

G. M. LANE.  
Spring Hinge.

No. 230,949.

Patented Aug. 10, 1880.

FIG. 1.

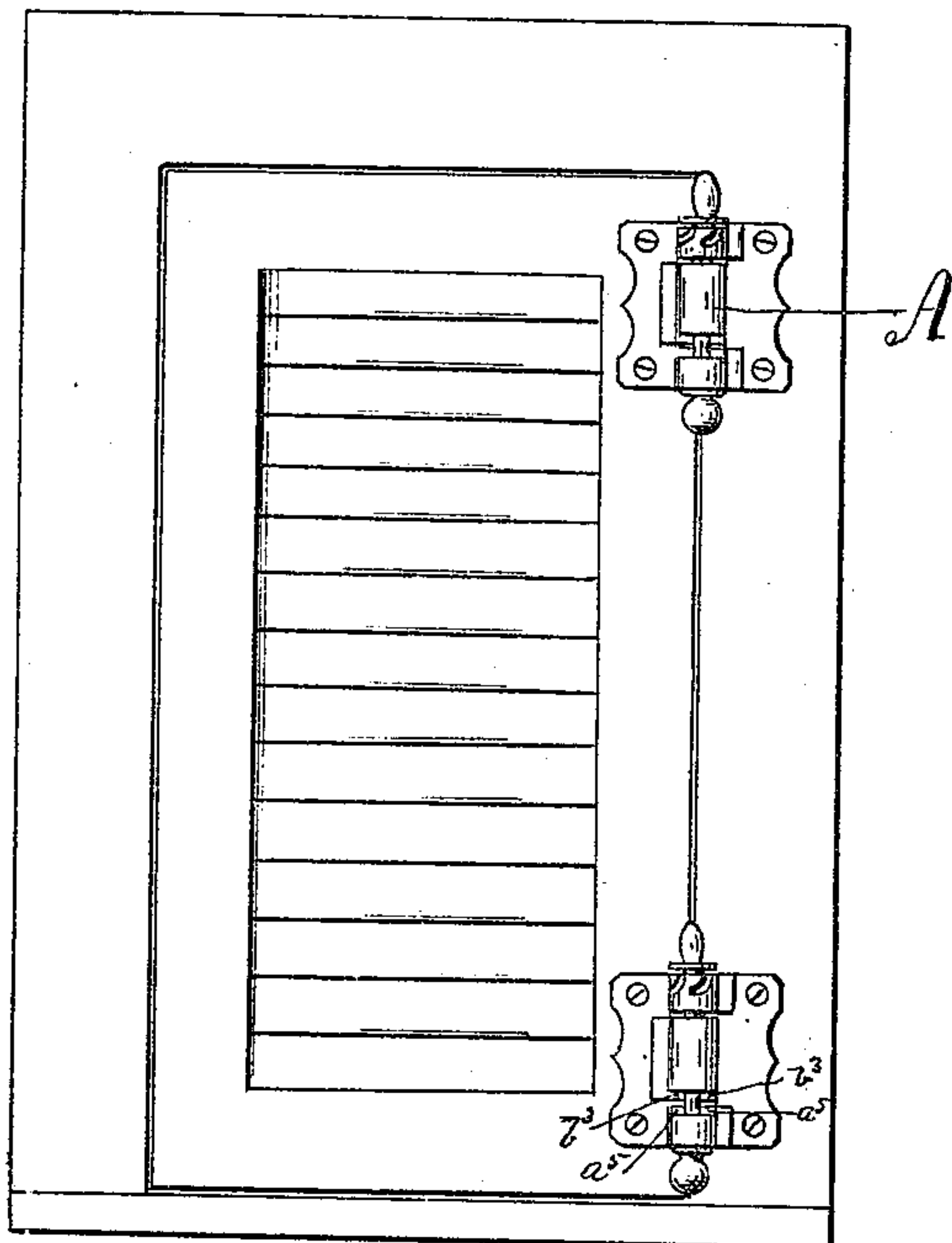


FIG. 2.

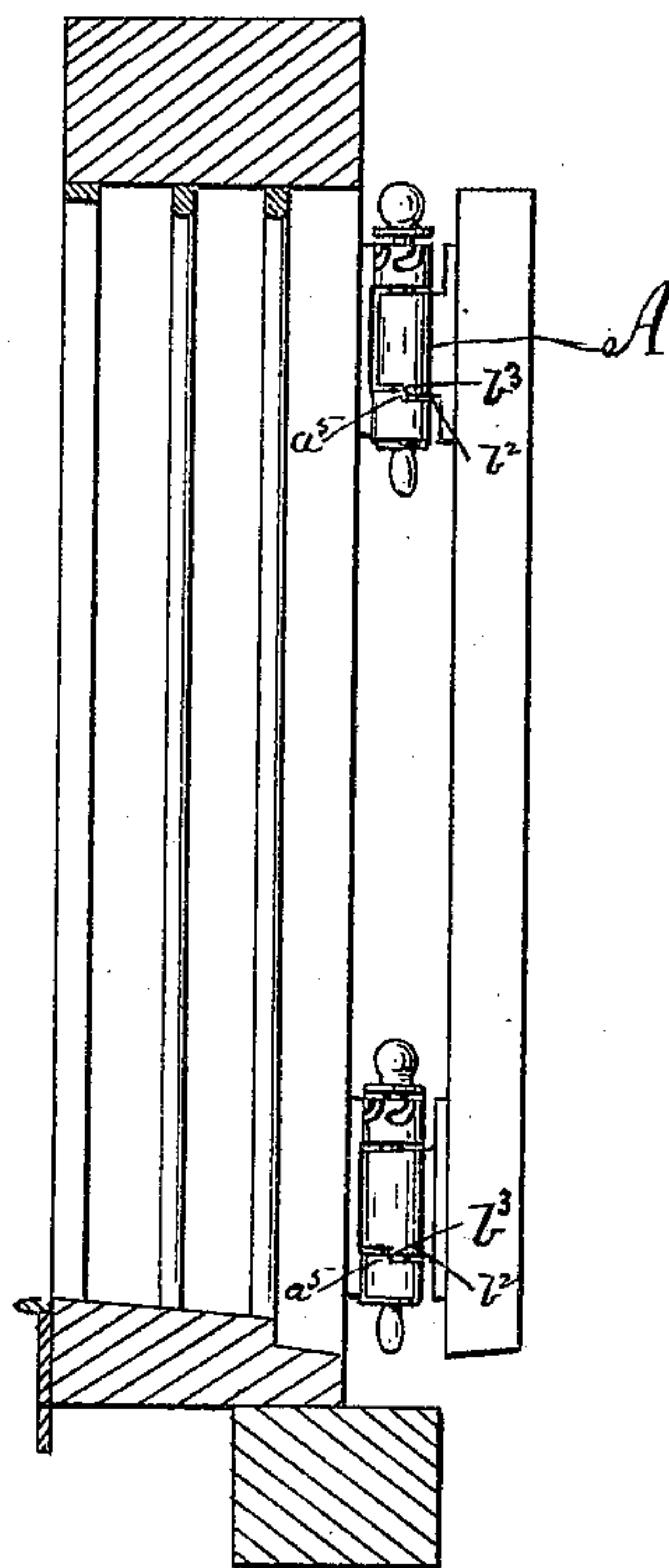


FIG. 3.

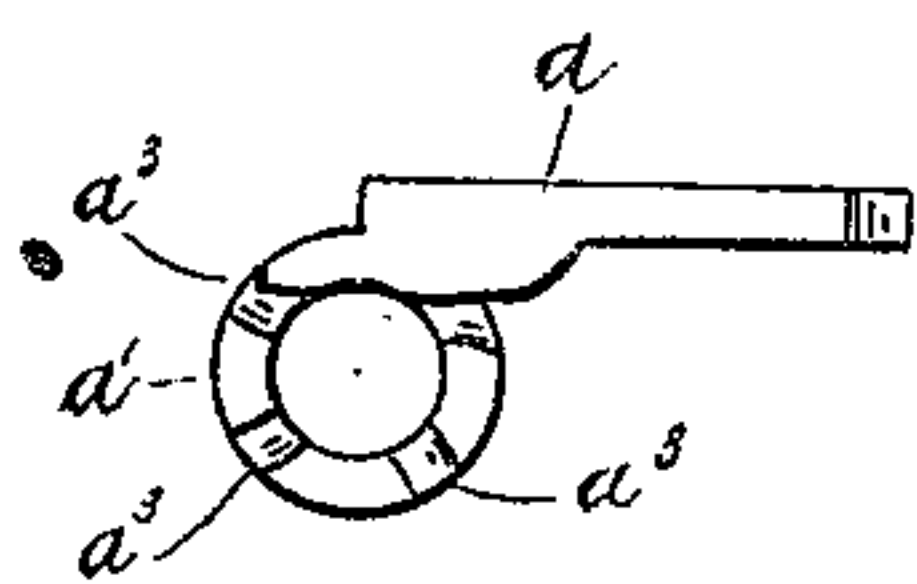


FIG. 4.

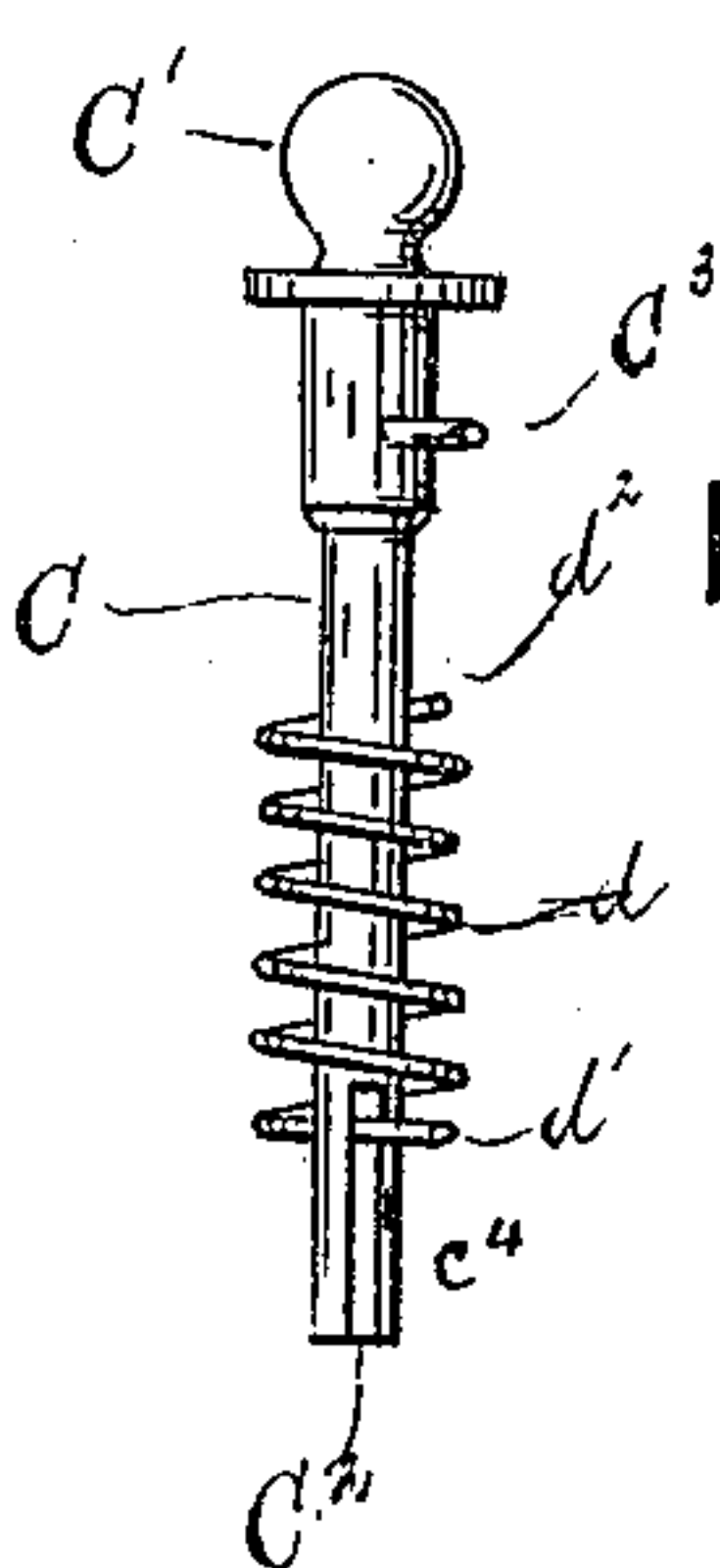
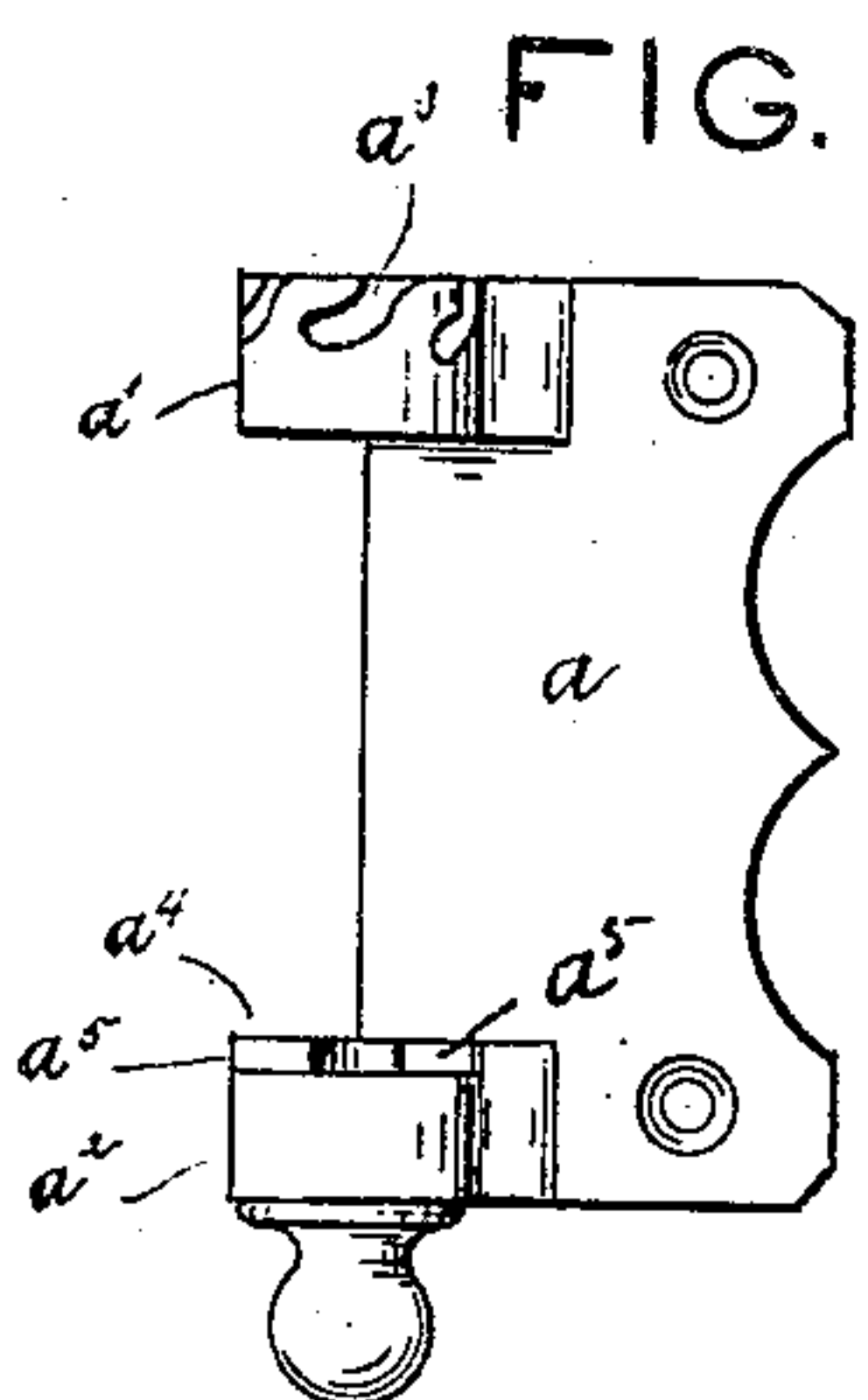


FIG. 5.

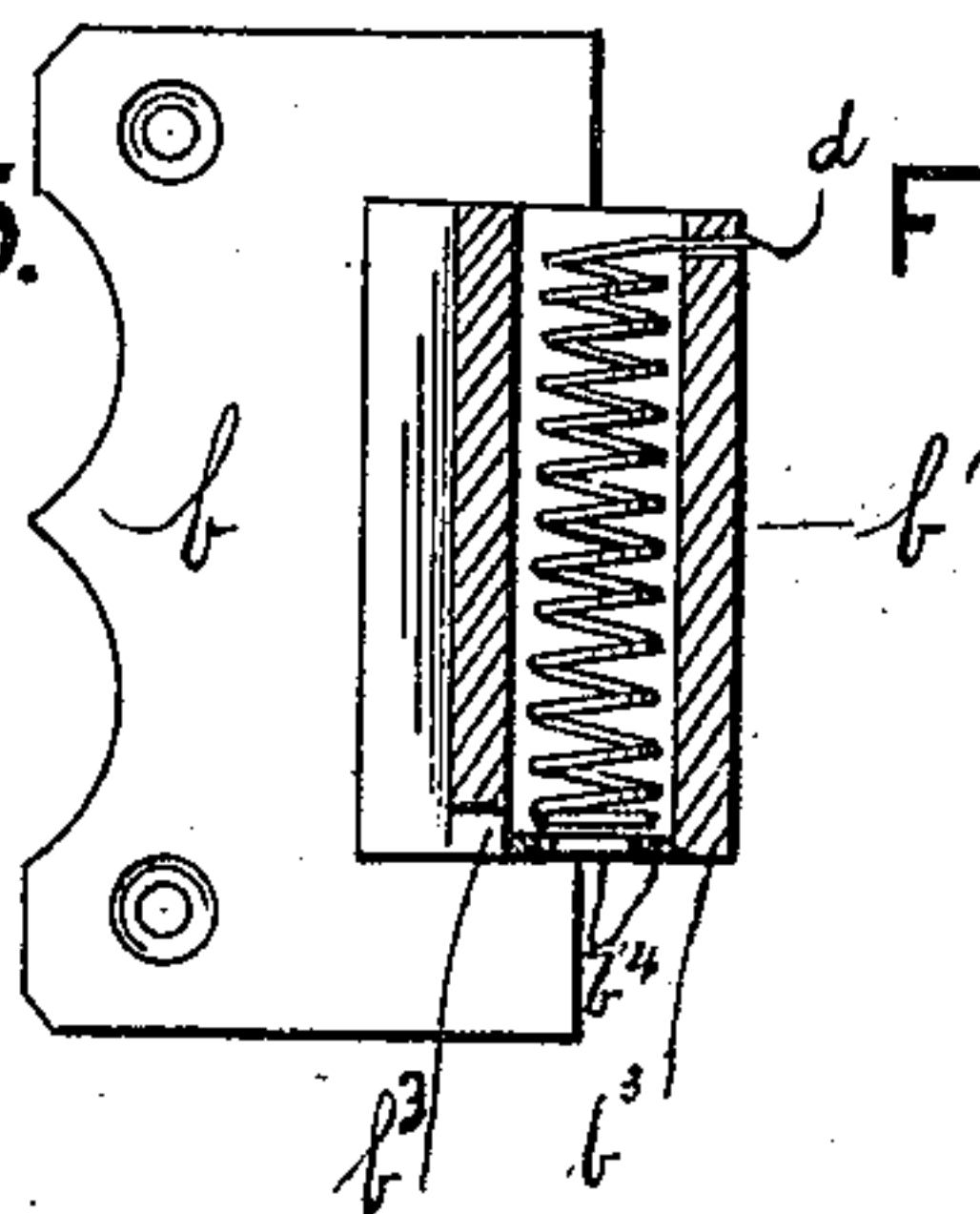


FIG. 6.

Witnesses:  
Sam R. Turner  
R. B. Durpin

Inventor:  
George M. Lane  
By R. B. & A. P. Lacey Attys

# UNITED STATES PATENT OFFICE.

GEORGE M. LANE, OF ASBURY PARK, NEW JERSEY.

## SPRING-HINGE.

SPECIFICATION forming part of Letters Patent No. 230,949, dated August 10, 1880.

Application filed October 31, 1879.

*To all whom it may concern:*

Be it known that I, GEORGE M. LANE, of Asbury Park, in the county of Monmouth and State of New Jersey, have invented certain new and useful Improvements in Shutter-Hinges; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention has for its object to furnish a shutter-hinge which may be made by one adjustment to open and by another adjustment close the shutter automatically, and which has its several parts so constructed and arranged that the said shutter may be easily detached from the window-casing for any desired purpose.

It consists in the construction and arrangement of the knuckles of the hinge, the pintle, and the spiral spring, all of which will be hereinafter fully explained, and specifically pointed out in the claim.

In the drawings, Figure 1 is a side elevation, and Fig. 2 an edge elevation, of a shutter having my improved hinged attached thereto. Figs. 3 and 4 show views of the leaves of the hinge. Fig. 5 is the pintle and spring, and Fig. 6 shows the spring in the knuckle of one of the leaves of the hinge.

A is the hinge, composed of the leaves  $a$  and  $b$ . The leaf  $a$  is constructed with the upper and lower knuckles,  $a'$   $a^2$ . The knuckle  $a'$  has formed on its upper edge the series of ratchet-teeth  $a^3$ , surrounding the central vertical hole through which the pintle passes. The lower knuckle,  $a^2$ , is constructed with the sliding surface  $a^4$  and shoulders or stops  $a^5$   $a^5$  on its upper edge and opposite to each other, as shown in Fig. 4.

The leaf  $b$  of the hinge A is formed with the single central knuckle  $b'$ , which has a length equal to the distance between the knuckles  $a'$   $a^2$  on leaf  $a$ . It fits between the knuckles  $a'$   $a^2$ , and has sufficient vertical play to permit the shoulders  $b^3$ , formed on its lower end, to pass over the shoulders  $a^5$  on knuckle  $a^2$  when the shutter is being closed.

The shoulders  $b^3$  are formed to correspond with the shoulders  $a^5$ , and they are locked together, as shown in Fig. 2, by the dropping of the shutter when the latter is opened. When thus locked the shutter will be held open against any ordinary force.

The lower end of the opening in the knuckle  $b'$  is contracted, so as to provide a surrounding projection or shoulder,  $b^4$ , on which the free end of the coil-spring (hereinafter described) rests. This shoulder  $b^4$  prevents the lower end of the spring from injury, and holds it in place when the shutter is lifted off the hinges.

$c$  is the pintle, constructed with the head  $c'$ , by which it may be turned or drawn out of the hinge. It is provided on its shank and near its upper end with a pin,  $c^3$ , which projects at right angles, and is so arranged that it will engage in the ratchet-teeth  $a^3$  when the head  $c^3$  is pressed down onto the knuckle  $a'$ . The lower end,  $c^4$ , has formed in it the longitudinal slot  $c^2$ , open at its outer end, and extends inward, so that its inner end will be within the knuckle or sleeve  $b'$  of leaf  $b$  when the said outer end,  $c^4$ , is engaged in the knuckle  $a^2$  of leaf  $a$ .

$d$  is the coil-spring placed within the knuckle  $b'$ . Its upper end is rigidly fastened to the knuckle, while its lower end is left free and rests on the inner projecting rim or shoulder,  $b^4$ , as shown in Fig. 6. The lower end,  $d'$ , of the wire forming the spring is bent so as to diametrically cross the circle of the coil and also cross diametrically the pintle opening through the inner projecting rim or shoulder,  $b^4$ , of knuckle  $b'$ . The pintle passes down through the coil, and the slot  $c^2$  passes over the crossed end  $d'$ , as shown more clearly in Fig. 5.

The pintle is retained in the hinge by its own gravity, and it may be raised or lowered or entirely removed at pleasure without affecting the position or fastenings of the coil-spring. The spring has no vertical action on the pintle. The lower end,  $c^4$ , of the pintle passes out of the knuckle  $b'$  and into the knuckle  $a^2$ , and when inserted gives a strong and substantial hinge.

It is often necessary, especially in dwelling-houses, to lift the shutters off the hinges for the purpose of washing or painting. With my



hinge the shutter can be removed and again replaced by any person without displacement or danger to any of the parts of the hinge.

When the knuckles of the two leaves are  
5 disengaged after withdrawal of the pintle the latter is then dropped back into the knuckles  $a' a^2$  on the leaf  $a$ , fixed on the window-casing.

The shutter can be replaced easily by one person. The knuckles of the leaves of the up-  
10 per hinge are first put together, after which the lower knuckles, when the pintle is lifted out, will automatically swing into proper relative position to receive the said pintle.

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

In a shutter-hinge, the pintle  $c$ , provided with pin  $c^3$  and slot  $c^2$ , around which is placed a coil-spring,  $d$ , the end  $d'$  of which is held in place by slot  $c^2$ , in combination with leaf  $b$ ,  
20 having shoulders  $b^4$ , on which the free end of the coil rests, and leaf  $a$ , having shoulders  $a^4$   $a^5$  and slots  $a^3$ , all constructed and arranged to operate as shown and described.

In testimony that I claim the foregoing I  
25 have hereunto set my hand this 29th day of October, 1879.

GEORGE M. LANE.

Witnesses:

SAMUEL ANDERSON,  
CHARLES WILLIAMS.