

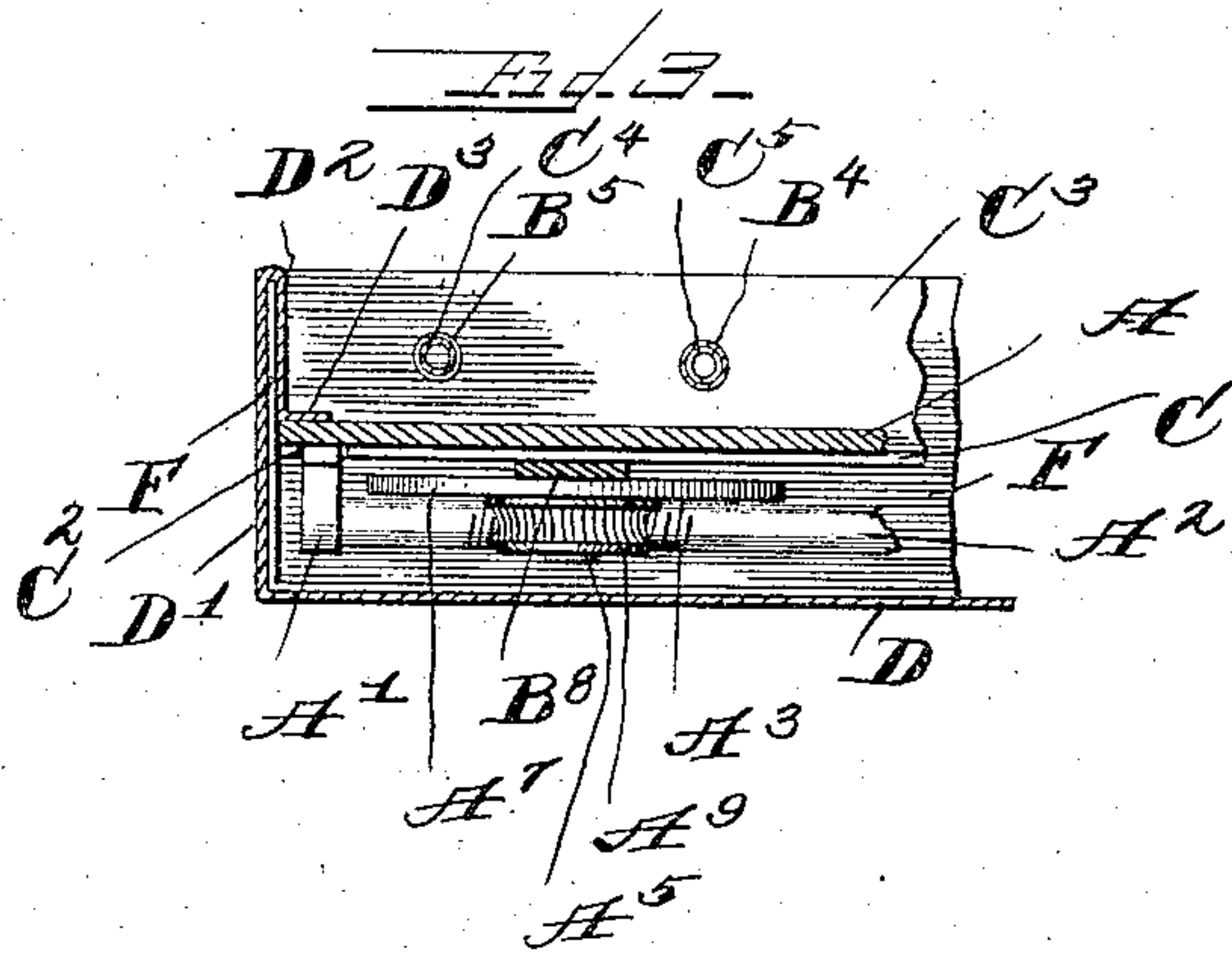
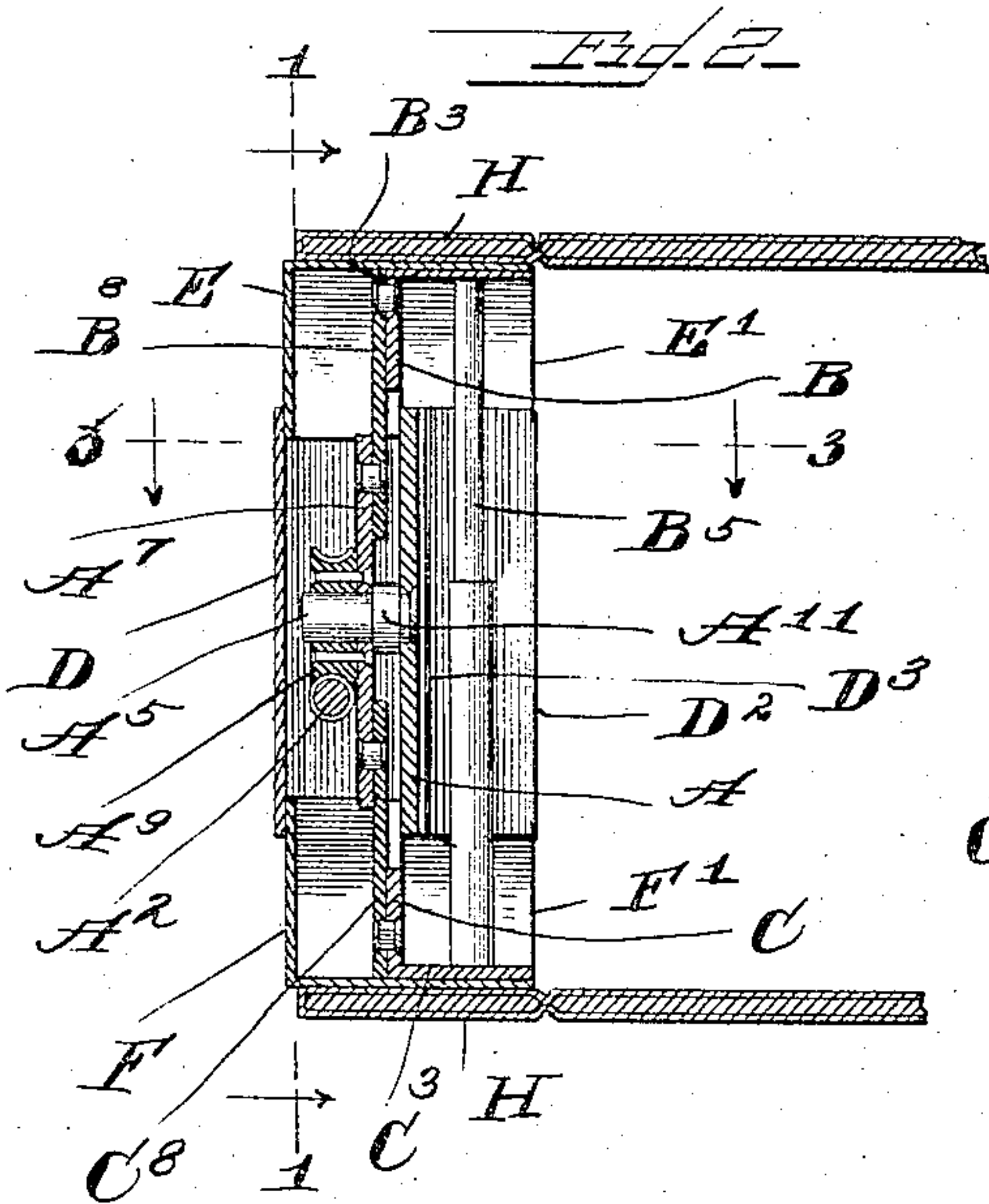
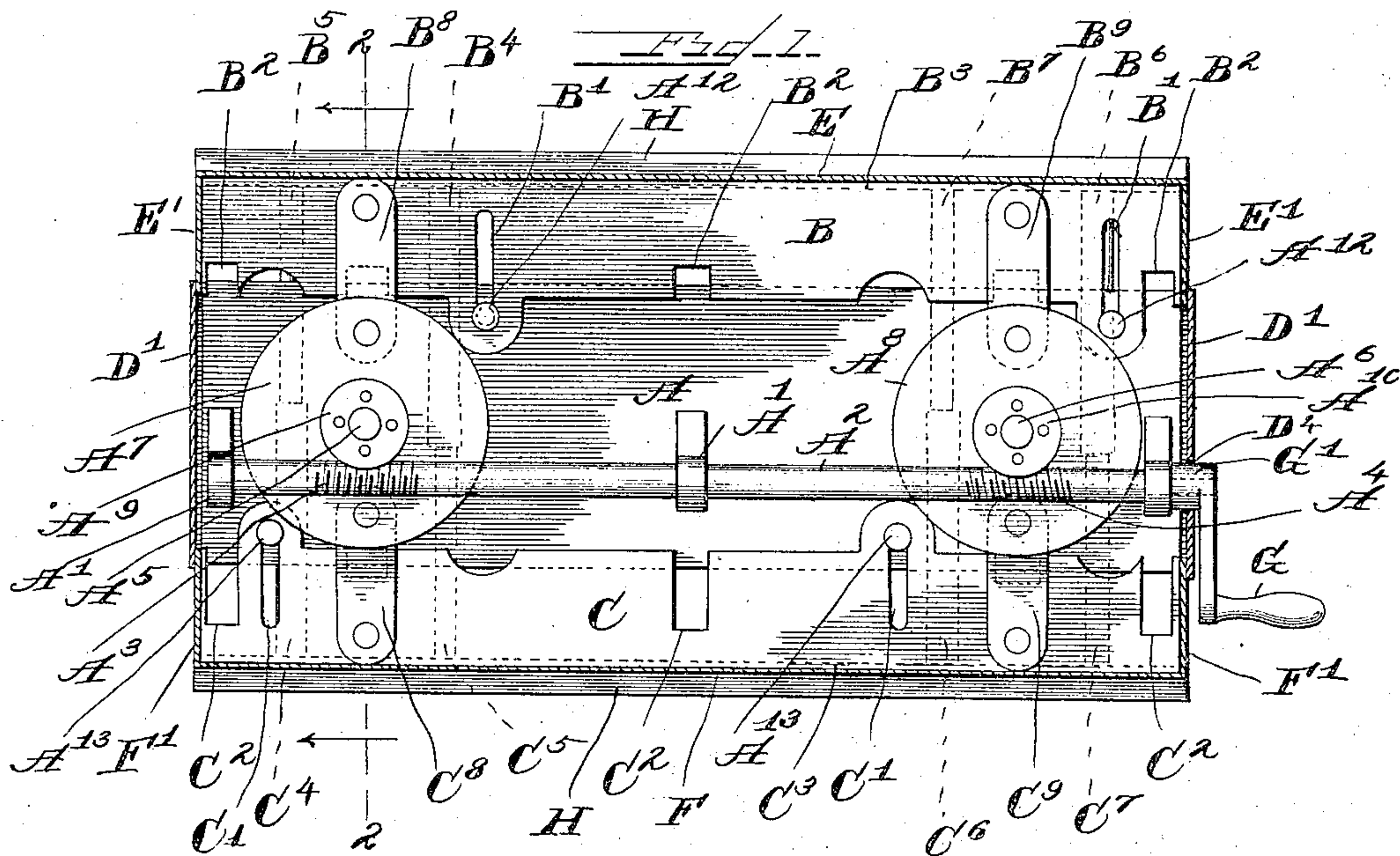
No. 767,197.

PATENTED AUG. 9, 1904.

L. ANDERSON.
LOOSE LEAF BINDER.

APPLICATION FILED OCT. 12, 1903.

NO MODEL.



Witnesses.

J. A. Pauberschmidt
George L. Chindahl

INVENTOR

Lars Anderson
By Luther L. Miller.
ATTY.

UNITED STATES PATENT OFFICE.

LARS ANDERSON, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

SPECIFICATION forming part of Letters Patent No. 767,197, dated August 9, 1904.

Application filed October 12, 1903. Serial No. 176,744. (No model.)

To all whom it may concern:

Be it known that I, LARS ANDERSON, 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 Loose-Leaf Binders, of which the following is a specification.

One of the objects of this invention is the production of a binder for loose leaves and the like which shall be strong and durable in construction and of large capacity.

A further object is the production of a binder having a divided back, the parts of the back being positively moved to open or close the binder.

The invention further relates to the various improvements in loose-leaf binders to be hereinafter pointed out.

In the accompanying drawings, Figure 1 is an under face view, partly in section, of a binder embodying the features of my invention. Fig. 2 is a transverse sectional view on dotted line 2 2 of Fig. 1. Fig. 3 is a fragmental sectional view on dotted line 3 3 of Fig. 2.

In the construction of a binder embodying this invention I provide a back piece A of rectangular form, having secured to its rear face bearings A' for rotatably supporting a shaft A², which shaft has worms A³ and A⁴ formed thereon, and also has one of its ends squared to receive a socket key or crank, to be hereinafter described. The rear face of the back piece A is also provided with two bearing-studs A⁵ and A⁶, secured in any suitable manner, as by riveting, to said back piece and being adapted to rotatably support the disks A⁷ and A⁸, which disks have the worm-wheels A⁹ and A¹⁰ secured thereto, respectively. The worm-wheels A⁹ and A¹⁰ engage with the worms A³ and A⁴, whereby rotatory motion of the shaft A² is imparted to the disks A⁷ A⁸. Each of the bearing-studs A⁵ A⁶ is provided with an enlarged base portion A¹¹ for holding the disks A⁷ A⁸ a little distance away from the back piece A. Two guide-studs A¹² A¹³ are secured to and project from the rear face of the back piece A near each side edge thereof, which studs are for guiding and holding in place the sliding side members to be next

described. These side members B and C comprise angle-plates and have elongated guide-openings B' and C' in their rear flanges to receive the studs A¹² A¹³, respectively. The meeting edges of the rear flanges of the side members B and C are notched at B² and C² to provide for the admission of the bearings A' when said side members close together. The forwardly-extending flanges B³ C³ of the side members B and C carry four pairs of telescoping impaling-pins, two of which individual pins on each flange are tubular and two are solid. B⁴ and B⁶ and C⁴ and C⁶ indicate the tubular pins and B⁵ and B⁷ and C⁵ and C⁷ the solid pins.

As implied by the foregoing description, the side members B and C slide upon their guide-studs A¹² A¹³ with reference to the back piece A, such sliding movement being imparted to the side members by means of links B⁸ C⁸ and B⁹ C⁹, pivotally connected in pairs with the disks A⁷ A⁸ and the side members B and C.

To cover the mechanism hereinbefore described, I provide a shield-plate D, substantially of the same width as the back piece A, each end of said shield-plate being bent forward at a right angle in the flanges D' to close the ends of the binder, each of said forwardly-extending portions being again bent upon itself in the loop D², and thence at right angles to form the flange D³, by which said shield-plate is attached to the front side of the back piece A. The flange D' at one end of the binder is provided with an opening D⁴ to give access to the squared end of the shaft A². Each of the side portions B and C is also provided with a shield E and F, respectively, which last-mentioned shields comprise pieces of sheet metal or other suitable material bent at a right angle, one flange of each of said pieces being secured to the flanges B³ and C³ of the side members B and C, respectively, the other flange lying within the shield D. The ends of the shields E and F are closed by the flanges E' and F', respectively, formed integral with their said shields and adapted to slide within the loop D² of the shield-plate D.

G refers to a key or crank for rotating the shaft A², said key having a socket G', adapted to receive the square end of said shaft.

The usual covers of strawboard or other suitable material are attached to the binder-back hereinbefore described in any suitable manner, as by means of the strips H, which 5 strips are secured to the flanges B³ and C³ of the side pieces B and C in any suitable manner.

As will be seen, the rear side of the binder-back is closed by means of the shields D, E, 10 and F, the shield D being stationary and the shields E and F sliding within the shield D as the side members are moved in and out.

The binder is opened and closed by turning the shaft A², the rotatory motion of said shaft 15 being imparted to the disks A⁷ A⁸ and the worm-wheels A⁹ A¹⁰ and to the side members B and C by means of the links B⁸ C⁸ B⁹ C⁹, extending between the disks A⁷ A⁸ and said side members. The telescoping pins are of 20 such lengths that they always remain in engagement.

It is clear that various changes may be made in the construction of this binder without departing from the spirit and scope of my invention, wherefore I desire to have it understood that I do not limit myself to the precise 25 details herein set forth.

I claim as my invention—

1. In a loose-leaf binder, in combination, 30 two side members; holding-pins fixed with relation to said side members; and means for moving said side members toward and from each other, which means comprises two rotatable disks having a link connection with 35 said side members, a worm-wheel for rotating each of said disks, and a worm-shaft for rotating said worm-wheels.

2. In a loose-leaf binder, in combination, a back piece; two side members; holding-pins carried by said side members; a disk rotatably 40 mounted on said back piece and having a link connection with said side members; a worm-wheel fixed to each of said disks for rotating the disks; and a worm-shaft rotatably supported on said back piece for rotating 45 said worm-wheels.

3. In a loose-leaf binder, in combination, a back piece; two side members, both movable with relation to said back piece; means 50 mounted upon the under side of said back piece for moving said side members toward and from each other; a shield-plate extending beneath said back piece for covering said moving means; and a shield carried by said 55 side members and adapted to coact with said shield-plate.

4. In a loose-leaf binder, in combination, a back piece; two side members, both movable with relation to said back piece; means 60 mounted on the under side of said back piece for moving said side members toward and from each other; a shield-plate extending beneath said back piece for covering said moving members, the ends of said shield-plate 65 being bent at a right angle to close the ends of the binder; and a shield carried by each of said side members, said last-mentioned shields extending within and adapted to slide upon said shield-plate.

LARS ANDERSON.

Witnesses:

L. L. MILLER,
GEORGE L. CHINDAHL.