

No. 702,703.

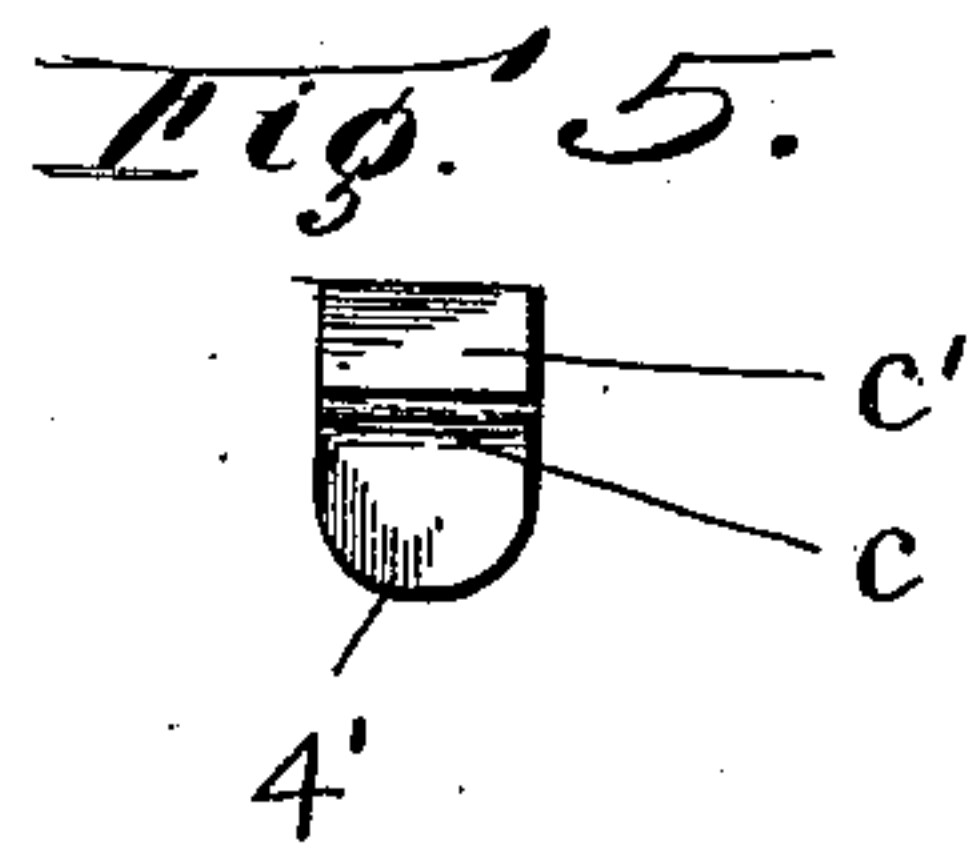
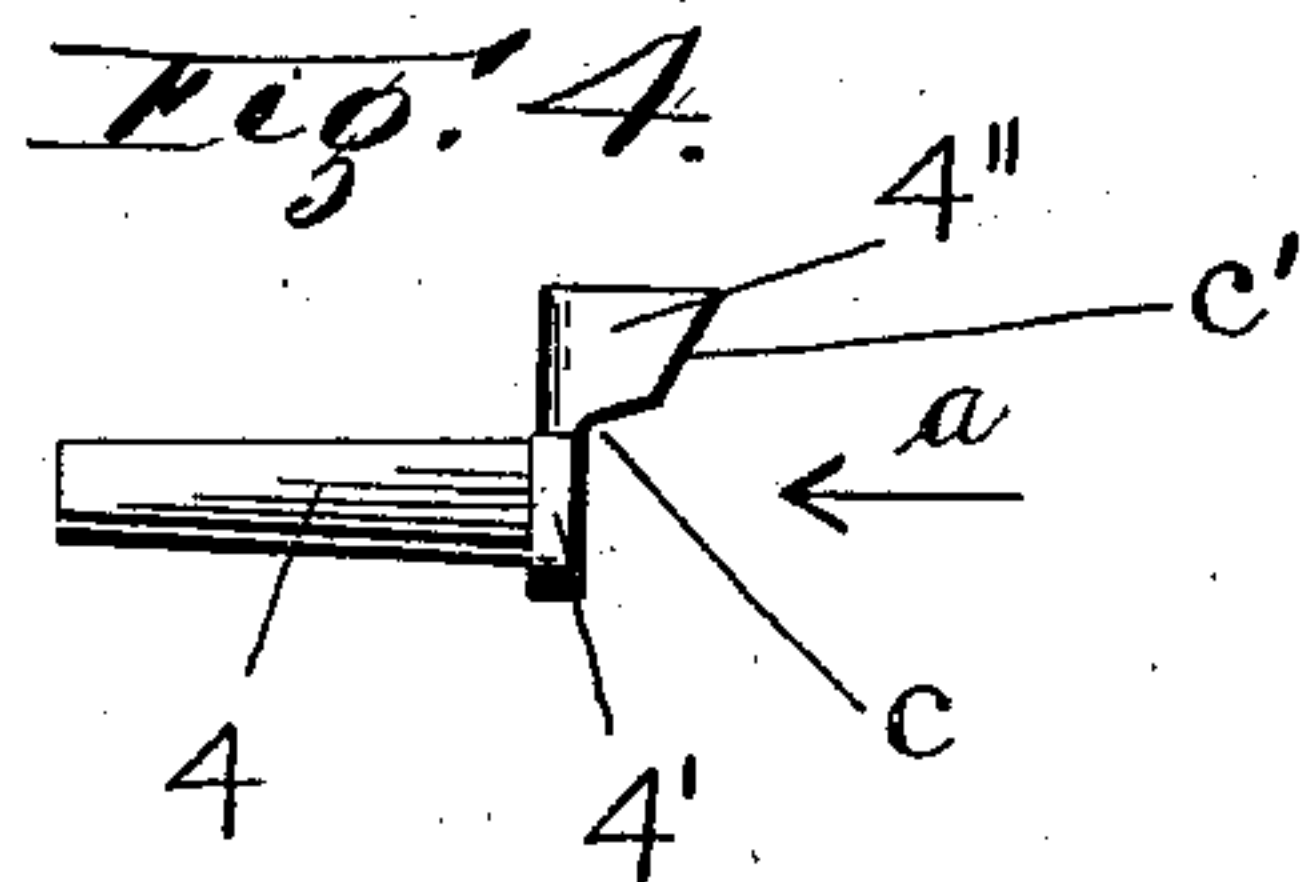
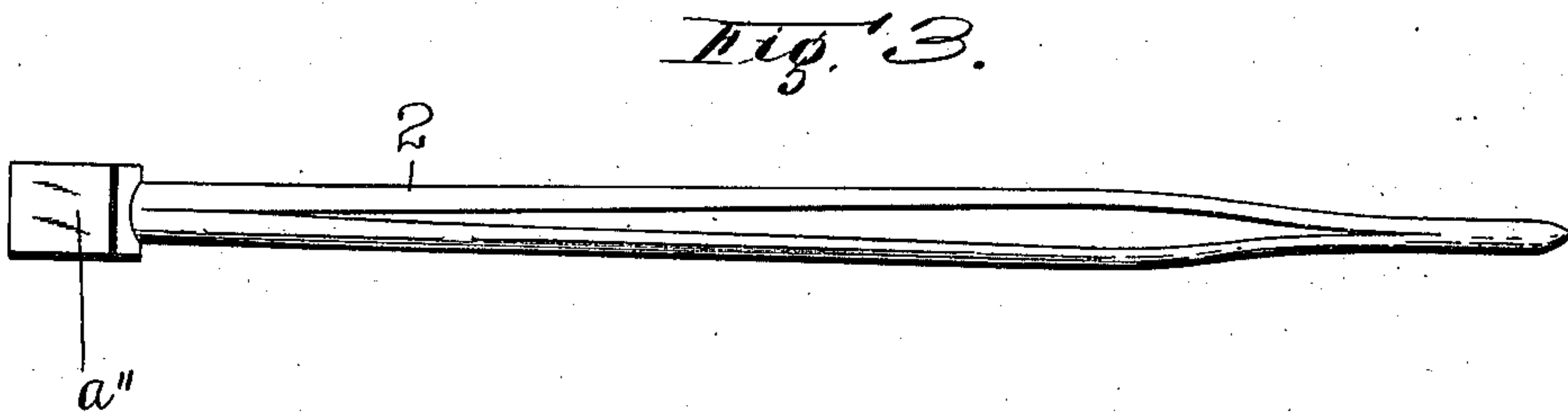
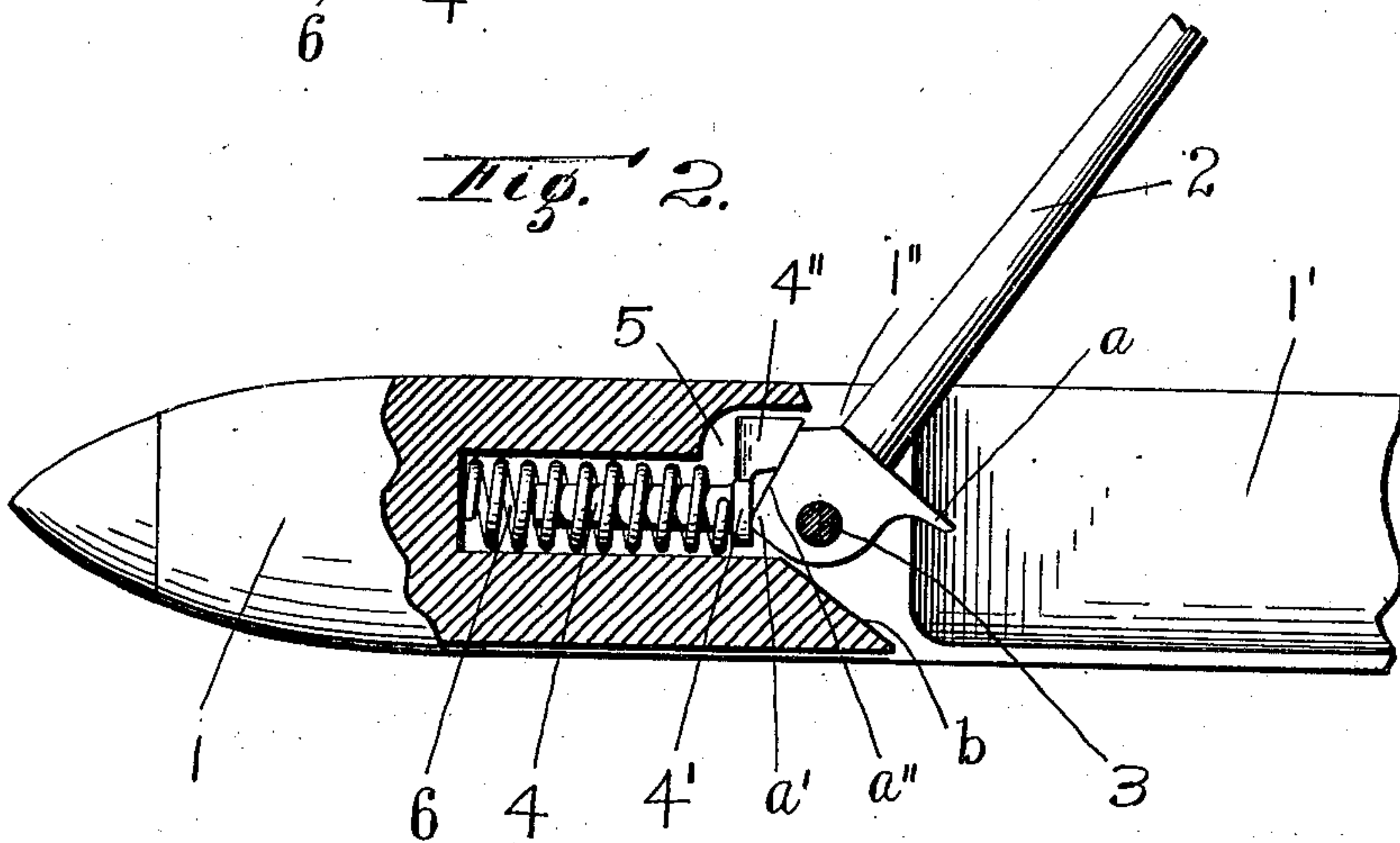
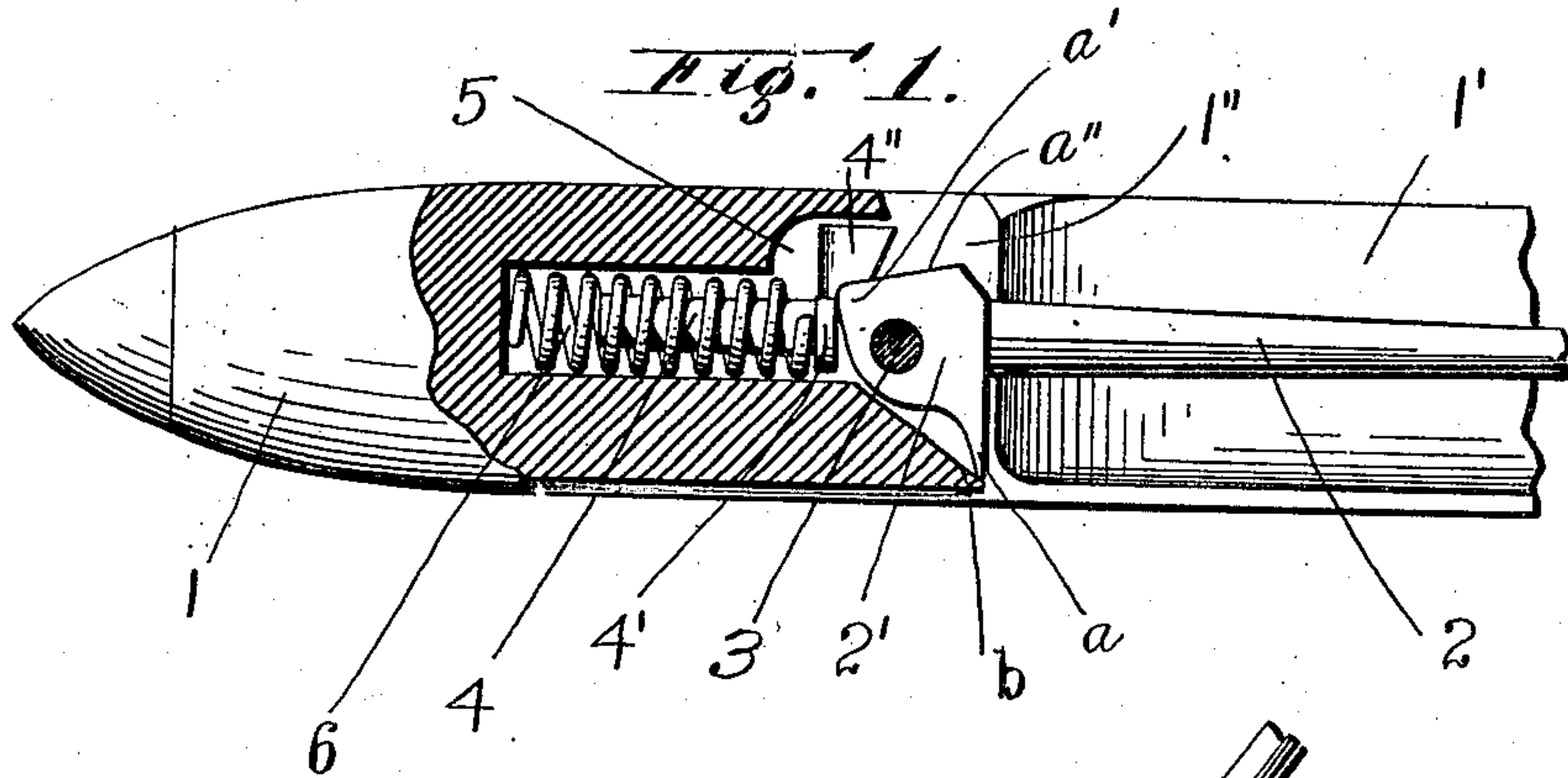
Patented June 17, 1902.

N. CAISSE.  
LOOM SHUTTLE.

(Application filed Dec. 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

E. F. Wisson.  
M. Heas.

Inventor:  
Nelson Caisse.

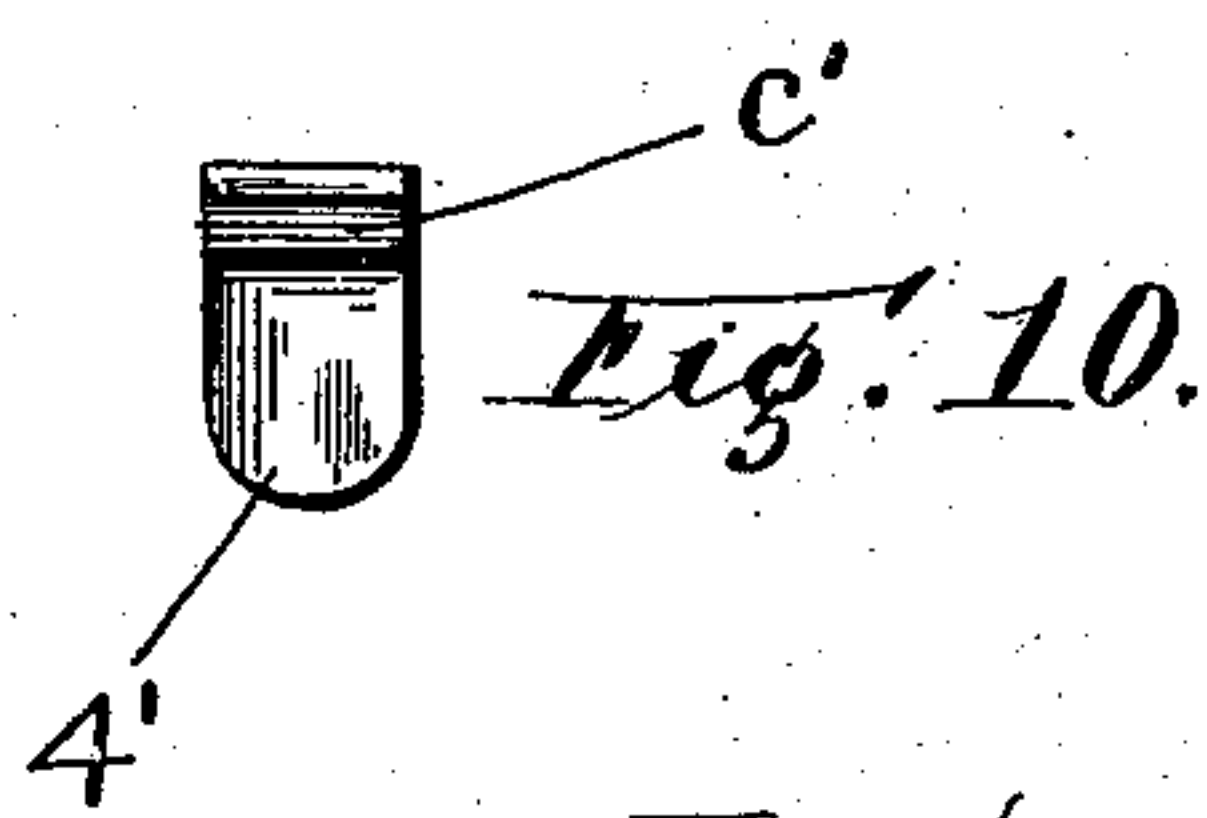
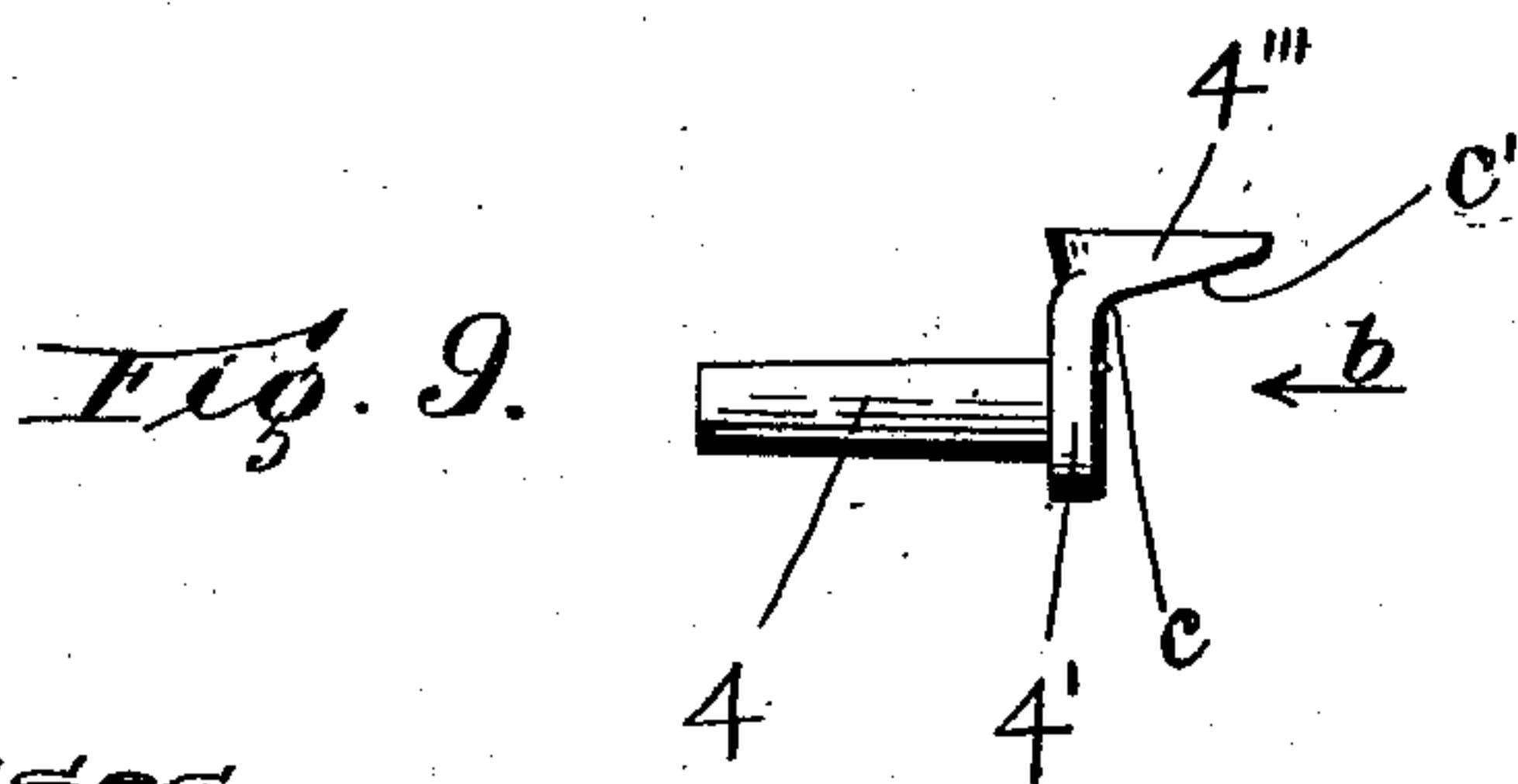
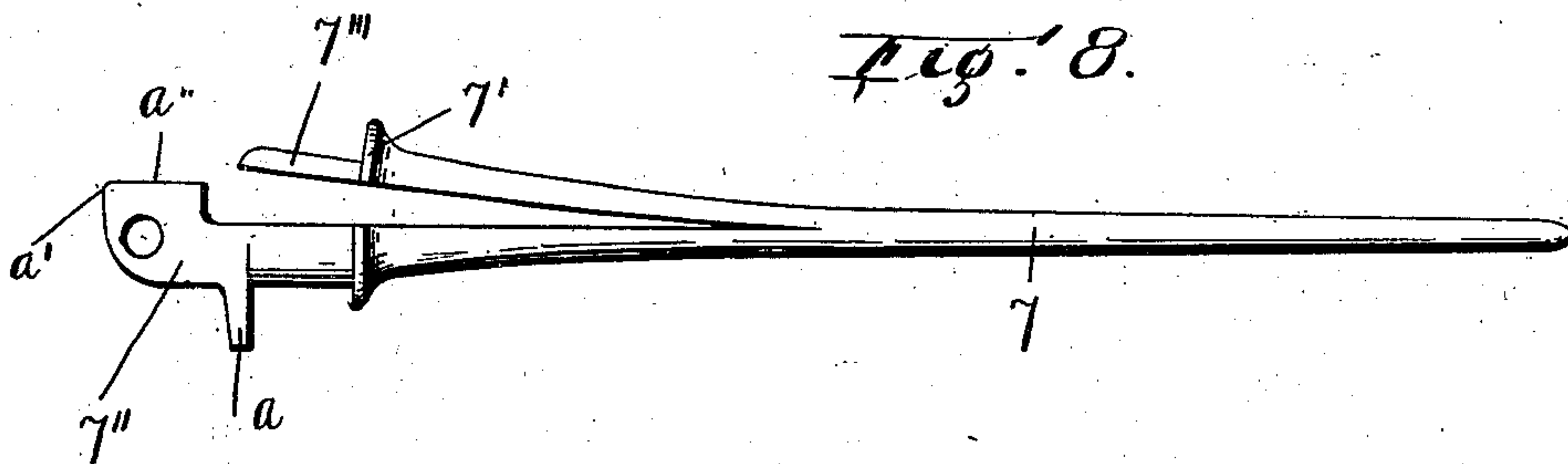
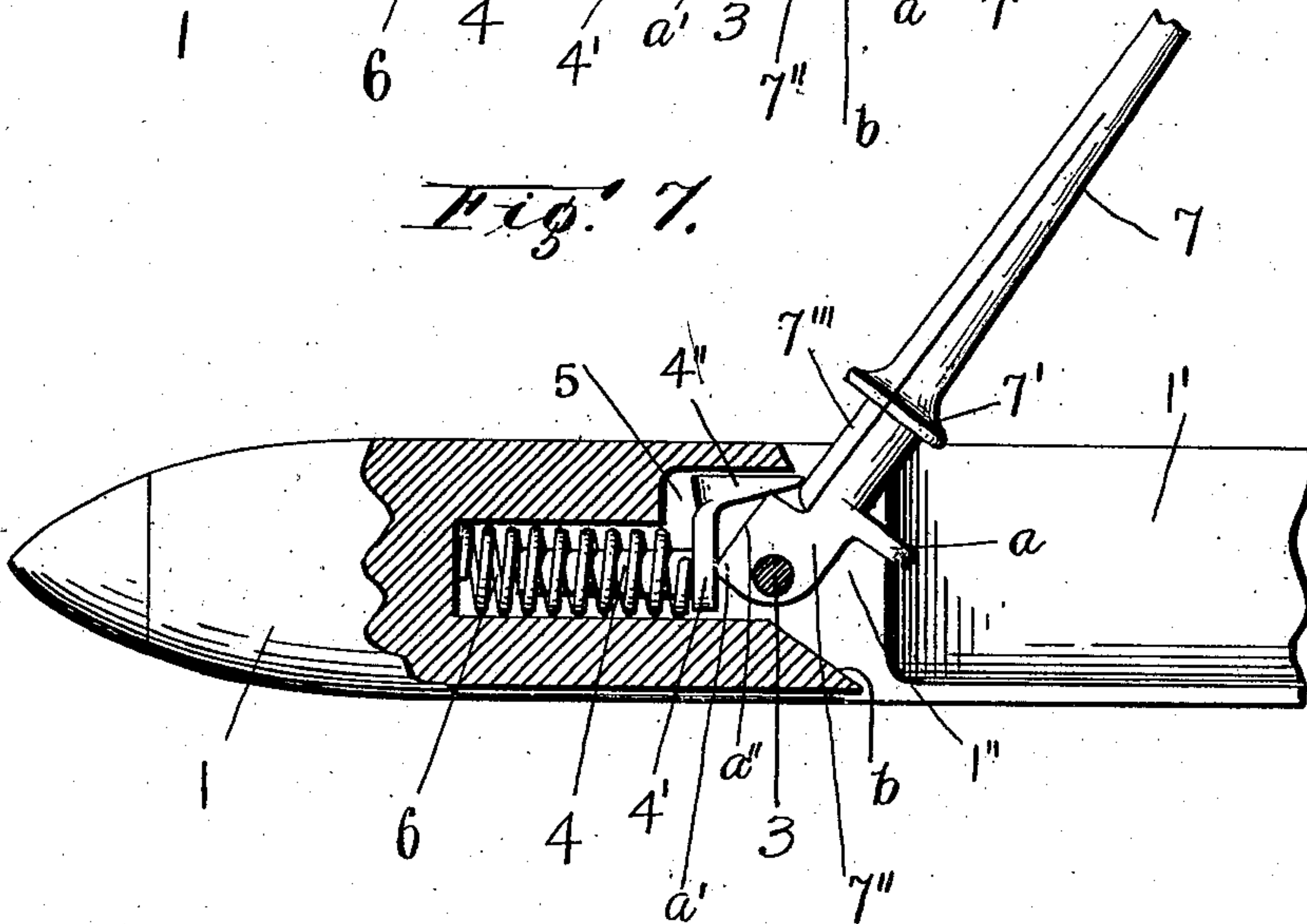
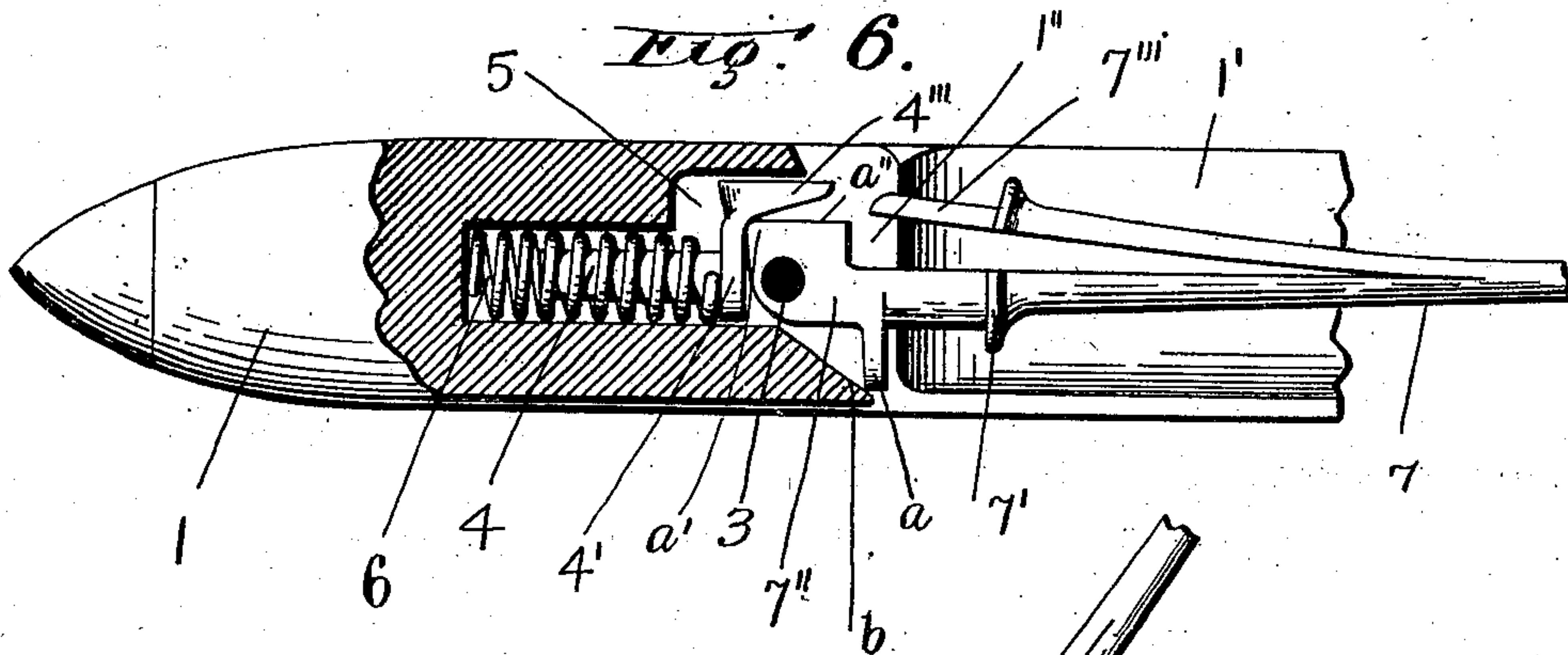
By  
John C. Dewey  
Attorney.

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LOOM SHUTTLE.

(Application filed Dec. 11, 1901.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses  
C. F. Wesson.  
M. Heale.

Inventor:  
Nelson Caisse.  
By  
John L. Dewey.  
Attorney.



# UNITED STATES PATENT OFFICE.

NELSON CAISSE, OF WILKINSONVILLE, MASSACHUSETTS, ASSIGNOR TO  
D. T. DUDLEY & SON COMPANY, OF WILKINSONVILLE, MASSACHU-  
SETTS, A CORPORATION OF MASSACHUSETTS.

## LOOM-SHUTTLE.

SPECIFICATION forming part of Letters Patent No. 702,703, dated June 17, 1902.

Application filed December 11, 1901. Serial No. 85,430. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON CAISSE, a citizen of the United States, residing at Wilkin-  
sonville, in the county of Worcester and State  
5 of Massachusetts, have invented certain new  
and useful Improvements in Loom-Shuttles,  
of which the following is a specification.

My invention relates to loom-shuttles, and  
particularly to that class of shuttles in which  
10 the spring which holds the spindle in its low-  
ered or raised position is contained within  
the shuttle and not on the outside of the shut-  
tle. The spindle on which the cop or bobbin  
is supported is preferably what is termed a  
15 "split" spindle.

The object of my invention is to improve  
upon the ordinary construction of the spring  
device which holds the spindle in its lowered  
or raised position in the class of shuttles  
20 above referred to and to make the base or  
pivoted end of the spindle of substantially  
the ordinary shape, with a single plane sur-  
face to be engaged by the spring device when  
the spindle is in its raised position.

25 My invention consists in certain novel fea-  
tures of construction of my shuttle, as will  
be hereinafter fully described

Referring to the drawings, Figure 1 is a side  
view of one end of a shuttle, partly in sec-  
30 tion, showing my improvements and the spin-  
dle in its lowered position. Fig. 2 corre-  
sponds to Fig. 1, but shows the spindle in its  
raised position. Fig. 3 shows the spindle de-  
tached. Fig. 4 shows the spring-actuated  
35 pin detached. Fig. 5 is an end view of the  
head of the pin looking in the direction of  
arrow *a*, Fig. 4. Fig. 6 corresponds to Fig.  
1, but shows a modified construction of the  
spindle. Fig. 7 corresponds to Fig. 6, but  
40 shows the spindle in its raised position. Fig.  
8 shows the spindle in Fig. 6 detached. Fig.  
9 shows the spring-actuated pin detached;  
and Fig. 10 shows an end view of the pin  
shown in Fig. 9 looking in the direction of ar-  
45 row *b*, same figure.

In the accompanying drawings, 1 is a por-  
tion of the shuttle-body, having the ordinary  
cavity 1' for the filling, carried on the spin-  
dle 2. The base 2' of the spindle 2 extends

in a slot or recess 1'', leading out of the end 50  
of the cavity 1' and of less width than said  
cavity, and is pivoted on a pin 3, extending  
transversely in the shuttle-body in the ordi-  
nary way.

The base 2' of the spindle 2, Figs. 1, 2, and 55  
3, is preferably of substantially the shape  
shown, having the extension *a* to engage the  
inclined surface *b* or wall of the recess 1''  
when the spindle is in its lowered position,  
as shown in Fig. 1, and having the heel or end 60  
*a'* to be engaged by the head of the spring-  
actuated pin 4 when the spindle is in its low-  
ered position, and also the single plane sur-  
face *a''*, extending above the heel *a'* to be  
also engaged by the head of the pin 4 when 65  
the spindle 2 is in its raised position, as shown  
in Fig. 2.

The spring-actuated pin 4 extends in a re-  
cess 5 within the end of the shuttle-body and  
leading out of the recess 1'', and a spring 6, 70  
in this instance a spiral expansion-spring,  
encircles the body of the pin 4 and is con-  
fined between the end of the recess 5 and the  
head 4' on the pin 4 and acts to force out-  
wardly the pin 4.

The pin 4, Figs. 4 and 5, has an enlarged flat  
end or head 4', having an offset or extension  
4'' on one side or edge thereof. The offset 4''  
forms, with the head 4', an angular recess *c* in  
the head 4' to receive the heel or extension *a'* 80  
on the base 2' of the spindle 2 when the spin-  
dle is in its lowered position. (See Fig. 1.)

The upper or outer surface *c'* on the offset  
or extension 4'' is preferably made inclined,  
as shown in Fig. 4, to engage and bear on the 85  
plane surface *a''* on the base 2' of the spindle  
2 when the spindle is raised, as shown in  
Fig. 2.

The operation of my improvements (shown  
in Figs. 1 to 5, inclusive) will be readily un- 90  
derstood by those skilled in the art. When  
the spindle 2 is in its lowered position, Fig.  
1, the extension or heel *a'* will extend into the  
angular recess *c* in the head 4' of the pin 4,  
and the spring 6 actuates the pin 4 to force 95  
it outwardly and cause its head 4' to bear on  
the base 2' of the spindle 2 above its pivot-  
point and hold the extension *a* on the base 2'



in contact with the wall 1'' of the recess 1', as shown in Fig. 1. When the spindle 2 is raised, the extension *a'* moves on the flat head 4' of the pin 4 away from the offset 4'' until it reaches a point in line with or a little below its pivot-point, in which position the upper or outer surface *c'* of the offset 4'' will engage and bear on the plane surface *a''* on the base 2' of the spindle 2 above its pivot-point, as shown in Fig. 2, and stop the further raising of the spindle. The spring-actuated pin 4, with its head 4' bearing on the heel or extension *a'* on the base 2' of the spindle 2 in a line with or just below its pivot-point, will hold the spindle 2 in its raised position, as shown in Fig. 2.

I will now describe the modified construction of my improvements. (Shown in Figs. 6 to 10, inclusive.) The construction shown in these figures is substantially the same as the construction shown in the previous figures, and therefore the same figures and letters of reference are employed on corresponding parts. The spindle 7 in Figs. 6, 7, and 8 is split through to the base and has an annular flange 7' at its lower end to engage an annular recess within the lower end of the bobbin (not shown) to retain the bobbin on the spindle in the ordinary way. The base 7'' of the spindle 7 is of a little different shape than the base 2' of the spindle 2. There is an extension *a* on the base 7'' of the spindle 7 to engage the inclined surface or wall *b* of the recess 1'' when the spindle is in its lowered position, as shown in Fig. 6. There is also a heel or extension *a'* on the base 7'' of the spindle 7, corresponding to the heel or extension *a'* on the base 2' of the spindle 2, and a plane surface *a''*. The head 4' of the spring-actuated pin 4 has its offset or extension 4''' of a little different shape from the offset or extension 4'', Fig. 4, (see Fig. 9,) the offset 4''' being a little longer and thinner, so that it will extend beyond the plane surface *a''* and engage the free end of the split part 7''' of the spindle 7 when the spindle is in its raised position, as shown in Fig. 7, to hold said part 7''' against the main part of the spindle and allow of the bobbin (not shown) being placed on the spindle. When the spindle 7 is lowered, the part 7''' is released and allowed to spread, as shown in Fig. 6, to hold the bobbin on the spindle.

The operation of the spring-actuated pin 4 (shown in Figs. 6 to 10, inclusive,) to hold the spindle 7 in its raised and lowered positions is the same as above described in connection with the spindle 2. (Shown in Figs. 1 to 5, inclusive.)

It will be understood that the details of construction of my improvements may be varied, if desired.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

1. In a loom-shuttle, the combination of a shuttle-body provided with a recess, a spindle having a base and pivoted within said recess, the base of said spindle being provided with an extension, as *a*, in front of the pivotal connection of the spindle with the shuttle-body, and a heel as *a'*, a spring-pressed pin having a head bearing upon the heel, said pin having an offset or extension and an angular recess at the junction of the head and extension to engage the heel when the spindle is turned into the shuttle, the said offset or extension having an inclined surface to engage the base of the spindle when the latter is turned to its outward position.

2. In a loom-shuttle, the combination with the spindle, having its base pivoted within a recess in the shuttle-body, and an extension on the base in front of its pivot-point, to engage a wall of the recess, and an extension or heel back of the pivot-point, and a plane surface above said extension or heel, of a spring-actuated pin extending in a recess in the shuttle-body at the rear of the spindle, said pin having on its head or end, which engages the base of the spindle, an offset or extension having an inclined surface and forming a recess to receive the heel of the spindle, when it is in its lowered position, and the inclined outer or upper surface of the offset or extension adapted to engage the base of the spindle, when it is in its raised position, to limit the raising of the spindle, substantially as shown and described.

3. In a loom-shuttle, the combination with the spindle having its base pivoted within a recess in the shuttle-body, and an extension as *a* on the base in front of its pivot-point, to engage a wall of the recess, and an extension or heel *a'* back of the pivot-point, said base of the spindle having a forwardly-extending plane surface above said extension or heel, *a*, of a spring-actuated pin extending in a recess in the shuttle-body at the rear of the spindle, said pin having on its head or end, which engages the base of the spindle, an offset or extension forming a recess to receive the heel of the spindle, said offset or extension having an inclined surface to engage the spindle-base, and the projecting end of the offset or extension engaging the split part of the spindle, when it is raised, to hold it against the main part of the spindle, substantially as shown and described.

NELSON CAISSE.

Witnesses:

J. C. DEWEY,  
M. HAAS.