

(No Model.)

H. F. TAYLOR & F. E. DRURY.
Door Spring.

No. 243,088.

Patented June 21, 1881.

Fig. 5.

Fig. 1.

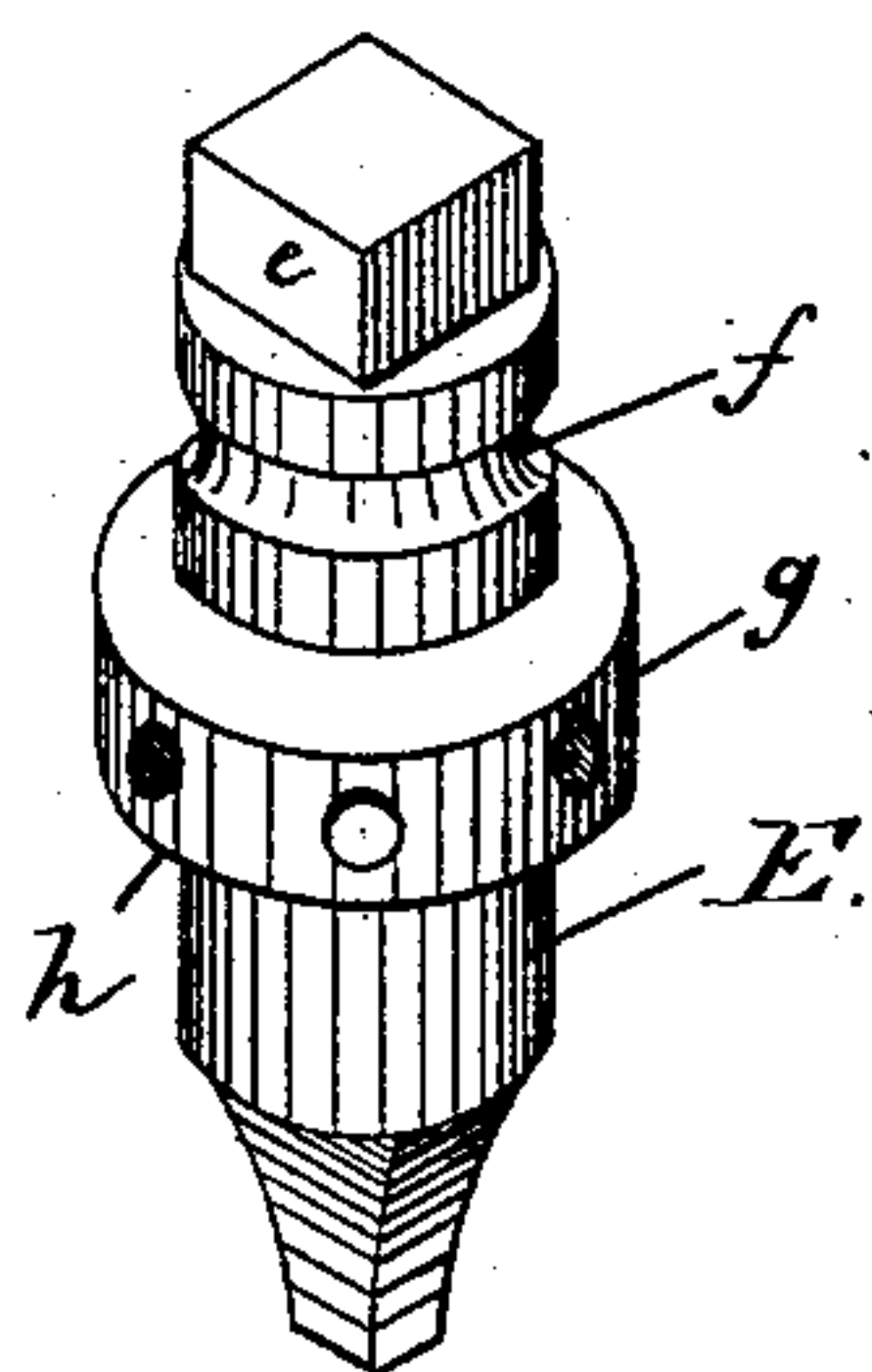


Fig. 2.

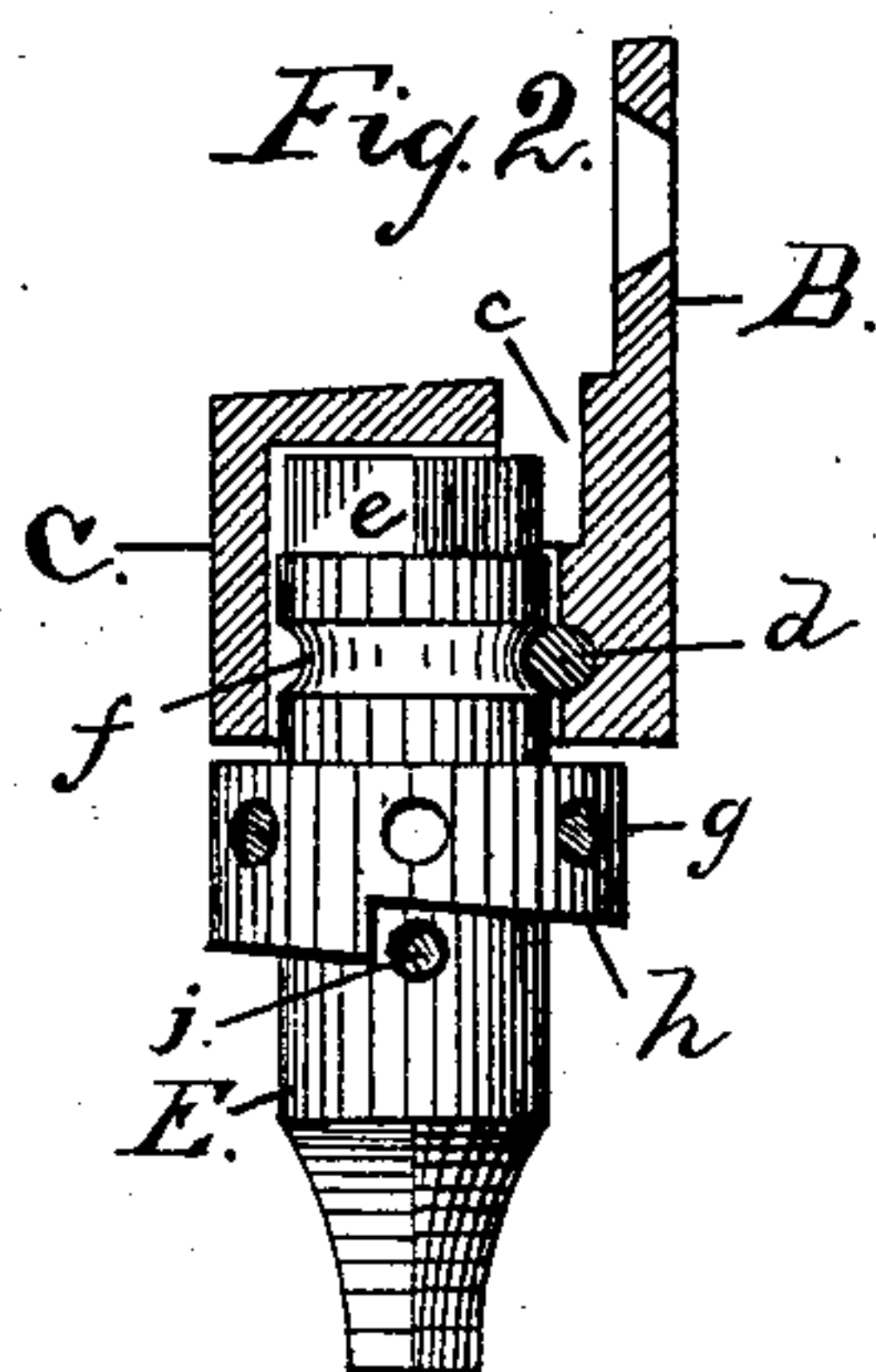


Fig. 3.

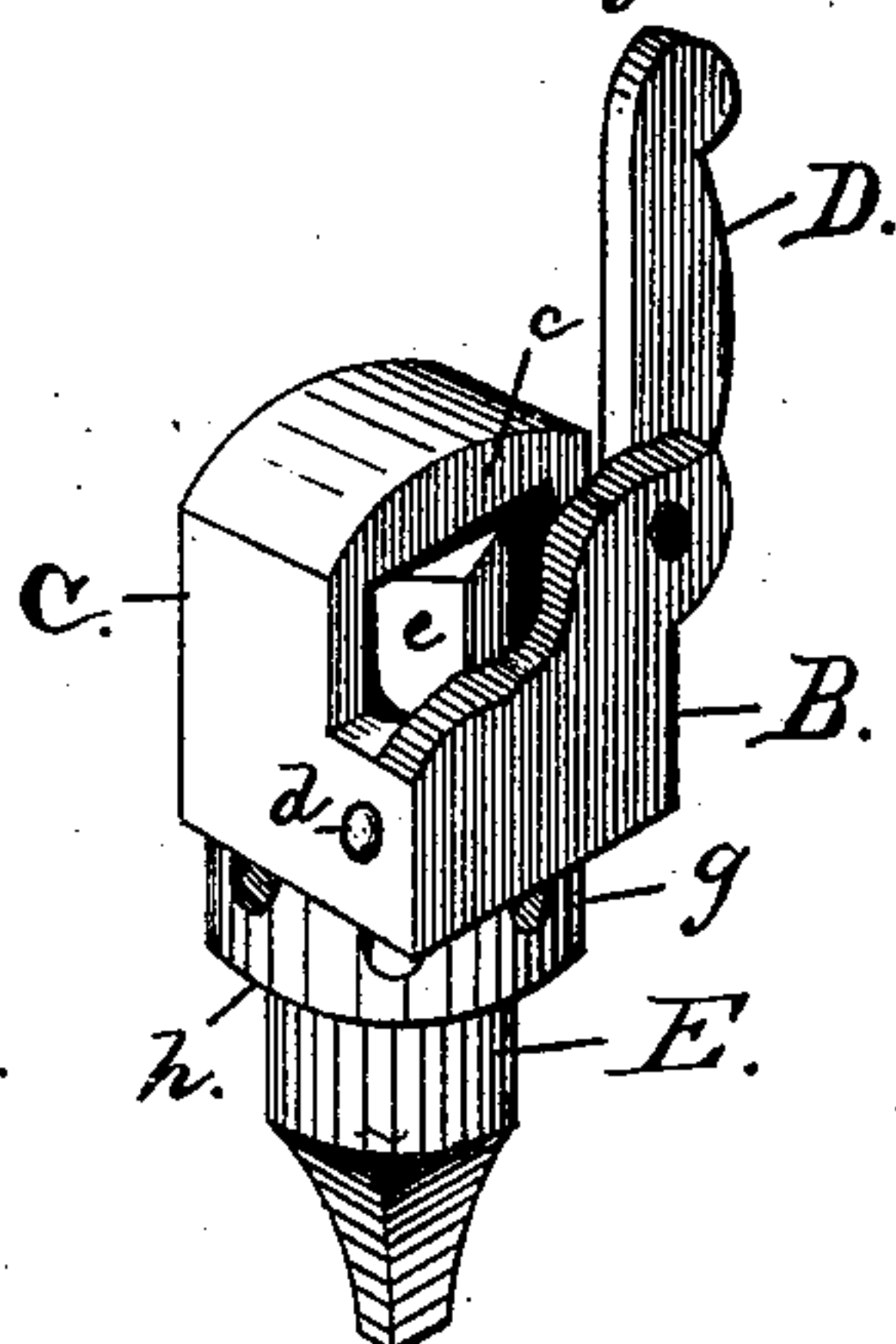
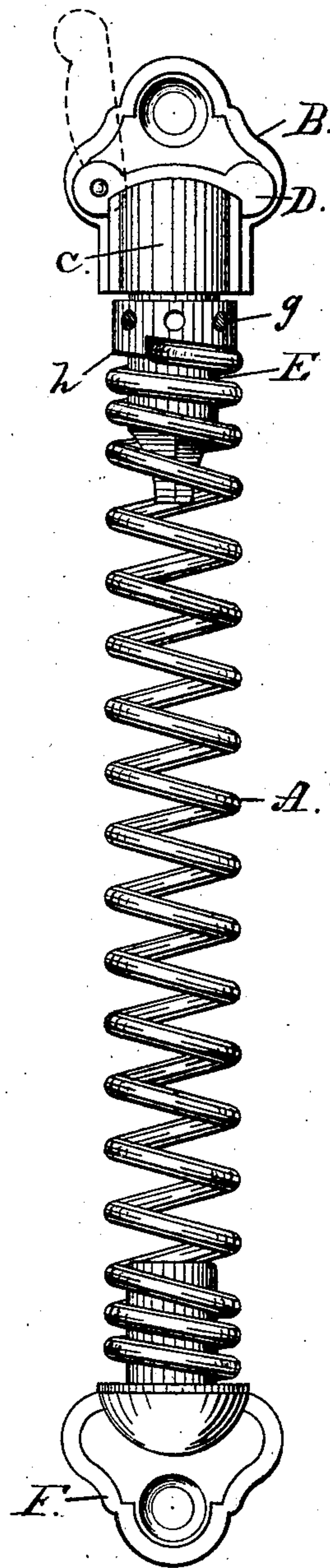
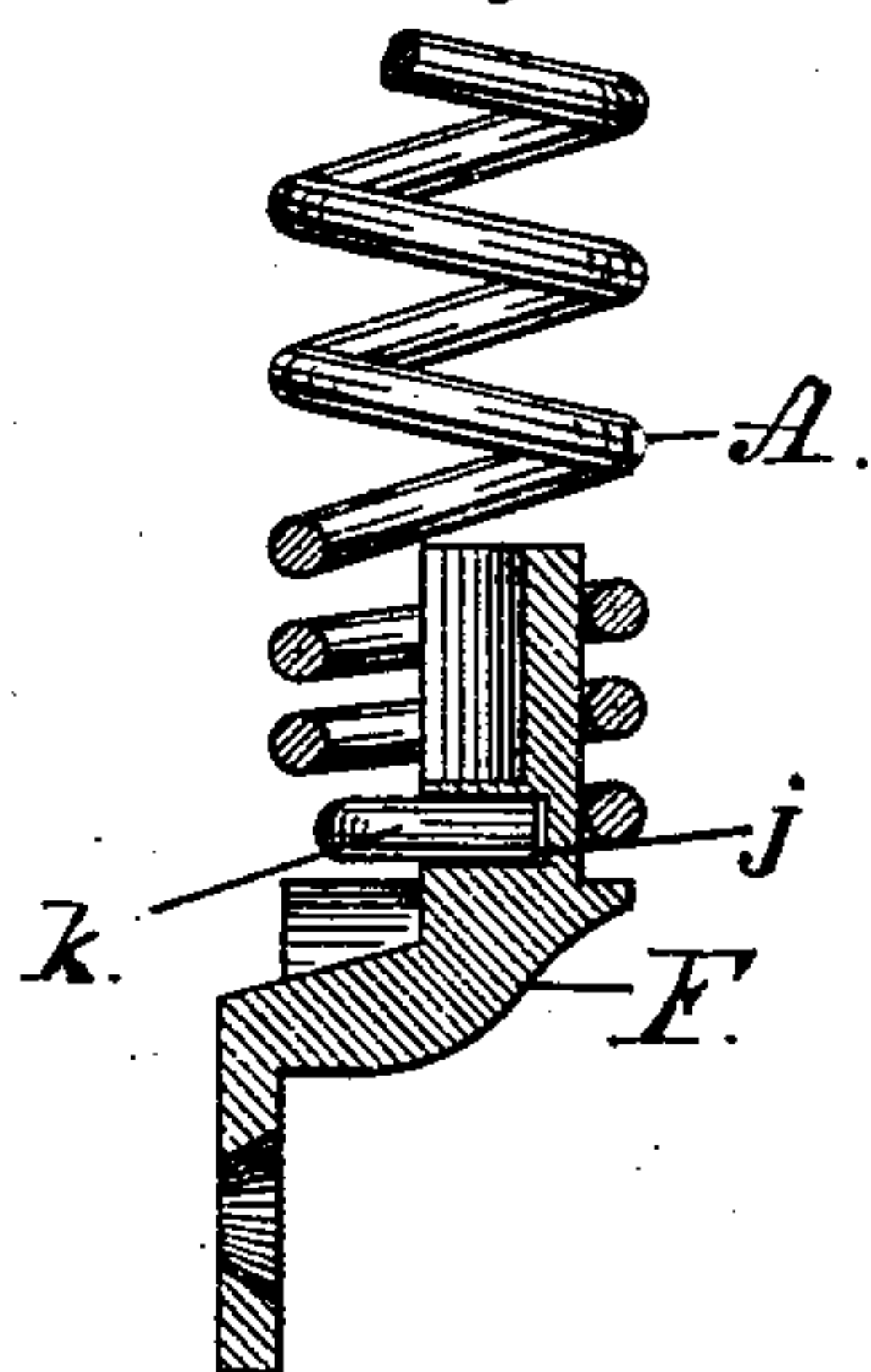


Fig. 4.



WITNESSES

Albert L. Lord.
W. Engel

INVENTORS

Herbert F. Taylor.
Francis E. Drury.
By Luzzard & Luzzard, ATTORNEYS

UNITED STATES PATENT OFFICE.

HERBERT F. TAYLOR AND FRANCIS E. DRURY, OF CLEVELAND, OHIO,
ASSIGNORS TO TAYLOR & BOGGIS, OF SAME PLACE.

DOOR-SPRING.

SPECIFICATION forming part of Letters Patent No. 243,088, dated June 21, 1881.

Application filed March 15, 1881. (No model.)

To all whom it may concern:

Be it known that we, HERBERT F. TAYLOR and FRANCIS E. DRURY, of Cleveland, in the county of Cuyahoga and State of Ohio, have
5 invented certain new and useful Improvements in Door-Springs; and we 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 pertains to make
10 and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to door-springs, and more particularly to that class of door-springs
15 which have one end secured to or near the hinged part of the door, and the other end to the frame to which the door is hinged, the spring being under a torsional strain in such a direction as to keep the door closed, and
20 when the door is opened to produce upon the spring an extra torsional tension, the reaction of which causes the door to close.

Our invention consists in providing a ready means for regulating the tension of the spring,
25 and, further, in providing a means for securing the ends of the spring in position, and prevent the possibility of the same turning or being pulled out endwise.

It also consists in a door-spring, with its two
30 attaching ends or brackets securely connected with said spring, as an article of manufacture, in contradistinction to the ordinary door-spring of this type wherein one or both of the brackets or attaching ends are only adapted to be
35 connected with the spring when the same is in actual use upon the door.

In the drawings, Figure 1 is an isometric view of the upper spindle of our spring. Fig. 2 is a sectional view of the upper bracket of
40 the same, showing the manner of securing the spindle therein. Fig. 3 is an isometric view of the upper bracket, with part removed, showing our manner of preventing the spindle from turning by means of a locking-bar, the locking-bar being raised. Fig. 4 is a longitudinal
45 sectional view of the lower bracket of our spring, showing the manner of attaching the same to the spring. Fig. 5 is a front elevation of our door-spring complete, with upper and lower

brackets attached, and ready to be fastened to 50 the door.

A represents our spring. B is the upper bracket. C is a case or socket, which is provided at its upper end with a slot or opening, *c*, into which fits a locking-bar, D. *d* is a pin, 55 which passes through the case or socket C and serves to hold the upper spindle from pulling out of said case C. E is the upper spindle of our spring. *e* is a square at the upper end of spindle E. *f* is an annular groove 60 extending around the spindle E, below the square *e*. *g* is an annular collar or projection, the same being provided with holes, as shown in the drawings. The lower face of this collar is made on an incline, *h*. *i* is a hole drilled 65 part way through the spindle E and directly under the collar *g*, into which one end of the wire of spring A fits. F is the lower bracket of our door-spring. This bracket has also a hole, *j*, drilled part way through its shank, into 70 which the other end of the wire of spring A fits. This is shown more clearly in Fig. 4 of the drawings.

In manufacturing our door-spring we fasten the lower part of the spring to the bracket F, 75 as shown in Fig. 4 of the drawings—viz., by turning the end *k* of the wire for a short distance, say three-eighths of an inch, more or less, at a right angle, and inserting this turned end *k* in the hole *j*, this hole being only deep 80 enough to admit it and keep the spring from turning, thus bringing a great part of the strain, when the spring A is under tension, on the point of the end *k*, and thus rendering the wire less liable to break at the part where it 85 is turned. The upper end of the spring A is fastened to the spindle E in substantially the same manner, the only difference being that the hole *i* is drilled near the shoulder on the collar *g*, formed by the incline *h* on its lower 90 face, this incline *h* having the same pitch as the wire of spring A, with which it comes in contact, and the shoulder serving the purpose of helping to keep the spring from turning around said spindle E by abutting against 95 the end of said upper part of the spring, as shown in Fig. 5. The upper spindle, E, is fastened to the bracket B by means of a pin,

d, which passes through the case or socket C, said pin fitting in the groove *f* in such a manner as to keep the said spindle from pulling out endwise, and at the same time allow it to
5 have a free revolving motion around its axis.

Thus it will be seen that the door-spring is securely connected together, and the liability of losing any of its several parts is obviated. It can also be attached to a door much quicker
10 than the ordinary ones of its type, as no fitting is required, it being only necessary to fasten the brackets E and F respectively to the door and door-frame.

The manner of applying our spring to a door
15 is as follows: We first raise the locking-bar D to the position shown in Fig. 3 of the drawings, and then fasten the brackets B and F respectively to the door and door-frame, the spring being now under no tension, as the spindle E
20 revolves freely in the case or socket C. The spindle E is then turned (by means of a nail or small piece of stiff iron inserted in the holes of the collar *g*) until the proper tension is obtained and one face of the square *e* is parallel

with the slot or opening *c*. The locking-bar D 25 is now dropped into place, and the corner of the square *e*, coming in contact with it, prevents the spindle E from turning, the spring A being thus held at any desired tension.

What we claim is—

1. The combination, with the spiral spring 30 A, having a bracket, F, secured to one end thereof, of the spindle E, secured to the opposite end of the spring, said spindle provided with a groove, *f*, and bracket B, secured to the
35 spindle by the pin *d*, substantially as set forth.

2. The combination, with the spring A, of the spindle E, provided with collar *g*, having holes formed therein, and incline *h*, adapted to fit
40 against the spring, substantially as set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

HERBERT F. TAYLOR.
FRANCIS E. DRURY.

Witnesses:

L. L. LEGGETT,
W. E. CONNELLY.