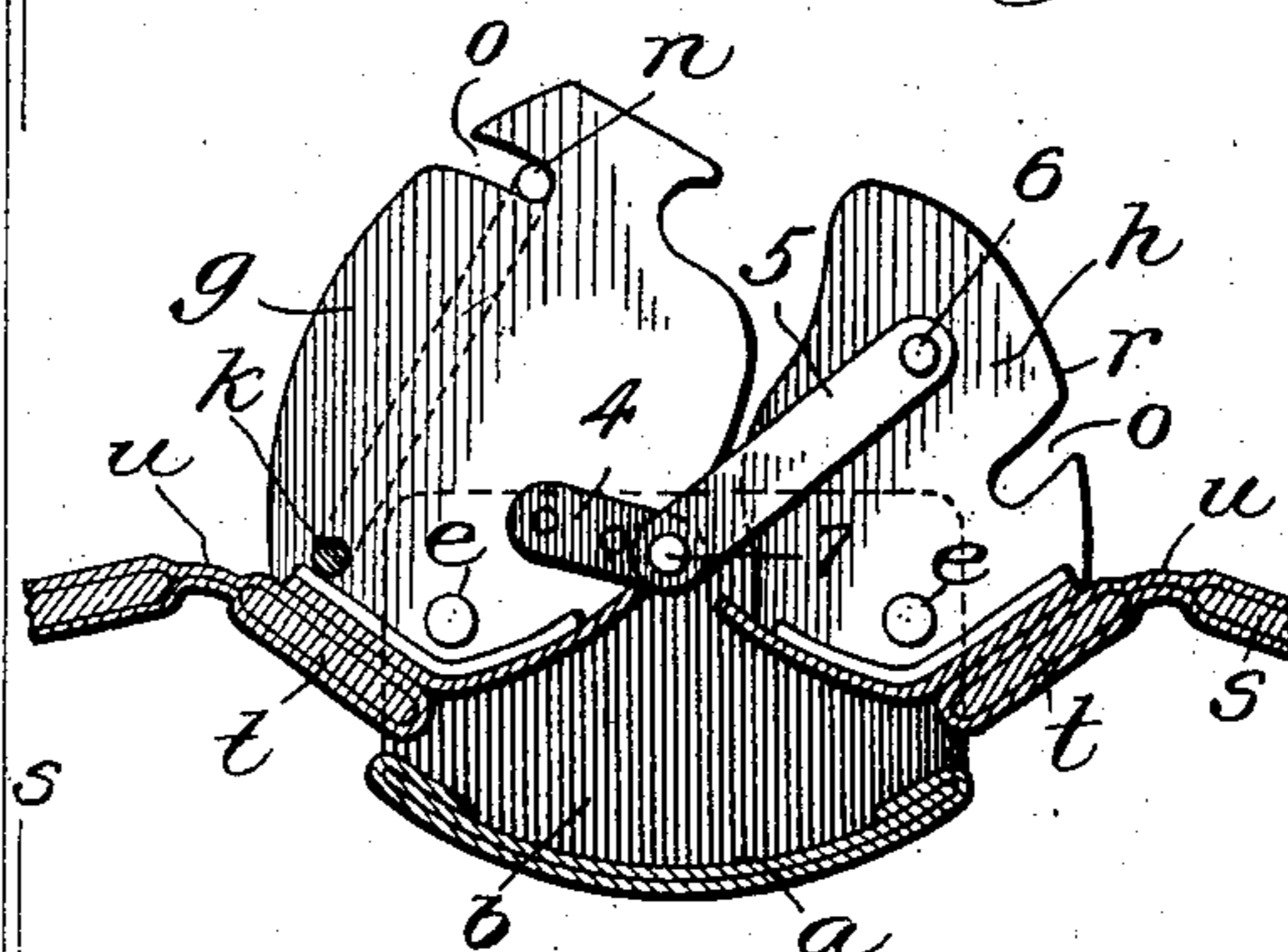


Fig. 4.

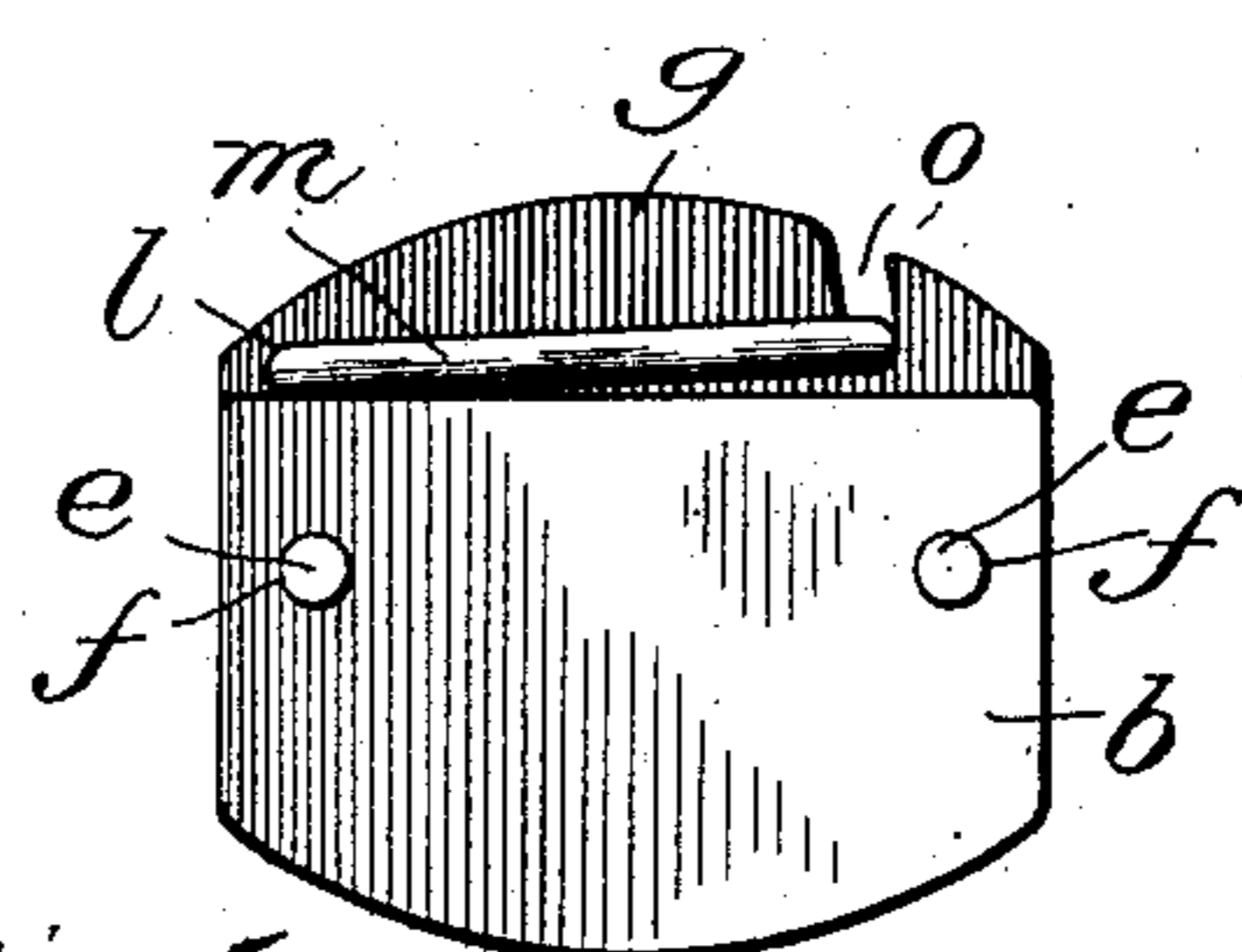
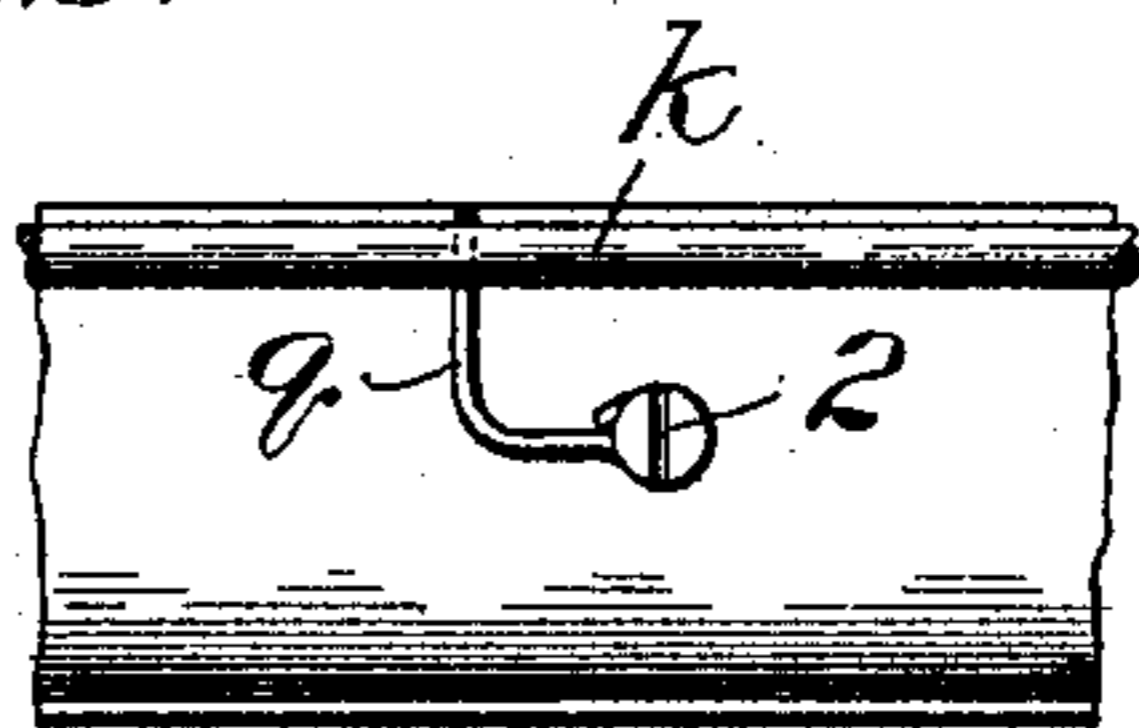


Fig. 5.



Witnesses:

Edw. J. Taylor,
John Enders, Jr.

Inventors:

William P. Northcott, Jr.
Herbert B. Mounsey,

By Thomas F. Sheridan,
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM P. NORTHCOTT AND HERBERT B. MOUNSEY, OF CHICAGO,
ILLINOIS.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 745,372, dated December 1, 1903.

Application filed April 16, 1903. Serial No. 152,878. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM P. NORTHCOTT and HERBERT B. MOUNSEY, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a specification.

Our invention relates to that class of loose-leaf binders having a rigid back portion and rigid side binder portions pivotally attached thereto at each end and detached therefrom throughout the length of such back portion.

It relates, further and particularly, to loose-leaf binders having a rigid back portion provided with parallel end flanges and rigid side binder portions pivotally mounted upon separate pivotal centers in such end flanges, binder-pins for each of such binder portions, and means for automatically locking both ends of the side binder portions in closed position and operable from one end thereof.

The principal object of the invention is to provide a simple, economical, and efficient loose-leaf binder.

A further object of the invention is to provide a binder adapted to be readily opened for the admission of leaves to be bound and automatically locked when closed.

A further object of the invention is to provide locking mechanism adapted to automatically lock the binder mechanism in closed position at either or both ends, such locking mechanism being adapted to be operated from either of the respective ends of the binder mechanism to lock or unlock both ends thereof.

A further object of the invention is to provide a binder having a rigid back portion and rigid side holder portions pivotally attached thereto at each end and detached therefrom throughout their length, so as to dispense entirely with flexible web connections between such parts.

A still further object of the invention is to provide a binder having side covers comprising flexible and rigid portions with means for removably attaching such covers to the side frames, so as to leave a smooth outer surface free from protruding screw-heads or other similar projecting parts.

Other and further objects of the invention will appear from an examination of the drawings and the following description and claims.

The invention consists in the features, combinations, and details of construction hereinafter described and claimed.

Figure 1 is a plan view of a binder-frame, showing the inside thereof, the frame being closed and the side covers open; Fig. 2, an end view thereof in elevation, showing the binder-frame mechanism in closed and locked position; Fig. 3, an end view showing the mechanism in open position; Fig. 4, an end view of the frame in closed position; and Fig. 5, a detail view in elevation taken on line 5 of Fig. 1, showing the locking-rod-actuating spring.

In constructing a binder in accordance with our improvements we provide a rigid back portion *a*, having parallel end flanges *b* at each end. Separate side binder-frames *c* and *d* are then provided and mounted in pivotal connection with the back portion by means of pivots *e* at each end extending into perforations *f* in the end flanges of such back portion. By this arrangement it will be readily seen that each of the side binder-frames is mounted on a separate and distinct pivotal center and is pivotally connected with the rigid back portion at each end and disconnected therefrom and from each other throughout the entire length of the parts and dispensing with all flexible web connections between the side-binder-frames and between such frames and the back portion. The side binder-frame *d* is provided with parallel end flanges *g*, and the binder-frame *c* is provided with parallel end flanges *h*, arranged inside of and in sliding contact with the end flanges of the other side binder-frame. The end flanges of both of such side binder portions thus overlap and form guides and braces to strengthen the parts and hold them in operative position with relation to each other. The body portions of the side binder-frames are curved, as shown in Figs. 2 and 3, for the purpose of strengthening them, so as to afford the highest possible degree of strength consistent with a light construction of such parts, and they are each provided with curved binder-pins *i* and *j*, operating in opposite directions and

adapted to enter the perforations of the leaves to be bound and hold them in position between such binder portions.

It is very desirable that means be provided whereby the side binder portions may be locked at each end in closed position and that such locking mechanism be adapted to be operated from one end or either end of the binder mechanism. In order to accomplish this, we rockingly mount a locking-rod k in perforations l in the end flanges of one of the side binder-frames, so that it extends entirely from end to end of such frame. This locking-rod is provided at each end with a lever-arm m , which in turn is provided at its outer swinging end with a locking lug or hook n , and the end flanges of the side binder portions are each provided with slots o , arranged to register with the slots on the corresponding ends of the other side binder-frame when the binder-frames are in closed position and adapted to receive the locking lug or hook of the locking-rod when in such position, so as to be locked thereby.

In order to provide for automatically locking the parts in closed position, the locking-rod is provided with a perforation p , into which extends a spring q , bent around a headed screw 2 and firmly held in position in the frame, so as to hold the locking-lugs at tension in the slots of the end flanges of the side binder portions, as shown in Figs. 1, 2, and 4, when such slots are in position to register with each other, and each of the end flanges of one of the side binder portions has its upper edge arranged in the form of a cam r , so that when the parts are open the locking-lug rests thereon and is held in position to automatically enter the slots when the parts are closed. Cover-leaves comprising body-boards s , which may be formed of paste-board or similar material, base-strips t , which we make, preferably, of fiber, flexibly connected to such body-boards and covered by a web of cloth, leather, or similar material u , are then provided and mounted one upon each of the pivoted side frames above described, as shown in Fig. 3, preferably entirely disconnected from and movable and removable independently of the back portion a of the frame. This also enables the cover of the back frame to be removed or a new one substituted therefor independently of the side covers.

In order to efficiently connect these cover-leaves to the binder-frames, so as to provide a smooth outer surface and enable them to be readily mounted, removed, and replaced when desired without removing the back portion or its cover or the side flanges, countersunk perforations v are provided in the base-strip, and bolts w , having correspondingly-countersunk heads, are mounted therein, with their threaded ends on the inner side of the binder-frame portion. Threaded nuts y are mounted in threaded engagement with such inner ends, so that such bolt mechanism is

flush with the outer surface of the cover-leaves.

It is desirable to efficiently flexibly connect the flanges of each of the side binder-frames with the adjacent flange of the other, so as to permit each side frame to swing upon a different pivotal center, so that the swinging of one side frame to opened or closed position will cause the other, with its curved binder-pins, to swing in the opposite direction to a corresponding position. The loose sheets may thus be quickly and easily placed upon the binder-pins or removed, as desired, and those in place prevented from being accidentally displaced while additional sheets are being arranged in position. In order to accomplish this by means of a mechanism which is certain in operation, we mount a lug 4 rigidly upon each end flange of one side binder-frame, on the inner side of such flange. These lugs may be integral with the flanges upon which they are mounted, and thus form a portion of such flange. A link 5 is pivotally mounted upon the corresponding end flanges of the other side binder-frame by means of pivots 6, and is pivotally connected to the lug above mentioned, and thereby with the flange upon which such lug is mounted, by means of a pivot-pin 7, mounted in perforations in the lower end of the lug and link, as shown in Figs. 1, 2, and 3. The link is thus yieldingly attached to both flanges. The lug should be of a thickness corresponding to or slightly exceeding that of the flange of the adjacent side binder-frame, and the swinging end of the link is mounted on the inner side of such lug. This gives both the link and side flanges free play in the desired direction and also braces the parts. The side frames are thus permitted to swing upon different pivotal centers, and the end flanges of each side frame are so flexibly connected that although they move in different directions and upon different pivotal centers the opening or closing of one will cause the other to move to a corresponding position, minimizing the independent play of the parts and affording a mechanism which is positive in its action.

We claim—

1. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached from said back portion throughout their entire length, and means for locking such binder-frames in closed position, substantially as described.

2. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion on opposite sides of such back and detached throughout their entire length from each other and from the back portion, substantially as described.

3. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion on opposite sides of such back and detached throughout their entire length from each other and from the back portion, and each provided with a pair of end flanges each having notches adapted to register with the notches on the corresponding ends of the other binder-frame, a locking-rod rockingly mounted in one side of such binder-frames provided with locking-lugs adapted to enter the notches in the end flanges of such binder-frames, and spring mechanism in engagement with such locking-rod for holding it yieldingly in position, substantially as described.

4. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached therefrom throughout their entire length, means for locking such binder-frames in closed position, and a pair of outer cover-leaves removably attached to such side binder-frames and detached from the back portion, substantially as described.

5. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached therefrom throughout their entire length, and each provided with a pair of end flanges having notches adapted to register with the notches on the corresponding ends of the other binder-frame, a locking-rod rockingly mounted in one of such binder-frames provided with locking-lugs adapted to enter the notches in the end flanges of such binder-frames, spring mechanism in engagement with such locking-rod for holding it operatively in position, and a pair of outer cover-leaves removably attached to each binder-frame and detached from the back portion, substantially as described.

6. In a device of the class described, the combination of a rigid back portion provided with end flanges, a pair of side binder-frames pivotally attached to such back portion at each end and separate therefrom and from each other throughout their entire length, each provided with a plurality of binder-pins and having a pair of end flanges provided with notches therein, a locking-rod rockingly mounted in one of such binder-frames extending from end to end and provided with locking-lugs adapted to enter the notches in the end flanges of the binder-frames when such frames are in closed position, spring mechanism in engagement with such locking-rod for holding it operatively in position, and a pair of cover-leaves comprising flexible and rigid portions removably attached to

such side binder-frames, substantially as described.

7. In a device of the class described, the combination of a rigid back portion, a pair of side binder-frames pivotally attached to such back portion, a pair of side cover-leaves each comprising rigid perforated base-strips of fiber and a rigid body portion flexibly connected together, and bolt-and-nut mechanism mounted in the perforations of the base-strip of each of such cover-leaves flush with the outer surface thereof for connecting such cover-leaves with the side frames, substantially as described.

8. In a device of the class described, the combination of a rigid back portion provided with end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached therefrom throughout their entire length, a pair of side cover-leaves each comprising rigid perforated base-strips of fiber and a rigid body portion flexibly connected together and mounted each upon one of the side binder-frames and detached from the back portion, bolt-and-nut mechanism mounted in the perforations of the base-strip of each of such cover-leaves flush with the outer surface thereof for connecting such cover-leaves with the side frames in closed position, substantially as described.

9. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached therefrom throughout their entire length, and each provided with a pair of end flanges, a link at each end of the binder pivotally attached to the end flanges of both side binder-frames, and means for locking such binder-frames in closed position, substantially as described.

10. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached from the back throughout their entire length, each provided with a pair of end flanges having notches adapted to register with the notches on the corresponding ends of the other binder-frame, a link for each of such binder-frames pivotally attached to the flanges of both frames, a locking-rod rockingly mounted in one of such binder-frames provided with locking-lugs adapted to enter the notches in the end flanges of such binder-frames, and spring mechanism in engagement with such locking-rod for holding it operatively in position, substantially as described.

11. In a device of the class described, the combination of a back portion provided with parallel end flanges, a pair of side binder-frames pivotally attached at each end to the end flanges of the back portion and detached

from the back throughout their entire length, each provided with a pair of end flanges, a perforated lug mounted upon each of the end flanges of one of such binder-frames, a link
5 pivotally mounted upon each of the end flanges of the other binder-frame and pivotally connected with one of such lugs and thereby with the flange upon which such lug is

mounted, and means for locking such binder-frames in closed position, substantially as described.

WILLIAM P. NORTHCOTT.
HERBERT B. MOUNSEY.

Witnesses:

HARRY I. CROMER,
ANNA L. SAVOIE.