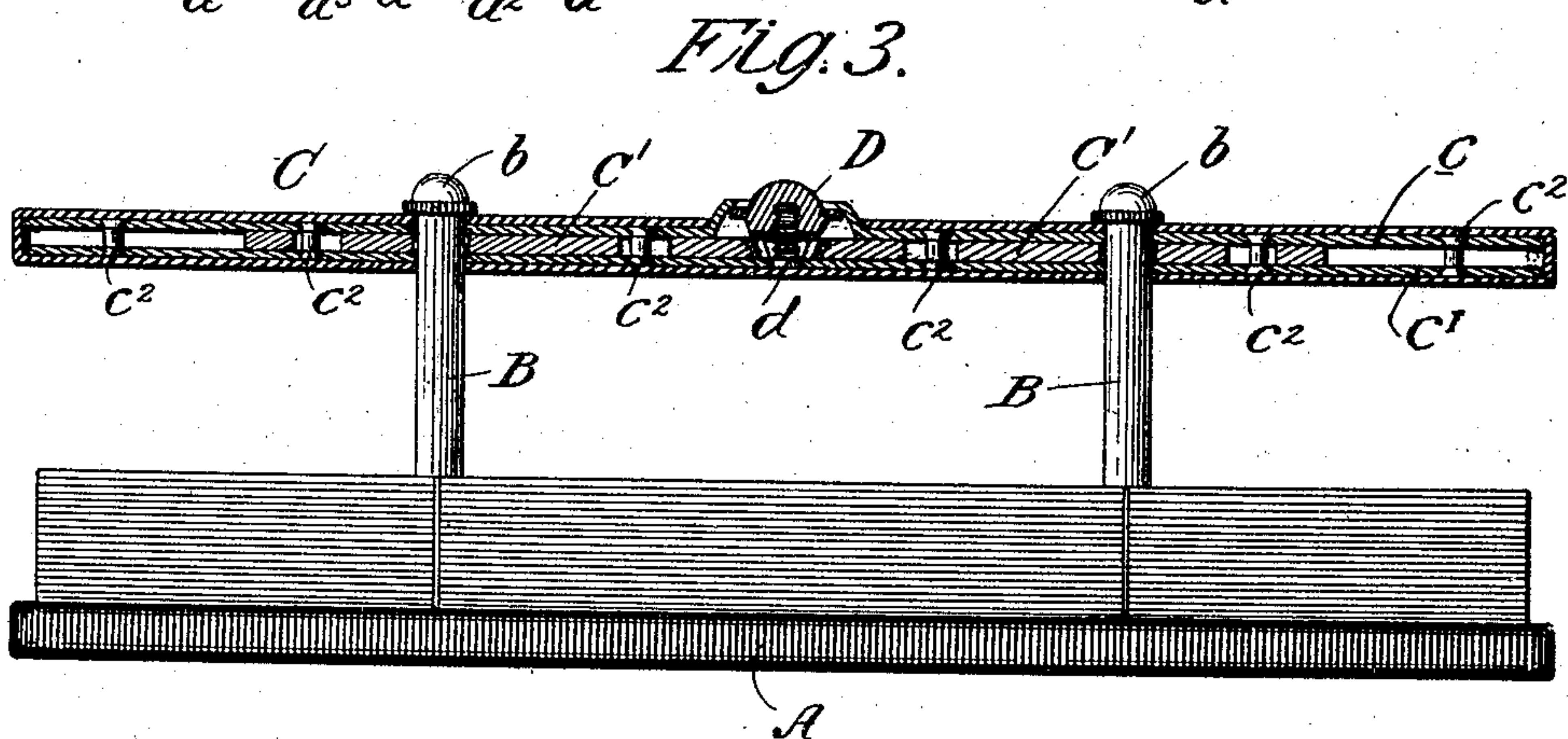
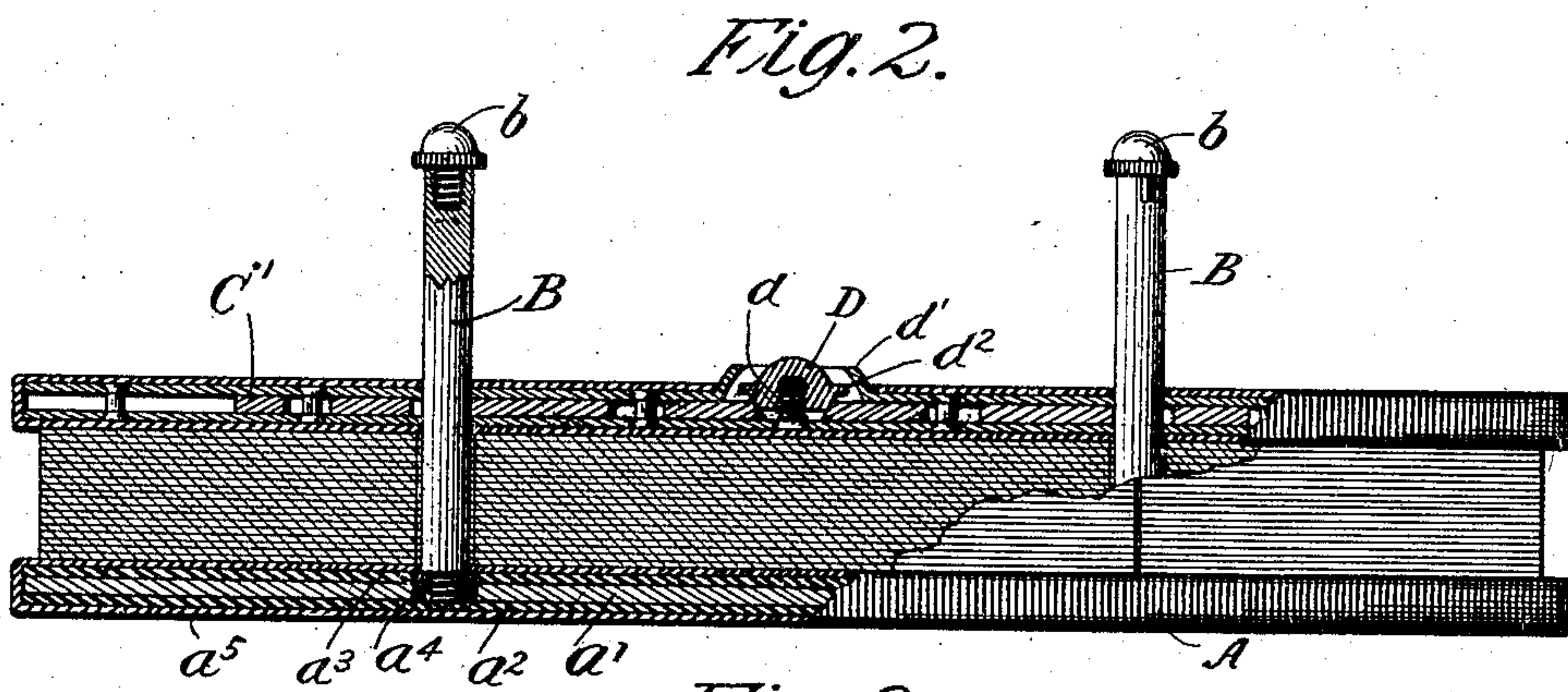
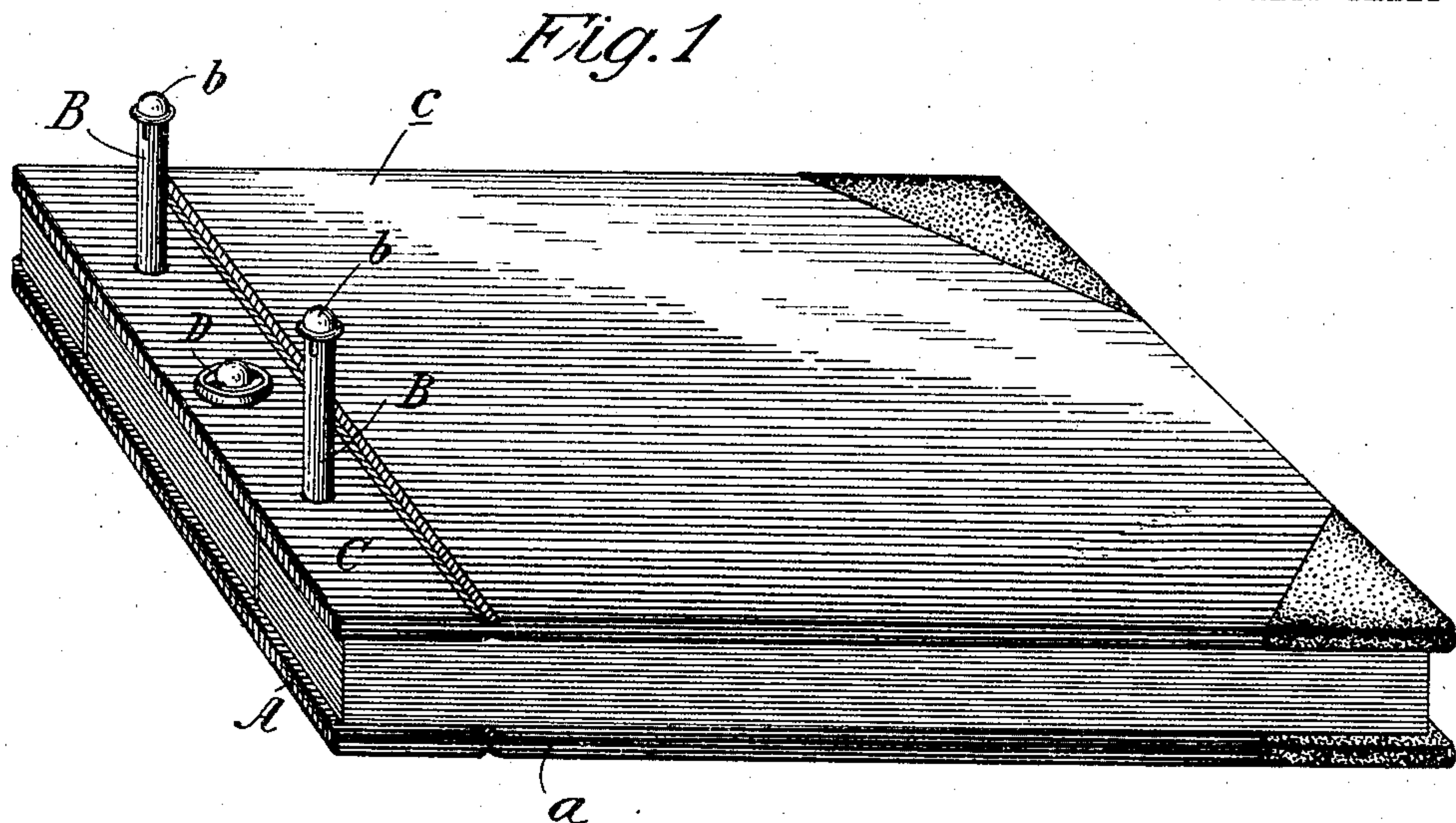


No. 785,155.

PATENTED MAR. 21, 1905.

J. F. CORDES.
LOOSE LEAF BINDER.
APPLICATION FILED JULY 19, 1902.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

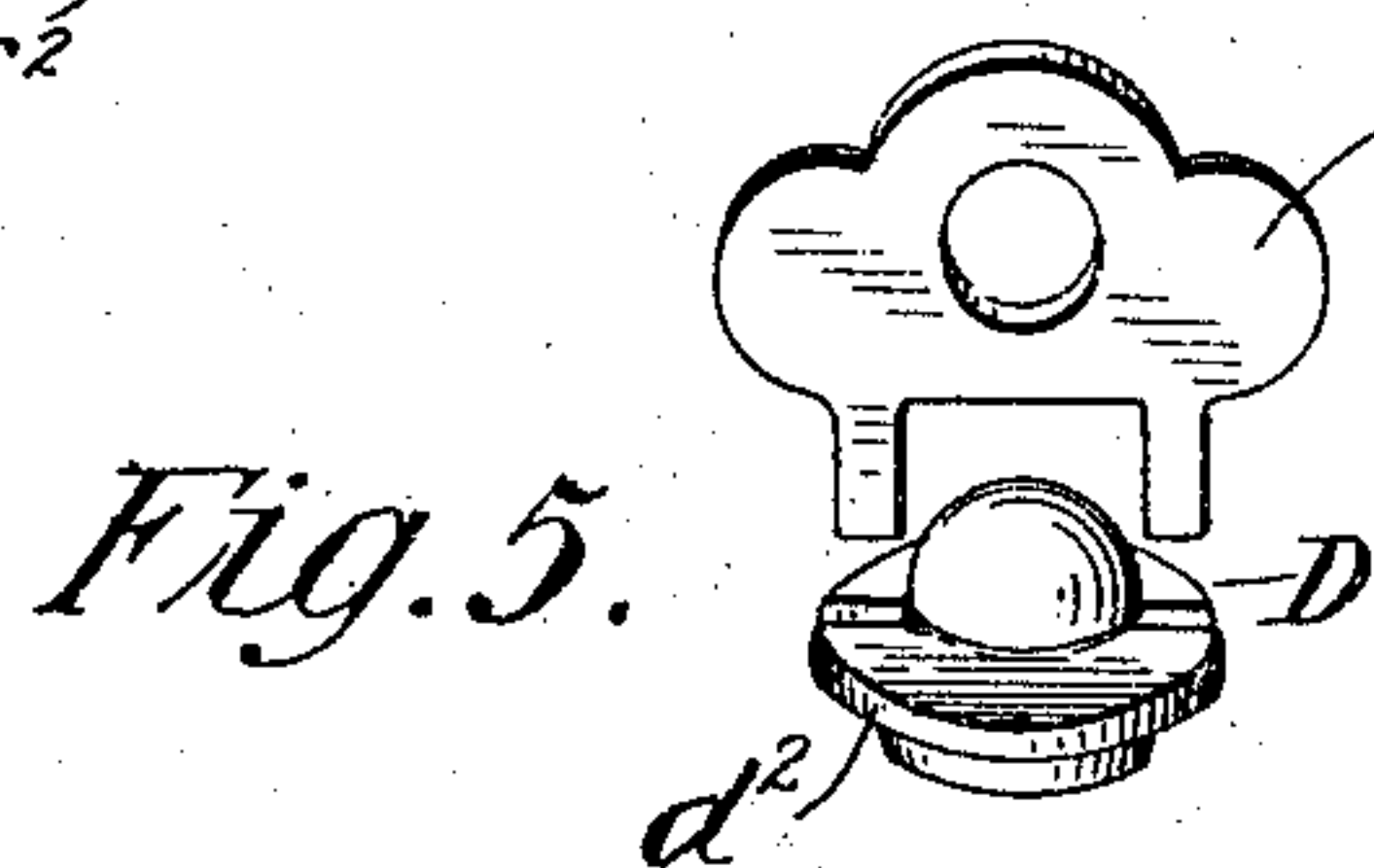
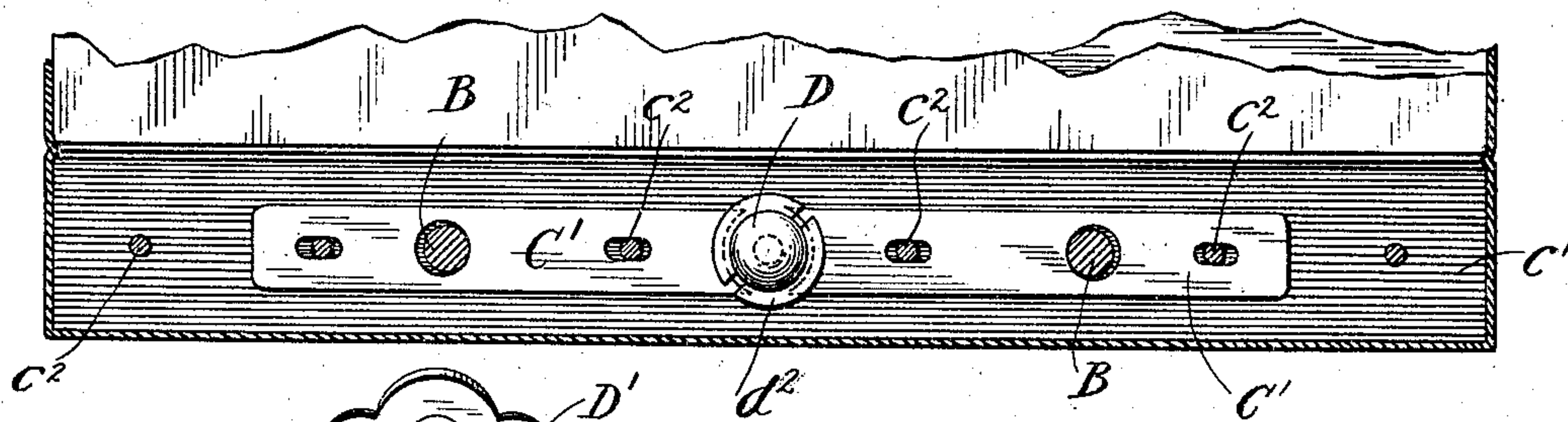


Fig. 6.



Fig. 7.



Fig. 8.

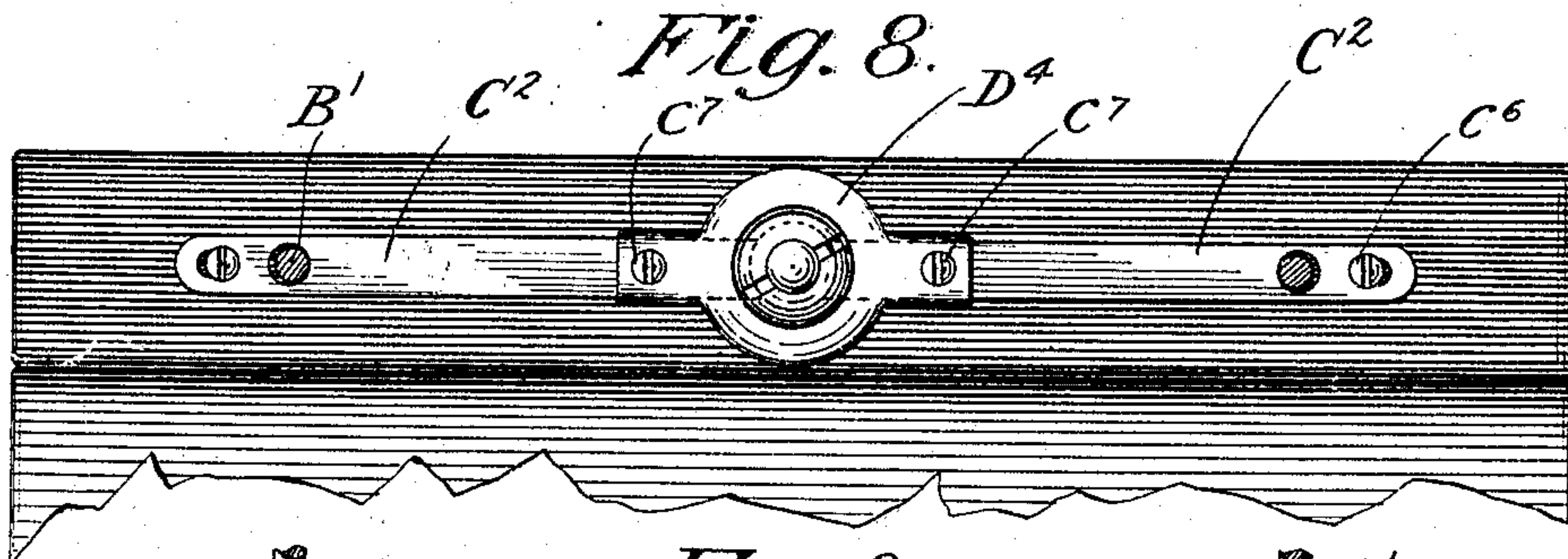
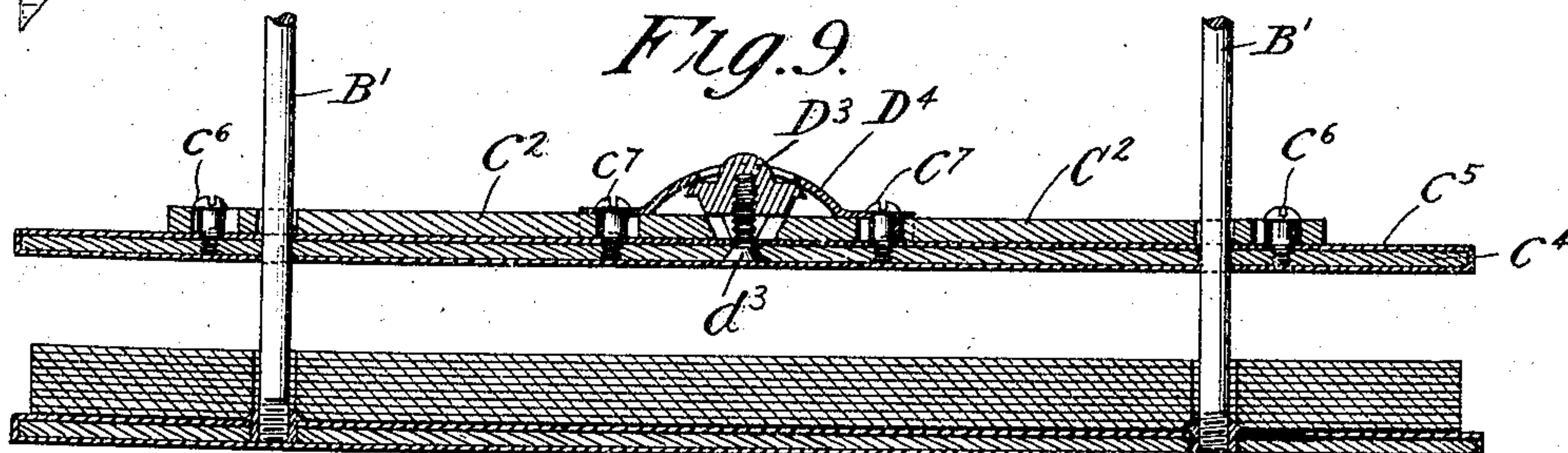


Fig. 9.



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JOHN F. CORDES, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 785,155, dated March 21, 1905.

Application filed July 19, 1902. Serial No. 116,144.

To all whom it may concern:

Be it known that I, JOHN F. CORDES, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to loose-leaf binders of that class in which impaling-posts secured on the binding-plate extend through perforations in the sheets or leaves in the binder and are rigidly locked or engaged in a clamping-plate.

The object of the invention is to provide a cheap, simple, and very strong construction in which the impaling-posts are rigidly locked in engagement with the clamping-plates by simple and positively-actuated means.

It is also an object of the invention to provide means on the impaling-posts to prevent accidental removal or displacement of the clamping-plate therefrom when the lock is released.

The invention consists in the matters hereinafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a perspective view of a device embodying my invention. Fig. 2 is an elevation of the back of the binder, showing the same partly in section. Fig. 3 is a similar view showing the locking means released from the impaling-posts and the clamping-plate elevated. Fig. 4 is a horizontal section of the clamping-plate, showing the locking means in plan. Fig. 5 is a perspective view of the rotative cam-nut. Fig. 6 is a fragmentary perspective view of the central and upper portion of the clamping-plate. Fig. 7 is a perspective view of one of the locking-bolts. Fig. 8 is a fragmentary top plan view of a slightly-modified construction. Fig. 9 is a transverse section of the same, taken in the line of the impaling-posts, showing said posts in elevation.

As shown in said drawings, A indicates the lower or binding plate provided with a forwardly-extending lower cover *a*, hinged thereto. Impaling-posts B, which may be of any desired number, are rigidly secured to the binding-plate and extend upwardly therefrom.

C indicates a clamping-plate apertured to receive the impaling-posts therethrough and provided with a forwardly-directed cover *c*, hinged thereto and similar to the cover hinged to the binding-plate. Said binding-plate comprises a central plate *a'*, of metal or other suitable material, engaged between an upper and a lower plate *a''* and *a'''*, as shown in Fig. 2, and in which are rigidly secured the nipples *a⁴*, in which the binding-posts B have threaded engagement. The binding-plate thus formed is covered with fabric, leather, or other material *a⁵* to afford a finish. The binding-posts B are of any desired length and are usually supplied in sets of various and graduated lengths to enable the capacity of the binders to be varied. Said impaling-posts are screw-threaded on the lower ends to adapt the same for engagement in the nipples *a⁴*, whereby they are rigidly but removably secured in the plate. The upper ends of said posts are slotted to adapt the same to be engaged by a wrench or the like, and an axial screw-threaded aperture is provided in said ends, and a cap *b*, having a diameter greater than the diameter of the posts, has screw-threaded engagement therewith.

The clamping-plate, as shown in Figs. 1, 2, and 3, comprises a covering-plate *c* and a base-plate *c'*, rigidly secured together by rivets *c²*, forming a flattened case within which are oppositely-movable bolts *C' C'*, which are apertured to receive the impaling-posts extending upwardly through apertures in the clamping-plate. Said locking-bolts act by movement laterally of the binder to rigidly engage said posts and lock the same rigidly in the clamping-plate. Said bolts, as shown in Fig. 7, are provided with longitudinal slotted apertures through which one or more of the rivets *c²*, securing the cover-plate and the base-plate of the clamping-plates together, extend and hold said

bolts in alinement, but slidable laterally of the binder. At their inner ends said bolts are provided with a concave downwardly-beveled or chamfered surface, and a screw d , rigidly secured in the base-plate and extending upwardly between the inner ends of the locking-bolts, is provided with a wedge or cam nut D, the lower half of which is conical and complementary with the ends of said locking-bolts. Said wedge or cam nut D is of a diameter sufficient that when screwed inwardly the tapered sides of the nut engage the inclined ends of said locking-bolts and force the same laterally of the binder and positively engage the impaling-posts against the clamping-plate, but when screwed outwardly release the bolts $C' C'$ and permit the clamping-plate to be adjusted at any desired point on the impaling-posts. As shown, the covering-plate c is provided with a central aperture and an incurving circular flange d' and within which said nut D is partly inclosed. A peripheral flange d'' is provided on said nut, which extends outwardly into proximity with the flange d' and limits the outward travel of the nut and also serves to conceal the ends of the locking-bolts $C' C'$. Notches are provided on each side of said nut, as indicated in Figs. 5 and 8, to permit the same to be engaged by a divided key, (indicated by D' .) Obviously it is not essential that said locking-bolts be inclosed within the clamping-plate, and in the constructions illustrated in Figs. 8 and 9 the locking-bolts C^2 are shown secured on the upper side of the clamping-plate, which consists of a rigid plate of metal c^4 , having the upwardly-turned screw-threaded shaft d^3 , secured centrally therein and which is covered by fabric c^5 or other material to afford a finish. The locking-bolts $C^2 C^2$, similar to the locking-bolts $C' C'$, are secured outside of the finish by means of headed screws or rivets c^6 , which extend through slotted apertures therein and engage in the clamping-plate. The wedge or cam nut D^3 , similar to the nut D and engaged on the screw-shaft d^3 , is adapted in a like manner to engage the ends of the bolts $C^2 C^2$, forcing the same laterally of the binder. A casing D^4 , shaped at its ends to engage over the locking-bolts, fits closely thereto, as shown in Fig. 8, and is rigidly engaged on the clamping-plate by screws or rivets c^7 , which extend therethrough and through slotted apertures in said locking-bolts. Said casing is circular and convex at its central part and fits over said wedge or cam nut and provides sufficient vertical adjustment of the nut to throw said bolts into engagement with the impaling-posts $B' B'$ or permit the same to be disengaged therefrom.

The operation is as follows: The impaling-posts being rigidly but removably secured in the binding-plates, perforated leaves may in

the usual manner be secured on said impaling-posts and the clamping-plate forced downwardly until the desired degree of compression at the rear margin of the leaves is secured. By means of the key D' the wedge or cam nut D or D^3 is turned inwardly, the tapered or conical surface thereof engaging the inclined ends of the locking-bolts and forcing the same laterally into locking engagement with the impaling-posts, which are rigidly engaged against the clamping-plate. When it is desired to release the clamping-plate from the impaling-posts, the wedge or cam nut is screwed outwardly, as shown in Figs. 3 and 5, and said plate is free to be lifted, leaves inserted, removed, or arranged, as desired. Obviously from the construction described the caps b prevent the accidental removal of the clamping-plate from the impaling-posts when the locking-bolts are released, thus preventing the leaves from becoming scattered or disarranged through accident. Should it ever, however, be necessary to remove the clamping-plate from the impaling-posts, the same may readily be done by removing the caps b from the ends of the impaling-posts, and a milled edge is provided on each cap to afford better engagement. Should it be desired to vary the capacity of the binder, the key D' may be engaged in the slot of the impaling-post and the same unscrewed from the binding-plate and longer or shorter impaling-posts inserted.

Obviously from the construction described any number of impaling-posts may be secured on the binding-plate, and as many locking-bolts may be provided on the clamping-plate as needed to lock said posts, and more than one nut D or D^3 may be employed, each acting to actuate one or more locking-bolts into positive engagement with impaling-posts, and it may be desirable in large binders to provide a plurality of such locking devices in connection with a greater number of impaling-posts than herein shown. Obviously any desired materials may be used, and the impaling-posts may be permanently or removably secured upon the binding-plate, and many other details of construction may be varied without departing from the principles of my invention.

I claim as my invention—

1. In a device of the class described, the combination with a clamping-plate apertured to receive the impaling-posts of a binder, of locking-bolts slidably secured on the clamping-plate and having apertures therein adapted to receive the impaling-posts, the inner ends of said bolts lying in close proximity with each other, a wedge member acting to force said locking-bolts into positive engagement with the impaling-posts, and means positively secured on the clamping-plate and

acting to limit the adjustment of the wedge member.

2. In a device of the class described, the combination with a clamping-plate, apertured to receive the impaling-posts of a binder, of a central threaded shaft thereon, locking-bolts slidably secured on the clamping-plate and each apertured to receive one of the impaling-posts, the inner ends of said bolts lying in close proximity with each other on each side the threaded shaft, a rotative wedge member comprising a conical nut engaging on the threaded shaft between the ends of the locking-bolts and forcing the same into locking engagement with the impaling-posts and a casing rigidly engaged on the plate and adapted to cover the joint between the inner ends of said bolts and limit the outward movement of said wedge member.

3. In a device of the class described, the combination with a clamping-plate apertured to receive impaling-posts, of apertured locking-bolts slidably engaged thereon, a threaded shaft rigidly engaged on said plate and projecting between said bolts, a wedge member rotatively engaged on said shaft adapted to force said bolts outwardly and an apertured casing carried on said plate above the wedge member and adapted to hold said wedge member in place.

4. The combination with the impaling-posts of a binder, of a clamping-plate adapted to receive said impaling-posts therethrough, locking-bolts permanently but slidably secured on the clamping-plates, a threaded shaft engaged on the clamping-plate between the bolts, a wedge-shaped nut on said shaft adapted to oppositely engage the ends of said locking-bolts and acting to move said bolts oppositely into positive engagement with the impaling-posts and a casing secured on the clamping-plate above said nut acting to limit the upward movement thereof.

5. The combination with a binding-plate of the class described, of impaling-posts detachably secured thereon, a clamping-plate adapted to receive the impaling-posts therethrough having longitudinally-movable locking-bolts secured thereon and held permanently in alignment, an upwardly-extending threaded shaft rigidly secured on said binding-plate and a rotary cam-nut engaged on the shaft and adapted to be forced toward the clamping-plate and acting to move said locking-bolts into positive engagement with the impaling-posts, and an apertured casing partly inclosing said cam and limiting the outward movement thereof.

6. In a binder of the class described, the combination with a binding-plate, of a plurality of impaling-posts removably secured thereon, a clamping-plate apertured to receive the impaling-posts, locking-bolts slidably secured on

the clamping-plate and adapted to lock the impaling-posts in the clamping-plate, a screw-shaft between the adjacent ends of the locking-bolts, a wedge-shaped nut on said screw-shaft acting when screwed inwardly to force said bolts oppositely into positive engagement with the impaling-posts and when turned outwardly to release the bolts therefrom, an apertured casing rigidly secured upon said clamping-plate adapted to limit the upward movement of said nut, and detachable means on the impaling-posts acting to prevent the clamping-plate falling therefrom when the locking-bolts are released.

7. In a temporary binder, the combination with a binding-plate and impaling-posts secured thereon, of a clamping-plate apertured to receive the impaling-posts, locking-bolts slidably secured on said clamping-plates in alignment, the adjacent ends of said bolts being chamfered to provide downwardly-inclined surfaces, a screw-shaft between the ends of said bolts and a nut engaged on said screw-shaft and tapering complementally with the ends of the bolts and acting when screwed inwardly to force the bolts oppositely into positive engagement with the impaling-posts, a peripheral flange on said nut and a covering-plate extending upwardly and partly inclosing said nut and limiting the unscrewing of the same from the screw-shaft.

8. In a device of the class described, the combination with a binding-plate and the impaling-posts thereon, of a clamping-plate apertured to receive the impaling-posts, an apertured casing rigidly secured thereon, a plurality of bolts slidably secured in alignment on said clamping-plate, a plurality of studs extending through slotted apertures in the bolts and permanently securing the same to the clamping-plate, an upwardly-extending threaded shaft secured on the clamping-plate between the adjacent ends of said bolts, and a conical nut thereon movable inwardly toward the clamping-plate acting to force said bolts into engagement with the impaling-posts and limited in its outward movement by said casing.

9. A clamping-plate of the class described apertured to receive a plurality of impaling-posts therethrough and comprising in combination a lower plate, an upper covering-plate, locking-bolts slotted longitudinally and concealed between said plates and rivets passing through said slots and permanently engaging the base-plate and covering-plate together and holding said locking-bolts permanently in alignment and slidable between said upper and lower plates, an upwardly-extending screw-shaft between the adjacent ends of the said locking-bolts and a wedge-shaped nut having threaded engagement thereon and adapted when screwed inwardly to force the

locking-bolts outwardly, a peripheral flange
on said nut above the wedge portion, said
covering-plate being provided with a central
aperture through which the upper portion of
5 said nut projects, and a raised inwardly-in-
clined flange surrounding said aperture and
engaging over said flange on said nut and
limiting the outward movement thereof.

In testimony whereof I have hereunto sub-
scribed my name in the presence of two sub- 10
scribing witnesses.

JOHN F. CORDES.

Witnesses:

C. W. HILLS,
ANNA B. HILLS.