

(No Model.)

2 Sheets—Sheet 1.

H. TOLLEY.

BREECH LOADING SMALL ARM.

No. 315,858.

Patented Apr. 14, 1885.

FIG 1

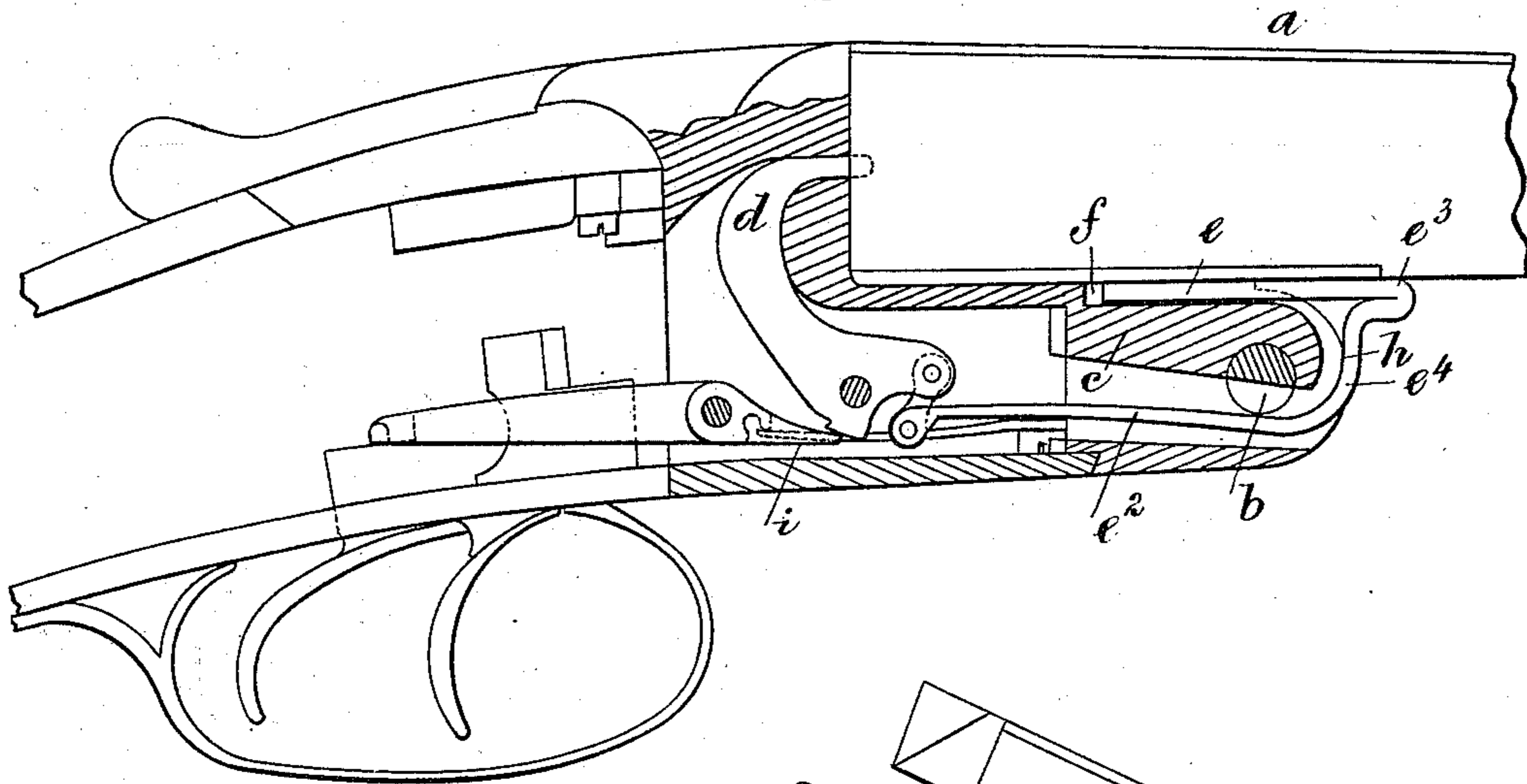


FIG 2

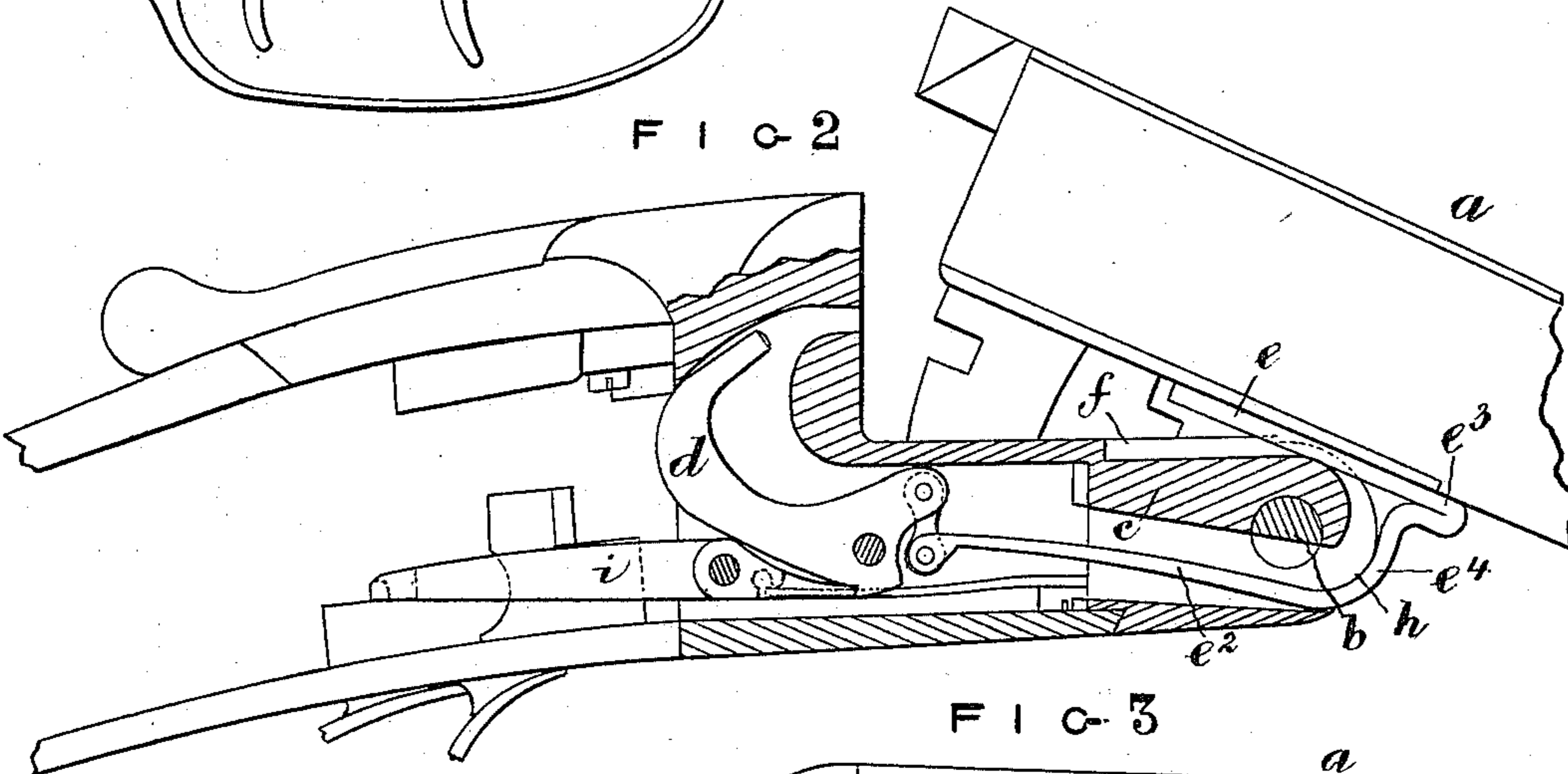
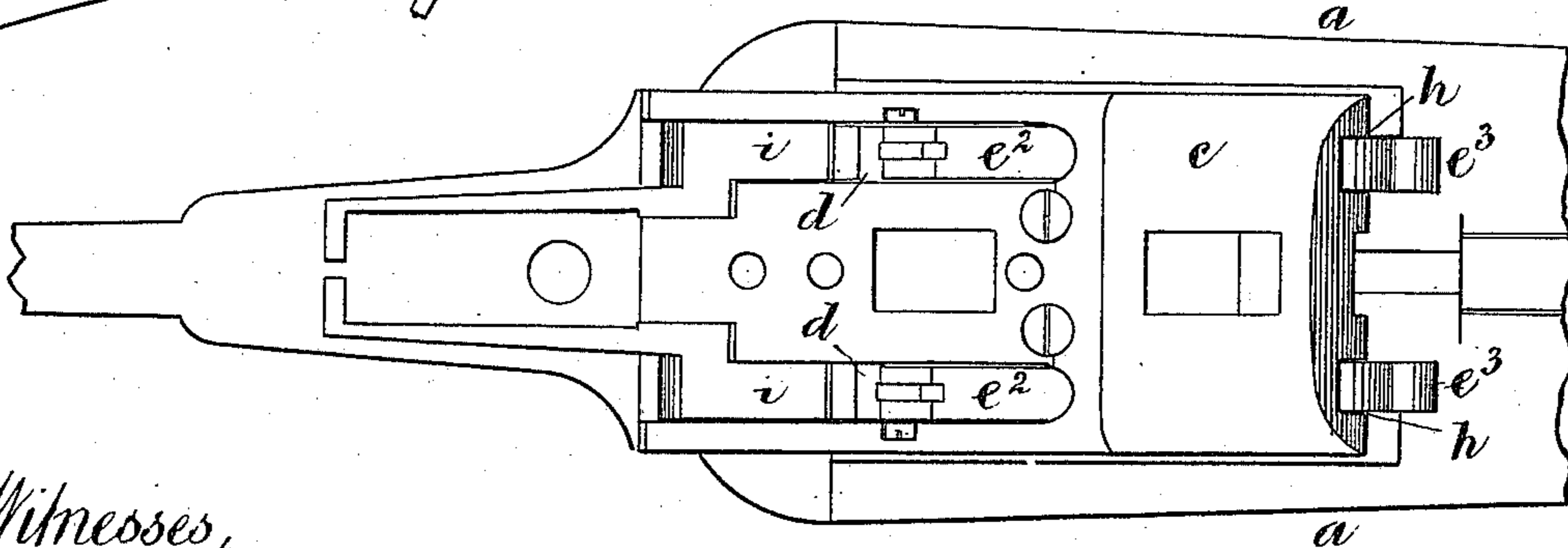


FIG 3



Witnesses,

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Henry Tolley

(No Model.)

2 Sheets—Sheet 2.

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FIG 4

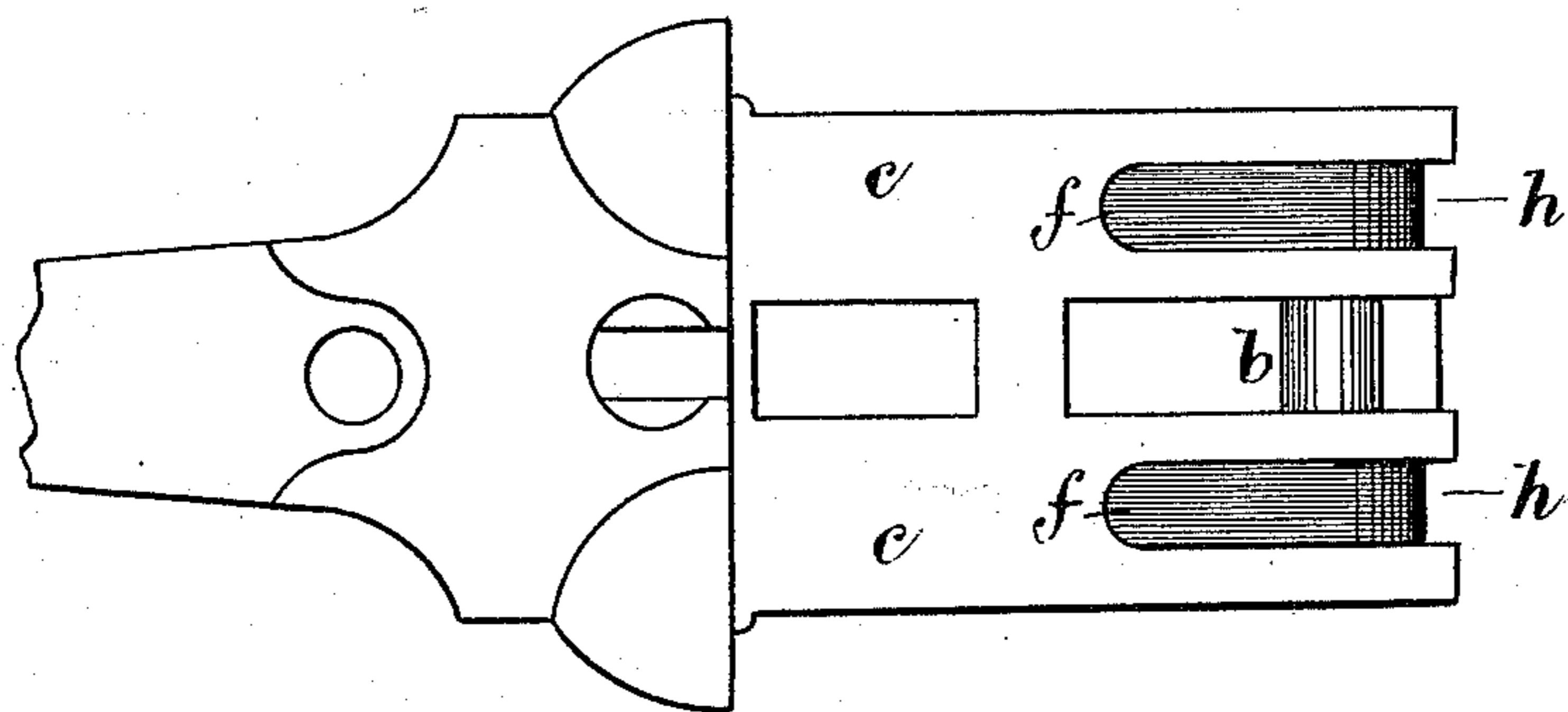


FIG 5

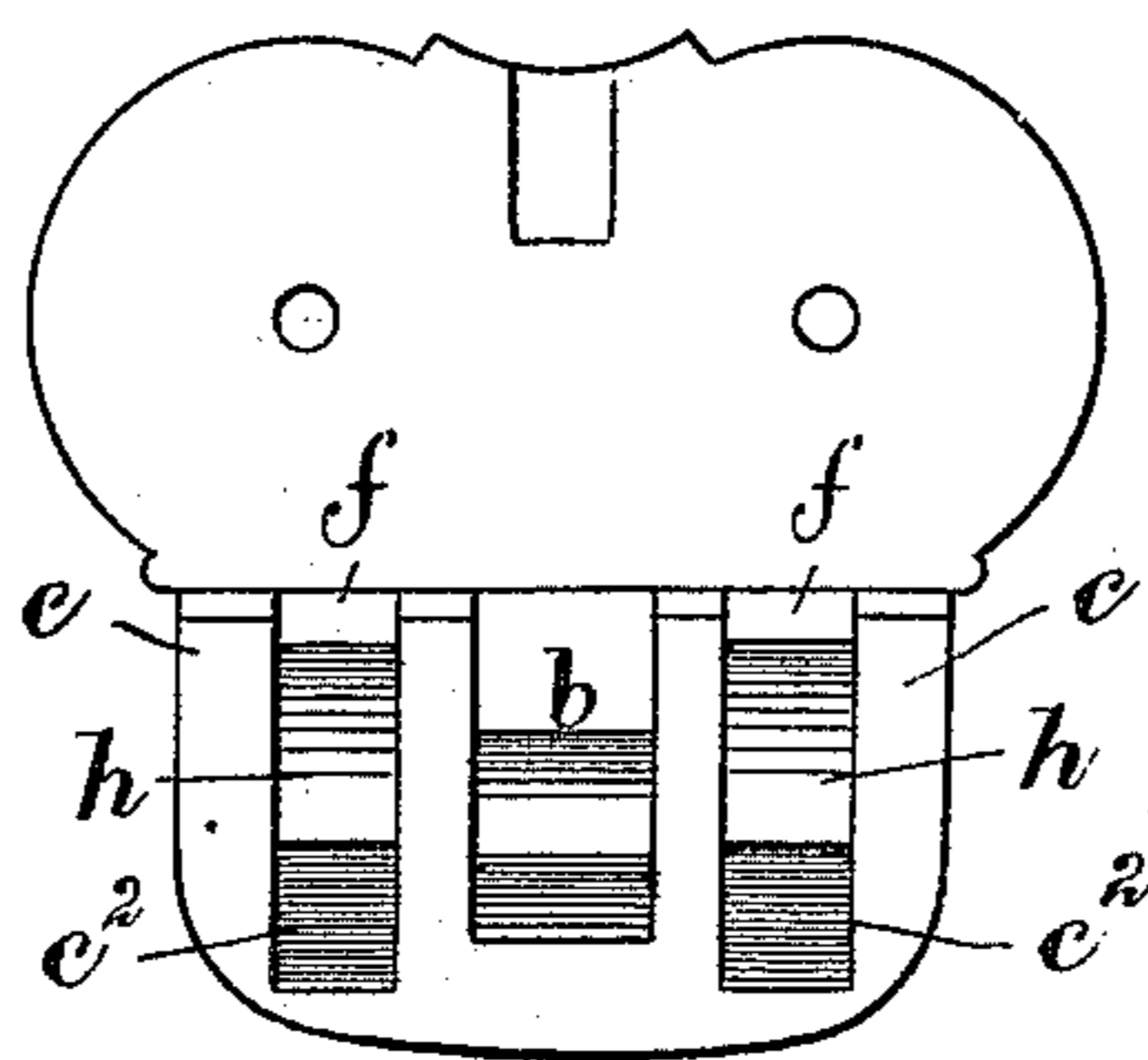


FIG 6

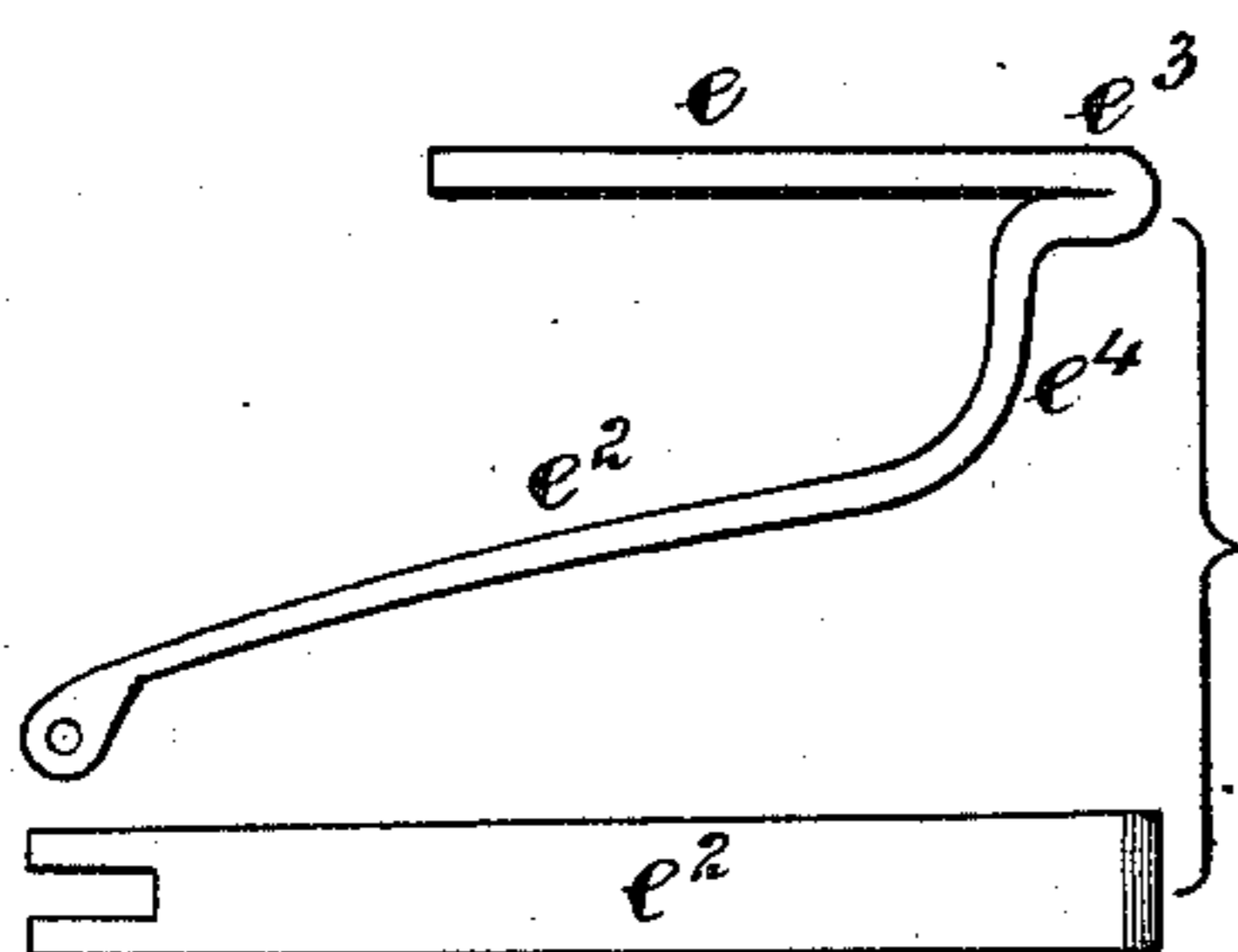


FIG 7

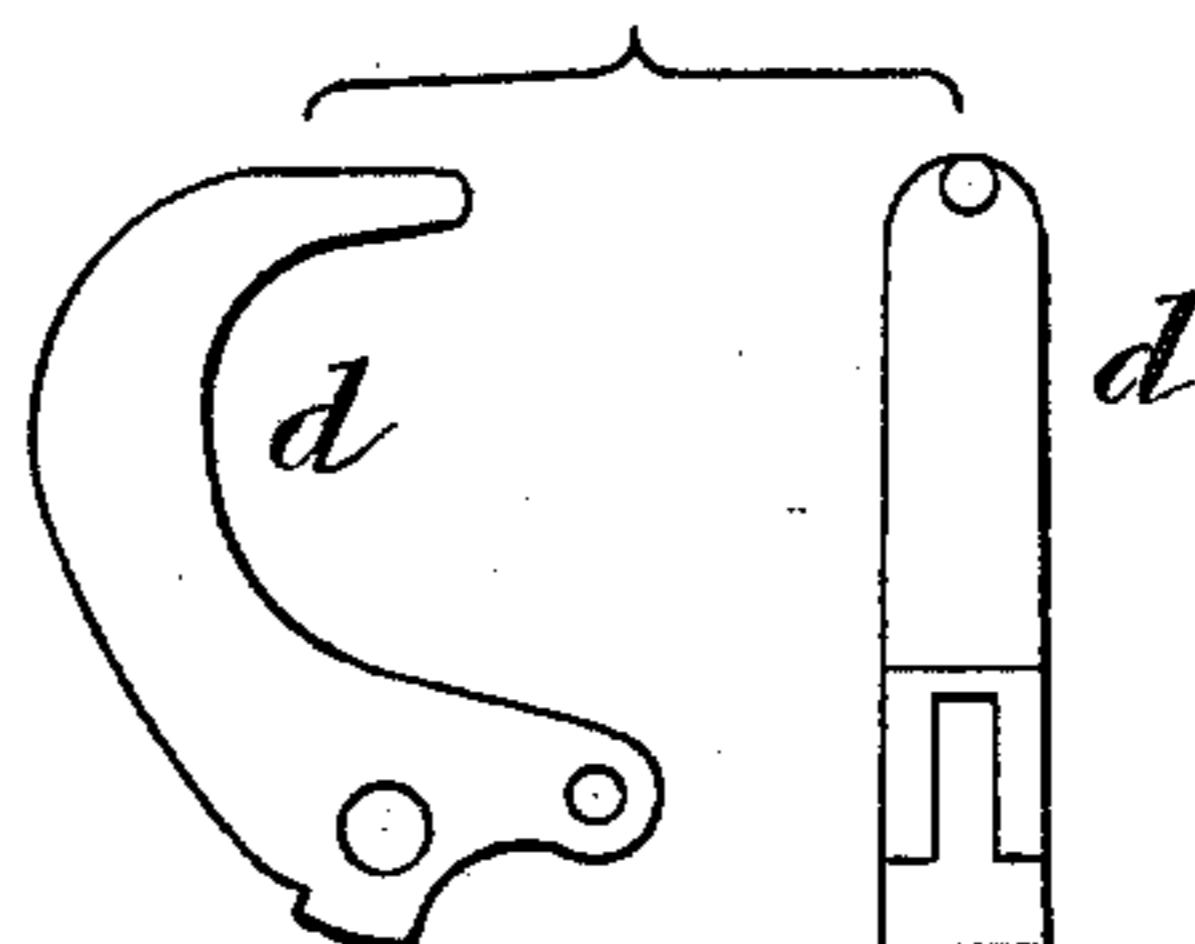
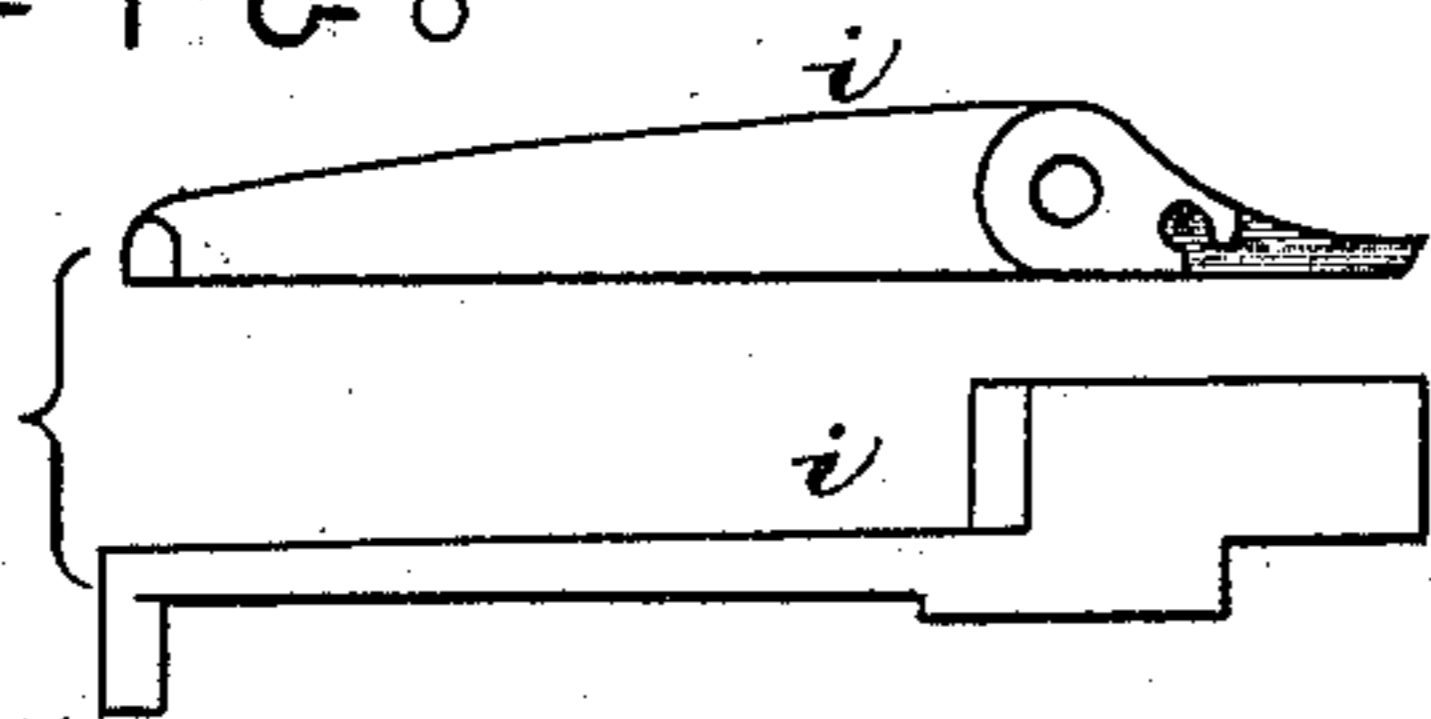


FIG 8



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY TOLLEY, OF BIRMINGHAM, COUNTY OF WARWICK, ENGLAND.

BREECH-LOADING SMALL-ARM.

SPECIFICATION forming part of Letters Patent No. 315,858, dated April 14, 1885.

Application filed November 18, 1884. (No model.) Patented in England July 12, 1884, No. 10,101.

To all whom it may concern:

Be it known that I, HENRY TOLLEY, of Nos. 65 and 66 Weaman Street, Birmingham, in the county of Warwick, England, gun-manufacturer, a subject of the Queen of Great Britain, have invented Improvements in Breech-Loading Small-Arms, (for which I have made application for Letters Patent in Great Britain No. 10,101, dated July 12, 1884,) of which the following is a specification.

My invention consists in constructing and arranging, in the manner hereinafter described, the parts of breech-loading small-arms whereby the mainspring, in addition to its ordinary function of forcing down the hammer to discharge the gun, is utilized in its relaxed state to raise the hammer to full-cock.

I will describe my improvements as applied to a single-barrel breech-loading gun; but my said improvements are equally applicable to double-barrel guns. I place the short or stand side of the mainspring uppermost, and on the other or longer arm or side of the mainspring I make a curve near the doubled part of the spring, for the purpose hereinafter described. The said mainspring occupies such a position in the body of the gun that while the end of its longer arm is jointed to the swivel of the hammer, the short or stand side in part occupies a recess in the upper face of the body, and in part projects beyond the knuckle or joint end of the body, the curved part of the longer arm taking a bearing on a curved part of the knuckle concentric with the pin on which the barrel turns. When the breech end of the barrel is raised, the stand side of the spring does not wholly occupy the recess described, its end being raised therefrom, the said stand side making a small angle with the face of the body. In this position of the stand side of the spring, the spring is not in a state of tension; but when the breech end of the barrel is shut down it depresses the stand side of the spring into its recess, the compression of the spring producing the required tension in it for discharging the gun. After the gun has been discharged and the breech end of the barrel unlocked, the breech end of the barrel is raised through a small angle by the end of the stand

side of the mainspring, and the said spring is thereby relaxed. By now continuing the rising motion of the breech end of the barrel the doubled part of the spring is depressed (the spring turning on the curved bearing described) and the long arm of the spring rises and lifts the hammer past the full-cock position, in which position it is retained by the ordinary sear and bent. When the barrel is charged and its breech end shut down, the stand side of the mainspring is pressed by the breech end of the barrel into its recess, and the mainspring is put into a state of tension ready for firing the gun.

Figures 1 and 2 of the accompanying drawings represent in longitudinal vertical section, partly in elevation, the breech end of a double-barrel drop-down gun containing lock and cocking mechanism constructed according to my invention, Fig. 1 representing the barrels shut down and the hammers in their discharged positions, and Fig. 2 the barrels raised from the break-off and the hammers cocked, the mainsprings being in a relaxed state. Fig. 3 represents a plan of the under side of the body of the gun. Fig. 4 represents a plan of the upper side of the body, and Fig. 5 an end elevation of the same. Fig. 6 represents one of the mainsprings detached. Fig. 7 represents one of the hammers detached; and Fig. 8 represents one of the sears detached.

The same letters of reference indicate the same parts in the several figures of the drawings.

a a are the barrels, turning on the joint-pin *b*, as usual. *c* is the body of the gun, and *d* the hammers. *e* is the short or stand side of the mainspring, which said stand side is situated uppermost, and *e'* is the other or longer side of the mainspring, jointed to the swivel of the hammer *d* in the ordinary way. *f f* are the recesses in the upper face of the body *c*, into which recesses the stand sides *e* of the mainsprings pass when the barrels are shut down, as illustrated in Fig. 1. The doubled part *e''* of each mainspring projects beyond the knuckle or joint end of the body *c*, and has a bearing upon the barrel forward of the joint-pin *b*. The longer side *e'* of each mainspring is curved at *e'''* near its junction with the

doubled part e^3 , the said longer sides e^2 of the springs passing through openings c^2 c^2 at the end of the body c . (See Fig. 5.) The curved or knuckle end of the body c is provided with
 5 recesses at h opening into the recesses f . The recesses h are concentric with the joint-pin b , and in the said recesses the curved parts e^4 e^4 of the mainsprings are fitted and take a bearing.

10 The "fore end" (not represented in the drawings) for holding the barrel to the body when the gun is open is of the ordinary construction, excepting that it is furnished with recesses to pass over the projecting parts e^3 of
 15 the mainsprings when the fore end is fitted in its place on the knuckle end of the body.

By an examination of Fig. 2 it will be seen that when the breech end of the barrel a is raised the stand side e of the mainspring does
 20 not wholly occupy the recess f in the body c , the end of the said stand side making a small angle with the face of the body c . In this position of the stand side e of the spring the said spring is inoperative—that is, it is in a re-
 25 laxated state—the swivel end of the long arm or side e^2 being raised into the position represented in Fig. 2 by fully opening the barrel. On shutting down the barrel it depresses the
 30 stand side e of the mainspring into its recess f , as illustrated in Fig. 1, thereby compressing or cramping the spring and producing the required tension in it for discharging the gun.

The action of the parts is as follows: In order to cock the gun after it has been dis-
 35 charged, as illustrated in Fig. 1, the barrels are unlocked in the ordinary way. As soon as the barrels are unlocked they are raised through a small angle by the rising of the stand sides e of the springs, thereby relaxing
 40 or uncramping the said springs. As the breech ends of the barrels are further raised, the doubled parts e^3 , which have a bearing forward of the joint-pin b , are depressed, the curved parts e^4 of the springs moving in the
 45 curved recesses or bearings h h in the knuckle end of the body and raising the long arms or sides e^2 of the said springs. The hammers d are thereby lifted or thrown back by the said long arms e^2 into their fully cocked positions, and retained in those positions by the sears i , engaging with the bents in the said hammers, the several parts now occupying the respective positions represented in Fig. 2. On shut-
 50 ting down the breech ends of the barrels a the stand sides e of the mainsprings are pressed into their recesses f in the body c , and the

mainsprings are again cramped or put into a state of tension, ready for discharging the hammers, the mainsprings now occupying
 60 nearly the positions represented in Fig. 1. Thus it will be understood that the lifting of the breech ends of the barrels first permits of the mainsprings to relax, and afterward turns
 65 them about the centers at h , so as to raise the ends of their long arms e^2 and lift the hammers d to full-cock, while the shutting down of the breech ends of the barrels by depressing the stand sides e brings the mainsprings
 70 into a state of tension, ready for discharging the gun.

My improvements are applicable to single and double drop-down guns and pistols.

Having now particularly described and as-
 75 certain the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is of improve-
 80 ments in drop-down small-arms—

1. The combination, with the barrel and the hammer of a breakdown gun, of a body or breech-block having a curved bearing, h , and
 80 a mainspring arranged in the forward end of the body or breech-block, and having a doubled part, e^3 , a curved part, e^4 , an upper stand portion, e , acting on the barrel, and a lower
 85 portion, e^2 , connected with the hammer, substantially as described.

2. The combination, with the barrel and hammer of a breakdown gun, of a body or breech-block having a recess, f , on its upper
 90 side and a curved bearing at its front end, and the mainspring having a stand portion, e , a doubled part, e^3 , seated upon the barrel in front of the knuckle or joint end of the body,
 95 a curved part, e^4 , and a lower portion, e^2 , connected with the hammer, substantially as described.

3. The combination, with the barrel and hammer of a breakdown gun, of a body or breech-block having a seat for a doubled main-
 100 spring, a mainspring having an upper stand portion bearing upon the barrel and a lower portion connected with the hammer, whereby when the barrel is dropped down the stand
 105 side of the spring is depressed, causing a cramping or depression of the mainspring and a cocking of the hammer, substantially as described.

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Witnesses:

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 ARTHUR J. POWELL.