

W. E. Copeland,

Spring Bolt.

N^o 16,228.

Patented Dec. 16, 1856.

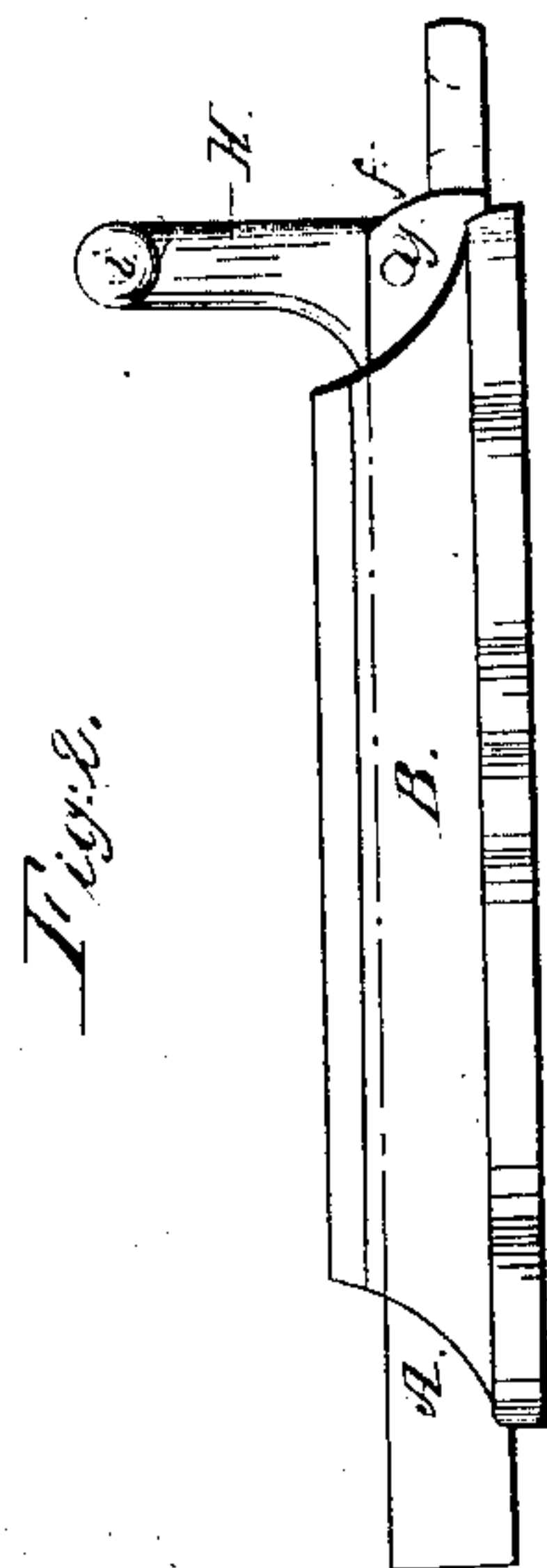


Fig. 5.

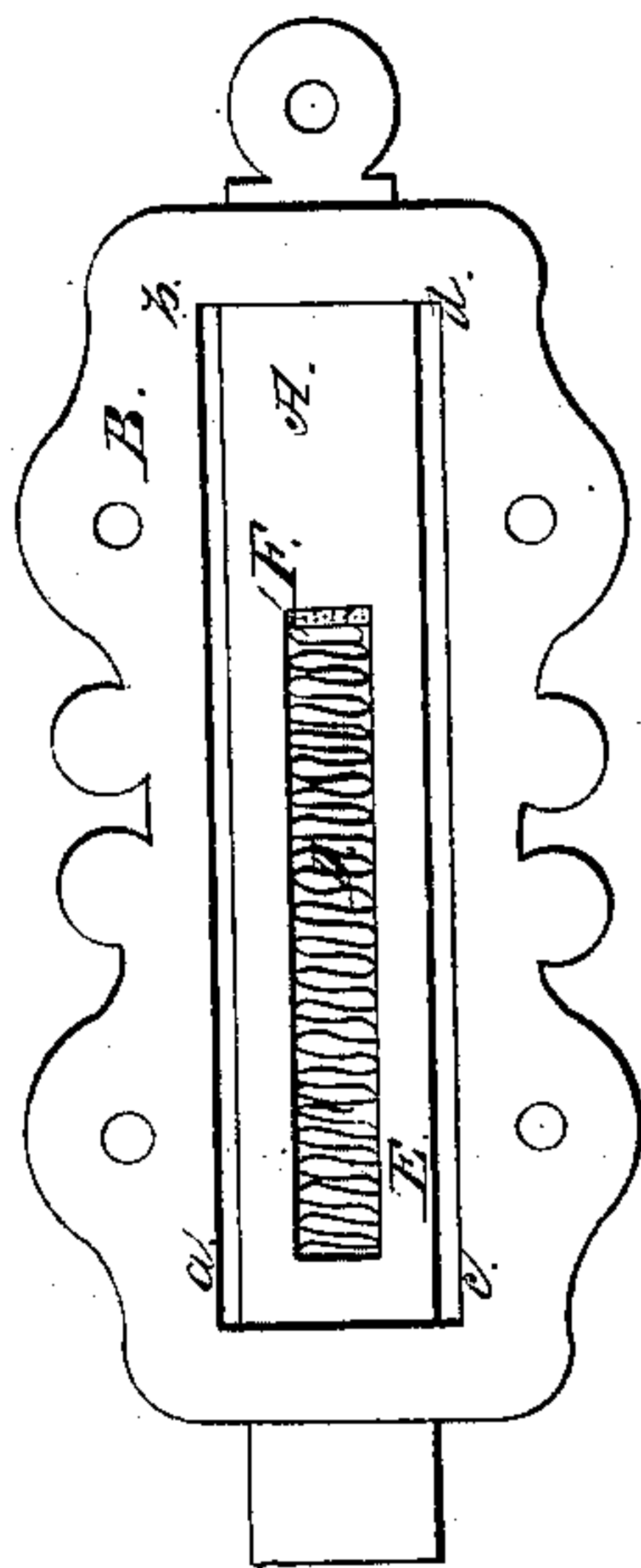


Fig. 4.

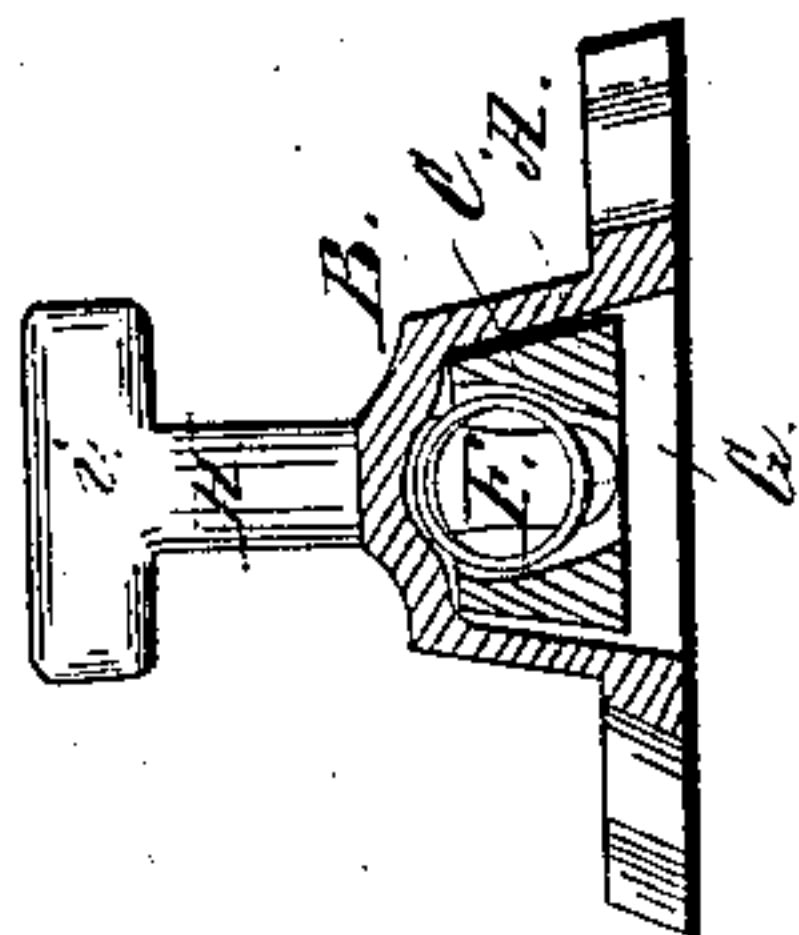


Fig. 1.

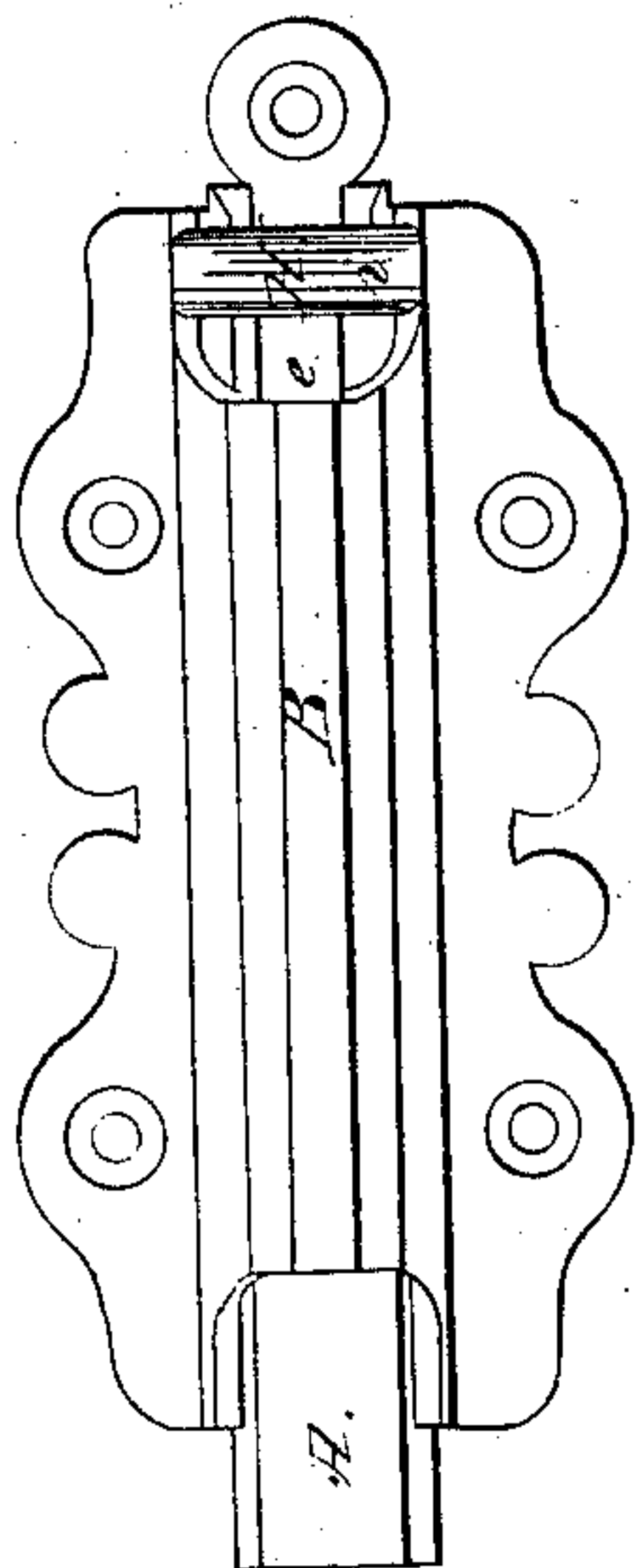
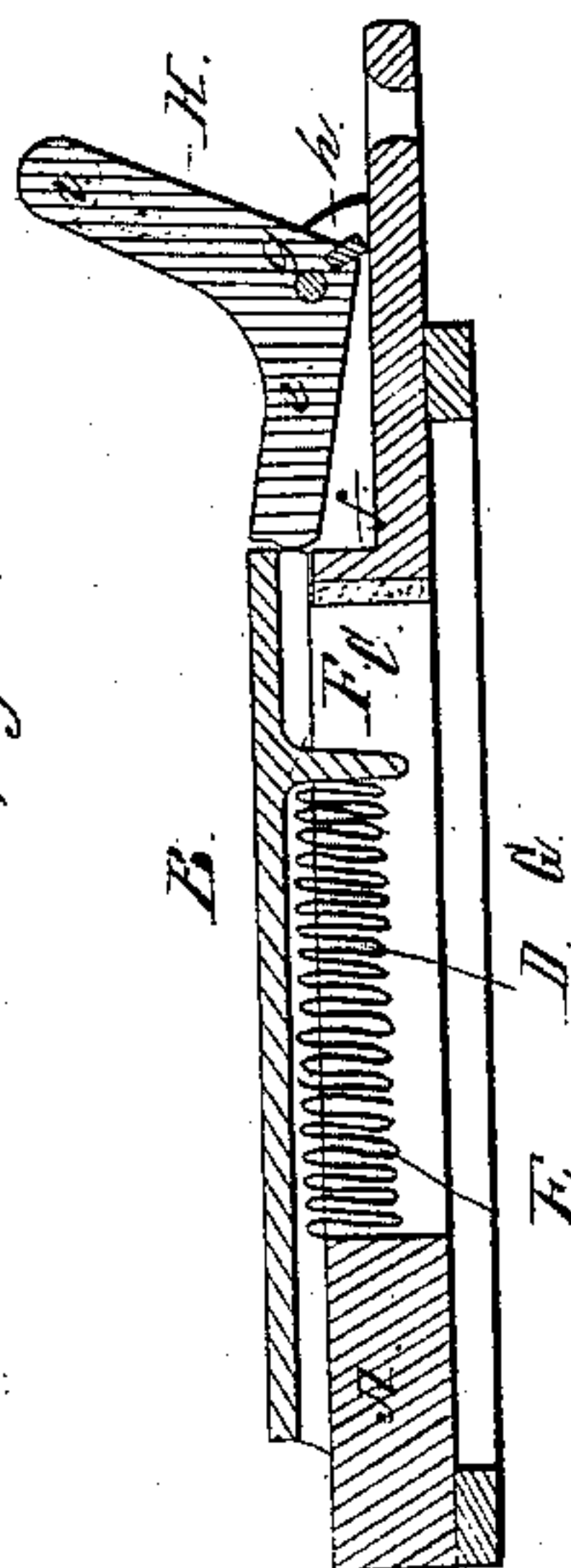


Fig. 3.



UNITED STATES PATENT OFFICE.

WILLIAM E. COPELAND, OF FALL RIVER, MASSACHUSETTS.

SPRING-BOLT.

Specification of Letters Patent No. 16,228, dated December 16, 1856.

To all whom it may concern:

Be it known that I, WILLIAM E. COPELAND, of Fall River, in the county of Bristol and State of Massachusetts, have invented
5 an Improved Spring-Bolt for Doors; and I do hereby declare that the same is fully described and represented in the following specification and the accompanying drawings, of which—

10 Figure 1, exhibits a top view of one of my improved bolts. Fig. 2, a side elevation of it. Fig. 3, a vertical, central and longitudinal section. Fig. 4, a transverse section of it. Fig. 5, an underside view
15 of it.

In such drawings A, is the bolt and B, its case, the former being adapted to the latter so as to be capable of being moved longitudinally therein. A long chamber or
20 slot formed "dovetailed" or trapezoidal in cross section, as shown in Fig. 4, is made in said bolt. Within the chamber there are arranged a main spring, D, and a secondary spring E, (represented respectively in Figs.
25 3 and 5) which are placed end to end and so that one shall bear against the other, the rear end of the mainspring being made to bear against a stud, F, extended from the case B, as shown in Fig. 3. The front end
30 of the secondary spring rests against that of the chamber C. In constructing such chamber, its least width transversely should be less than the diameter of the main-spring, while its greatest width should be such as
35 to enable the mainspring to be placed within the chamber as seen in the drawings.

The bolt case is constructed with an opening or slot formed through its bottom as seen at *a b c d*, in Fig. 5, and at G, in Figs.
40 3 and 4, the two springs D, and E, being of such width, that when the bolt is drawn backward far enough to so contract the springs as to bring the coils of each of them, in close contact with one another, the said
45 bolt shall not be far enough back as to admit of its being detached from its case, by being moved laterally through the opening *a b c d*. Besides this, the mainspring should be made of such length as to allow the bolt to be so
50 detached from its case when the secondary spring E, is not in place within the chamber C. Furthermore, the said secondary should be constructed of such a length, that when it is entirely contracted, the distance between
55 its ends, shall be, less than its diameter and also less than the least width of the slot or

chamber C, and this in order that said secondary spring readily may be introduced either into the chamber C, or be removed therefrom, its introduction being effected by
60 first contracting the main spring, and next contracting the secondary spring (so that it will pass into the chamber) and next inserting said secondary spring in the chamber and turning the spring around therein
65 so as to bring it end to end with the main-spring.

By removing the secondary spring from its chamber, by simply contracting said spring and turning it around in the chamber, and then drawing it through the slots C,
70 *a b c d*, we shall have prepared the bolt, so that it may be removed from its case, it being understood, that, under such circumstances, the bolt may be drawn back far
75 enough to allow of its being turned laterally through the slot *a, b, c, d*, the case B, being constructed so as to allow the bolt to be so moved.

The object had in view in the devices
80 above described, has been to enable the case B, to be constructed in one entire casting or piece of metal and at the same time to construct the springs and the bolt that each shall mutually assist in maintaining the
85 other in place in the case.

In the rear part of the bolt I form a recess or chamber, *f*, for the reception of one arm, *e*, of a bent or right angled lever H, such lever turning on a fulcrum or pin
90 arranged as seen at *g*, and extended through the bolt and the lever. At the vertex of the angle of the lever H, there is placed a small stud, *h*, as shown in Fig. 3, it being constructed so as to stop or arrest the lever,
95 when the bolt is thrown backward and the lever in the position as shown in Fig. 3, the lever under such circumstances having the end of its arm, *e*, in contact with the case B, as seen in said figure. In this way, the
100 lever serves to hold back the bolt. During the forward movement of the bolt, the arm, *e*, of the lever H, passes into the case B. When it may be desirable to retract the bolt, the thumb of a person's hand is to be borne
105 against the arm *i* of the lever H, until the bolt is forced backward and the lever so moved on its fulcrum as to be in a position to arrest the forward movement of the bolt under the pressure of the main spring. In
110 order to permit the bolt to be forced forward by its spring, it will be necessary to

press against the arm, *i*, of the lever so as to depress the other arm, *e*, into the recess, *f*, all of which may either be accomplished by a slight blow or pressure against the rear side of the arm, *i*.

My particular arrangement and mode of applying the lever, *H*, to the bolt has the advantage of presenting the lever in a very convenient position for withdrawal of the bolt, by the hand applied to said lever. It operates differently from the lever shown and described in the specification of Oliver H. Bush's patent, such patent bearing date August fifth, A. D. 1851; for this last named device, when turned upon its fulcrum operates like a cam to withdraw the bolt, whereas, by the arrangement construction and application of the lever, *H*, with reference to the bolt, *A*, as hereinbefore described no such action of the lever takes place during the act of withdrawal of the bolt, the said lever, *H*, serving only as a stop to the bolt, after its retraction has been effected by the lever acting like the knob of any ordinary slide bolt.

I do not pretend to claim combining a lever with a bolt and for the purpose of moving said bolt rearward, because such is a very old application of a well known device; nor do I claim so combining a lever with a spring bolt and its case as to operate

the bolt substantially in the manner as described in the specification of the patent of the said Bush, that is to say, so that it shall operate not only as a cam lever, but as a stop; nor do I claim applying to a bolt or a rod, a lever and a stop, and in such manner that, the bolt or rod, not only may be moved by power applied to the lever, but may be stopped or held in place by the stop acting against the lever, for such is an old and well known contrivance, but

What I do claim is—

1. My improved arrangement of the stop lever *H*, with respect to the bolt, and so as to operate therein, and into and out of the bolt case substantially as specified.

2. And I also claim combining with the main spiral spring, *D*, the secondary and separate spiral spring *E* (or, its equivalent) when the bolt is applied to its case, and the springs are arranged within a trapezoidal recess or chamber of the bolt, and made so as to operate essentially as specified.

In testimony whereof I have hereunto set my signature this 22nd day of April, 1856.

WM. E. COPELAND.

Witnesses:

R. H. EDDY,
F. P. HALE, Jr.