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A.D 1840. . . . . N° 8347.

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S P E C I F I C A T I O N

OF

JOSEPH ROCK COOPER.

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FIRE-ARMS AND BALLS TO BE USED  
THEREWITH.

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L O N D O N :

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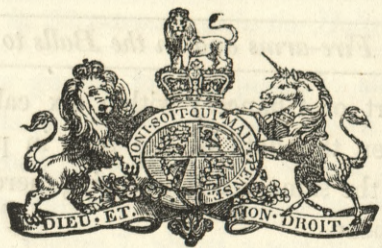
1854.





INVENTION

A.D. 1840—N° 8347



A.D. 1840 . . . . . N° 8347.

**Fire-arms and Balls to be used therewith.**

**COOPER'S SPECIFICATION.**

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOSEPH ROCK COOPER, of Birmingham, in the County of Warwick, Gun Maker, send greeting.

WHEREAS Her present most Excellent Majesty Queen Victoria, by Her Letters Patent under the Great Seal of Great Britain, bearing date at Westminster, the Twenty-first day of January, in the third year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Joseph Rock Cooper, Her especial licence, full power, sole privilege and authority, that I, the said Joseph Rock Cooper, my exors, admors, and assigns, or such others as I, the said Joseph Rock Cooper, my exors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein expressed, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "IMPROVEMENTS IN FIRE-ARMS AND IN THE BALLS TO BE USED THEREWITH;" in which said Letters Patent is contained a proviso that I, the said Joseph Rock Cooper, shall cause a particular description of the nature of the Invention, and in what manner the same is to be performed, to be inrolled in Her said



317042/2

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

**NOW KNOW YE**, that in compliance with the said proviso, I, the said Joseph Rock Cooper, do hereby declare the nature of my Invention, and the manner in which the same is to be performed, are fully described and ascertained in and by the following statement thereof, reference being had to the Drawings hereunto annexed, and to the figures and letters marked thereon (that is to say):

## DESCRIPTION OF THE DRAWINGS.

Figure 1, represents a side view of a gun or fowling-piece having the first part of my Invention applied thereto; Figure 2, is a plan of Figure 1; Figure 3, shews a side view of the lock separately; Figure 4, is a plan or inside view of the lock; and the other Figures of this Sheet of the Drawings shew various views of the separate parts of the lock. In each of these Figures the same letters indicate similar parts, and as the first part of my Invention relates only to the mode of constructing the lock, it will not be necessary to enter into a description of the other parts of the gun or fowling piece. *a*, represents the trigger plate, on the upper surface of which are formed two projecting plates *b*, or what are called bridles, as it is in openings formed in these plates *b*, in which the axis of the tumbler turns; *c*, is the tumbler, and it will be seen that its axis *c'*, is borne up into the hook-formed openings of the plates *b*, by means of the main spring *d*, which main spring is affixed to the trigger plate, and is attached by the ordinary construction of swivel to the tumbler, as will be seen on examining the Drawing; *e*, is the trigger; and *f*, the trigger and sear spring. It will thus be seen that by the peculiar arrangement of the bridles or plates *b*, and the mode of applying the axis of the tumbler with its main spring, a very simple construction of lock is obtained, little liable to get out of order, is easily cleaned, readily taken to pieces, and again put together. It will also be seen that the hammer is attached to the axis of the tumbler, and that there is a gap cut in the under part and at one side

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

of the stock of the gun or fowling piece, to allow of the axis of the tumbler going to its proper position, as is shewn in the Drawing.

I will now proceed to describe the second part of my Invention. Figure 5, shews a side view of a double barrel gun; Figure 6, is a  
 5 plan of Figure 5; Figure 7, shews a section of the lock and part of one of the barrels; Figure 8, shows a plan of the interior of the lock, which is uncovered; the other Figures shew detached views of the various parts of the lock and metal frame or body of the gun which  
 10 affixed, and also forms the brake-off for the barrel. Thus gun is so arranged as to be discharged by a direct central fire, and in this case the hammer and tumbler are formed together as one instrument, and the parts in other respects are formed very similarly to the first part of my Invention, and are marked with the same letters of reference; but  
 15 in this case there is only a single bridle, and in place of its being formed on the upper surface of the trigger plate, as was the former case, the bridle *b* in this lock is affixed to the interior of the frame or body of the gun, as is clearly shewn in the Drawing. And this frame  
 20 or body of the gun consists of the trigger plate *a*, the two side plates *a*<sup>1</sup>, and the plate *a*<sup>2</sup>, or brake-off plate, into which the barrels, or rather the breeches, are affixed; and all these parts *a*, *a*<sup>1</sup>, *a*<sup>2</sup>, are cast or otherwise formed in one piece, thus giving great strength.

In the upper edges and on the inside of the two side plates *a*<sup>1</sup>, are formed grooves to receive the sliding cover *g*, by which all parts are  
 25 enclosed, but the same is capable of sliding, in order to place detonating caps ready for discharging the barrels. *g*<sup>1</sup>, is a spring which bears on the under side of the sliding cover to retain it secure when shut. *h*, is a partition plate through which the hammers work, the openings through such plate being only so large as to allow the hammers to  
 30 move through the same, and as much as possible prevent the smoke passing into the works of the lock.

The body of the lock is affixed to the stock by means of screws passing through the trigger plate *a*, and through the upper or top plate *a*<sup>2</sup>, which is affixed to the side plates *a*<sup>1</sup>, by a pin passing through those

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*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

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plates and through the top plate  $a^3$ , as will readily be understood on examining the Drawing.

I will now proceed to describe the third part of my Invention. Figure 9, shews the side view of a gun or fowling piece constructed according to the third part of my Invention; Figure 10, is a plan of 5 Figure 9; Figure 11, is a section of the lock and part of the barrel; Figure 12, shews the trigger plate separately in plan and side view; Figure 13, is a plan or inside view of the trigger plate and the works of the lock; Figure 14, shows a front view and side section of an apparatus 10 or instrument for applying detonating caps to the nipples of fire-arms constructed according to this part of my Invention. In each of these Figures the lock is shewn similar to the first part of my Invention, and the parts are marked with the same letters of reference, the difference 15 being that in this case the hammer is a sliding bolt, which is affixed to the tumbler by a pin joint, and the bolt is guided in its action by sliding through an opening formed in the partition plate A, and the brake-off or plate into which the end of the barrel enters forms part of the top plate B, and the same is affixed to the trigger-plate by means of two 20 screws, which also aid in the affixing of the various parts to the stock of the gun.  $A^1$ , is a chamber which forms part with the trigger-plate, and is a recess into which the detonating cap explodes, and there is an opening at the side of the gun into this chamber at C, through which the instrument for applying the cap on to the nipple is inserted. This instrument consists of a long quadrangular case  $C^1$ , there being a slit 25 or opening at  $C^2$ , in front, through which a stud passes; this stud is affixed to a ram or piston, which slides freely in the case  $C^1$ , there being a spring at the back which forces up the ram or piston and consequently the caps towards the outer end, there being a portion of the front plate of the case  $C^1$ , cut away in order to the cap coming through, and the back plate of the case protrudes beyond the other sides, as is 30 shewn in the Drawing.  $C^3$ , is a spring which partly covers the end of the case, and prevents the caps being forced out too far; hence when the end of the case  $C^1$ , is placed through the opening at C, a cap may readily be placed on the nipple, and the case withdrawn, the spring  $C^3$ .

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

giving way as the case is withdrawn. The chamber A<sup>1</sup>, is rectangular, and has an opening for inserting the case C<sup>1</sup>, another opening through for the sliding hammer, which ought to fit well, yet slide easily, and there is a third opening through which the nipple passes, and the  
5 chamber A<sup>1</sup> is formed on to the trigger plate *a*, by casting therewith or otherwise.

I will now describe the fourth part of my Invention, which relates to a mode of self-priming applied to guns or other such fire-arms, by which detonating caps are caused to be fed into the opening or guide  
10 hole or passage way through which the hammer passes, and such feeding in of a cap can only take place when the gun is cocked, or in the act of cocking; at other times the hammer covering the opening through which the caps are passed prevents any cap coming into the passage or way through which the sliding hammer passes. Figure 15,  
15 shews a side view of a gun or fowling-piece having this improvement applied thereto; Figure 16, is a side view in section, by which the internal arrangement of parts can be more readily traced; Figure 17, is a plan or inside view of the trigger plate and the parts of the lock; the other Figures shewing detached views of the various parts. And it  
20 will be seen that the lock in this case is so arranged as to be cocked and discharged by the simple act of pulling the trigger in like manner to what has heretofore been practiced in some constructions of pistols; but it will be evident that in carrying out this part of my Invention, the working parts of the lock may be varied, thus, for instance, with the  
25 exception to the apparatus applied for self-priming, the lock may be similar to that one last described. It will not therefore be necessary to enter into a particular description of such parts, but confine the explanation of the present Figures to the apparatus for self-priming. E, is the tube affixed to the under side of the gun, and it enters into  
30 the lock and rises up to the opening in the plate A, through which the sliding hammer moves or slides, and in such manner that so long as the hammer is not drawn back to be cocked no detonating cap can rise into a position to be used as a means of discharging the gun. F, is the ram, which is driven up by means of a spring behind; the ram

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

F, is made of several parts, and linked together, so that they will readily bend to the curve of the tube, and when forced up by the spring will drive the detonating caps towards the opening or passage through which the hammer works, and the caps being somewhat larger than the nipple will not hold thereon. G, is a stud which is affixed to one of the links of the chain or ram, and passing through a slit in the tube E, by which means the chain or ram can be drawn back, in order to introduce caps into the tube E, and the caps are introduced through an opening H, when the chain or ram is drawn back. The Drawing shews the parts in the position of the gun being cocked, consequently there is a cap opposed to the passage of the hammer, such cap having its concave side opposite to the nipple, and in discharging the hammer by pulling the trigger the cap will be carried forward by the hammer and be forced upon the nipple, and by the contact discharged. And it should be stated that should the gun or other fire-arm have a lock similar to that at Fig. 11, applied thereto, in place of the one shown, and at any time be cocked and not discharged, the cap may be removed by uncocking the lock, by which the cap will be forced out of the passage way of the hammer and fall into the chamber A<sup>1</sup>, and from thence may be shaken out at the opening C, and a fresh cap cannot again come up into the passage way of the hammer until the hammer is drawn back in order to cock the lock, when another cap will be immediately placed across the passage way, in a position to be driven on to the nipple when the trigger is pulled.

Another part of my Invention relates to a mode of constructing pistols which have a series of barrels revolving on an axis, and which barrels are fired in succession by a single lock, and the improvement consists in so arranging the parts that the nipples may be affixed at the ends of barrels, and thus obtain what is called a direct and central or nearly a central fire. Figure 18, represents a side view of a pistol with six barrels revolving on an axis; Figure 19, is a plan thereof; Figure 20, is a section of the same, by which the construction of the parts will more readily be understood; the other Figures show the various parts separately. It will be seen that the pistol is self-acting.



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*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

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that is, the pulling of the trigger throws back the hammer, and also turns the barrels round on their axis of motion in order to bring them successively into a position to be discharged; but it should be stated that the arrangement of parts, so far as the construction of the lock is  
5 concerned, forms no part of my Invention, it being well known and in use, and my Invention only relates to the so arranging of the parts of the lock, and the means of receiving the detonating priming at the back, in order to obtain a central fire to each of the barrels.

I will now describe the sixth part of my Invention, which relates to  
10 a mode of applying detonating tubes in discharging pistols where a series of barrels are combined together and revolve around a common axis of motion. Figure 21, shows a side view of a pistol constructed according to this part of my Invention; Figure 22, shows a plan thereof; Figure 23, shows a section thereof. In this case, as in the  
15 former, the barrels are caused to move and come into proper position by the act of moving the trigger, and the tubes are so arranged as to be at the back, but they do not get a direct central fire, but very nearly a central fire, the touch-holes slanting downwards, and the tubes entering openings formed at the end of the barrels, such openings entering into  
20 the touch-holes. In this arrangement, as is also the case in the preceding, and as is usual in pistols of this description, the barrels are taken off the axis J, which is used as a ram rod, and when the barrels are loaded the detonating priming is applied, either caps or such like means in the former case, and tubes in the present case, before placing the  
25 barrels on the axis, and retained thereon by the screw as shown.

I will now describe the seventh part of my Invention. Figure 24, shews a section of a pistol constructed according to this part of my Invention; Figure 25, a plan thereof; and the novel feature thereof consists in the hammer K, striking through the barrel or  
30 breech, and discharging a detonating tube, and thus obtain a central fire by a tube actually within the barrel or breech thereof, the line of discharge of such detonating tube being in the line of the centre, or nearly so, of the barrel, by which a most beneficial arrangement is produced; and I sometimes employ a tube, such as is shewn at Figure 26,

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

containing detonating powder, which at once acts as the prime and the charge for this pistol, gun, fowling-piece, or other fire-arms to which such improvement in the construction thereof is applied, or an ordinary detonating tube may be introduced, and a charge of gunpowder employed therewith; and it will be evident that by such mode the powder will be discharged under the most favorable circumstances. Figure 27, shows a section of another pistol; and Figure 28, an under side view of Figure 27. In this case the hammer strikes through the barrel from below in place of from above; in other respects this pistol is the same as in respect to the application of this part of my Invention, for the detonating tube lies within the barrel or breech thereof, and is discharged by the hammer striking through.

I will now describe the eighth part of my Invention, which relates to the construction of balls for pistols, guns, or other fire-arms, and consists of forming a recess in each ball, and filling the same in with detonating powder, which is to act as the charge for discharging such balls from the pistol and other fire-arms. Figure 29, shows a section and front view of a ball constructed according to this part of my Invention; and this recess may be formed in casting the ball by making suitable moulds; or the ball may be moulded complete, and have a recess formed therein by a drill or other convenient means. In using these balls the barrel is to be unscrewed, and the ball placed therein in such manner that the detonating powder will stand opposite the touch-hole, or cylindrical balls may be employed, such as are shewn at Fig. 29\*, and the same is to be discharged by any of the usual means for priming pistols.

Another part of my Invention relates to a mode of applying nipples to guns & other fire-arms, and consists of passing the nipple from the interior to the exterior of the breech in place of screwing the nipple from the external surface towards the interior of the breech; by this arrangement the great liability of blowing out the nipple now experienced will be avoided. Fig. 16, Fig 16\*, show this part of the Invention.

Having thus described the nature of my Invention, I would remark

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*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

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that although I have necessarily shown many parts which are old and well known, I do not claim the same; and further, in carrying out my several improvements variations may be made in some of the parts without departing from my Invention, so long as the modes of action  
5 claimed as my Invention be substantively retained. And I would have it understood that what I claim is,—

First, the mode of carrying the axis of the tumbler by the bridles *b*, formed on the trigger plate *a*, and retained therein by the main spring, as described.

10 Secondly, I claim the mode of forming the parts *a*, *a*<sup>1</sup>, *a*<sup>2</sup>, in one piece, as above described, and I do also claim the mode of supporting the axes of the tumblers by the main springs supporting them into the hooked formed opening of the bridle or plate *b*, and into similar openings formed in the side plates *a*<sup>1</sup>, as described in respect to Figures 5, 6,  
15 7, and 8.

Thirdly, I claim the mode of constructing fire-arms with an opening *C*, to have detonating caps applied to the nipple combined with the chamber *A*<sup>1</sup>, in the manner above described.

Fourthly, I claim the mode of applying a self-priming apparatus to  
20 guns, fowling pieces, or other such like fire-arms, whereby detonating caps are caused to be fed into a passage way through which the hammer moves, and whereby the caps are forced on to the nipple and discharged.

Fifthly, I claim the mode of constructing pistols having a series of  
25 barrels moving on an axis in such manner as to obtain a central or nearly central fire, as above described.

Sixthly, I claim the mode of constructing pistols having a series of barrels revolving on an axis in such manner as to discharge the same with detonating tubes, as above described.

30 Seventhly, I claim the mode of constructing pistols, guns, and other fire-arms in such manner that detonating tubes within the barrel or breech may be discharged by the hammer striking through, as above described.

Eighthly, I claim the mode of applying charges of detonating powder  
35 to balls, as above described.

*Cooper's Impts. in Fire-arms and in the Balls to be used therewith.*

An, lastly, I claim the mode of applying nipples to fire-arms by screwing them from the interior outwards, as described.

In witness whereof, I, the said Joseph Rock Cooper, have hereunto set my hand and seal, this 21st day of July, in the year of our Lord One thousand eight hundred and forty. 5

JOSEPH (L.S.) ROCK COOPER.

WINGFIELD.

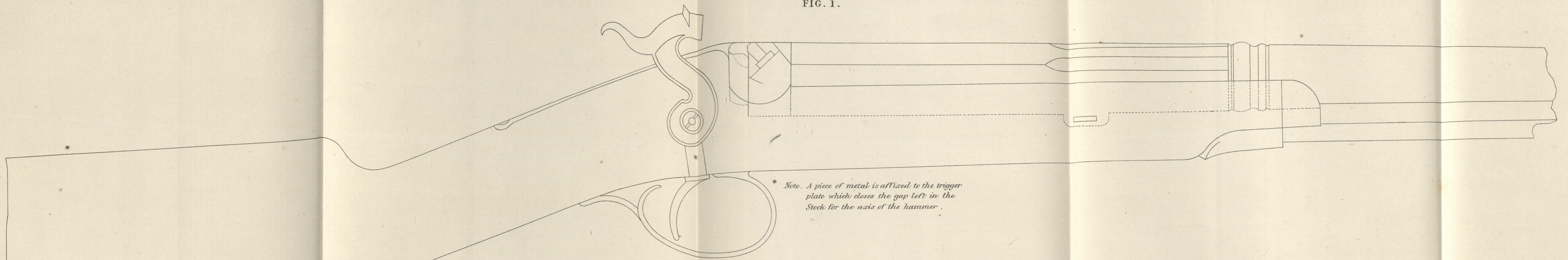
**AND BE IT REMEMBERED**, that on the Twenty-first day of July, in the year of our Lord 1840, the aforesaid Joseph Rock Cooper came before our said Lady the Queen, in Her Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose. 10

Inrolled the Twenty-first day of July, in the year of our Lord One thousand eight hundred and forty. 15

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FIG. 1.



\* Note. A piece of metal is affixed to the trigger plate which closes the gap left in the Stock for the axis of the hammer.

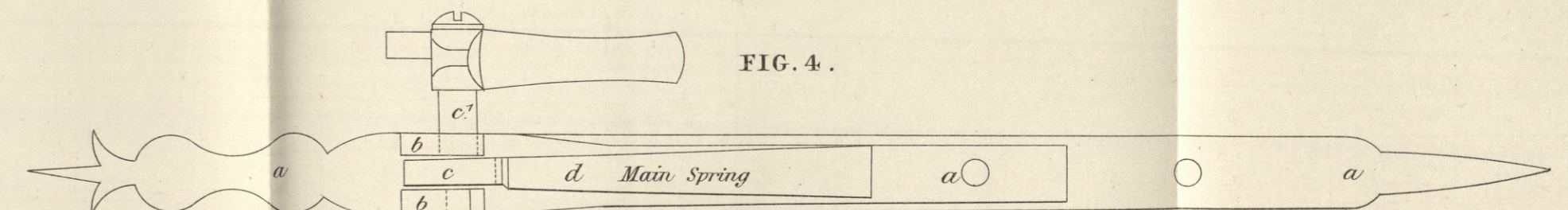
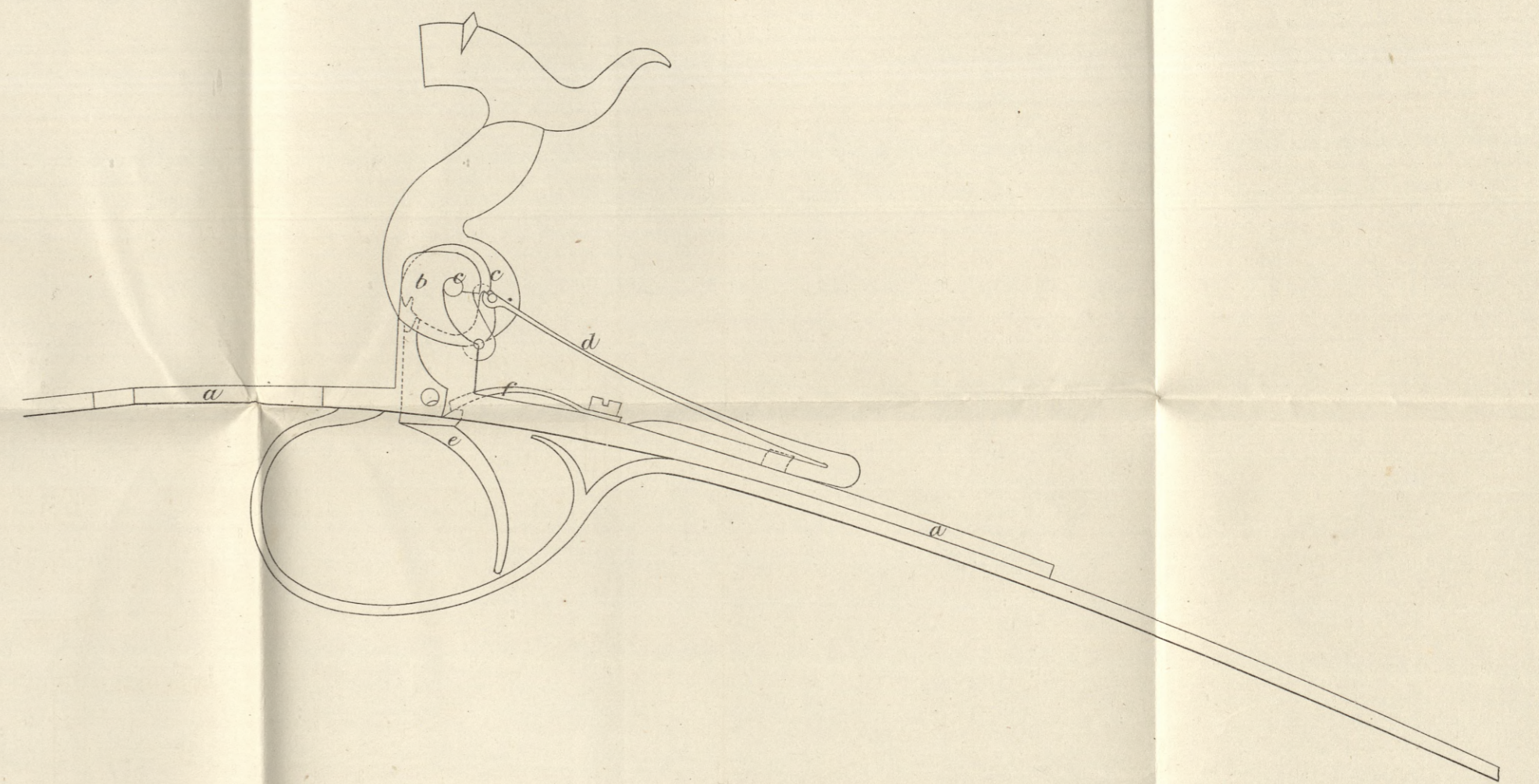
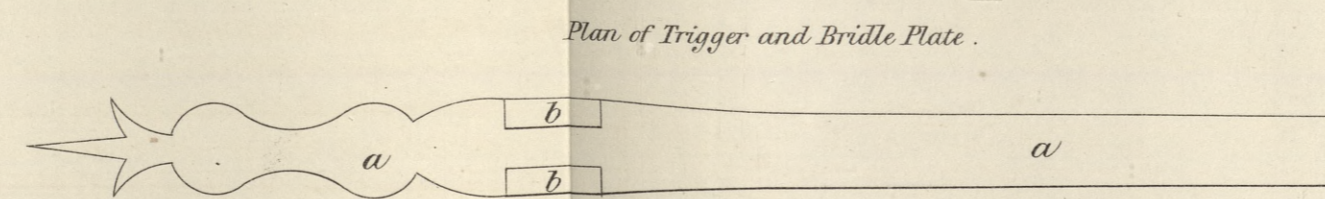
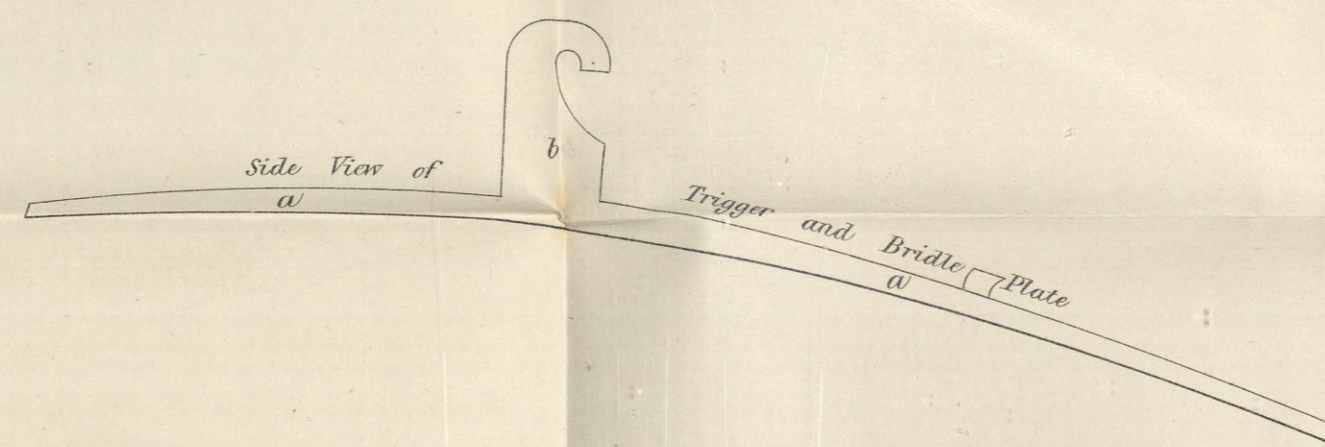
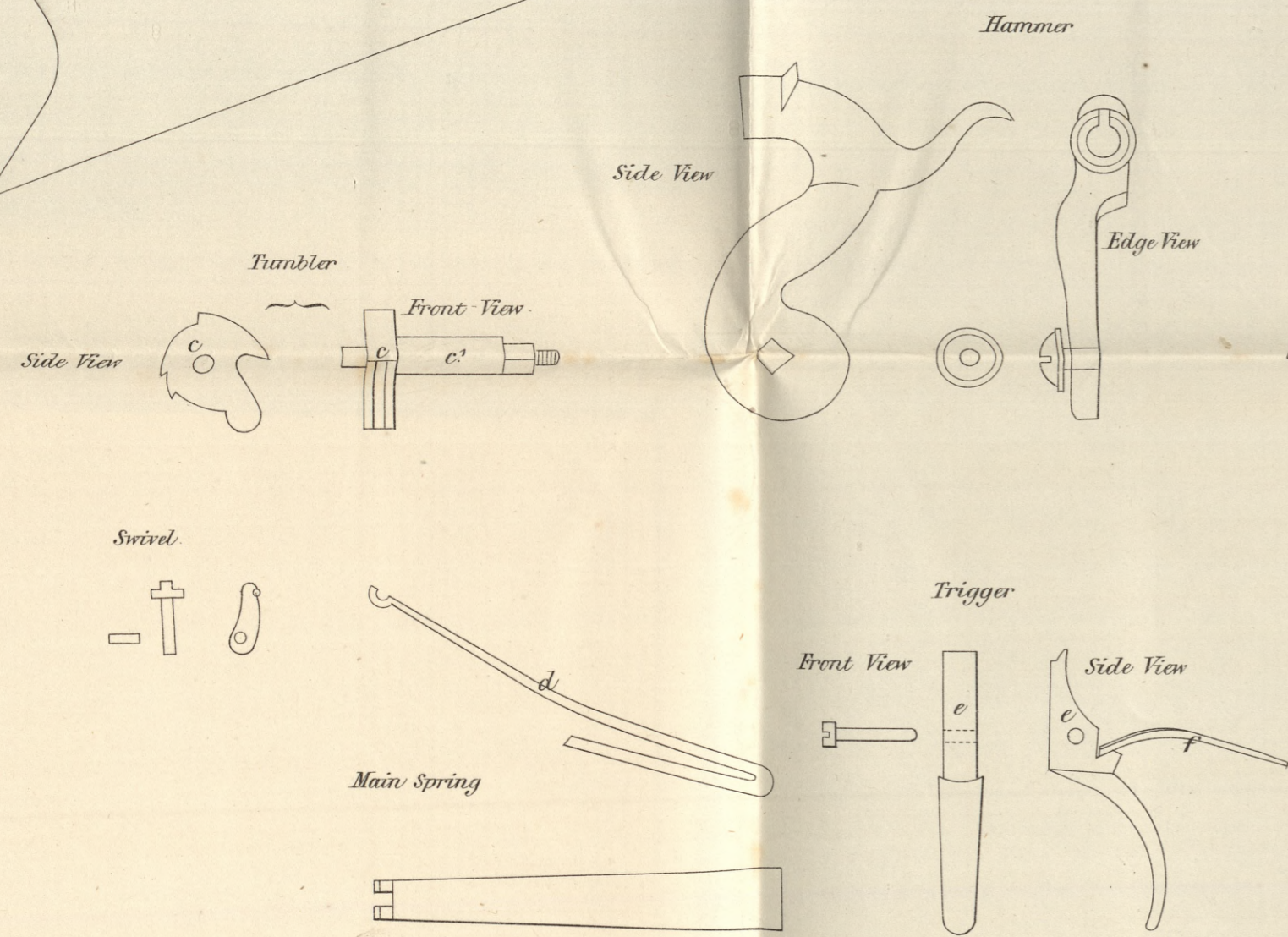
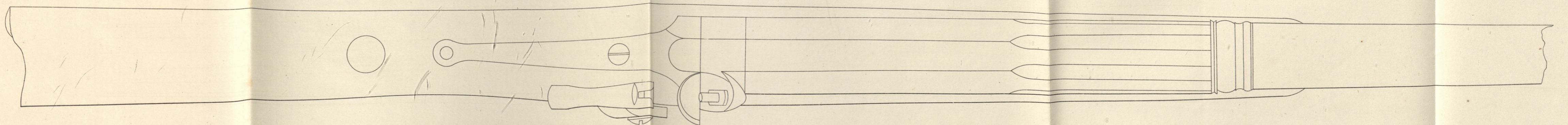


FIG. 2.



The Enrolled Drawing is not colored.

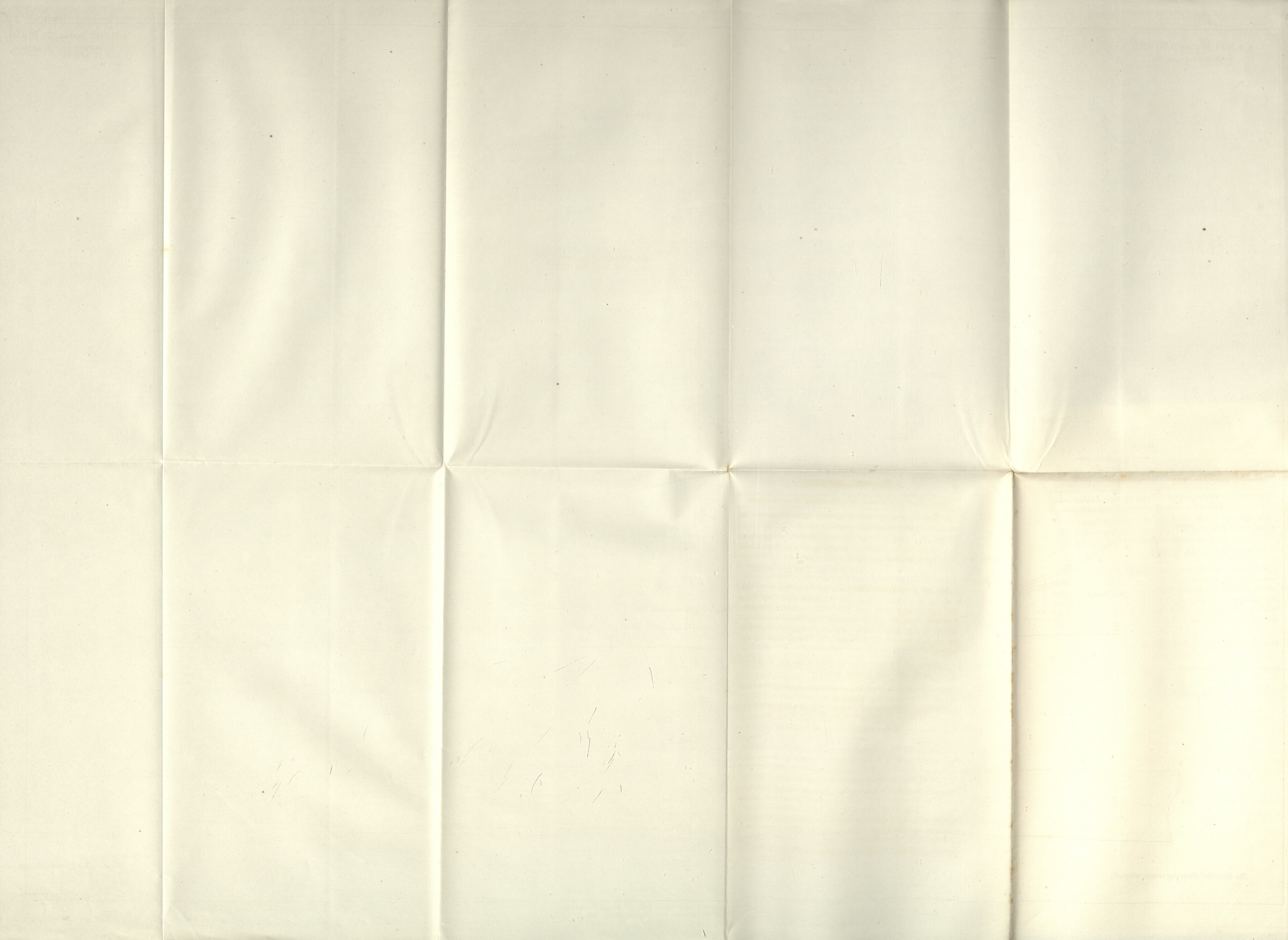
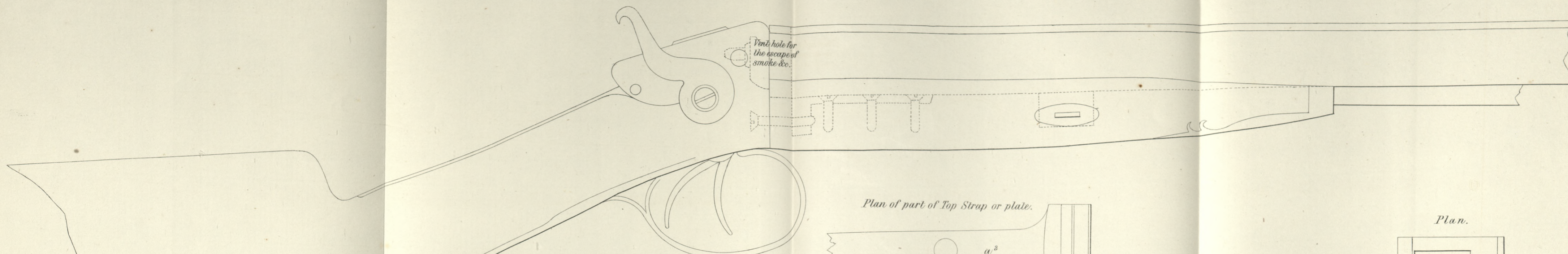
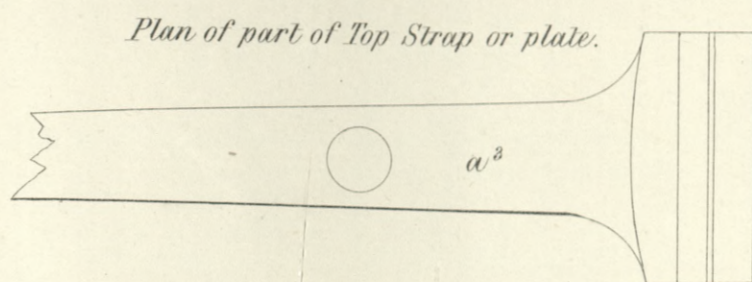


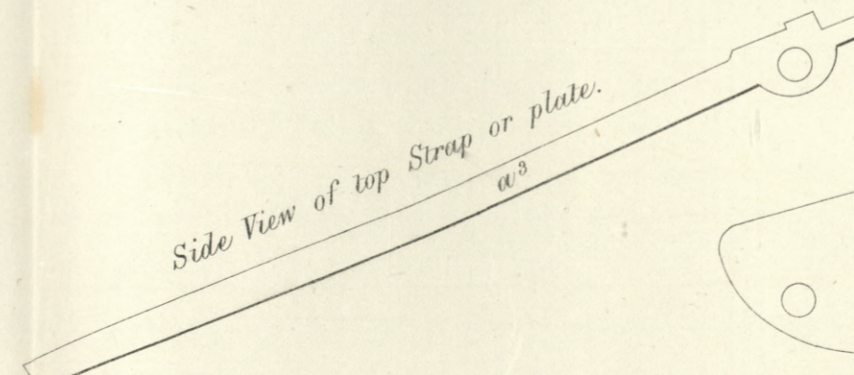
FIG. 5.



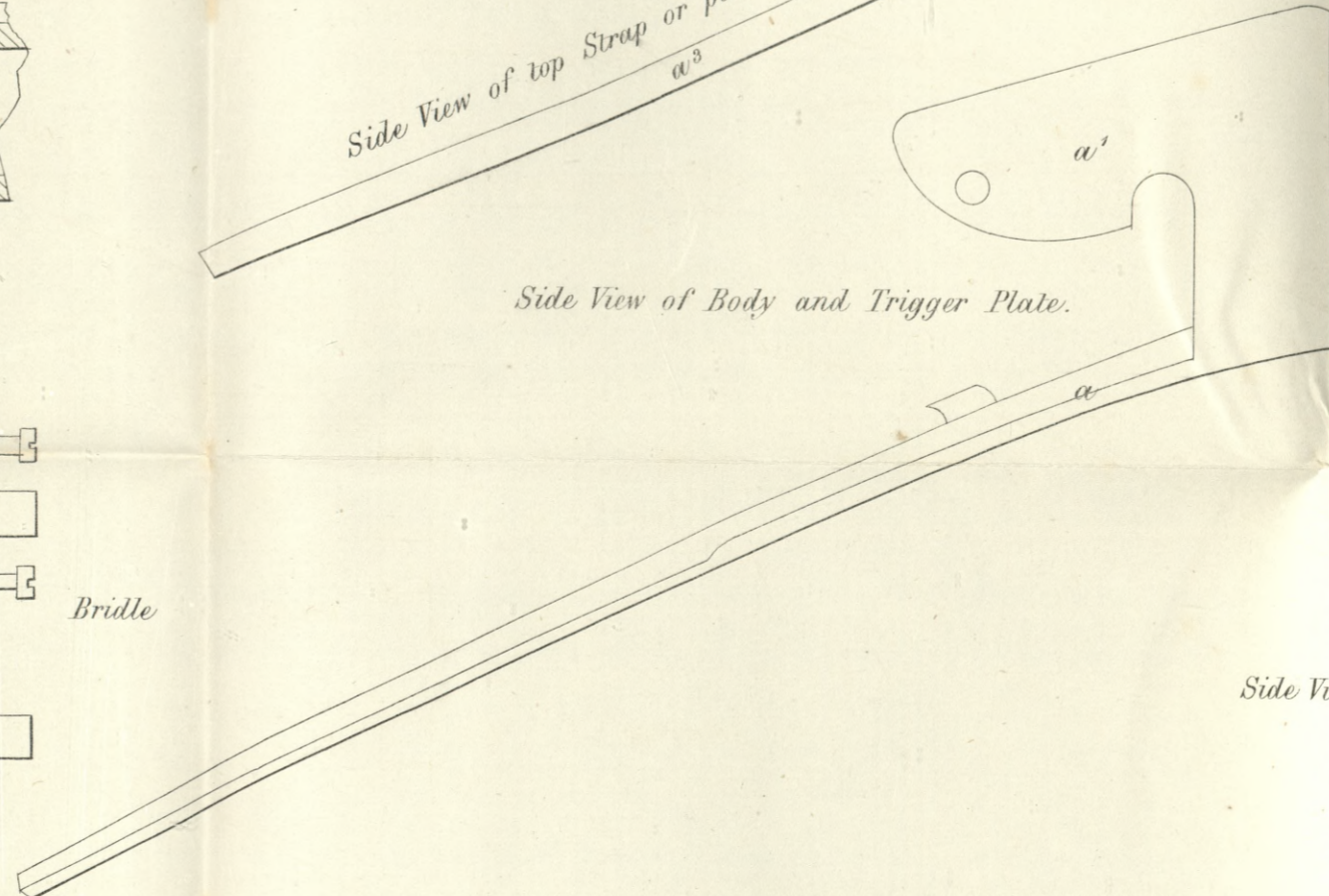
Plan of part of Top Strap or plate.



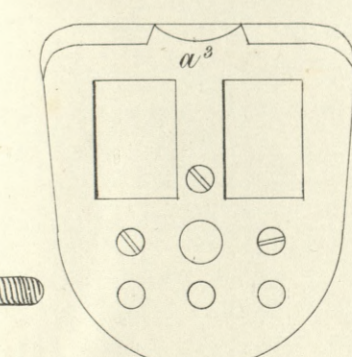
Side View of top Strap or plate.



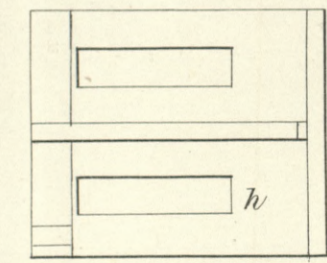
Side View of Body and Trigger Plate.



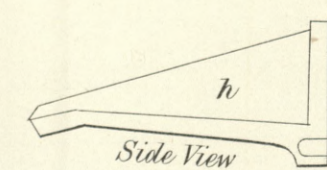
End View of Body showing the openings for the Breeches.



Plan.

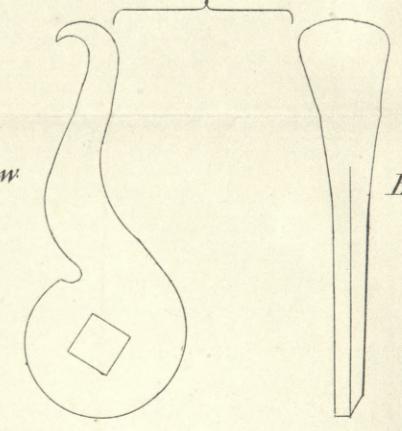


Partition h to prevent smoke passing into the works of the Lock.

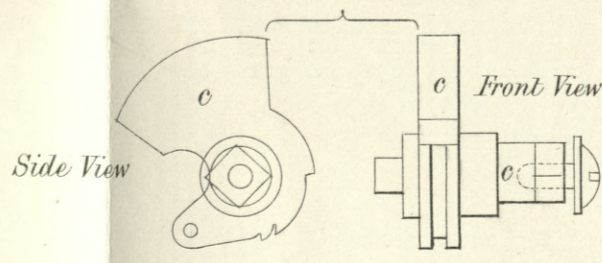


End View.

Cocking Lever.



Tumbler hammer

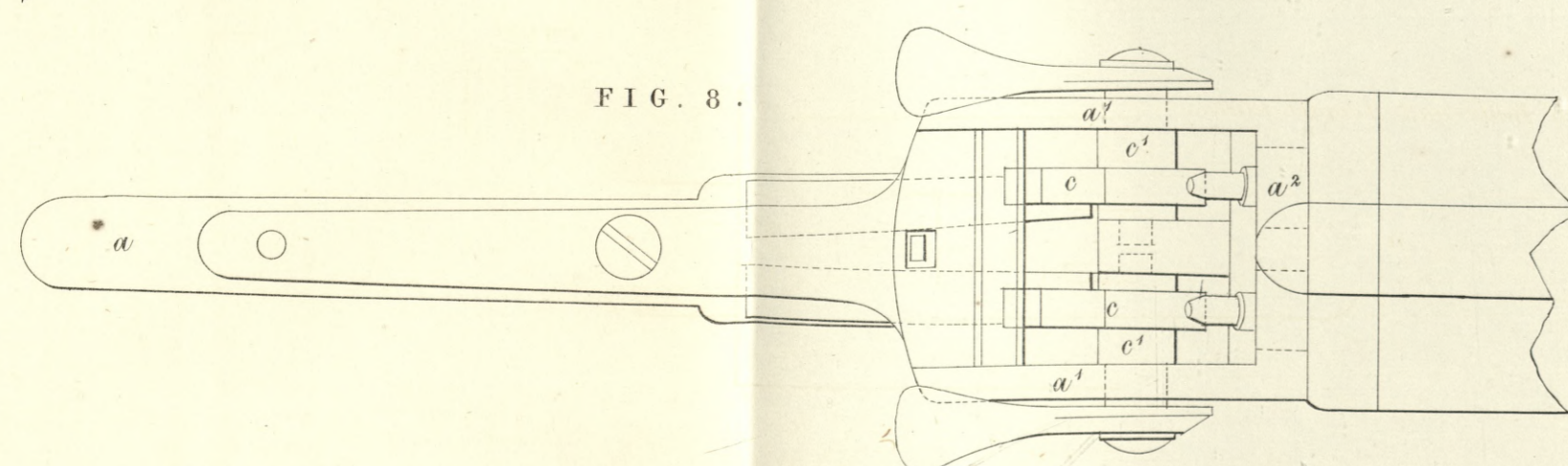


Side View

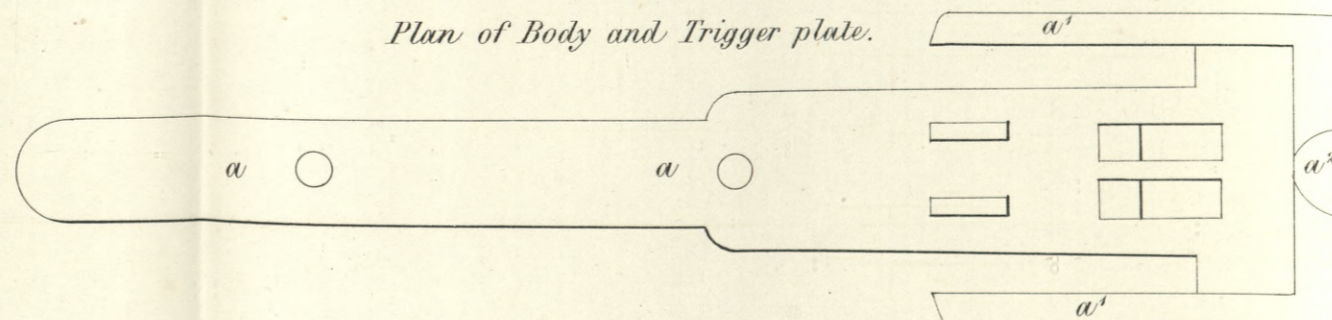
Front View

Edge View

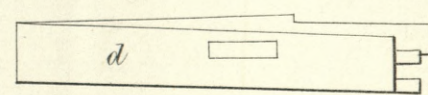
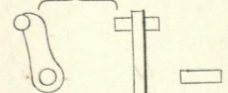
FIG. 8.



Plan of Body and Trigger plate.

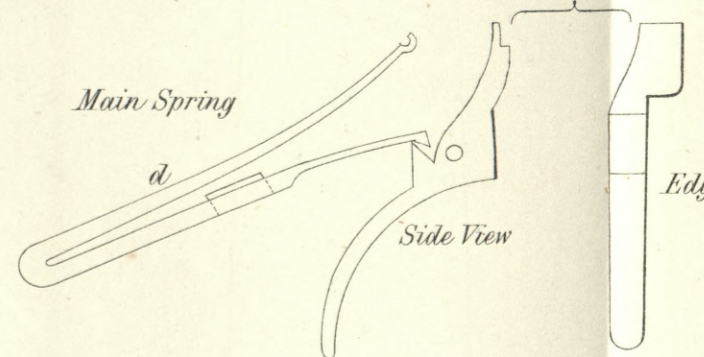


Swivel



Right hand Trigger.

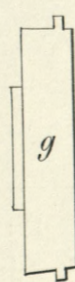
Main Spring



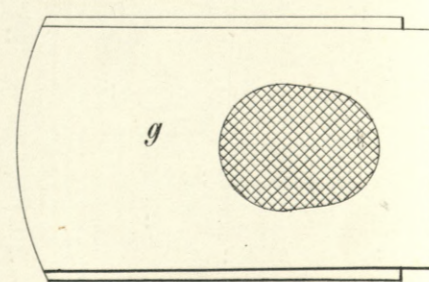
Side View

Edge View

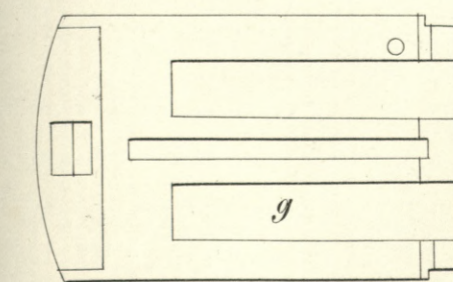
Front View.



Top View of Sliding Cover g.



Underside View of Sliding Cover g.



Back View.

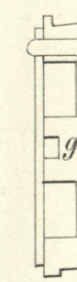
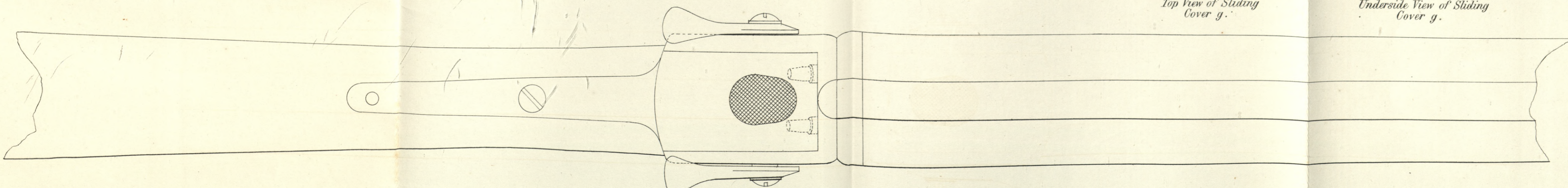


FIG. 6.



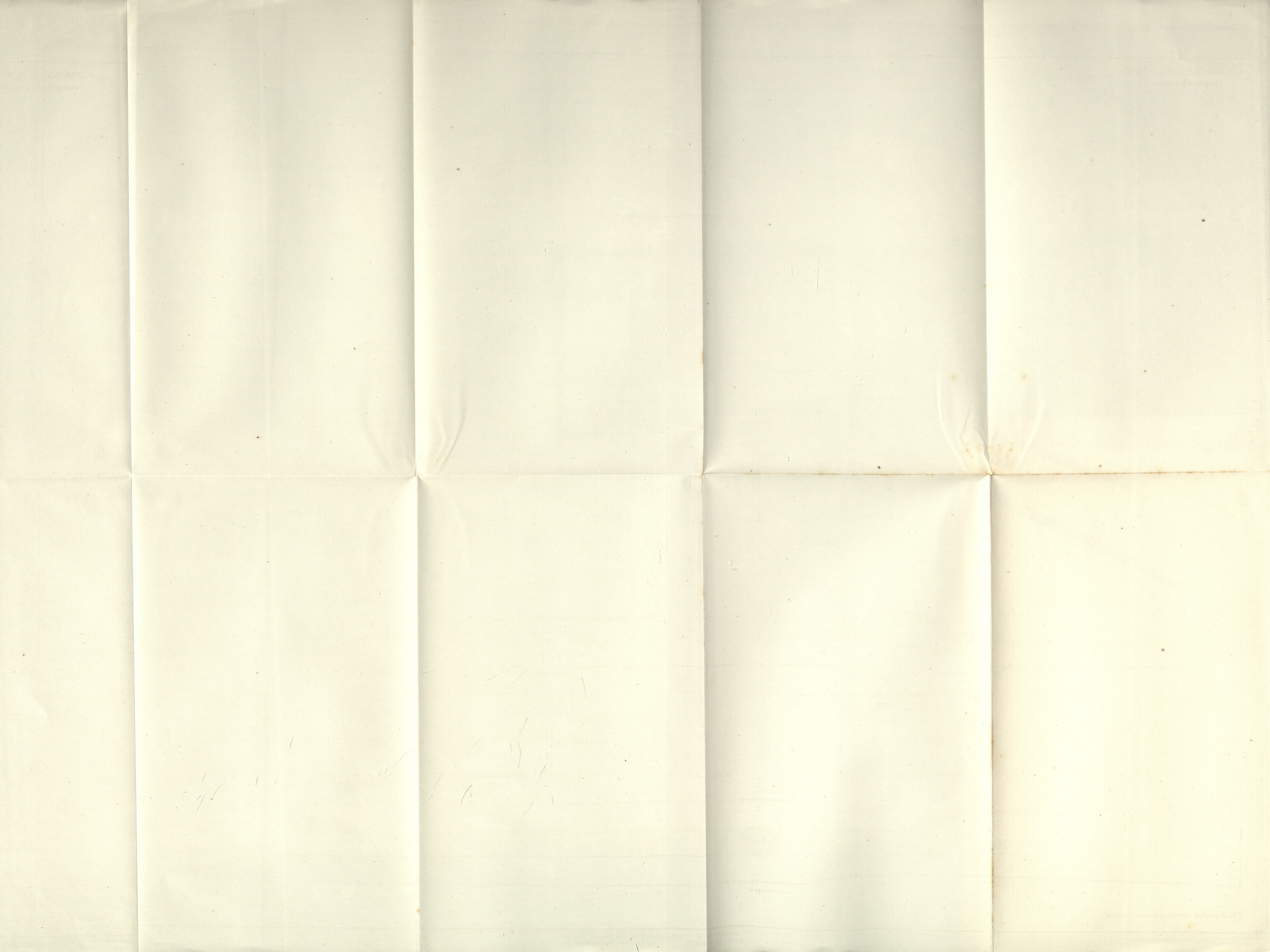




FIG. 9.

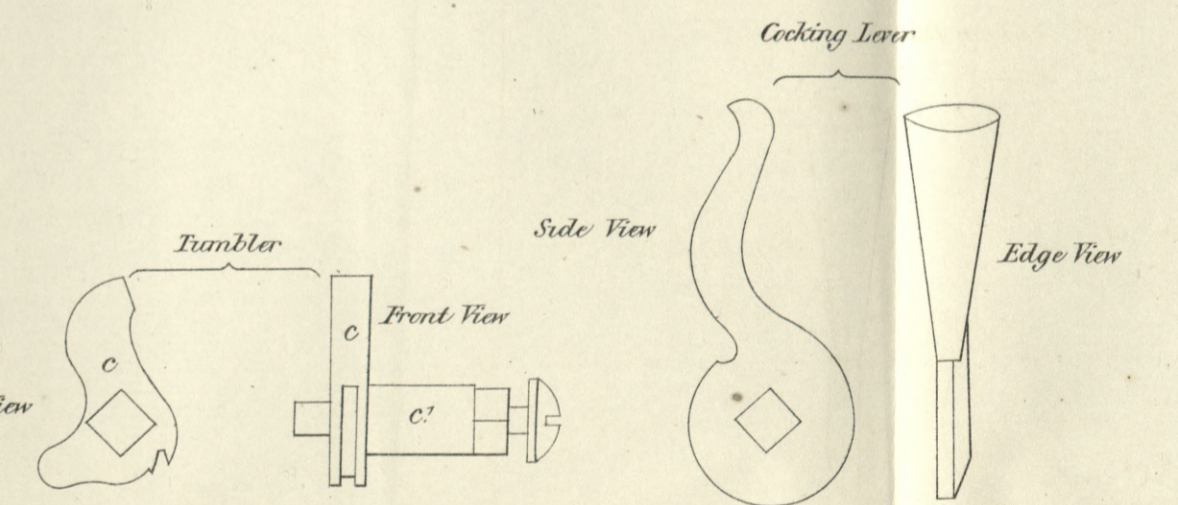
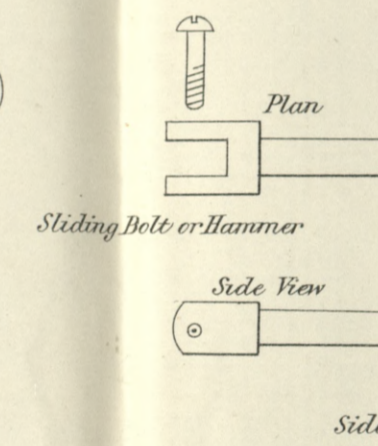
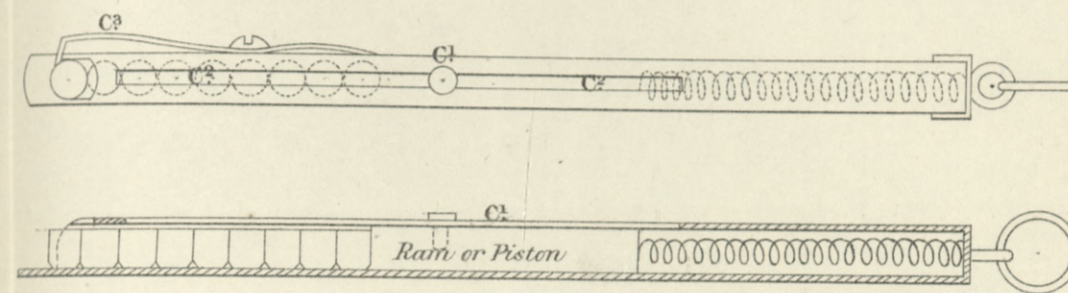
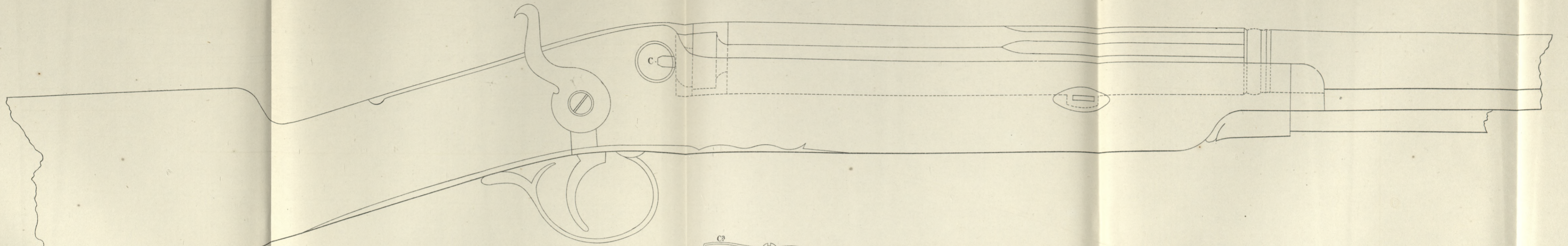


FIG. 11.

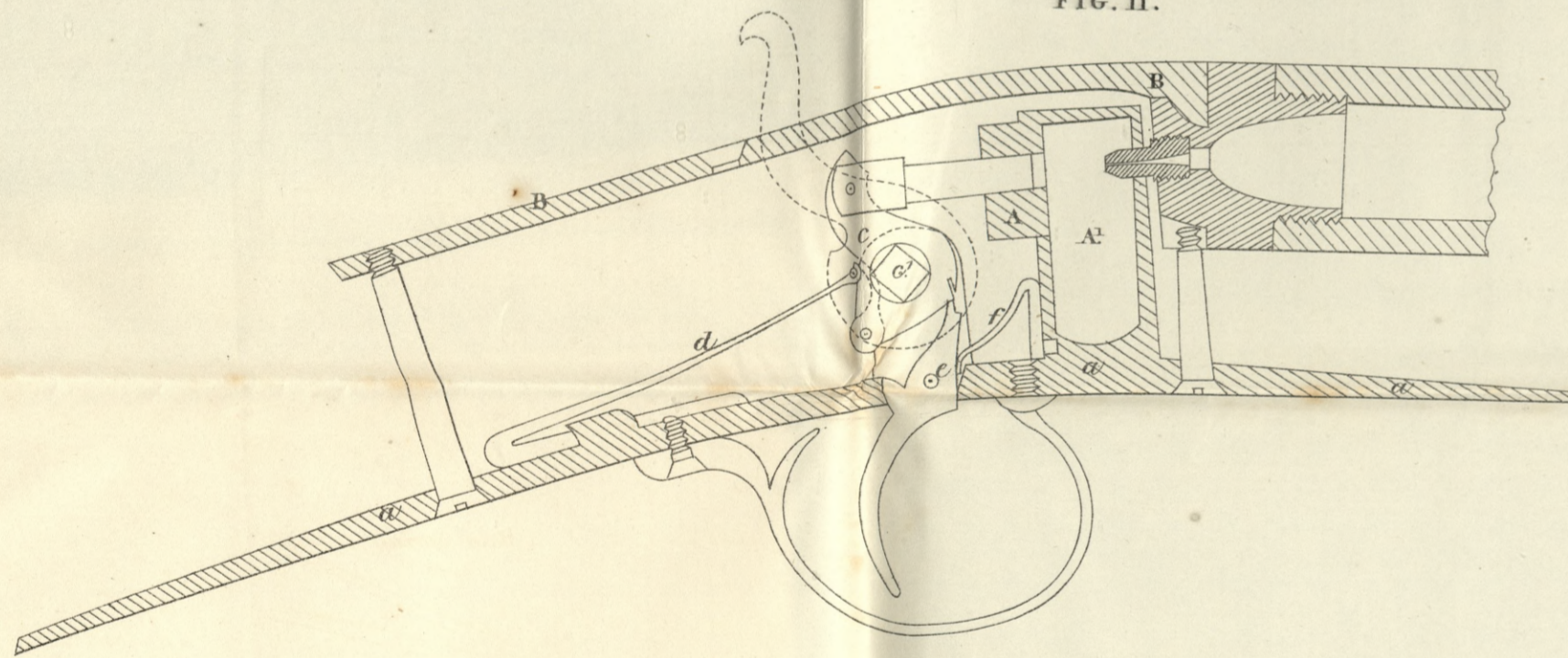


FIG. 12.

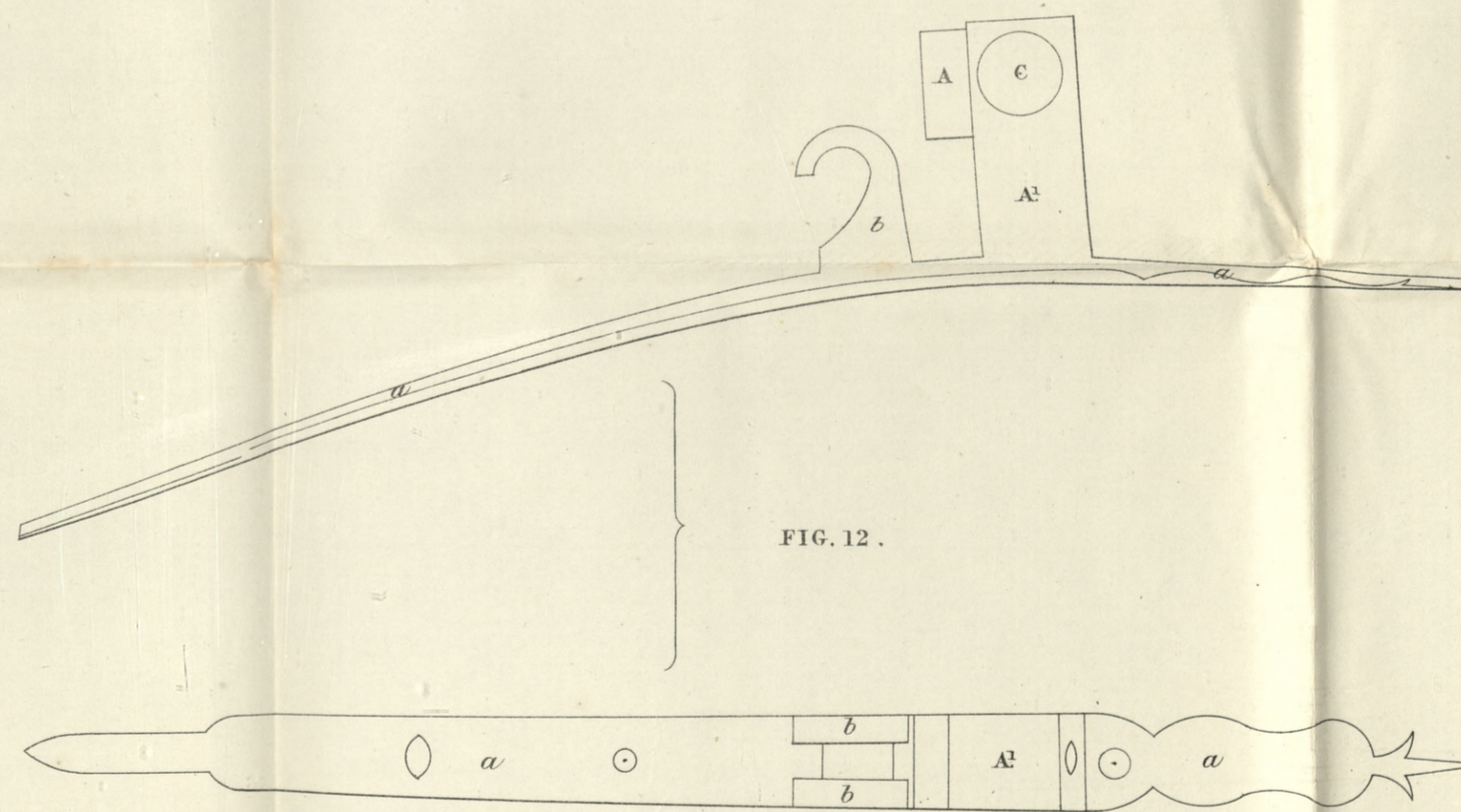


FIG. 13.

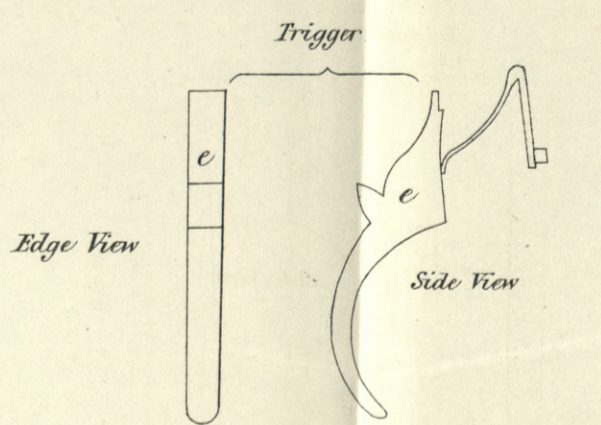
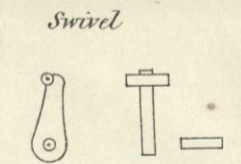
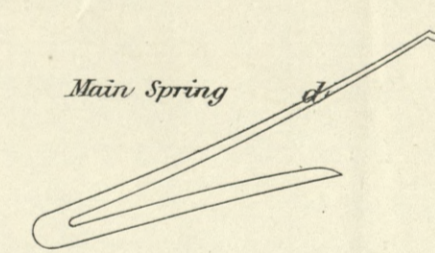
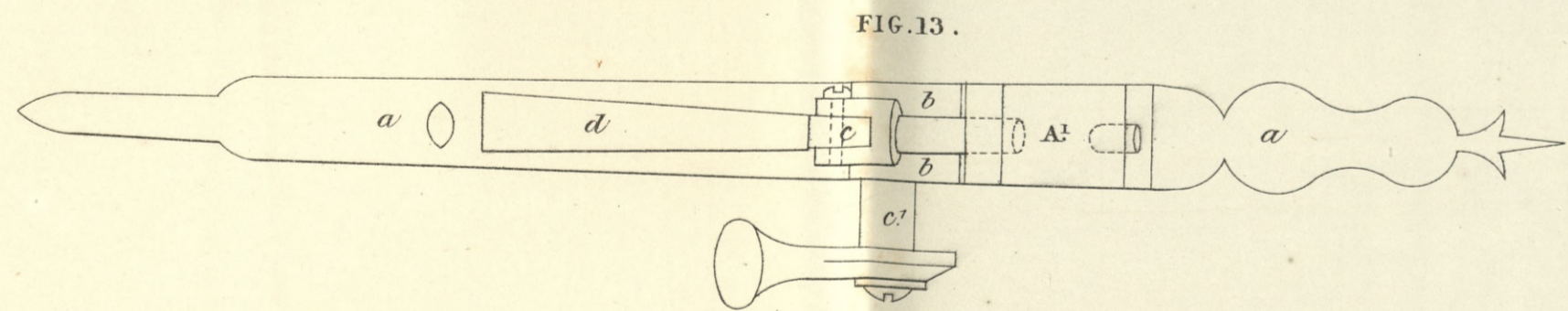
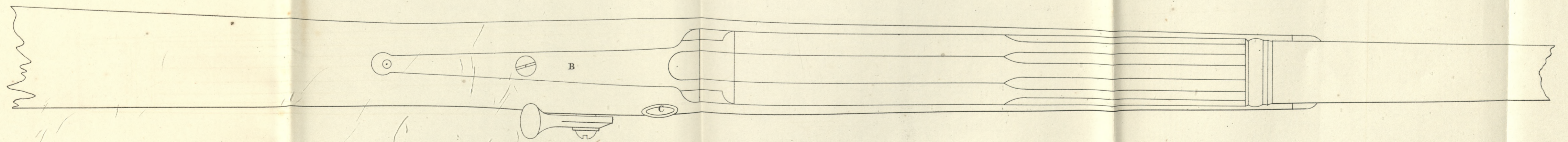
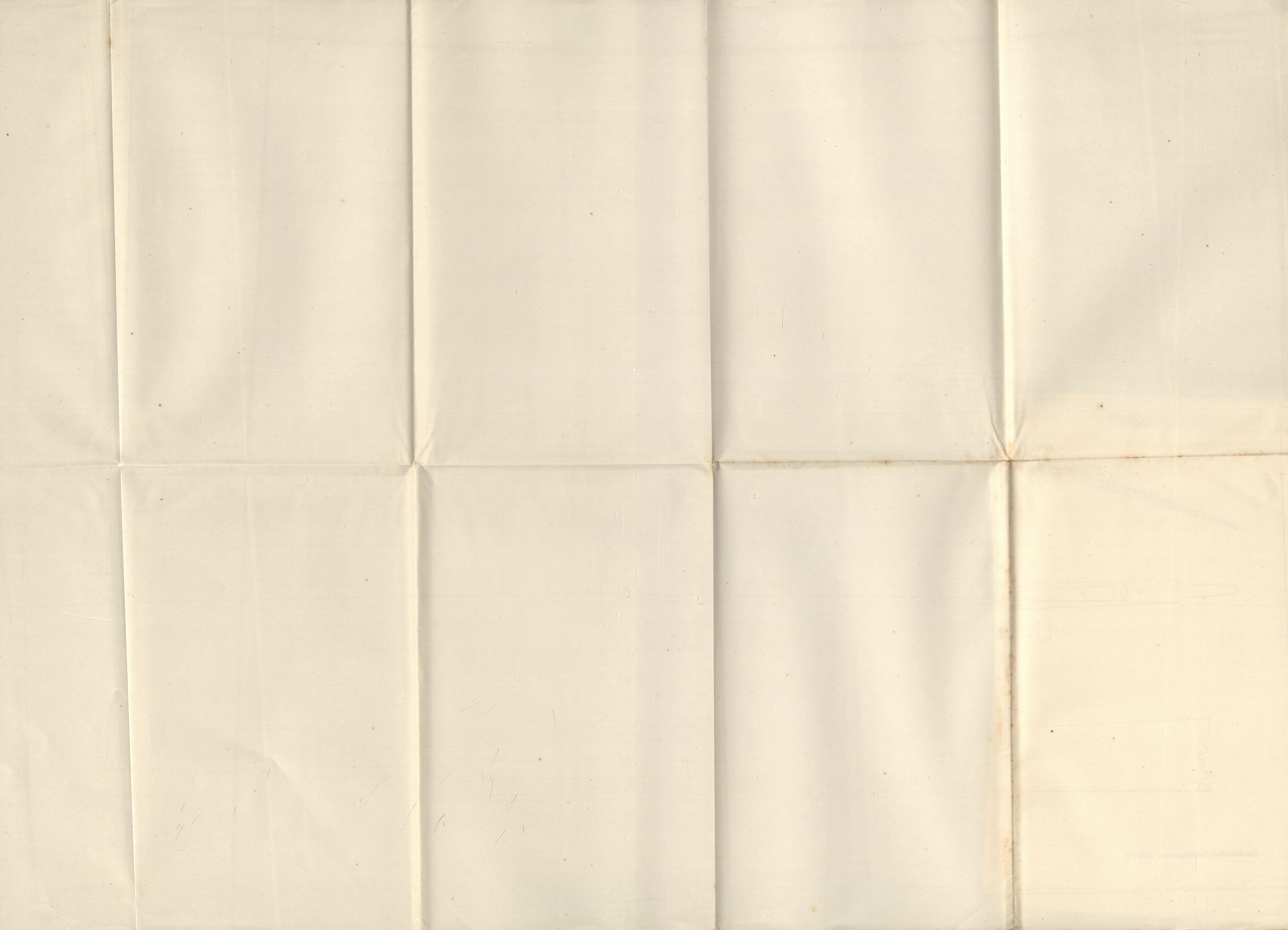


FIG. 11.



The Enrolled Drawing is not colored.



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FIG. 15.

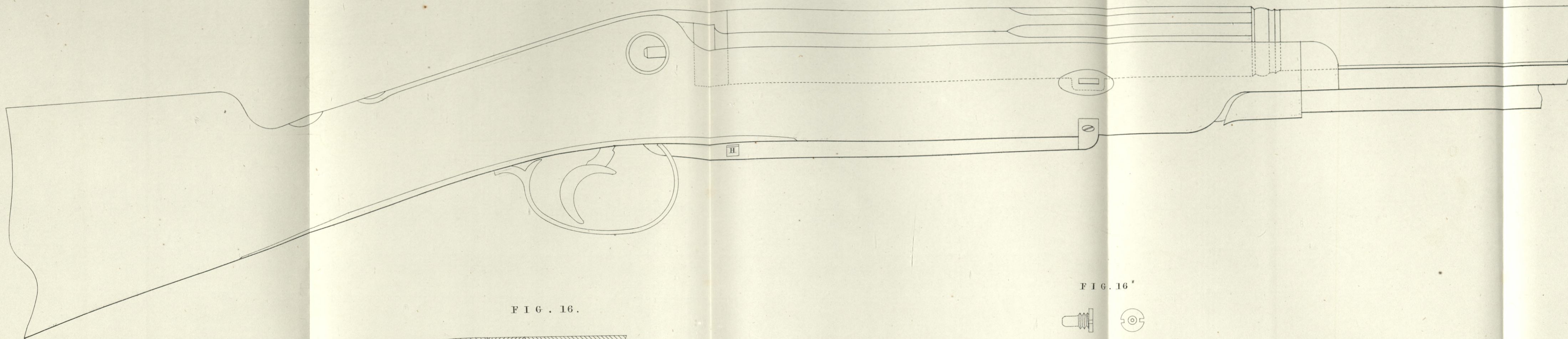


FIG. 16.

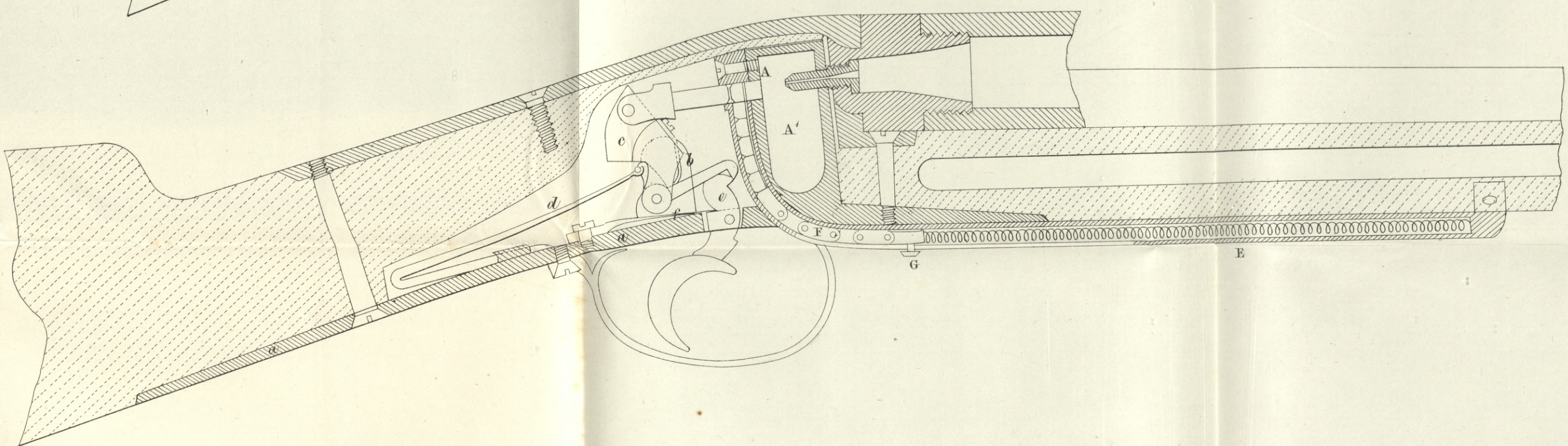
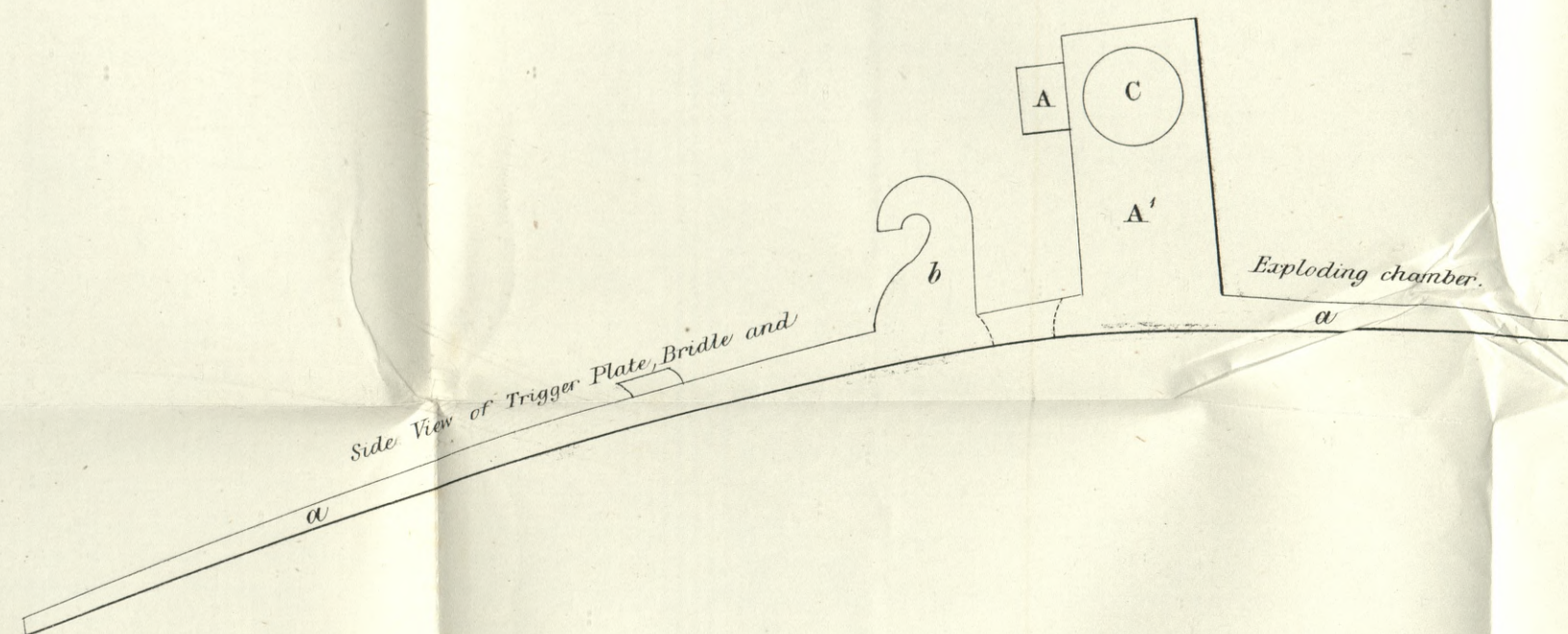
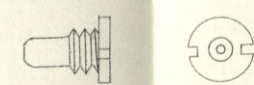


FIG. 16'



Plan of Trigger Plate, Bridle and Exploding Chamber.

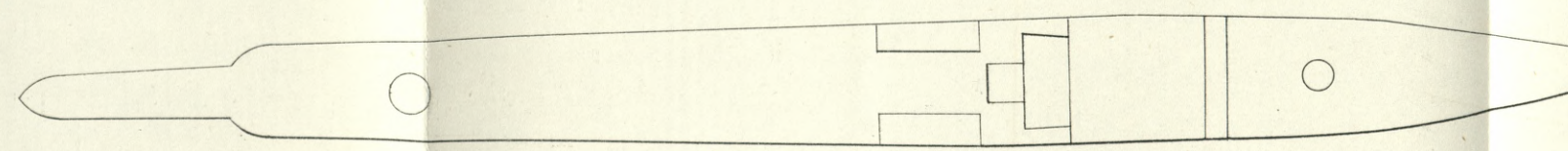
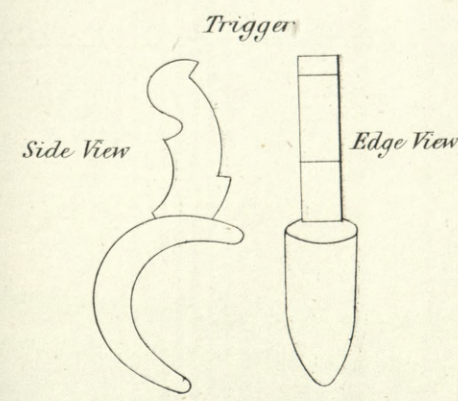
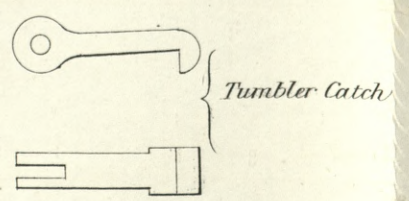
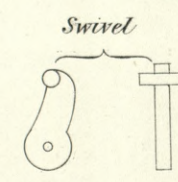
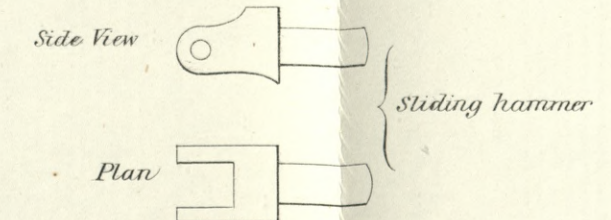
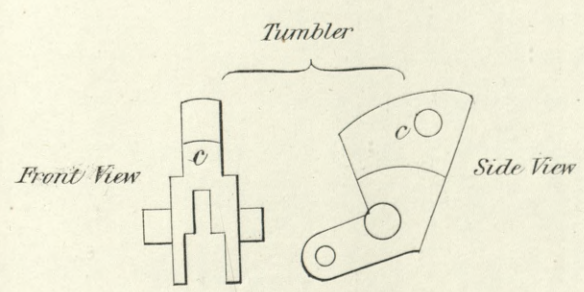
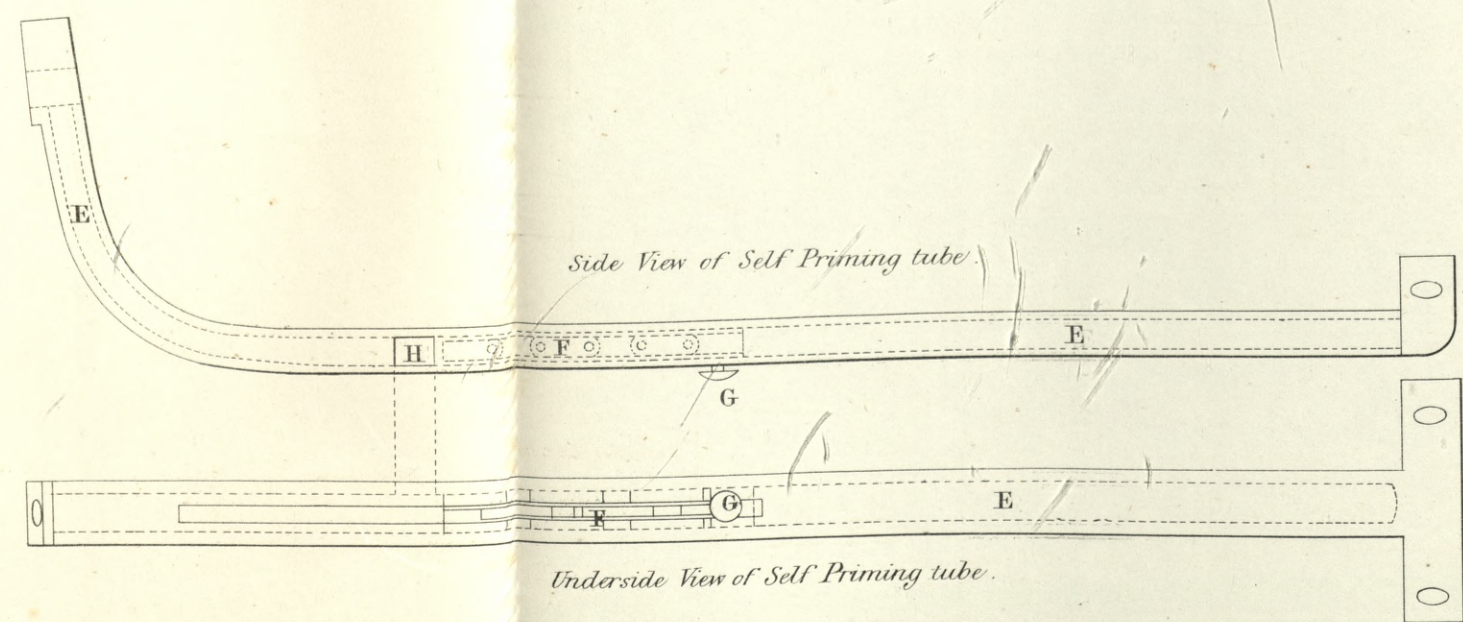
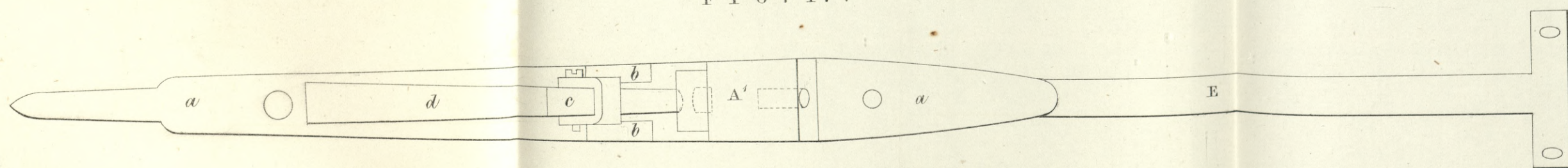
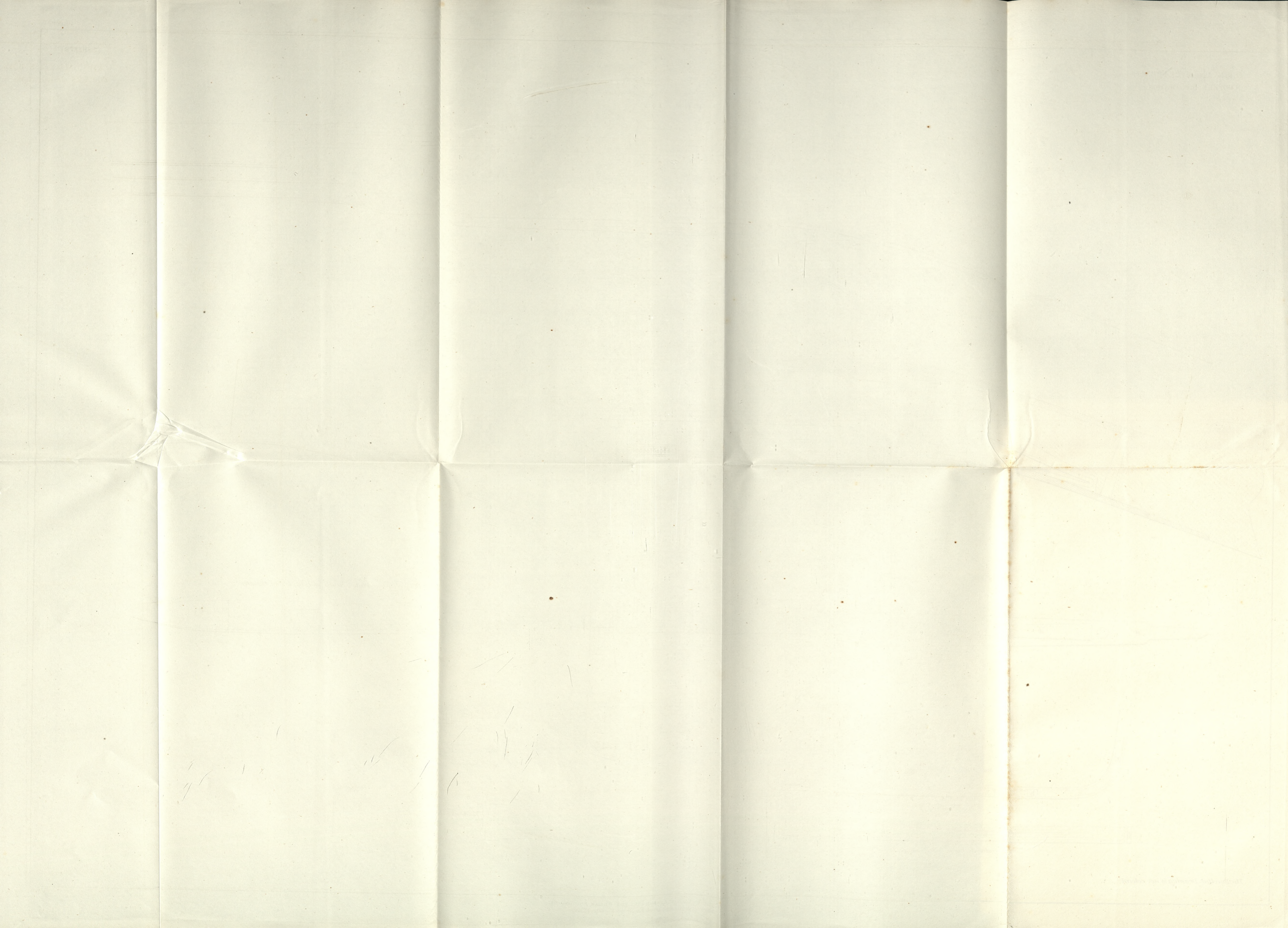


FIG. 17.



The Enrolled Drawing is not colored.



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FIG. 18.

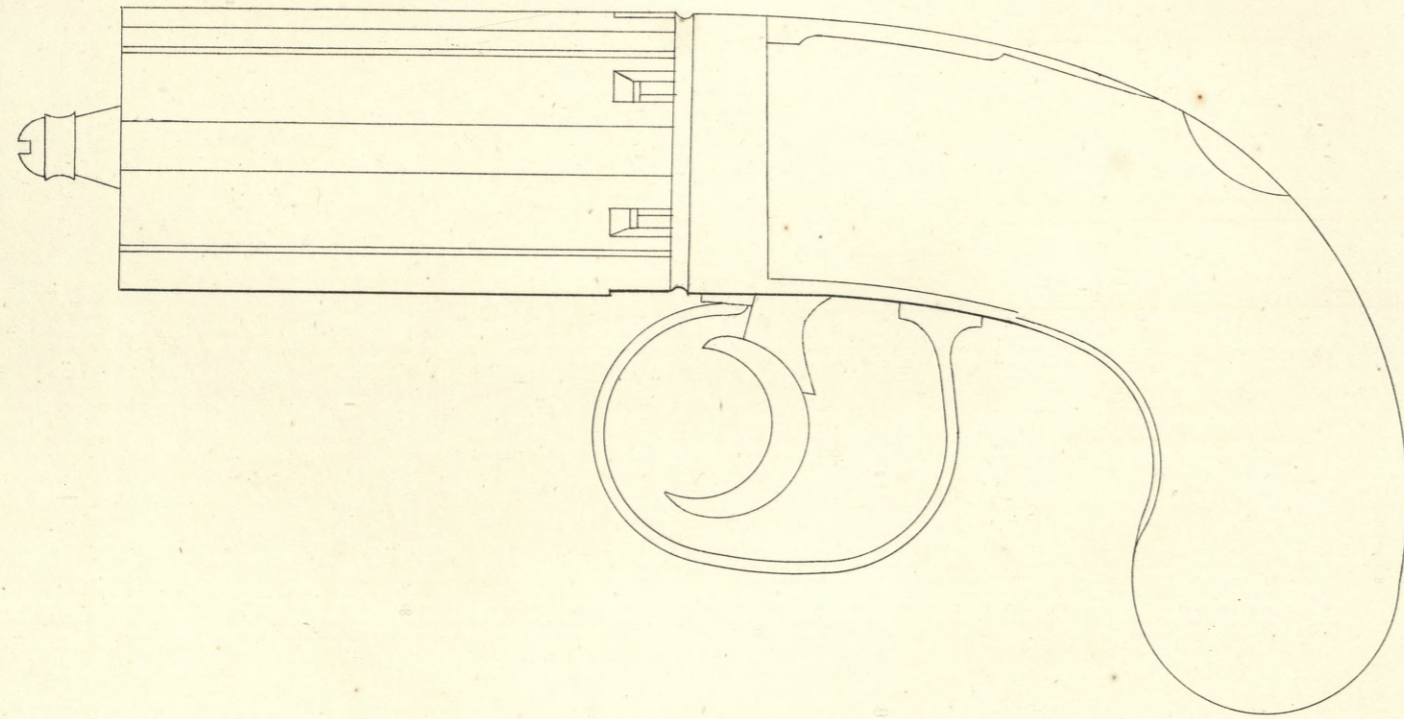


FIG. 19.

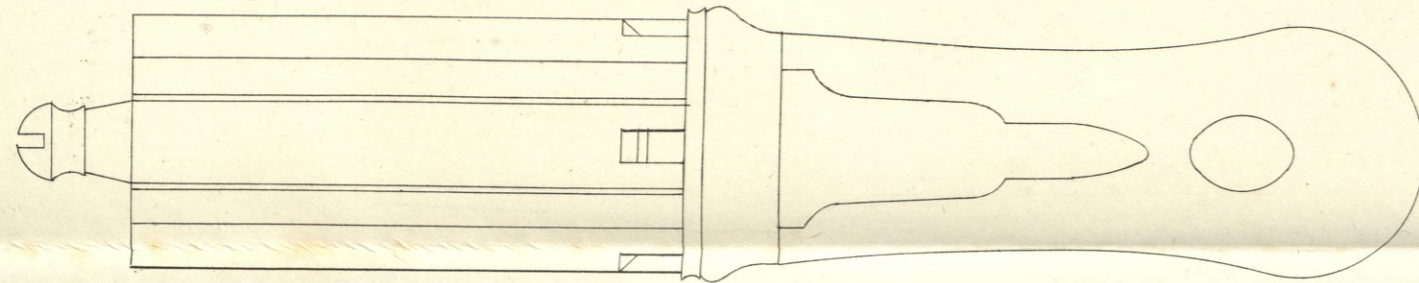
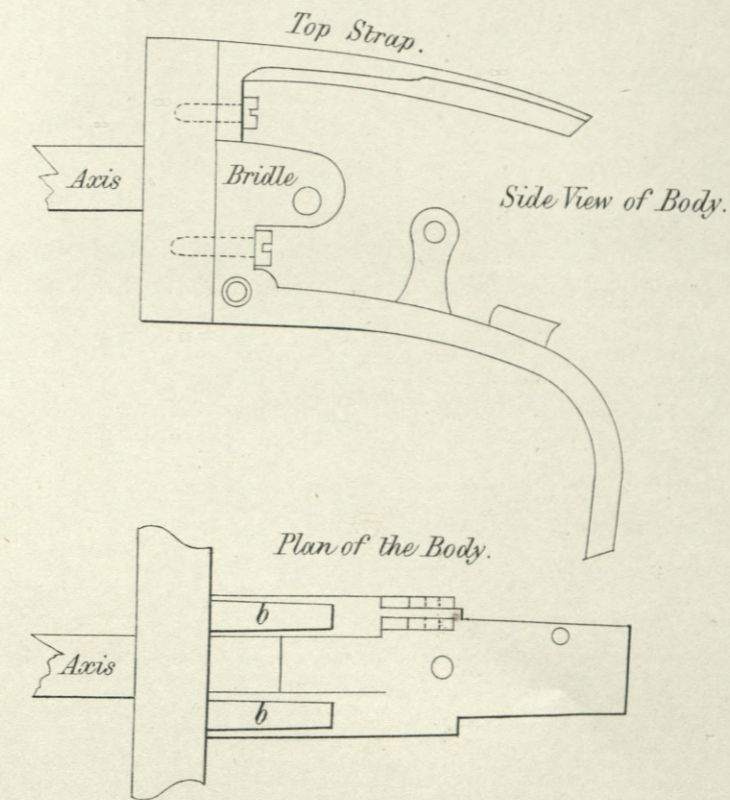
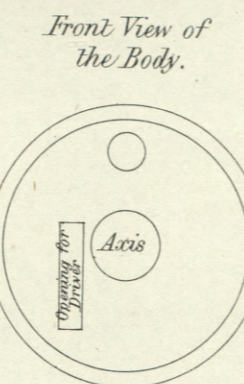
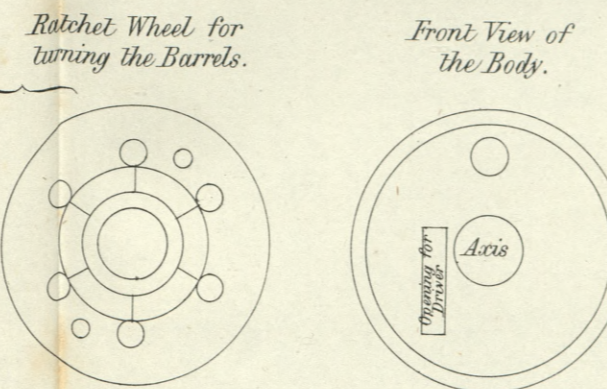
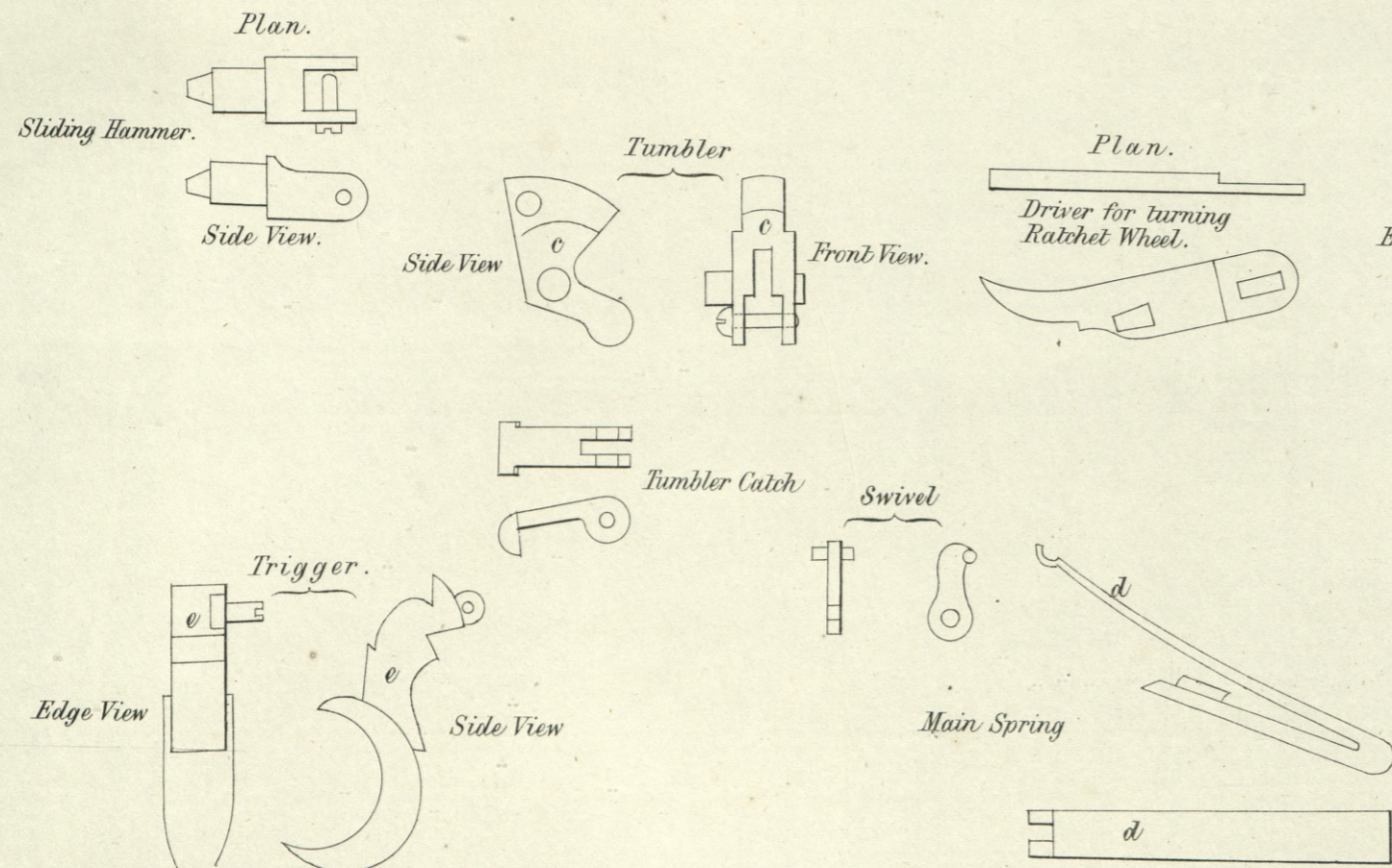
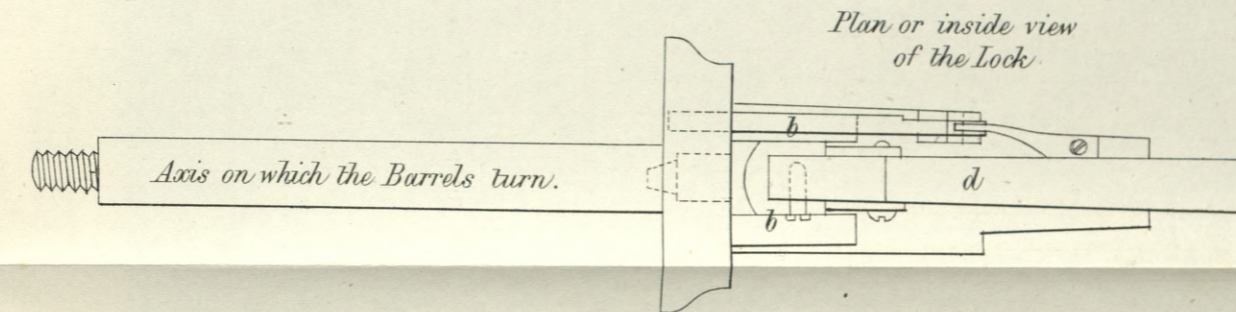
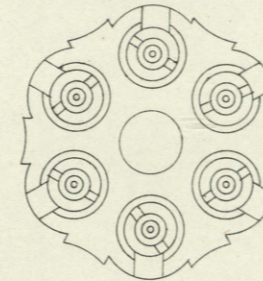
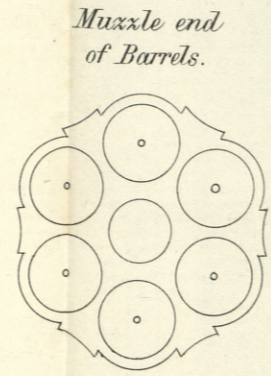
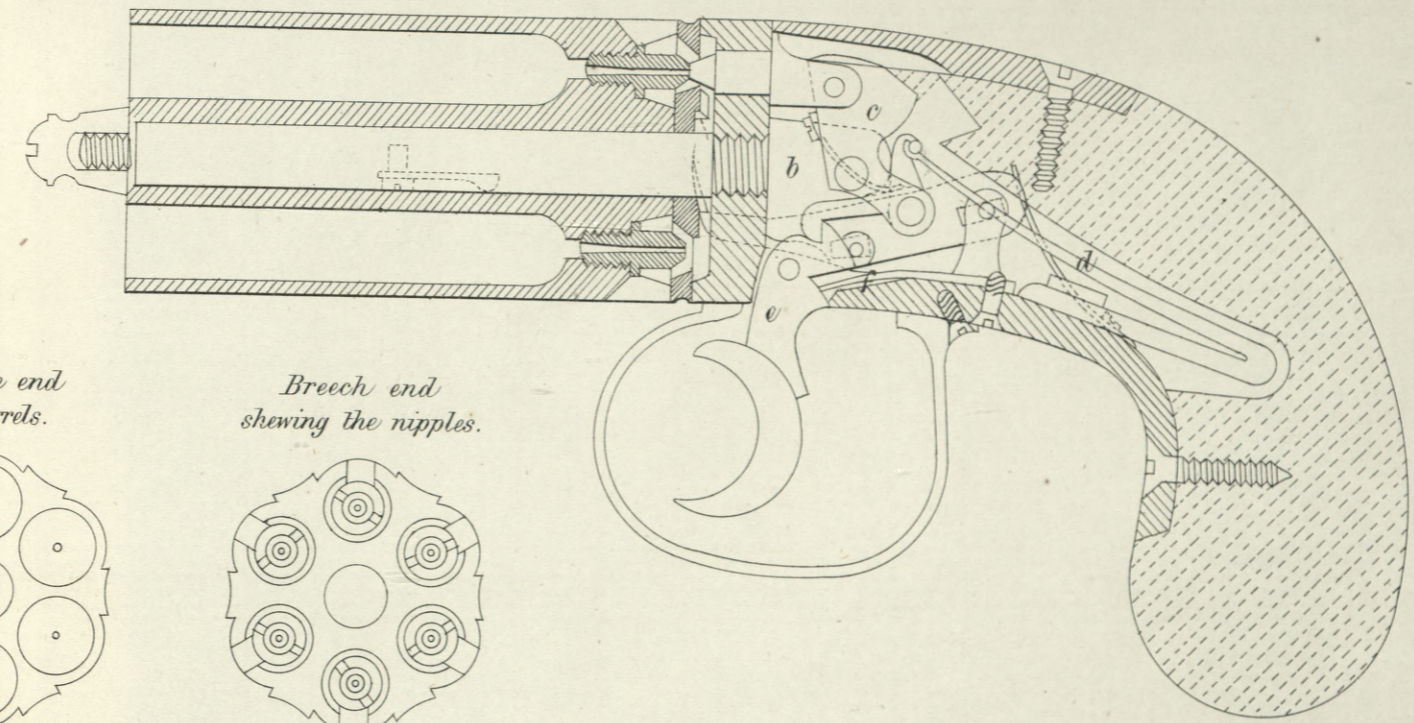


FIG. 20.

(7 SHEETS)



The Enrolled Drawing is not colored.



FIG. 18



FIG. 21.

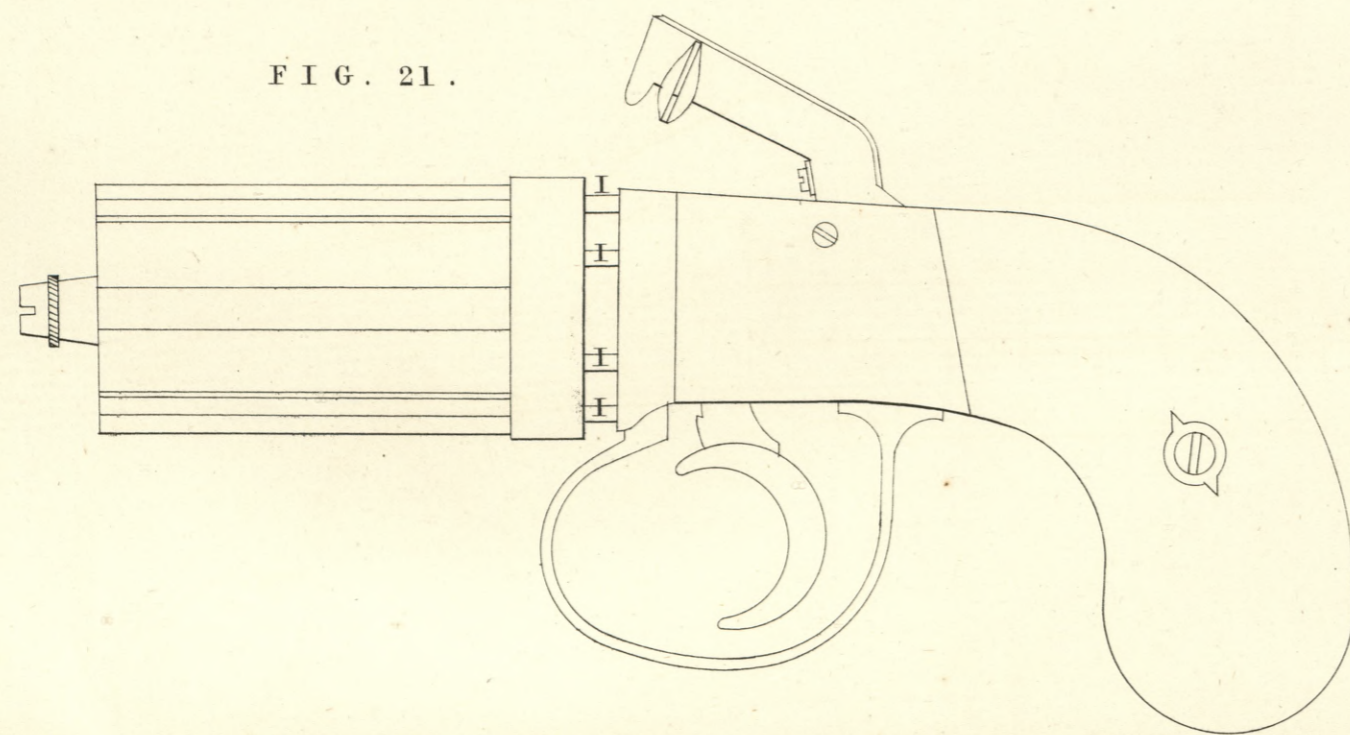


FIG. 23.

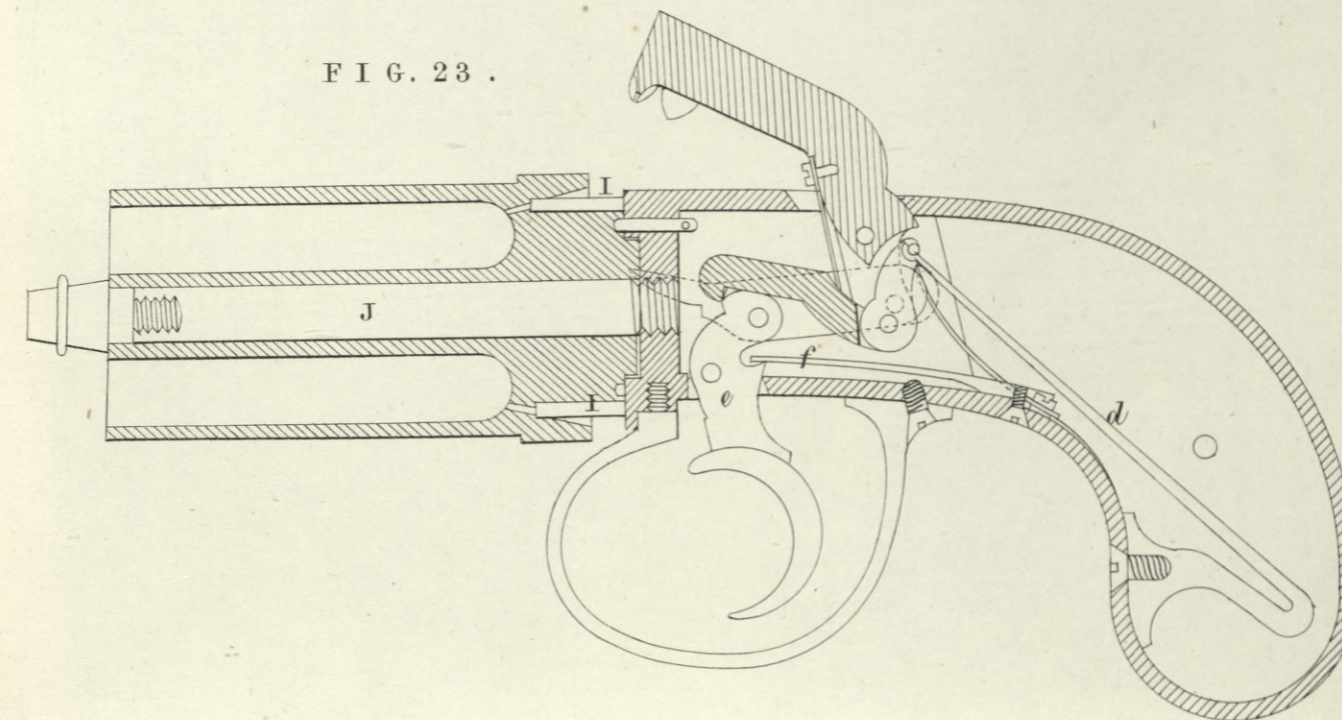
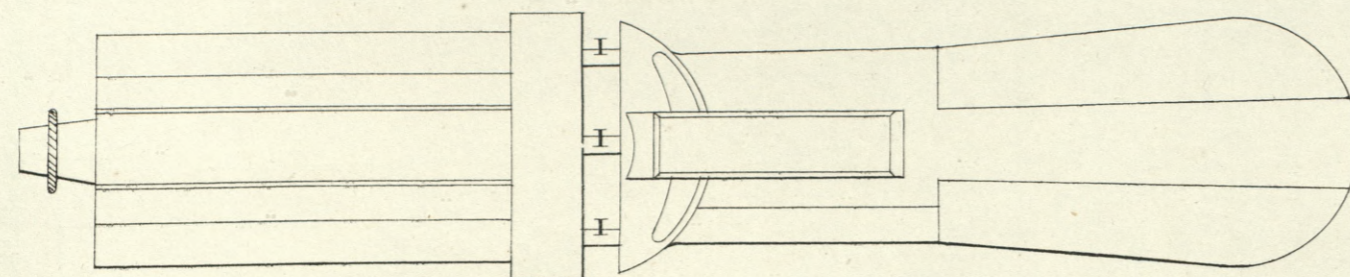
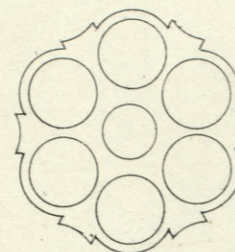


FIG. 22.

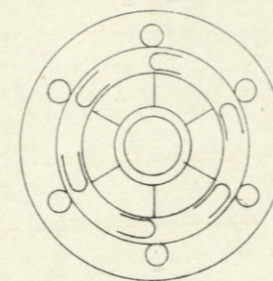


Discharging  
I  
Tube

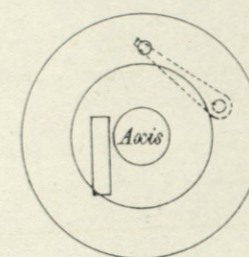
Muzzle end  
of Barrels.



Breech end  
the Ratchet wheel in  
this case being formed  
in the end of the Barrels.



Front View  
of the Body.



The Enrolled Drawing is not colored.

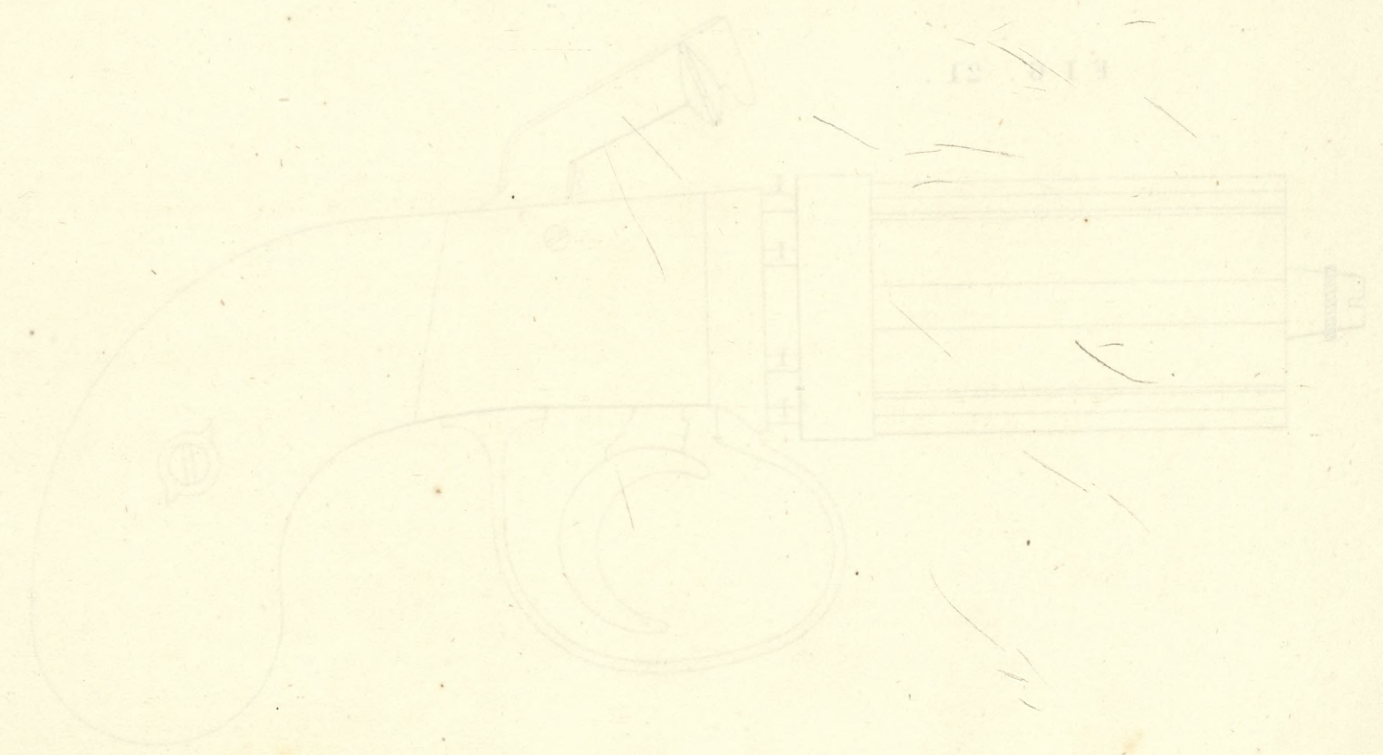




FIG. 24.

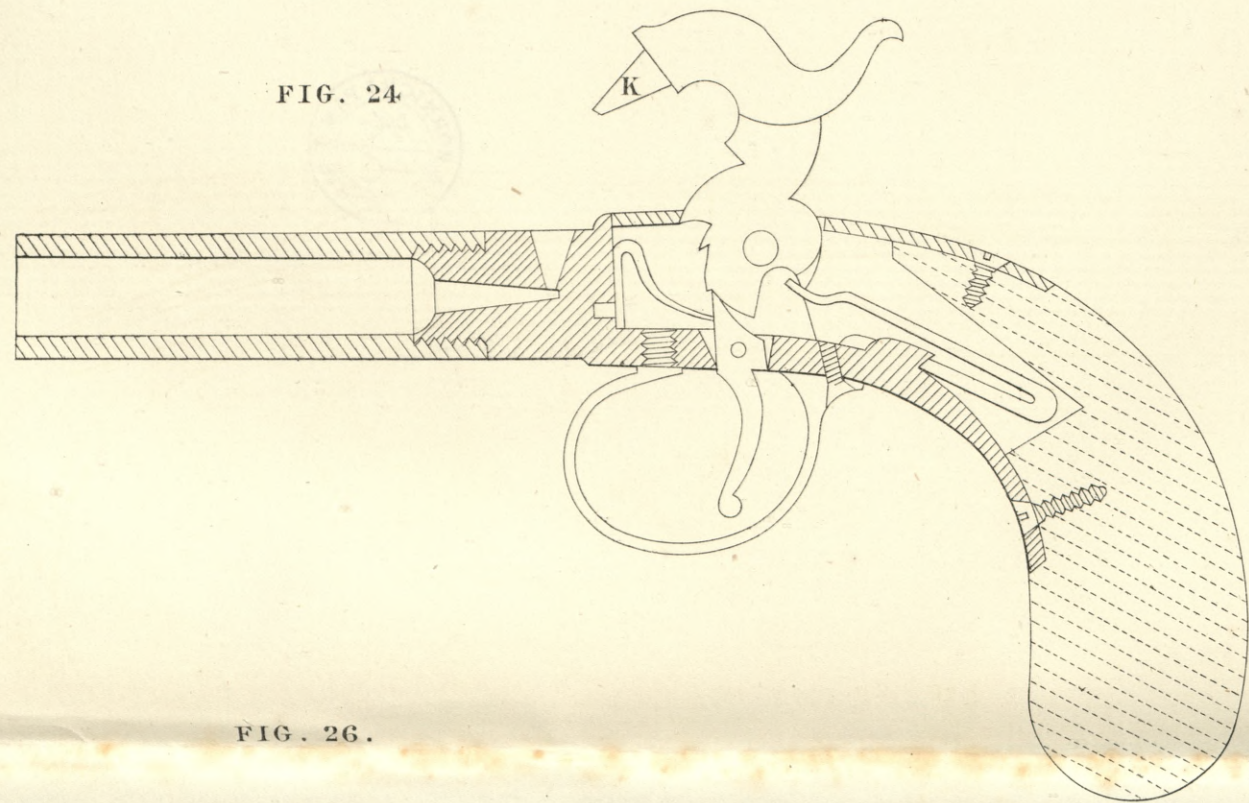


FIG. 26.

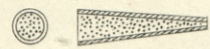


FIG. 25.

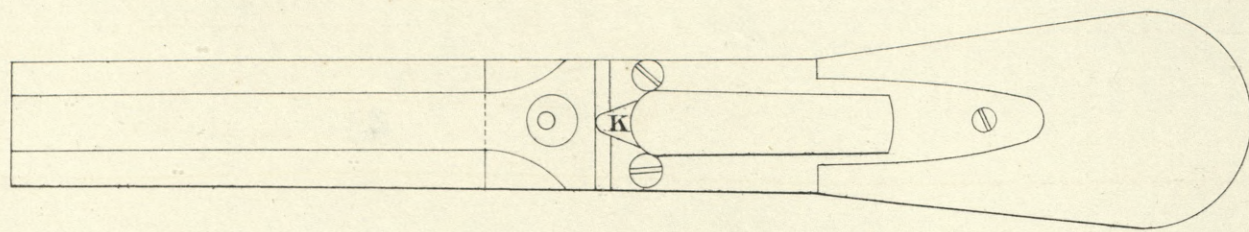


FIG. 27.

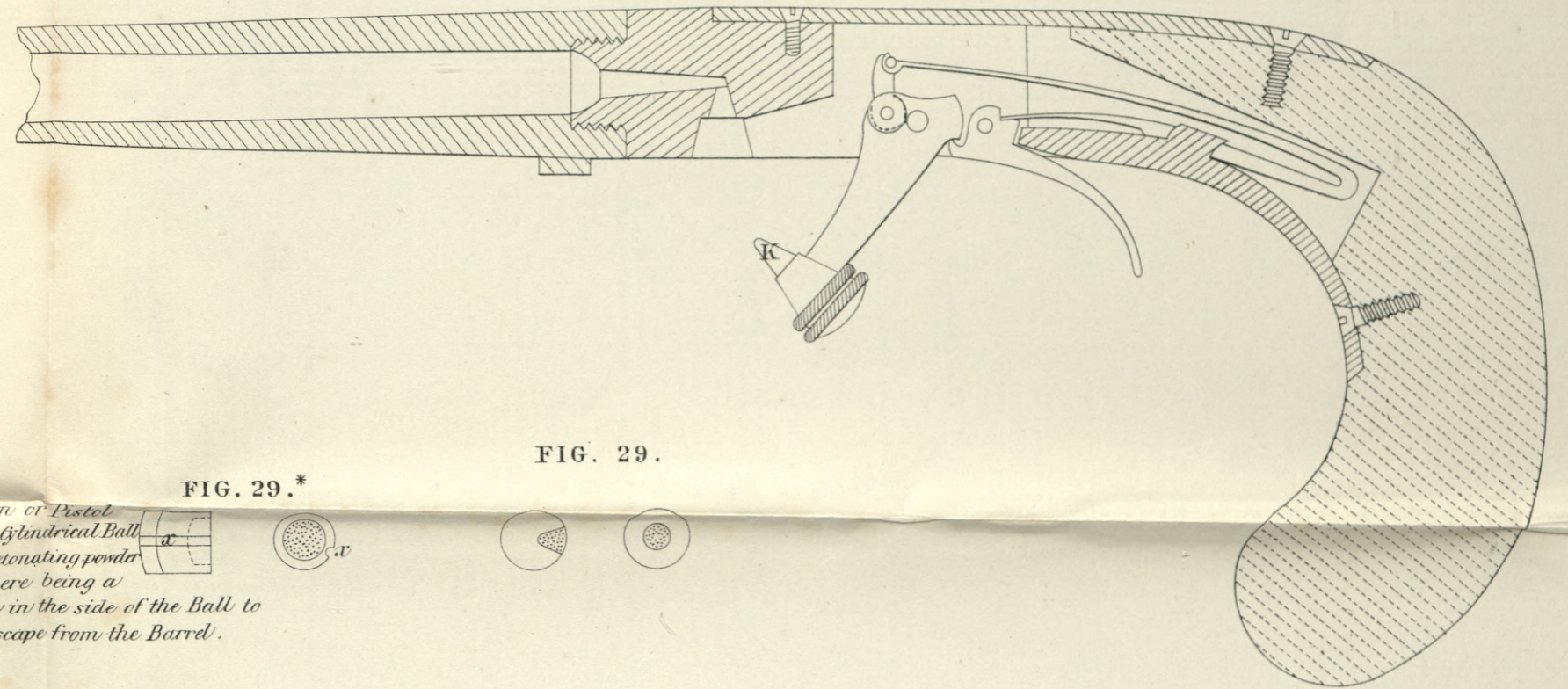


FIG. 29.

FIG. 29.\*

*\*Note. In loading a Gun or Pistol at the muzzle a cylindrical Ball charged with detonating powder may be used there being a groove x formed in the side of the Ball to allow the air to escape from the Barrel.*

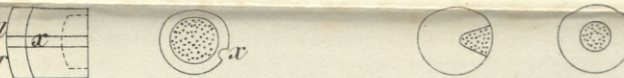
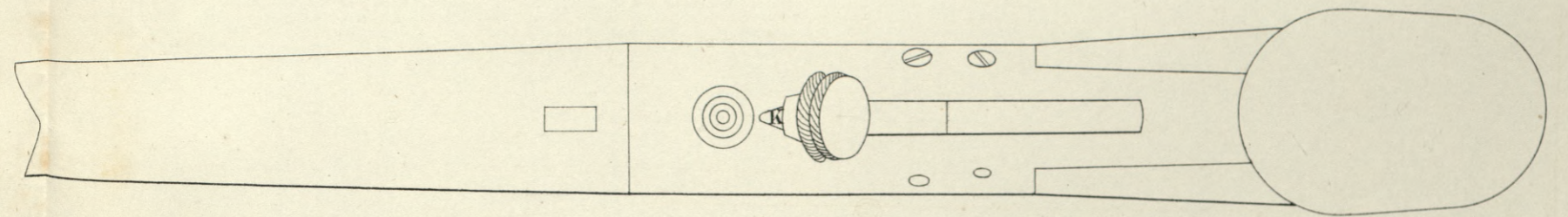


FIG. 28.



*The Enrolled Drawing is not colored.*

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