

(No Model.)

2 Sheets—Sheet 1.

H. J. CASE.

GRAIN ADJUSTING DEVICE FOR GRAIN BINDING MACHINES.

No. 359,426.

Patented Mar. 15, 1887.

Fig-1

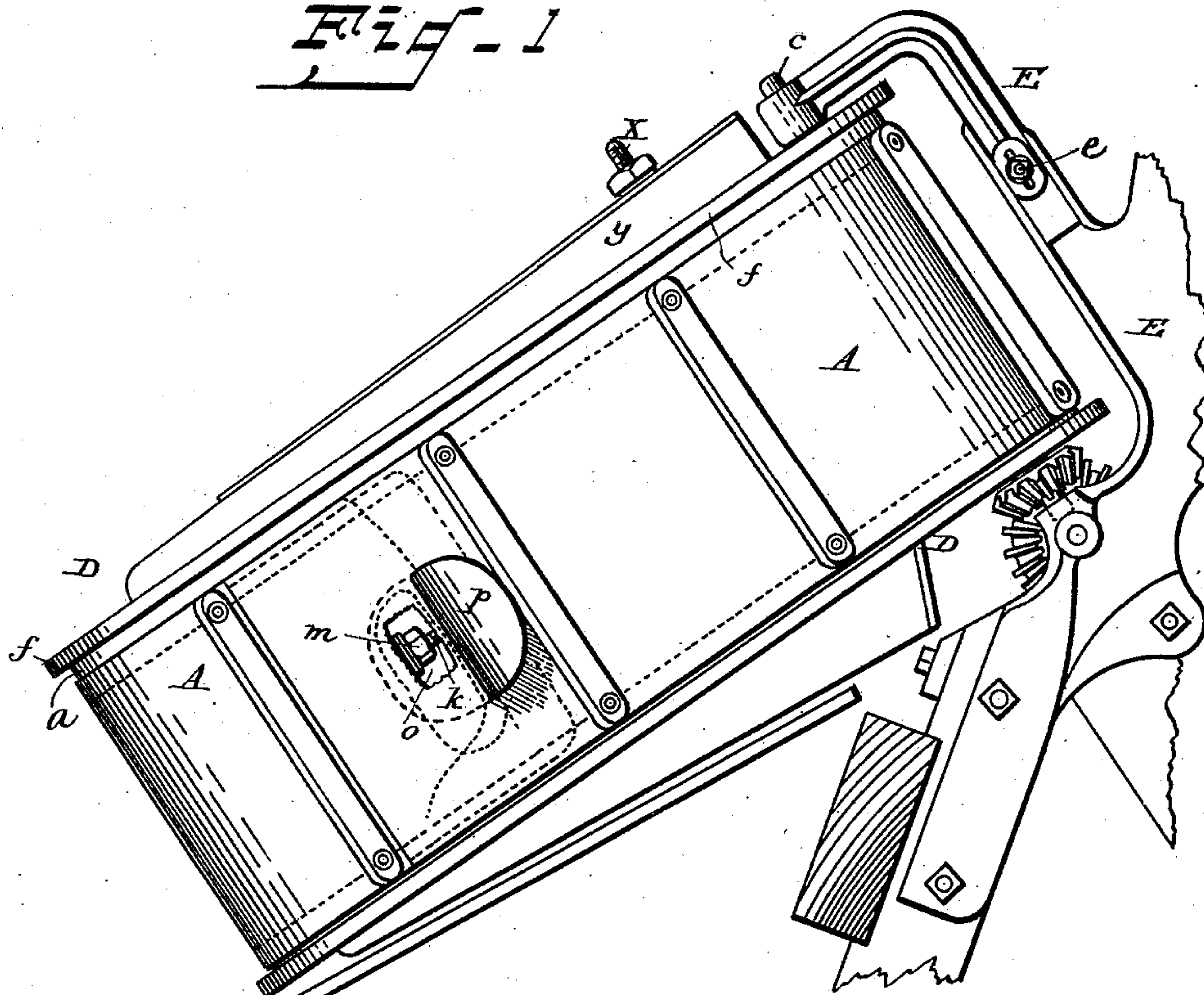
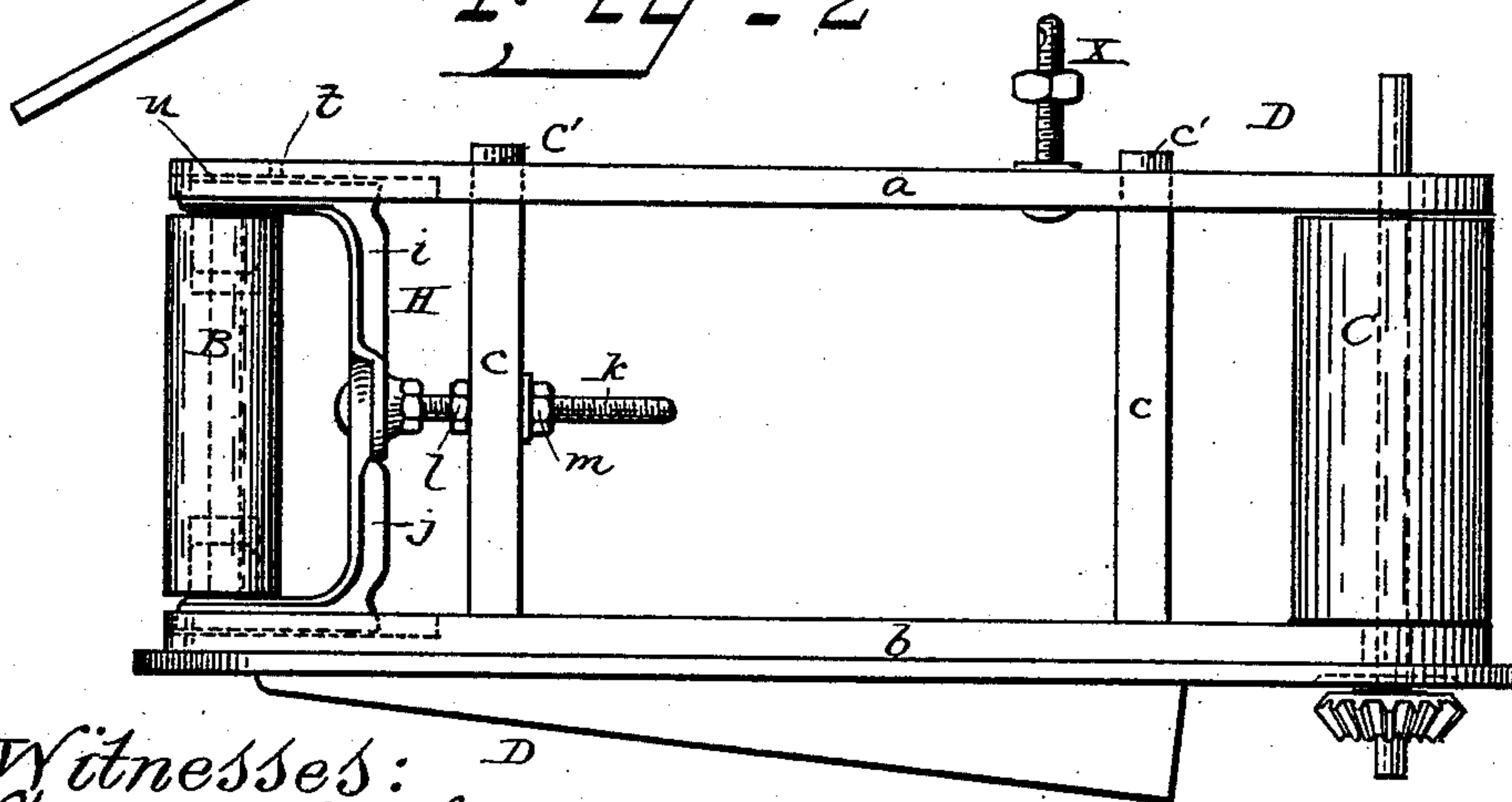


Fig-2



Witnesses:
William H. Shipley.
Jm L. Kennedy.

Inventor:
H. J. Case
By P. T. Dodge Atty

(No Model.)

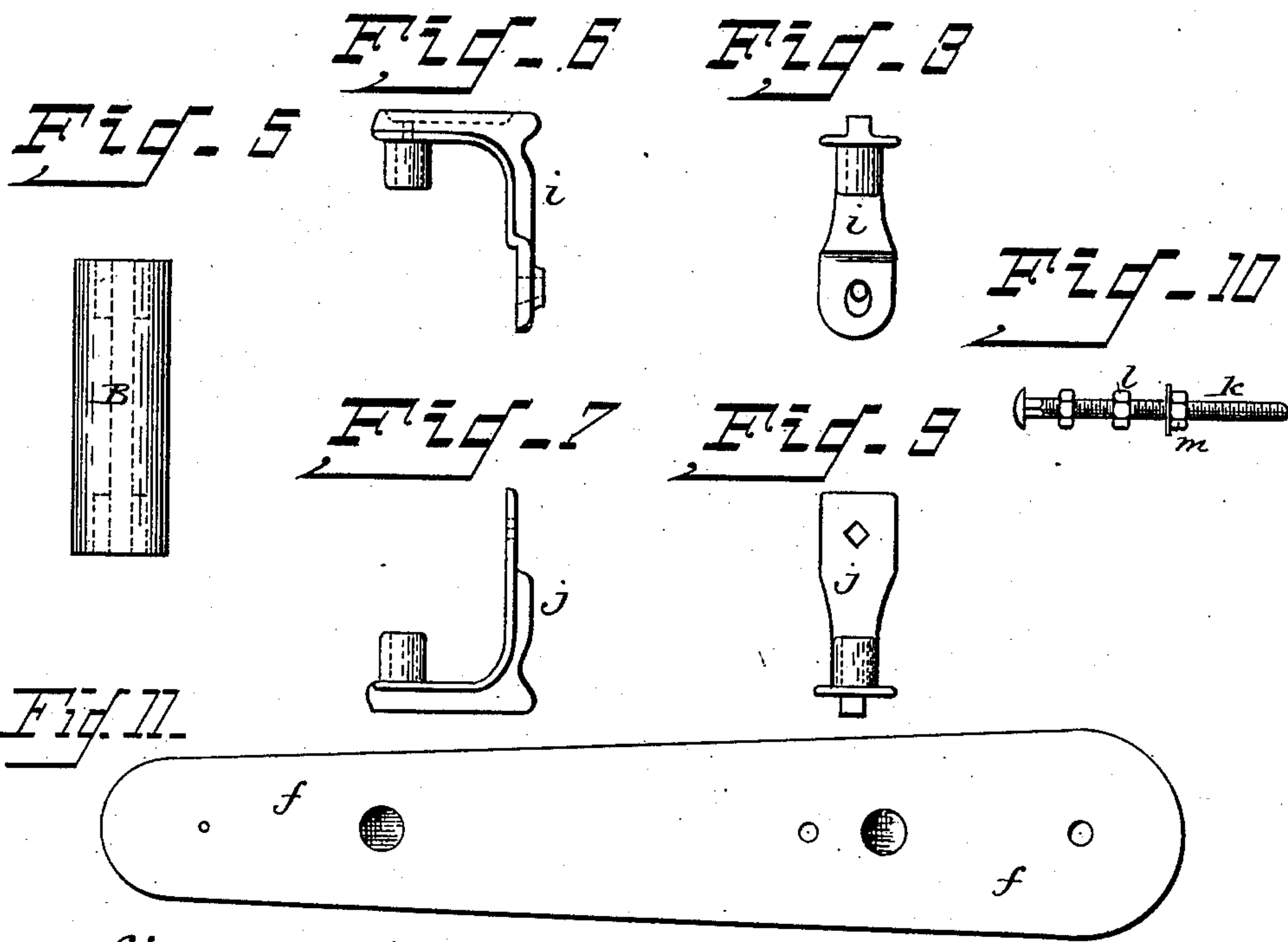
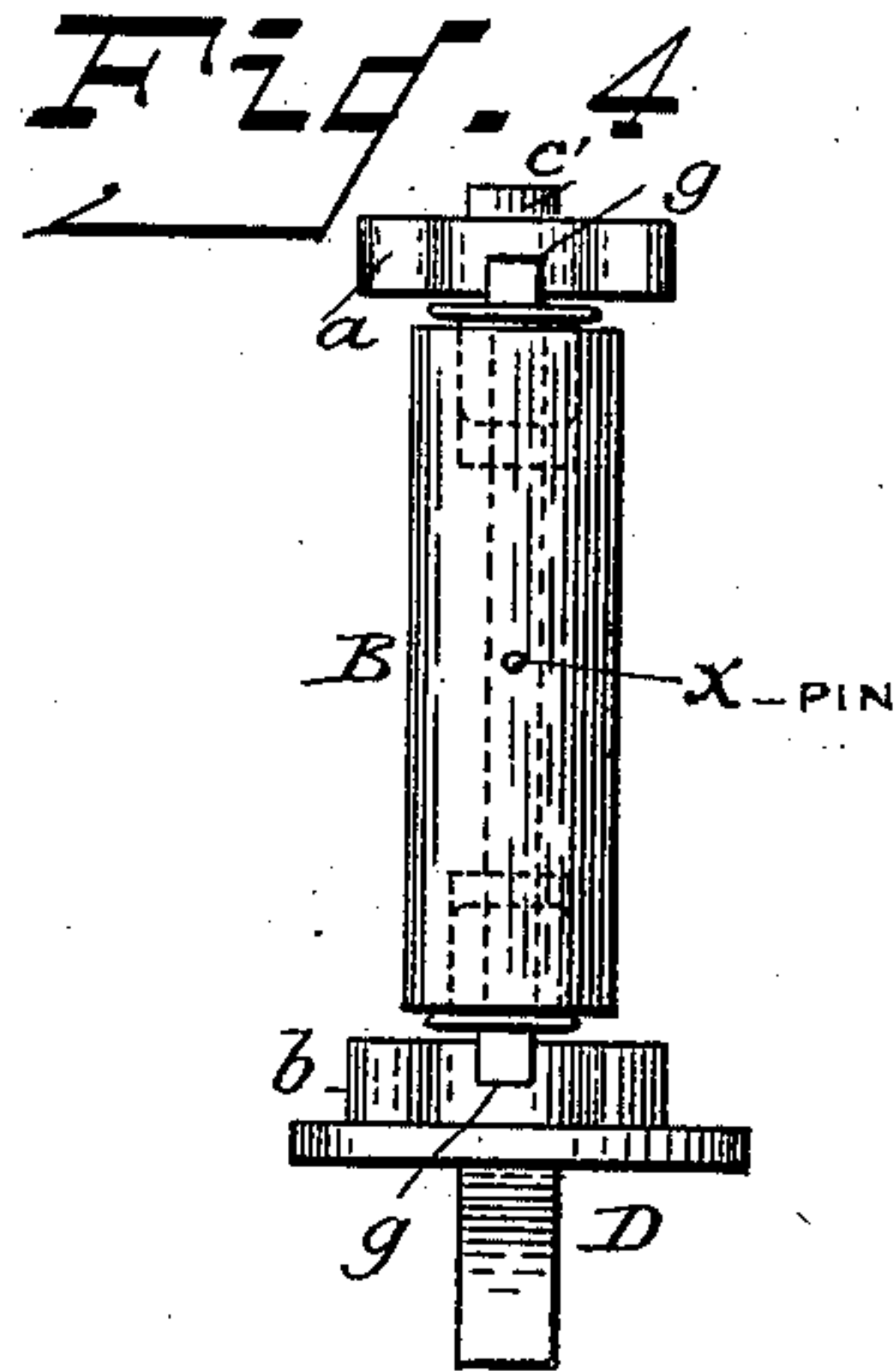
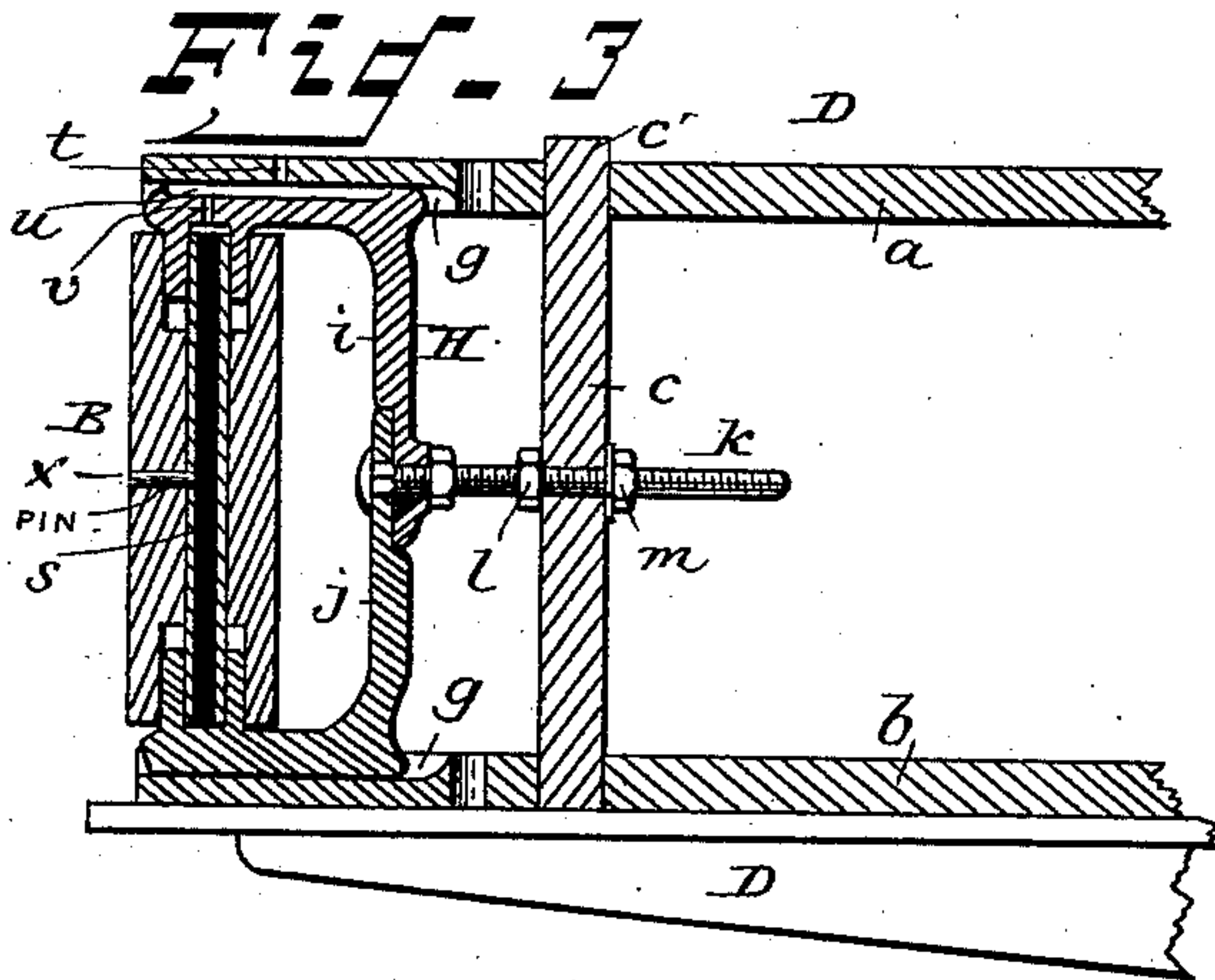
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William H. Shipley
J. Kennedy.

Inventor:
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By P. T. Dodge.
Atty.

UNITED STATES PATENT OFFICE.

HENRY J. CASE, OF AUBURN, NEW YORK, ASSIGNOR OF ONE HALF TO
D. M. OSBORNE & COMPANY, OF SAME PLACE.

GRAIN-ADJUSTING DEVICE FOR GRAIN-BINDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 359,426, dated March 15, 1887.

Application filed July 30, 1886. Serial No. 209,578. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. CASE, of Auburn, in the county of Cayuga and State of New York, have invented certain Improvements in Grain-Adjusting Devices for Grain-Binding Machines, of which the following is a specification.

This invention has reference to what are commonly known in the art as "butting-aprons," or "butt-adjusters," which consist of an endless apron having vertical faces mounted on a swinging or adjustable frame located ordinarily across the end of the binding-table, with the operative face in a line oblique to the path of the grain, for the purpose of acting against the butts of the grain and forcing the same endwise upon the table, in order that it may be brought into the proper relation to the binding devices.

The principal objects of my invention are to provide for the more convenient adjustment of the tension of the apron, to facilitate its removal and replacement, and to cheapen the cost of construction.

In the accompanying drawings, Figure 1 represents a side elevation of my improved adjusting mechanism, together with the binding-table and other adjacent parts, in so far as it is necessary to an understanding of my invention. Fig. 2 represents a side elevation of the supporting-frame with the apron removed therefrom. Fig. 3 is a longitudinal vertical section through the lower end of the frame. Fig. 4 is an end view thereof. Fig. 5 is a side view of the roller by which the lower end of the apron is carried, the openings therein being indicated in dotted lines. Figs. 6 and 7 are side elevations of the two parts of the roller-supporting slide or bracket. Figs. 8 and 9 are end views of the same. Fig. 10 is a side view of the bolt and nuts by means of which the sliding frame is adjusted and secured. Fig. 11 is an under face view of the top board of the frame, showing the openings therein.

Referring to the drawings, A represents the endless apron or canvas, sustained at its two ends by the upright rollers B and C, mounted in a frame, D, which is arranged to swing horizontally about the axis of the upper roll C, in order to change the obliquity of the face of the

belt with reference to the path of the grain. E represents a metallic bracket, constructed in two parts, in which the upper and lower journals of the lower roll C are sustained, the upper end of the bracket being attached to the remaining portion by a bolt, *e*, so that it may be readily removed when the belt or apron is to be detached.

The foregoing parts, as regards their general construction and mode of operation, are similar to those now in use in the art.

Instead of constructing the swinging frame, the rollers, and the lower roller-bearing in the ordinary manner, I adopt the construction which will now be described in detail.

The frame proper consists of upper and lower bars or boards, *a* and *b*, connected by upright bars *c*, inserted therethrough and secured firmly therein in any suitable manner. The uprights *c* are projected above the bar *a* in the form of tenons *c'*, which enter and serve to hold in position the board *f*, which overlies the frame and the upper edge of the apron, to keep the latter in place. The top board, *f*, is preferably fastened down in place on the frame and the tenons *c'* by a vertical bolt, X, passing through the board into the frame, as shown in Fig. 2, the same bolt serving also to hold the top bar, *y*, in place. The frame-bar *a* is made of such size that after the removal of the board *f* and the upper end of the bracket E the apron may be slipped upward endwise thereover off from the rolls. This removal of the apron without the necessity of disconnecting the frame or removing the rolls is a very advantageous feature of the construction.

The upper roll C has its journals inserted through the bars *a* and *b* in an ordinary manner. The lower roll, B, has its ends recessed to receive inwardly-extending journals on a bracket, H, which slides at its upper and lower ends in grooves *g*, formed in the frame-bars, as shown. This bracket H is preferably made, as shown, of two angular parts, *i* and *j*, united by a bolt, *k*, this construction permitting their journals to be readily inserted into the ends of the roller. The bolt *k* is extended through the lower upright frame-bar, *c*, and provided on opposite sides thereof with two adjusting-nuts, *l* and *m*, by means of which the bolt may be caused to slide the bracket H and roller B

endwise of the frame, so as to give the apron the required tension.

It will be perceived that the bolt K serves the double purpose of uniting the two parts of the bracket H; and of adjusting the bracket as a whole within the frame to regulate the tension of the apron. In order to permit convenient access to these adjusting-nuts without removing the apron, I provide the latter, as shown in Fig. 1, with an opening, *o*, which, being brought opposite the ends, will permit the insertion of a wrench. A flap, *p*, secured to the face of the apron and arranged to close backward over this opening, prevents the straw or other matters from entering the same. This flap should of course be arranged so that it will be held in a closed position by the pressure of the grain thereon.

In order to increase the durability of the parts, I prefer to provide the roller B with a central tubular shaft, *s*, the ends of which are projected into the journals of the bracket H, as shown. A pin, *x'*, inserted as shown in Figs. 3 and 4, rigidly unites the roller and shaft.

An oil-opening, *t*, formed in the upper side of the frame, communicates with a groove, *u*, formed in the top of the bracket, and this groove in turn communicates through a hole, *v*, with the interior of the roller-bearing, thus permitting oil to be readily introduced to both the upper and lower bearings without removing the belt. The lower journal serves as a cap or socket to retain the oil, which is thus prevented from saturating the apron and causing the same to become loaded with dust, as in machines of the ordinary construction.

Having thus described my invention, what I claim is—

1. In combination with the roller-frame, the adjustable roller, and internal roll-adjusting devices, the endless apron provided with an opening through which access may be had at will to said devices, whereby the tension of the apron may be readily controlled.

2. In combination with the roller-frame, a belt-sustaining roll, and internal roll-adjusting devices, the endless apron provided with the opening and with the flap or cover to close said opening.

3. In a butt-adjusting mechanism for a binder, the roll-carrying frame D, having its bars *c* extended upward to form tenons, in combination with the removable top board seated upon and held in place against horizontal movement by said tenons, as described, and a bolt or fastening to hold the board from rising.

4. In a butt-adjusting mechanism, the combination of the main frame having the longitudinal bars *a b*, the rollers B C, sustained by bearings in said bars, the endless apron applied to said rollers, and an independently-removable top board, *f*, applied to the frame, substantially as described, whereby the removal of the apron is permitted without removing the rolls and without disturbing the bearings in which they are supported in the frame.

5. In combination with a supporting-frame, D, the roll-supporting bracket H, constructed of two parts, and the bolt *k*, applied as described, to serve the double purpose of uniting the parts of the bracket and of adjusting the bracket in the frame.

6. The bracket H, provided with the tubular inwardly-extending journals, in combination with the tubular shaft *s*, seated at its ends within said journals, and the roller B, surrounding said shaft and secured thereto, the ends of said roller being recessed to receive the journals of the bracket.

7. In combination with the roller B, provided with the tubular shaft, a sliding bracket, H, supporting the journals of said roll, and provided with an oil-opening and an oil-conducting groove in the upper end, and the main frame D, supporting said bracket, and provided with an oil-inlet, *t*, whereby the oil delivered through the last-named opening is conducted to both ends of the roll.

In testimony whereof I hereunto set my hand, this 26th day of July, 1886, in the presence of two attesting witnesses.

HENRY J. CASE.

Witnesses:

T. M. OSBORNE,
J. FRANK DAVIS.