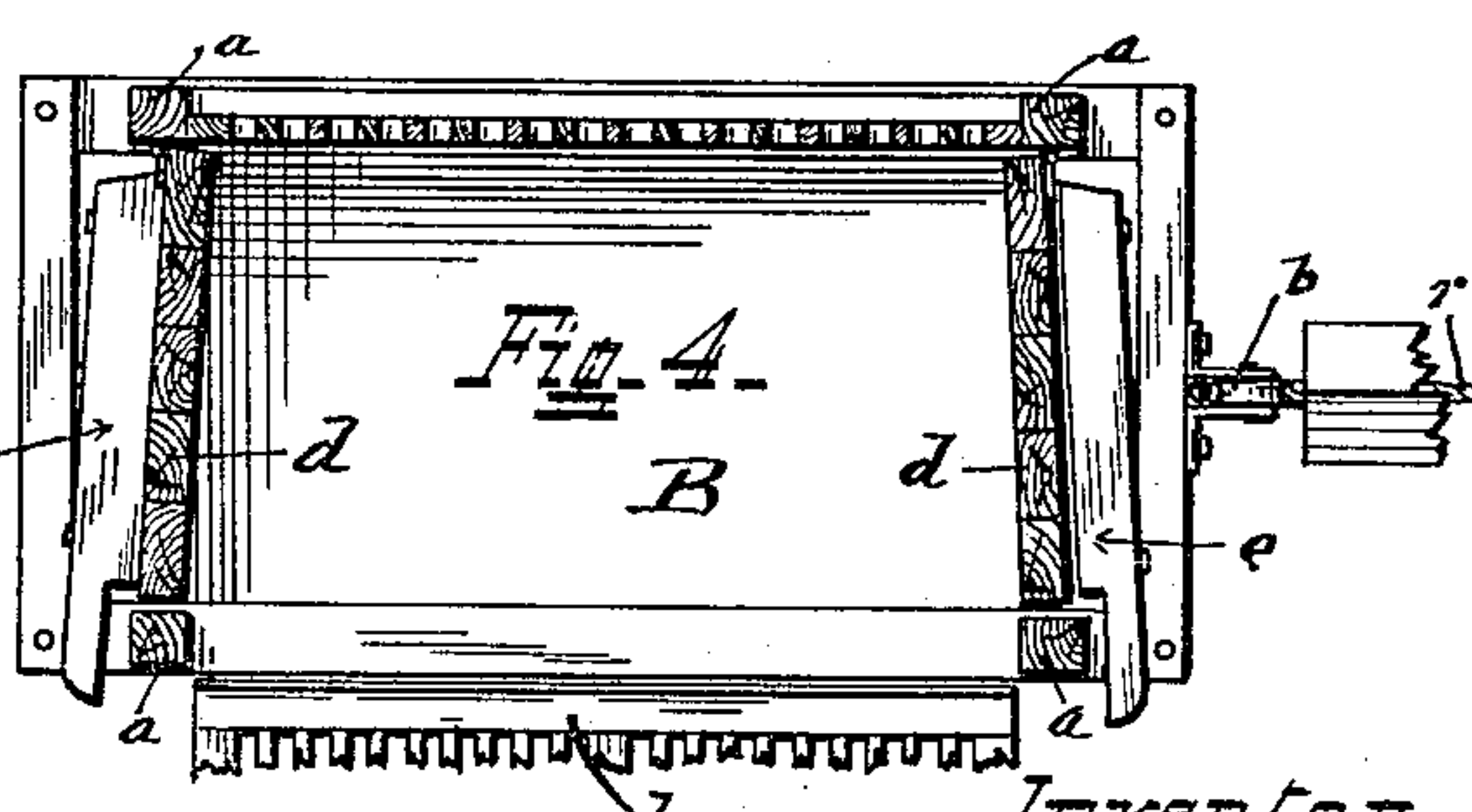
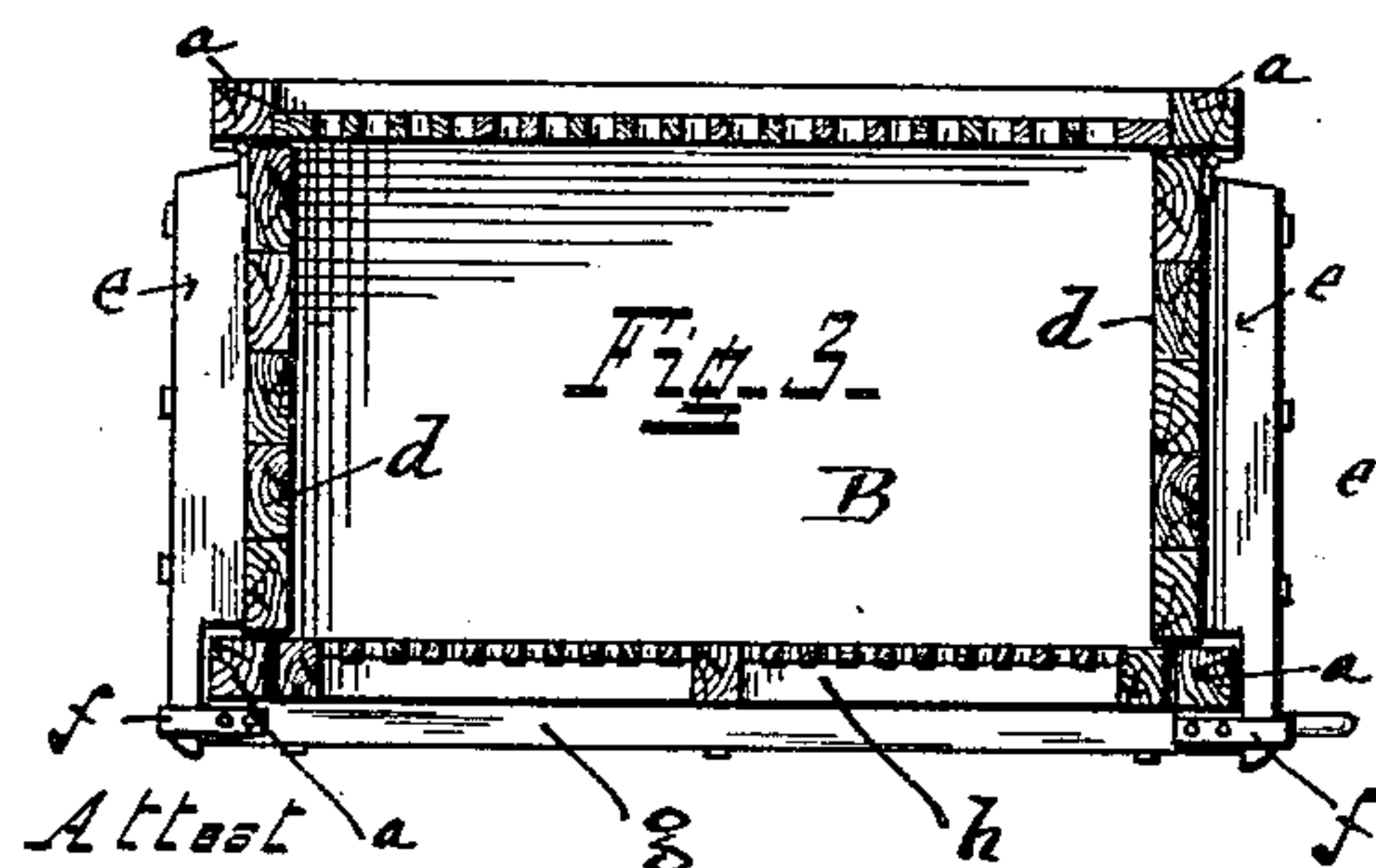
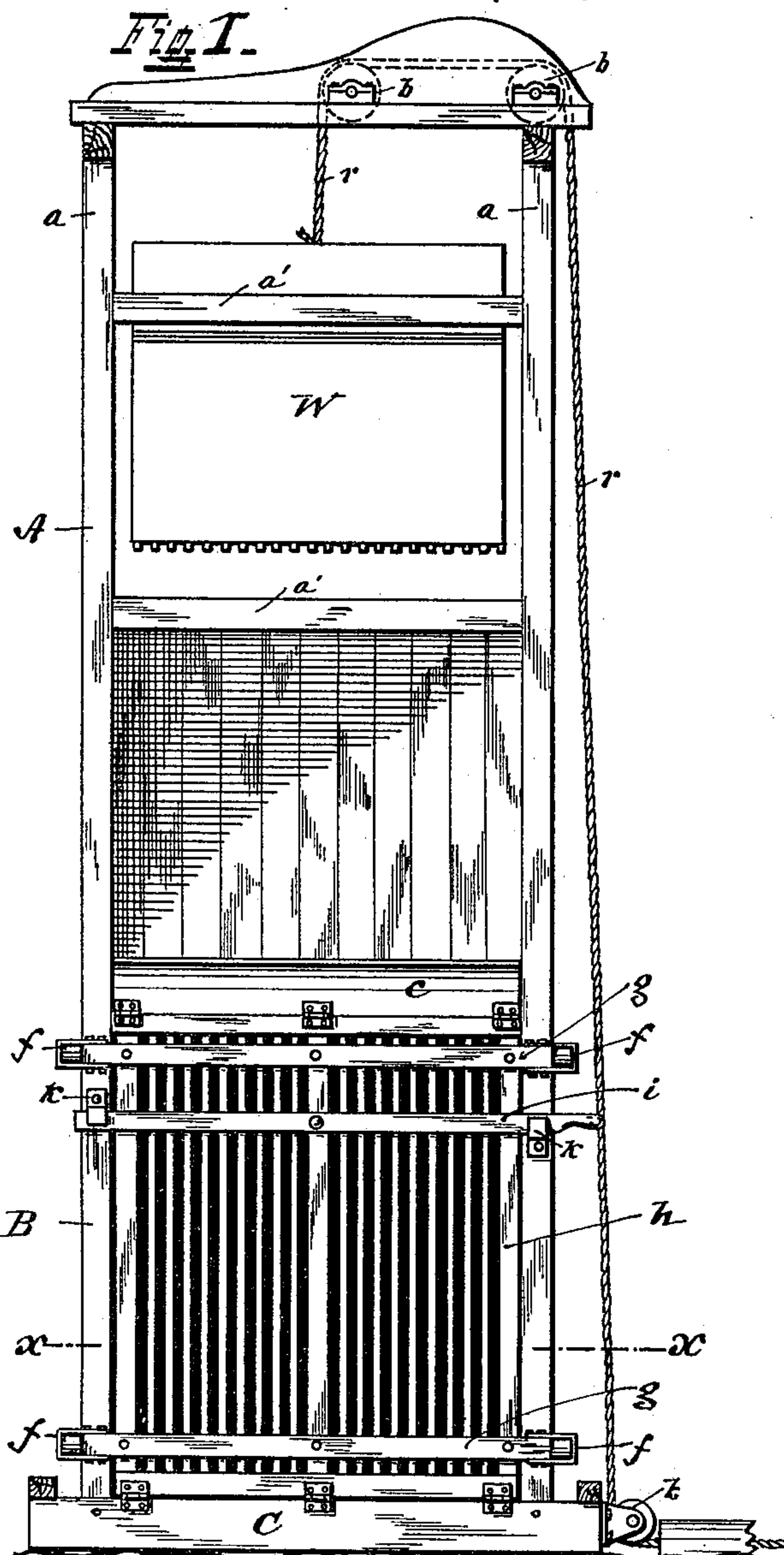
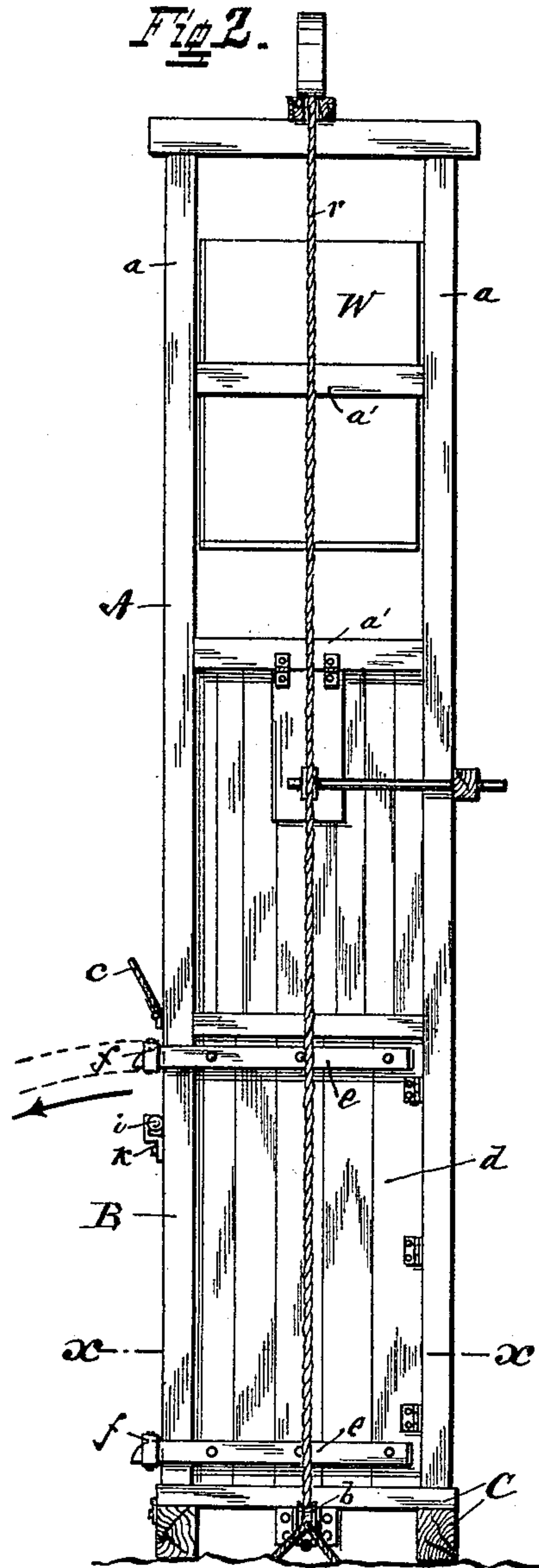


B. J. LESLIE.  
BALING MACHINE.

No. 344,486.

Patented June 29, 1886.



Attest  
C. A. Kerr  
Charles Downie

Inventor  
Benjamin T. Leslie  
By *Kell H. H. H. H.* Atty.

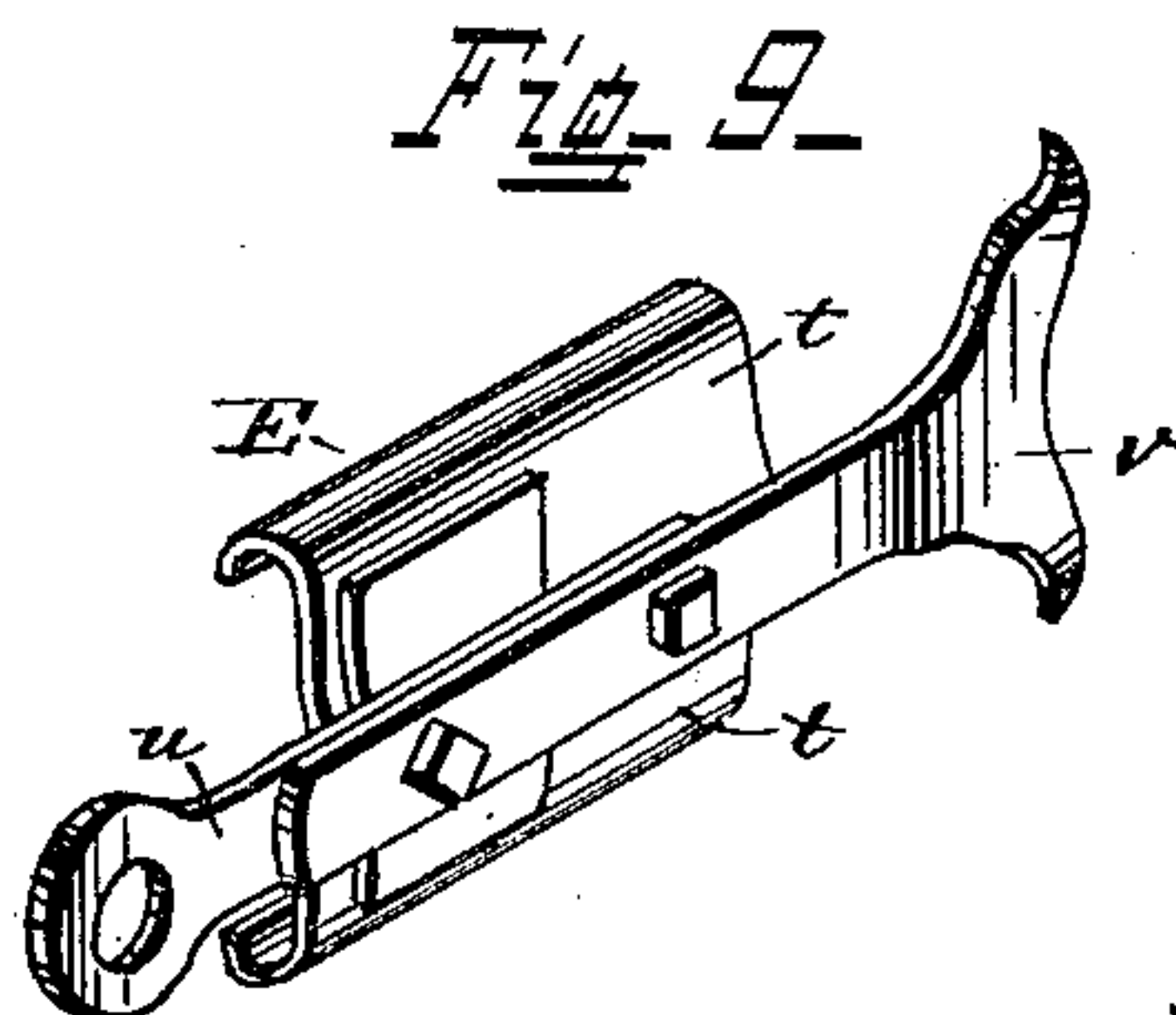
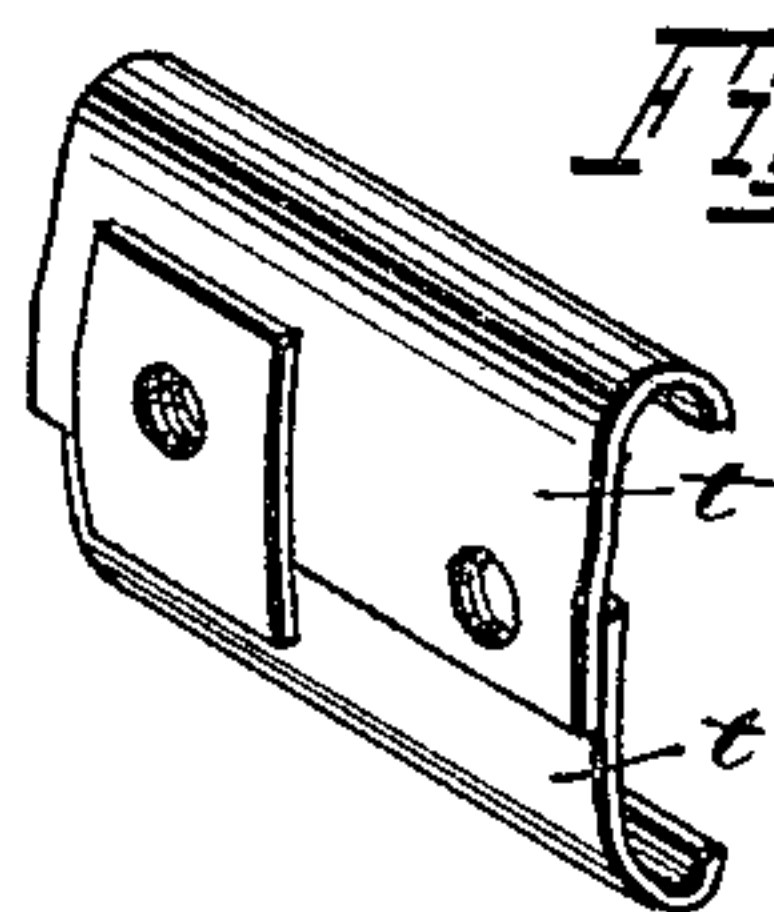
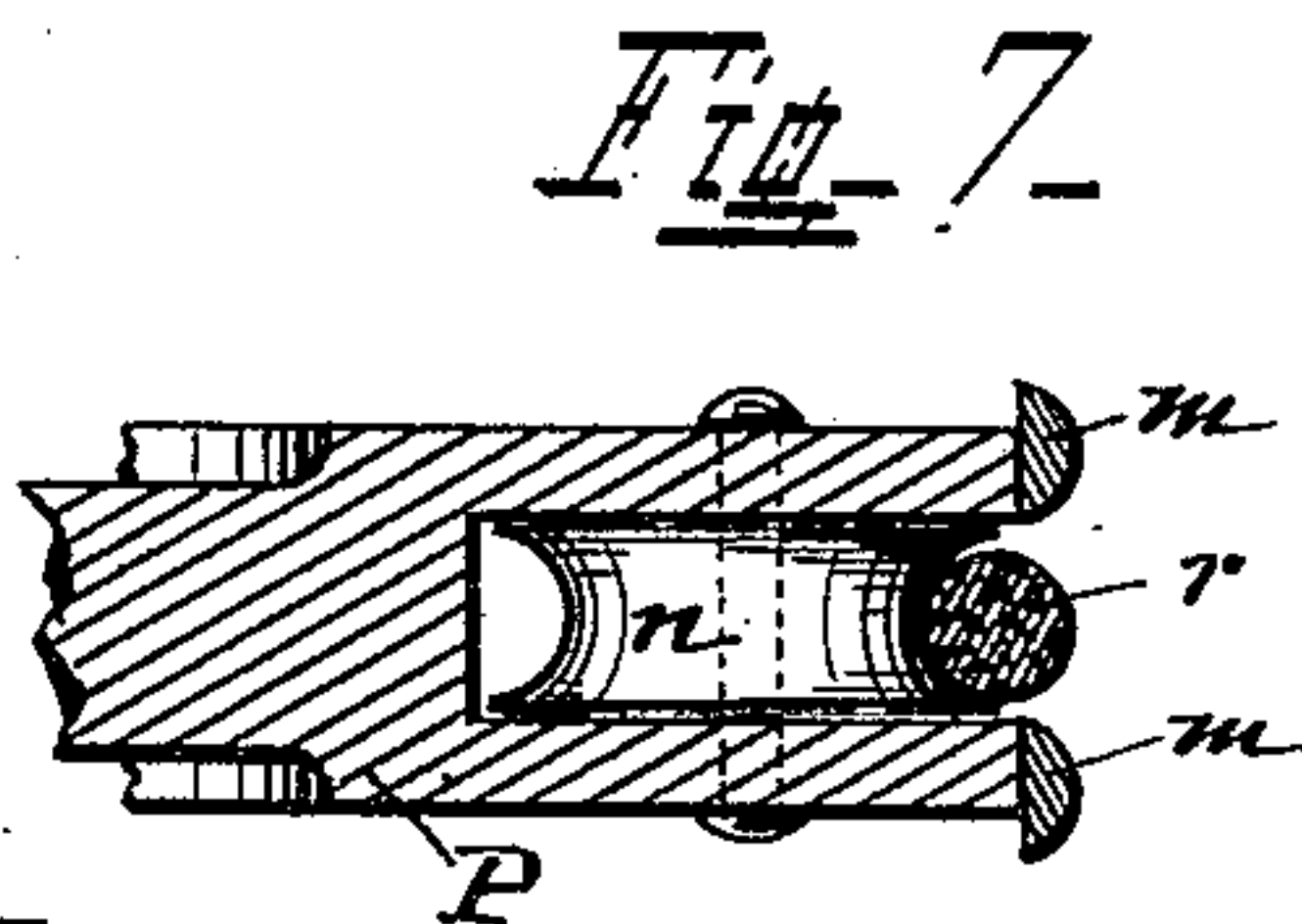
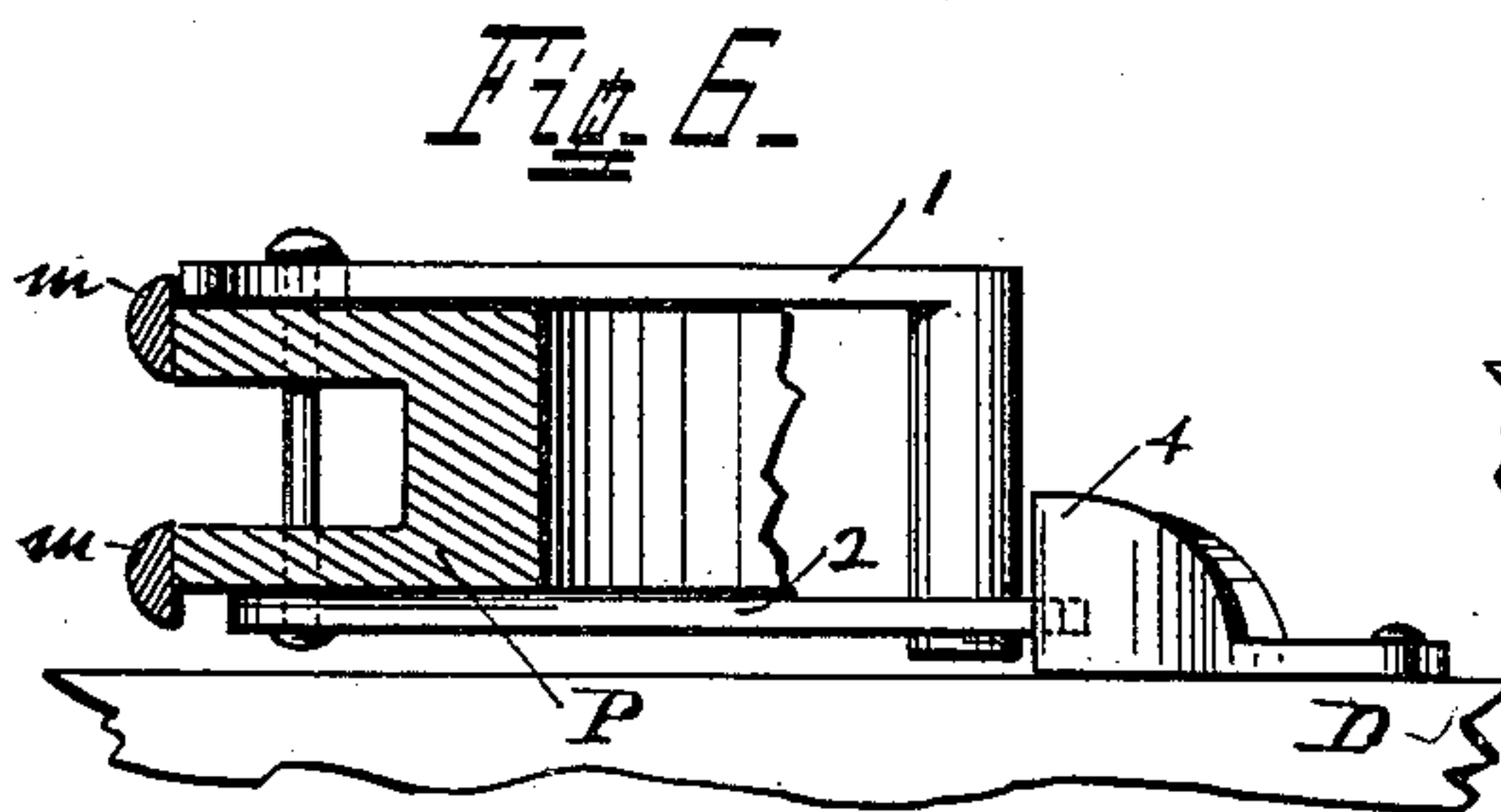
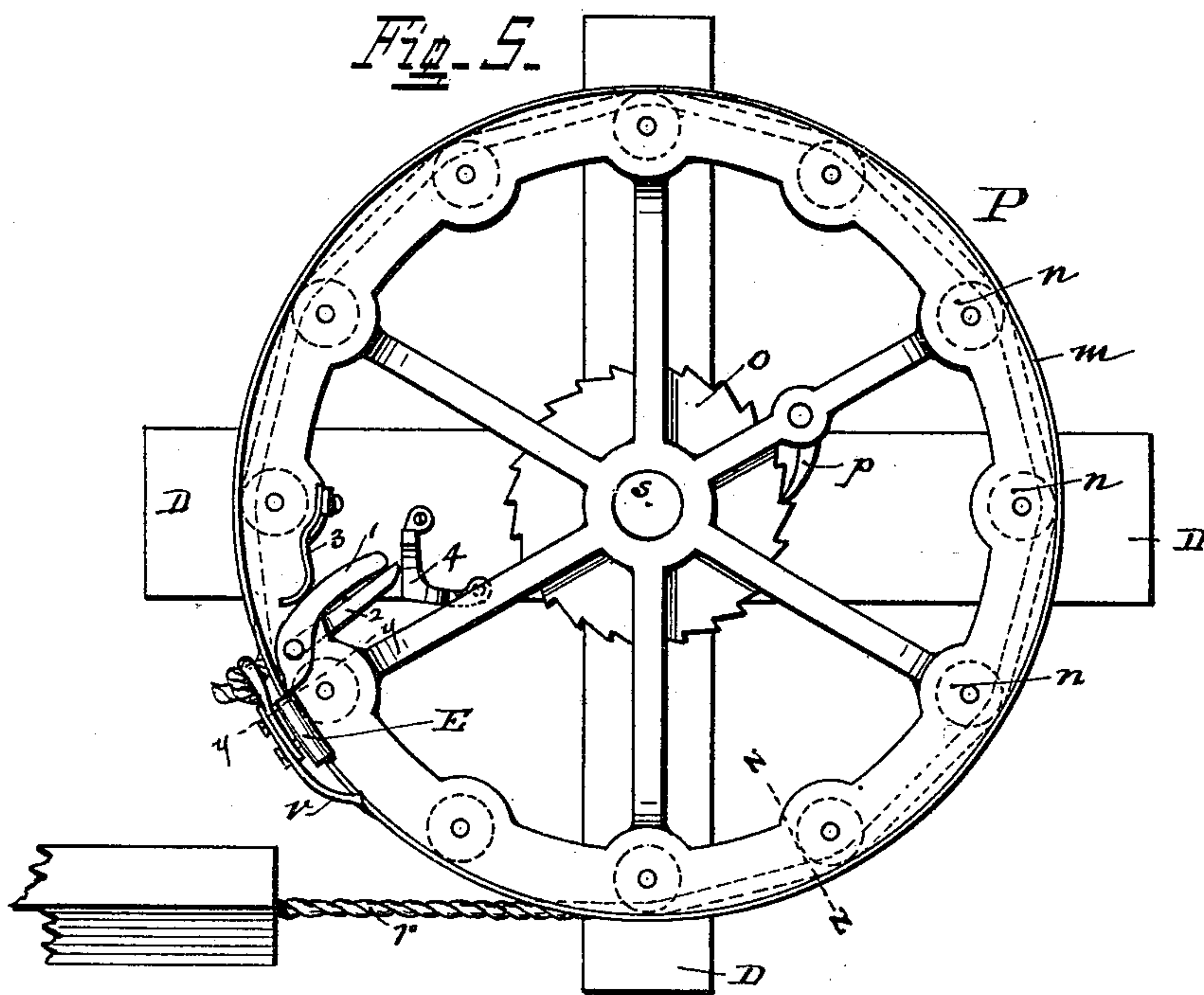
(No Model.)

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# UNITED STATES PATENT OFFICE.

BENJAMIN J. LESLIE, OF BUTLER, KENTUCKY.

## BALING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 344,486, dated June 29, 1886.

Application filed October 29, 1885. Serial No. 181,236. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN J. LESLIE, a citizen of the United States, residing at Butler, Pendleton county, Kentucky, have invented new and useful Improvements in Baling-Machines, of which the following is a specification.

My invention relates to machines for baling hay, cotton, straw, &c.; and is designed to provide an economical and efficient apparatus for this purpose that can be easily transported and operated with the ordinary labor and appliances at hand upon farms.

To this end my invention consists in the construction of a baling-machine, as more fully hereinafter set forth, embodying a vertical frame arranged for guiding a suitable weight, by whose alternate elevation and release the material is compacted in a suitable compress-box, and particularly in the construction and arrangement of the portion of the frame constituting the compress-box, by which the release of the bale when completed is more easily effected; also, in the construction and arrangement of the weight-operating devices, whereby the weight is alternately raised and automatically released, as desired, without cessation of the operating power; and, lastly, in the provision of an adjustable flap to facilitate the introduction of material in the successive stages of the baling operation, and to guide the final layer of material within the limits of the compress-box and secure a neater and more finished bale free from ragged edges, &c.

Mechanism embodying my invention is illustrated in the accompanying drawings, in which Figure 1 is a front elevation, and Fig. 2 a side elevation, of my improved baling-press; Figs. 3 and 4, horizontal sections through the compress-box on the line *xx* of Fig. 1, the first showing the box closed and the second showing the same opened for the release of the finished bale; Fig. 5, a plan view of the weight-operating wheel and tripping devices; Fig. 6, a vertical cross-section of the rim of the weight-operating wheel at *yy* of Fig. 5, showing the tripping devices in elevation; Fig. 7, a vertical cross-section of the same at *zz* of Fig. 5, showing one of the friction-rollers; Fig. 8, a detail view of the parts consti-

tuting the "traveler," for carrying and releasing the rope, and Fig. 9 a detail perspective view of said traveler complete with friction-brake attached.

Referring now to the drawings, A designates the main frame of the machine or the baling-press proper; B, the lower portion constituting the compress-box; *w*, the weight guided in the vertical frame of the machine; *r*, the rope for elevating the weight, and P the power-wheel for winding the rope and elevating the weight. These constitute the general features of the machine, which is operated by placing the material to be baled in successive layers in the compress-box B, and forcing the same into a compact mass by the repeated dropping of the weight upon the material so placed.

The main frame A consists of four upright corner-posts, *a*, suitably bound together by cross-bars *a'*, the whole resting upon a strong base-frame, C, into which the posts *a* are preferably doweled and secured by pins permitting the frame A to be detached from its base for convenience of package and transportation. The inner corners of the upright posts *a* constitute the guides for a weight, *w*, which may consist of a suitably-strong box-frame, to be filled with stones or other heavy material, as required. The bottom of said box is provided with cross-slats, as usual, to permit the passage of the baling bands or rope in finally securing the finished bale.

One or more idler-sheaves, *b*, are provided, one arranged at the top of the machine for the elevating-rope *r*, and a similar sheave, *b*, upon the base-frame for directing the rope horizontally to the power-wheel. The frame A is boarded in for a limited space above the compress-box at the sides and rear, but is otherwise open, excepting a hinged flap, *c*, in front immediately above the compress-box, opening outward. The flap is hinged at the bottom, and is arranged to have a limited movement outward and normally stand open. While open it serves as a hopper-shield to assist the operator in placing the successive layers of material in proper position for the action of the weight; but may be temporarily held closed at the final stroke of the weight to force the loose ends of material within the



path of the weight, thus preventing the said loose ends from projecting beyond the weight and insuring a compact and neat-looking bale.

5 Instead of giving the sides of the compress-box a flare outward, as is common in this class of machines, and which, therefore, gives the bale a corresponding shape, which is undesirable, I construct the compress-box truly rectan-  
10 gular, with sides and front arranged as follows: The sides *d* are hinged vertically to the rear posts, and are secured in their normal closed positions by cleats *e e*, attached to the hinged gates *d* and projecting beyond the front,  
15 where they engage with loops *f* at the ends, respectively, of cross-bars *g g*, secured to the front gate, *h*, of the box B, which gate is hinged at the bottom, and in opening falls outward and downward, constituting a platform for  
20 convenience of the operator in removing the bale. The gate *h* is secured by a brace, *i*, centrally pivoted to the gate and engaging behind socket-abutments *k* upon the front posts, *a*. It will thus be seen that the front gate, when  
25 in position, retains the side gates, *d*, closed by the engagement of the cleats *e* in the loops *f*, and it should be mentioned that the engaging ends of the cleats *e* are beveled, so that in closing the front gate, *h*, the engagement of the  
30 sides is rendered automatic.

The operation of this part of my invention is as follows: The bale being finished, ready for removal, the brace *i* is released and the front gate dropped downward, whereupon the  
35 sides, being also released, swing slightly outward upon their hinges, thereby clearing the bale and allowing it to be rolled outward upon the platform *h*. In closing the front gate, *h*, the cleats *e* still remain in the path of the  
40 loops *f*, and re-engage automatically by their beveled ends entering the loops *f*. The sides and front are preferably hung detachably on their hinges, and the rear or back board of the compress-box is also stepped into suitable  
45 sockets, permitting the ready removal of these parts in transportation.

The construction and arrangement of the power-wheel P is as follows: The wheel is a sheave, preferably of cast-iron, and preferably  
50 provided with half-round tires *m* of wrought iron shrunk on at each outer marginal edge, said tires projecting slightly above and below the outer faces of the wheel, as shown. At suitable intervals recesses are cast in the  
55 curved outer groove of the wheel P, in which are pivoted small grooved friction-rollers *n*, which support and engage the rope as it winds around the wheel P. The wheel is provided with a pivoted spring-pawl, *p*, to operate over  
60 a central ratchet-wheel, *o*, secured upon the base D. The wheel P is arranged to revolve in a horizontal plane upon a fixed stud, *s*, secured upon the base-frame D, and provided with a lever-bar adapted for operating the  
65 wheel by horse or man power, as desired. The rope for elevating the weight is secured to a

traveler or slide, E, consisting of a curved plate, preferably made in two parts, *t t*, as shown in Fig. 8, for convenience of attachment and removal, to which is bolted an eye-  
70 cleat, *u*, for securing the rope. The edges of the slide project over and behind the tires *m*, thus holding the slide in position on the wheel. I also prefer to use in connection therewith a  
75 friction-brake, *v*, consisting of a curved spring or tongue secured to the slide and projecting over and bearing against the tires *m*.

The clutching and releasing devices consist of two dogs or catches, 1 2, secured by the same pivot at opposite sides of the wheel P,  
80 their outer ends bearing normally against the inner projecting sides of the tires *m m*, and their inner ends engaging by contact with each other within the rim of the wheel P, so that a spring, 3, acting against the dog 1, holds both  
85 dogs in normal position, while pressure applied to the inner end of the lower dog releases both from contact with the rims. This releasing-pressure is given by a cam-plate, 4, affixed  
90 to the base-frame D in the rotating path of the dogs. When in normal position, as described, the ends of the dogs 1 and 2 stand in contact with the tires *m*, and behind the slide E, which is thus held against movement in that direc-  
95 tion. As the wheel P is rotated the rope is thus wound upon it, and during its rotation the dogs 1 and 2 are released by contact with the cam-plate 4, when the weight at the remote end of the rope will draw the slide around  
100 the wheel until the slide is again caught by the dogs. The position of the cam-plate of course determines the relative amount of travel of the rope and slide and the elevation to which the weight may be raised; but it will be obvi-  
105 ous that the wheel P may be kept in continuous rotation and the release will take place automatically, as arranged.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. In a baling-machine embodying an up-  
110 right rectangular frame, a detachable base, a weight or weight-carrier adapted to move within and be guided upon the corner-posts of the upright frame, the lower part of said  
115 frame closed in rear and provided with hinged doors at sides and front to constitute a compress-box, substantially as set forth.

2. In a baling-machine, in combination with the upright frame and vertically-moving weight, a slotted gate constituting the front  
120 of the compress-box hinged at the bottom and adapted to open forward and form a platform for unloading the finished bale, substantially as set forth.

3. In a baling-machine, in combination with  
125 the upright frame and vertically-moving weight, hinged gates constituting the sides of the compress-box hung at the rear end, adapted to swing outward to free and release the finished bale, substantially as set forth.  
130

4. In a baling-machine embodying an up-  
right frame and vertically-moving weight, the



combination of hinged front and sides swinging outward to free and release the finished bale, provided with inter engaging fastenings so arranged that the closing of the front secures the sides in closed position and releasing the front releases the sides, substantially as and for the purpose set forth.

5. In a baling-machine of the character described, the hinged front provided with bar *g* and end loops, *f*, in combination with the hinged sides *d*, provided with extended cleats *e*, substantially as set forth.

6. In a baling-machine of the character described, in combination with the vertically-moving weight and compress-box, the hinged flap *c*, as and for the purpose set forth.

7. In a baling-machine of the character described, in combination with the upright frame, vertically-moving weight, and compress-box, the hinged catches, arranged and operating substantially as and for the purpose set forth.

8. In combination with a baling press or machine employing a similarly-operating weight, an elevating sheave, *P*, provided with friction-rollers *n*, pivoted in its periphery, and a rope-carrier, *E*, sliding upon its periphery, and suitable devices, substantially as described, for engaging and releasing said carrier, as set forth.

9. In a baling-press or similarly-operating machine, the grooved sheave *P*, provided with peripheral recesses for the attachment of friction-rollers, and a raised rim for the engagement of a sliding rope-carrier, substantially as set forth.

10. In a baling-press or similarly-operating machine, in combination with the sheave *P* having raised rims *m m*, and a rope-carrier, *E*, sliding upon said rims, the pivoted catches 1 and 2, and cam-plate 4, substantially as set forth.

11. In a baling-press or similarly-operating machine, in combination with the sheave *P* and rope-carrier *E*, the friction-brake *v*, substantially as and for the purpose set forth.

12. In a baling-press or similarly-operating machine, in combination with the sheave *P*, having raised rims *m m*, the rope-carrier *E*, constructed in two parts, *t t*, detachable, as shown and described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

BENJAMIN J. LESLIE.

Witnesses:

J. A. BRADFORD,  
W. H. CORBIN.