

No. 713,392.

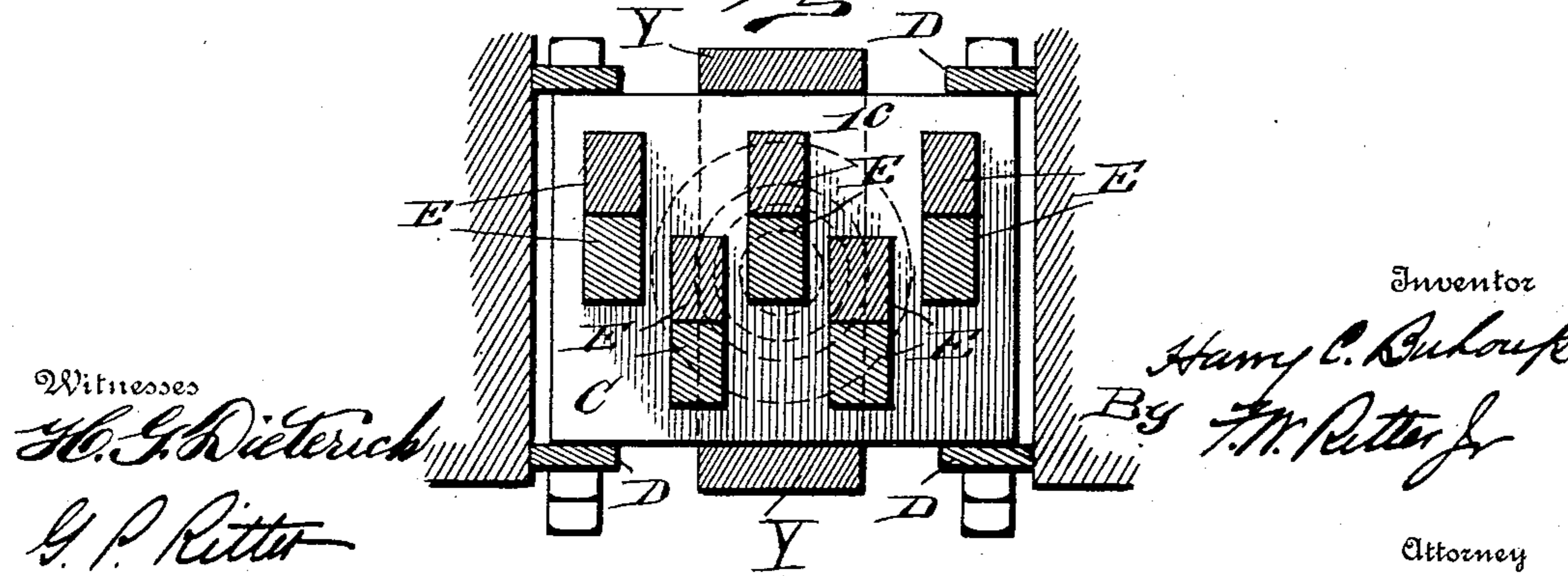
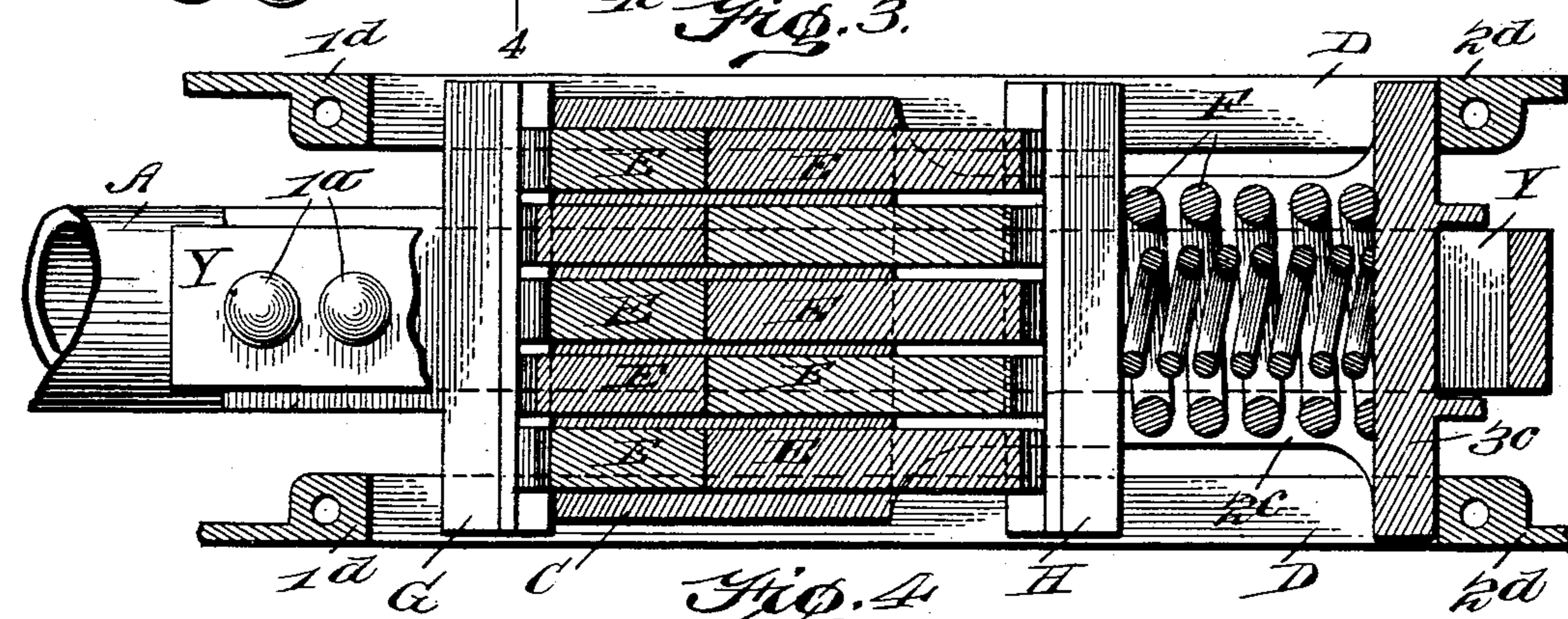
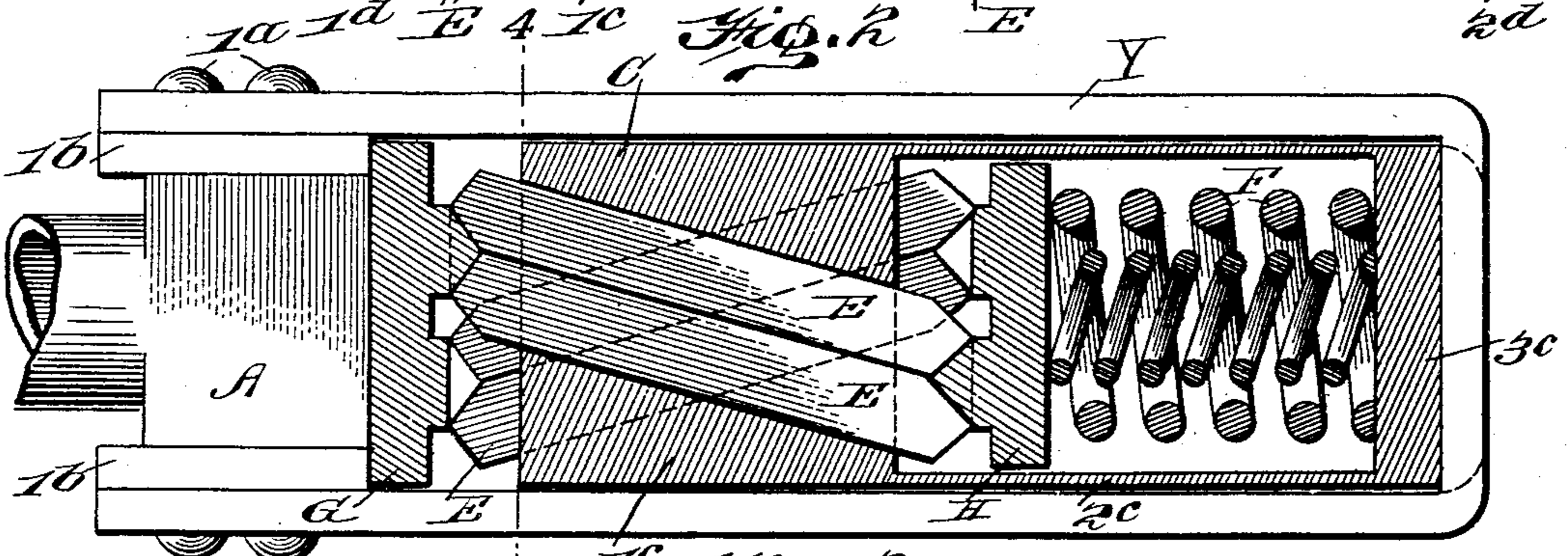
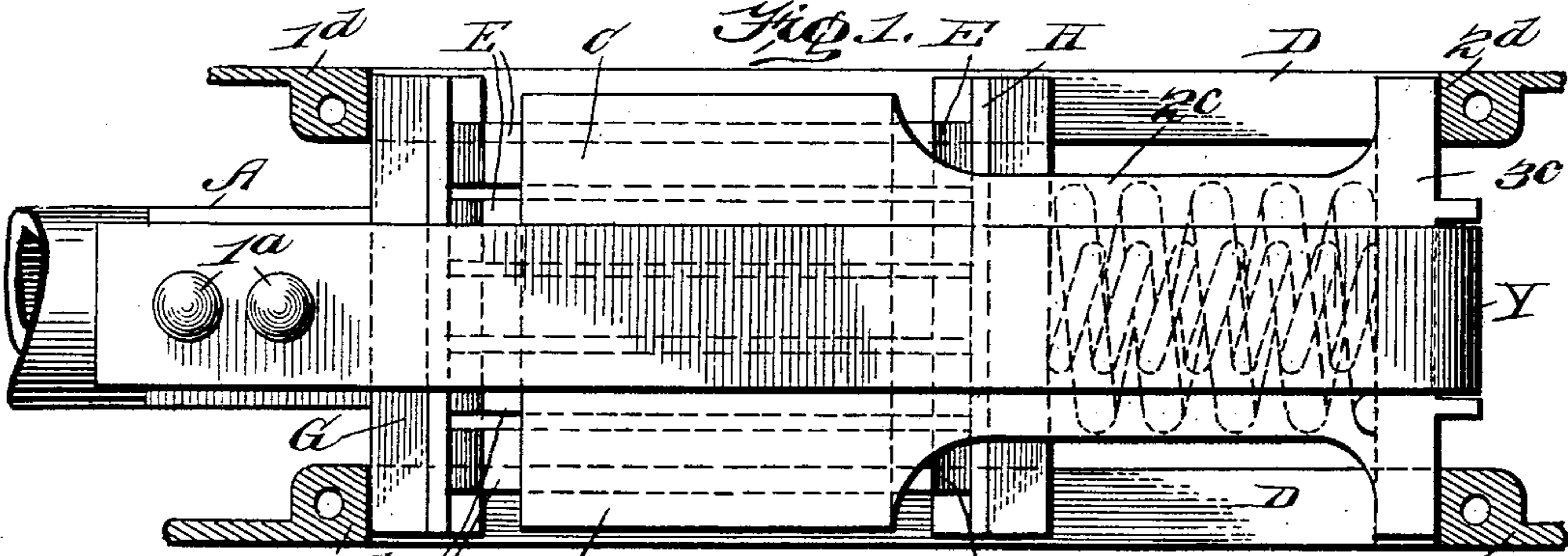
Patented Nov. 11, 1902.

H. C. BUHOUP.
FRICTION DRAFT GEAR.

(Application filed Oct. 7, 1902.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses
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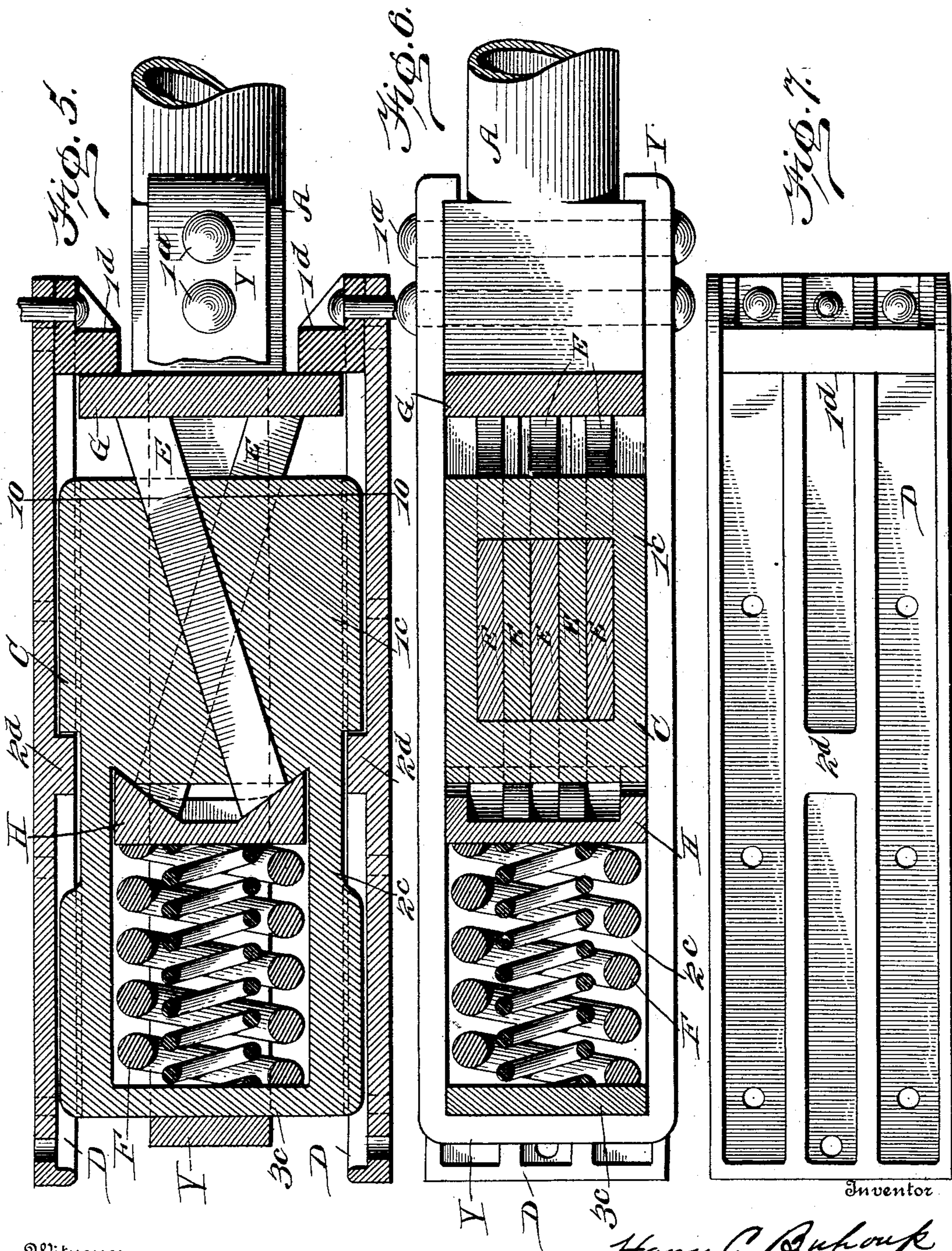
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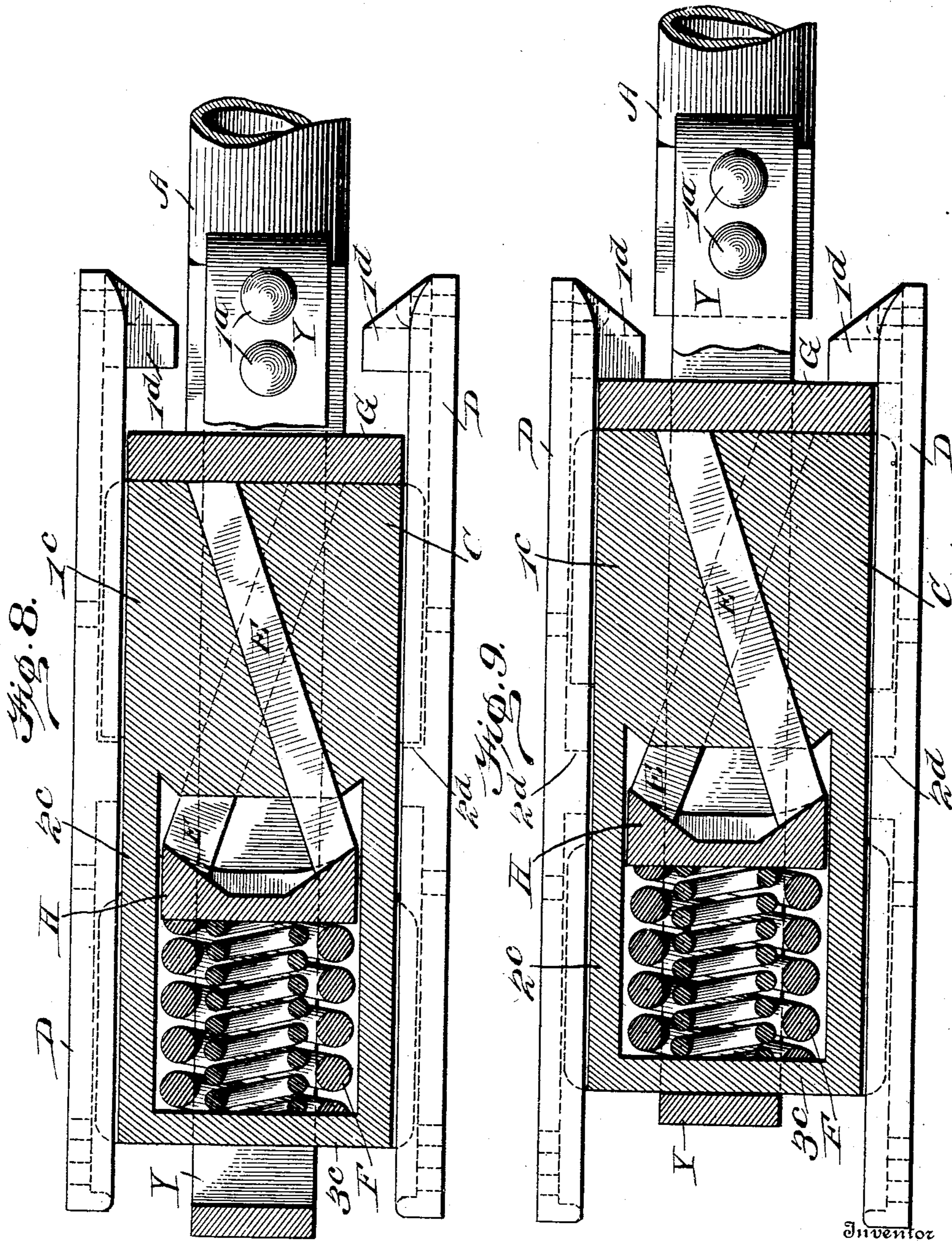
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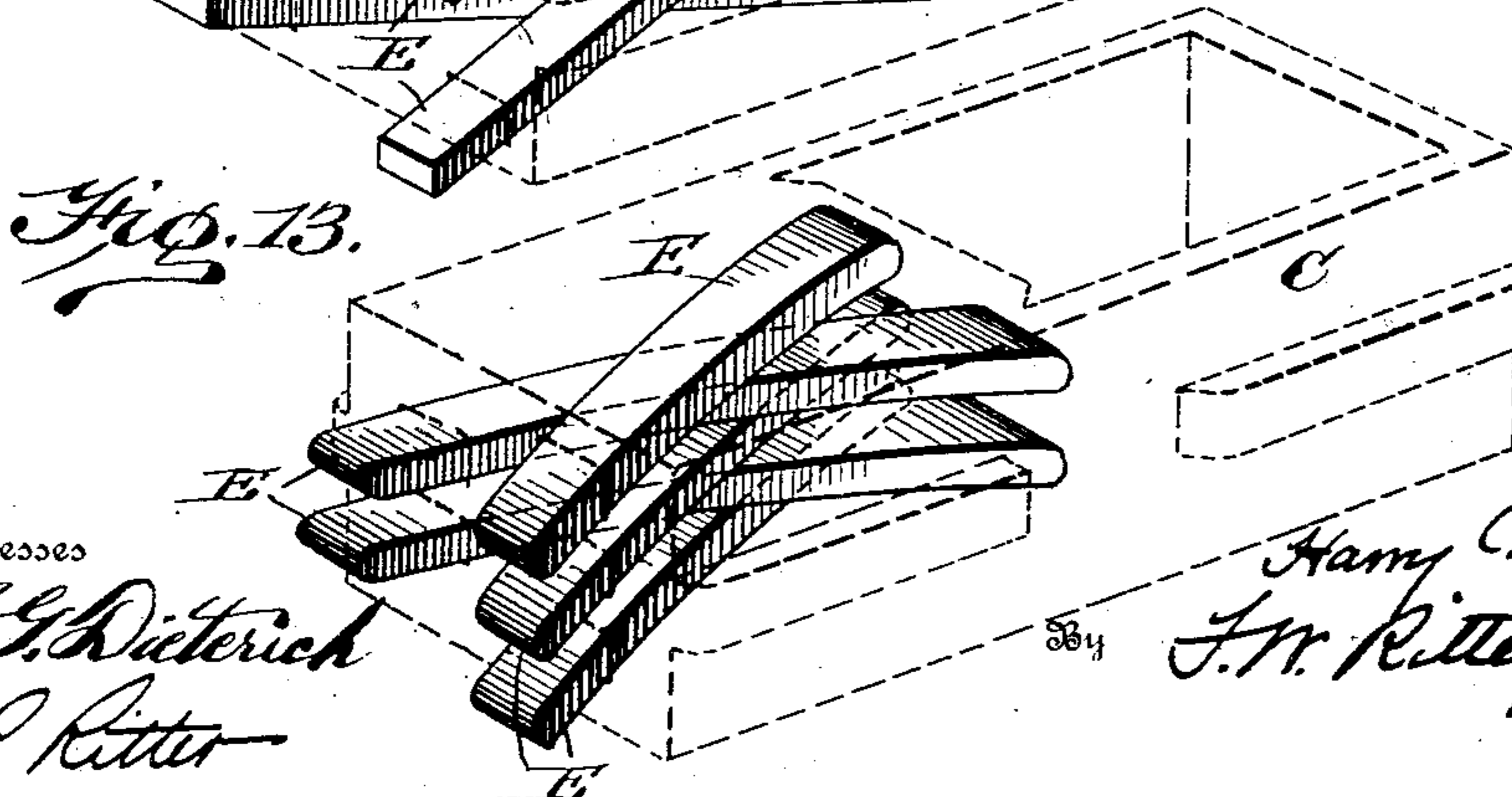
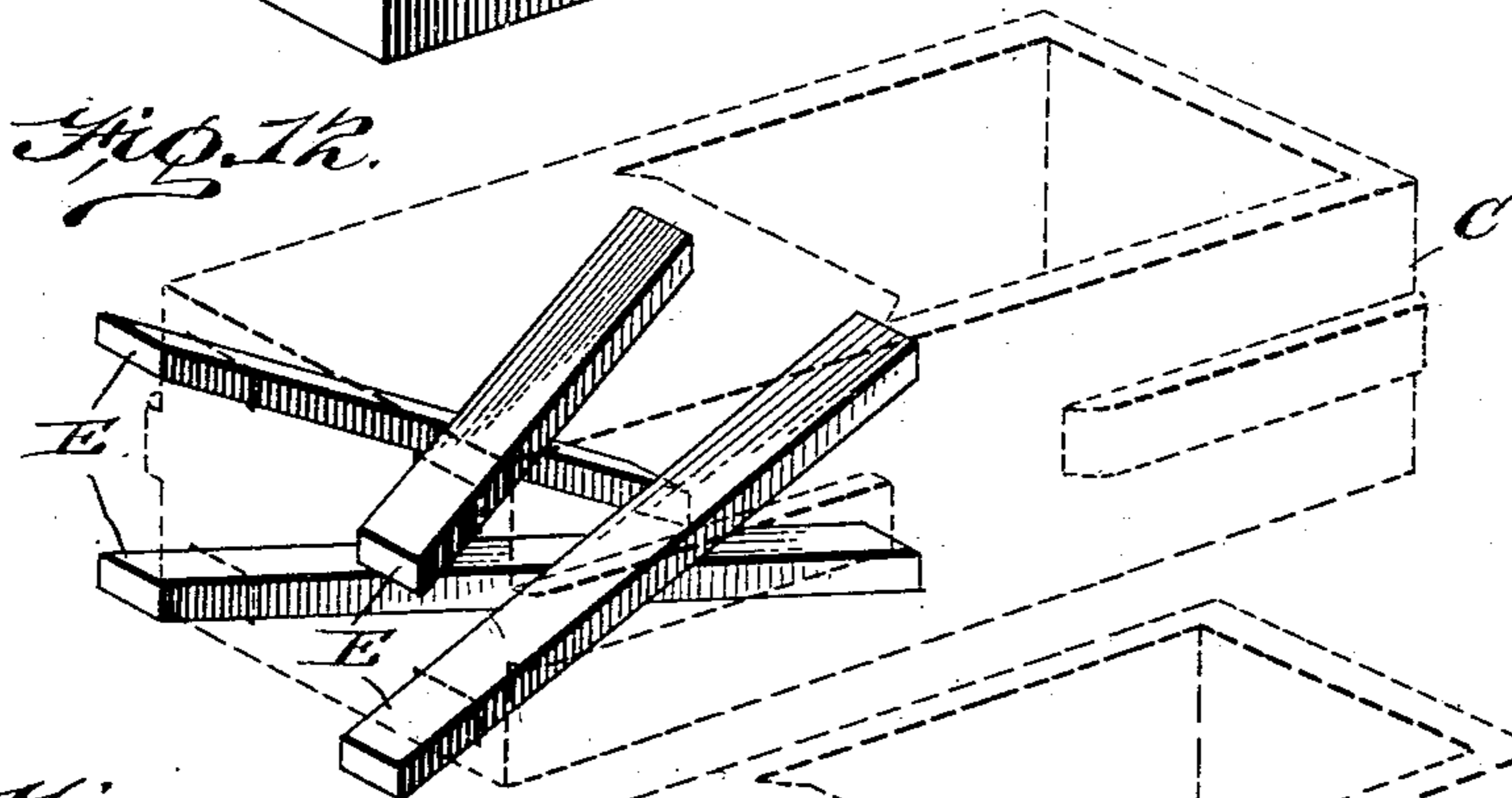
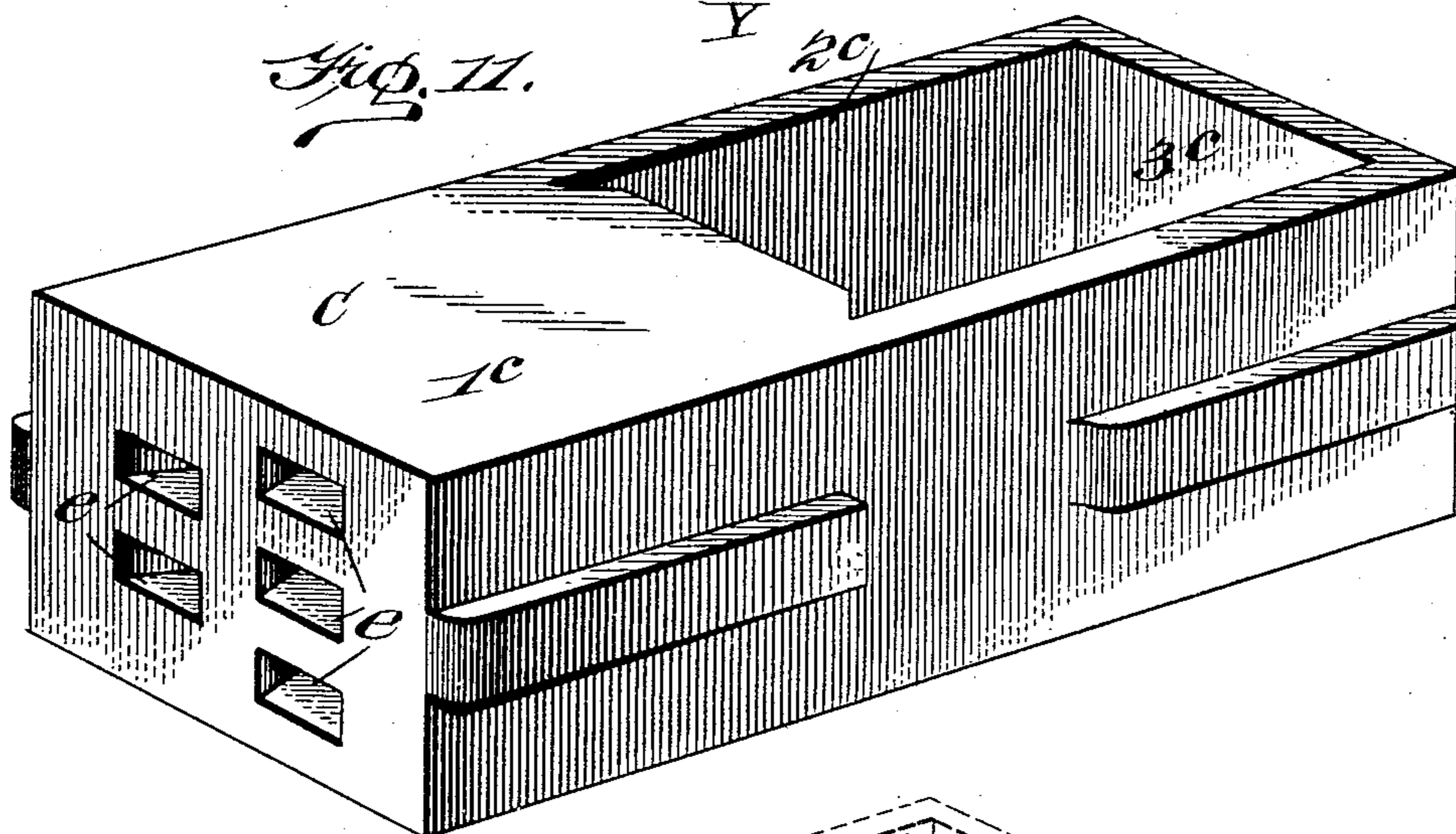
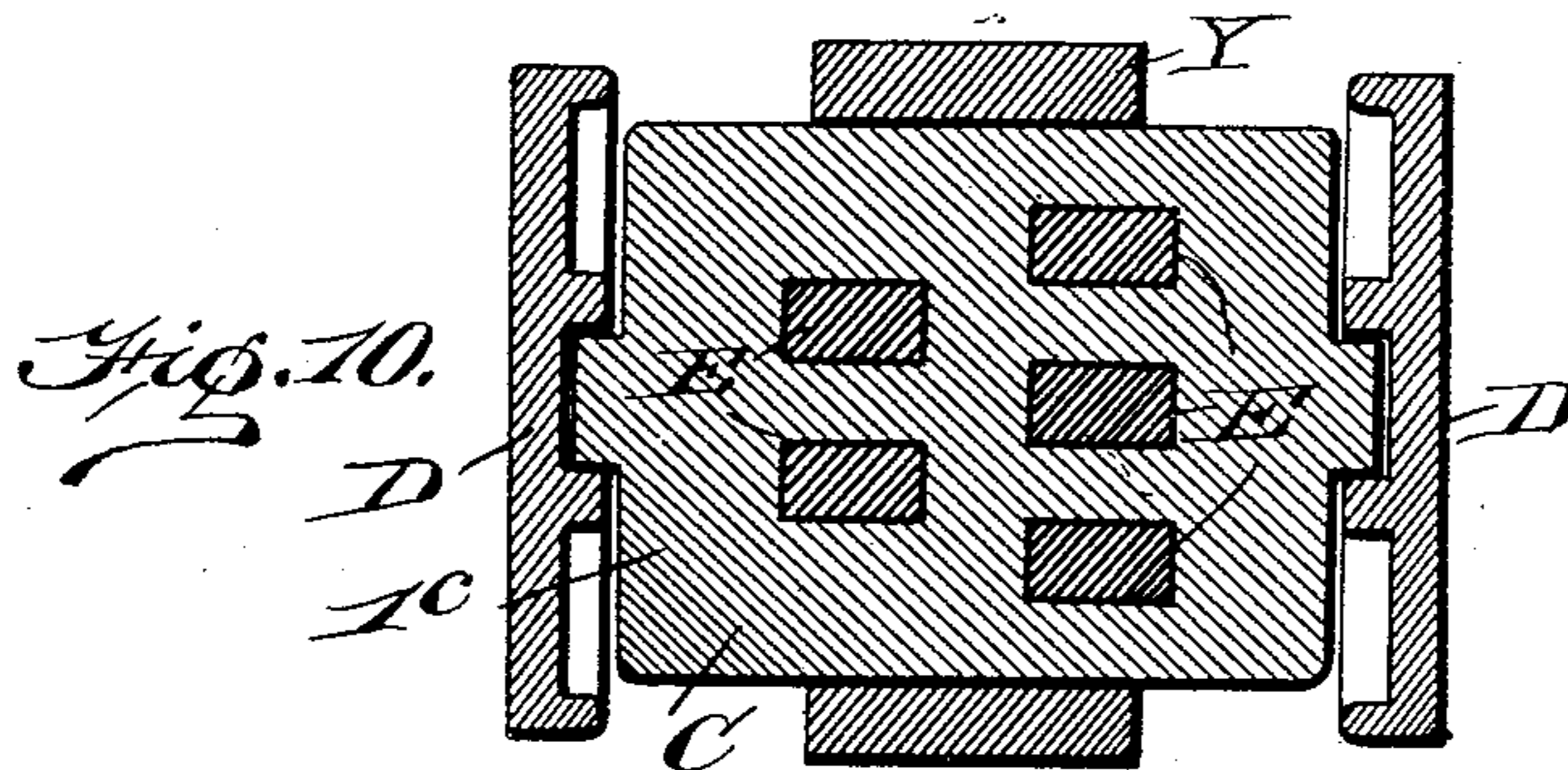
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4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

HARRY C. BUHOUP, OF CHICAGO, ILLINOIS.

FRICION DRAFT-GEAR.

SPECIFICATION forming part of Letters Patent No. 713,392, dated November 11, 1902.

Application filed October 7, 1902. Serial No. 126,270. (No model.)

To all whom it may concern:

Be it known that I, HARRY C. BUHOUP, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Friction Draft-Gear; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of the draft-gear embodying my invention. Fig. 2 is a vertical central section of the same, the yoke and coupler being in elevation. Fig. 3 is a horizontal central section, the parts being in the relative positions they occupy in buffing and the coupler and followers adjacent to the friction devices in elevation. Fig. 4 is a section on the line 4 4, Fig. 2. Fig. 5 is a horizontal central section of a modification of my invention. Fig. 6 is a vertical central section of the modification shown in Fig. 5. Fig. 7 is a side elevation of the cheek-plates shown in Fig. 5. Figs. 8 and 9 are respectively horizontal central sections in buffing and in draft of the modification shown in Fig. 5, the cheek-plates and couplers being in elevation. Fig. 10 is a section on the line 10 10, Fig. 5. Fig. 11 is a perspective view of the housing or casing of the modification, Fig. 5; and Figs. 12 and 13 are perspective views of the friction members and casings (shown in dotted lines) of still other arrangements or modifications.

Like symbols refer to like parts wherever they occur.

My invention relates to that class of draft-gear for railway-cars in which the spring-action is modified by a frictional resistance which is induced by the movement of the coupler in compressing the spring, and this I accomplish in such a manner that the structure is simple in construction and a large friction-surface is obtained.

Generally stated, my invention may be said to reside in a combination, with suitable spring or springs acting thereon, of a plurality of friction elements having friction-faces parallel to the line of their movement, said friction elements seated upon a pair of oppositely-disposed followers adapted to force them in a direction transverse to their line of

travel and a housing or casing for the said friction elements through which they travel at an angle to the line of draft, and such a construction embodies the main feature of my invention.

There are other minor features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully, so that others skilled in the art to which it appertains may apply the same.

In the drawings, A is the shank of a coupler, to which is attached, by the rivets $1^a 1^a$ and filling-pieces (see Figs. 1, 2, and 3) $1^b 1^b$ or in other suitable manner, the well-known yoke Y, which passes around the housing or casing C, that incloses the operative parts of the device and is the element whereby the force is transmitted to the friction devices in draft.

C is a housing slidably mounted between stops $1^d 1^d$ and $2^d 2^d$ of the cheek-plates D, which are attached to the car by bolts or in other suitable manner. The casing C is preferably of general rectangular cross-section, having a closed portion 1^c incasing the bars or friction elements E, which pass there-through, and a portion 2^c , open on opposite sides and on the closed end 3^c of which is seated the spring F; but the casing C may be of other form, if desired, and open at both ends, instead of closed, as at 3^c , a follower being substituted to perform its function, at the will of the constructor. However, the form of the casing C, herein shown for purposes of illustration, has the advantage of so housing the spring as to insure it against loss in case of accident.

E E are bars passing through corresponding openings $e e$ (see Fig. 11) in the casing C, and the said bars or friction elements may be arranged in pairs, as shown in Figs 1, 2, 3, and 4, or singly, as shown in the modifications, and said bars may be of any form, provided the elements of their friction-surfaces, which are forced in contact with the corresponding walls or coacting friction elements of the casing-passages $e e$, are parallel to the line of travel of the bars through said diagonal slots or passages $e e$, whether rectilinear or (see Fig. 13) curvilinear. The ends of the bars E E may be oppositely beveled or inclined

and rest upon followers G H, which have bearing-faces contacting the inclined or beveled ends of the bars E E at such an angle that the said bars E are during their travel forced into frictional engagement with the corresponding walls of the passages or slots *ee*; but other relative construction of the contacting portions of the bars and followers whereby like result is obtained may be adopted at the will of the constructor, the essential being that the force imparted to the bars shall be transverse to the line of their travel.

The construction being substantially such as herein pointed out, the operation will be as follows: The device being in its normal or unstrained position, (see Figs. 1, 2, 5, and 6,) receives a buffing blow, whereupon (see Figs. 3 and 8) the follower G is forced inwardly by the coupler-shank A, thus causing the bars or friction elements E to travel through the passages *ee* of the casing C, while they are at the same time forced in contact therewith by the inclined faces of the followers G and H, such travel of the bars through the casing C, which is held against retreat by the rear stops 2^d 2^d , causing a recession of the rear follower H and a consequent compression of the spring F, which rests upon the end 3^c of the casing C. A pulling strain upon the coupler in draft (see Fig. 9) causes the yoke Y, which passes around the rear end of the casing C, to cause the said casing to move with the coupler, while the forward follower G, being held against movement by the stops 1^d 1^d , causes the friction-bars E E to be forced through the slots *ee* of the advancing casing C, causing a relative movement of the follower H and end 3^c of the casing, as before, thus compressing the spring F and creating friction between the bars E E and casing or housing C in the same manner as before described for the buffing operation.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a friction draft-gear, the combination with a spring adapted to create pressure between coacting friction elements proportional to the travel of the load-transmission element, of a casing having friction-faces on its interior, a plurality of bars extending diagonally through said casing, followers adapted to transmit force to the bars transversely of their line of travel and bearing upon the opposite ends of said bars, and a load-trans-

mission element, substantially as and for the purposes specified.

2. In a friction draft-gear, the combination with a spring, of a casing having passages extending diagonally therethrough, a plurality of bars passing through the passages of the casing, a plurality of followers one at each end bearing upon the bars, and means for compressing the spring, substantially as and for the purposes specified.

3. In a friction draft-gear, the combination with a plurality of bars angularly disposed with relation to each other, of a casing having passages corresponding to the angularly-disposed bars, and means for causing a travel of said bars in contact with said casing, substantially as and for the purposes specified.

4. In a friction draft-gear, the combination with a plurality of bars angularly disposed with relation to each other and having beveled ends, of a casing inclosing said bars and having passages corresponding to the angularly-disposed bars, a plurality of followers bearing upon the beveled ends of said bars one at each end, and means for causing relative movement in contact of the bars and casing, substantially as and for the purposes specified.

5. In a friction draft-gear, the combination with a movable casing, of a plurality of bars angularly disposed to the line of draft and to each other extending through said casing, a plurality of passages in said casing corresponding to said angularly-disposed bars, a plurality of followers bearing upon the bars one at each end thereof, and means for causing a relative movement in contact of the bars and casing, substantially as and for the purposes specified.

6. In a friction draft-gear, the combination with a casing having passages therethrough angularly disposed to the line of draft, a spring acting thereon, a plurality of friction elements extending through and movable in said passages, and means for compressing said spring, substantially as and for the purposes specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 3d day of October, 1902.

HARRY C. BUHOUP.

Witnesses:

G. P. RITTER,

HUGH M. STERLING.