J. COLLINS.

Spring-Hinges.

No. 156,539. Patented Nov. 3, 1874.

Fig. 1.

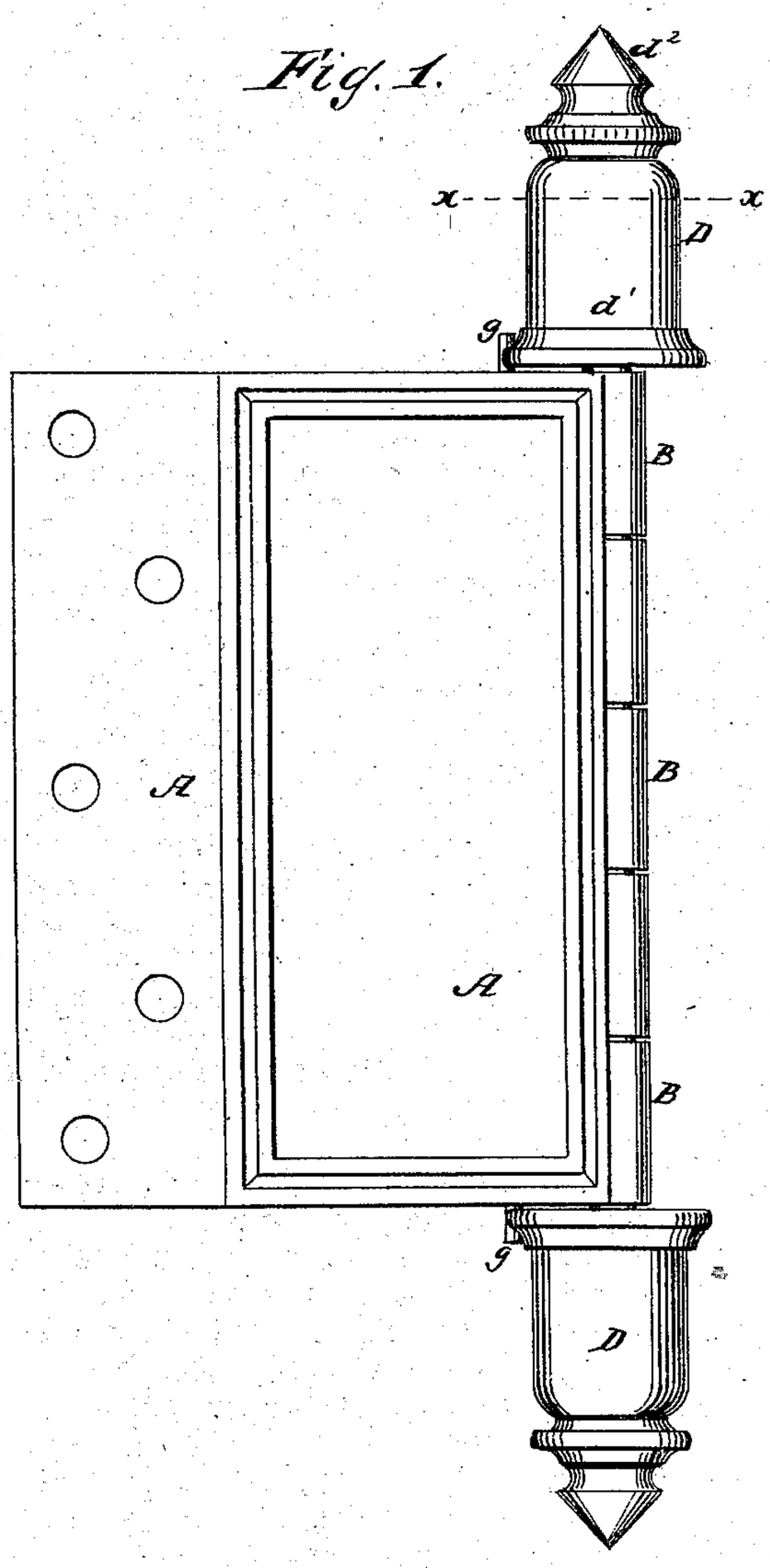


Fig. 2.

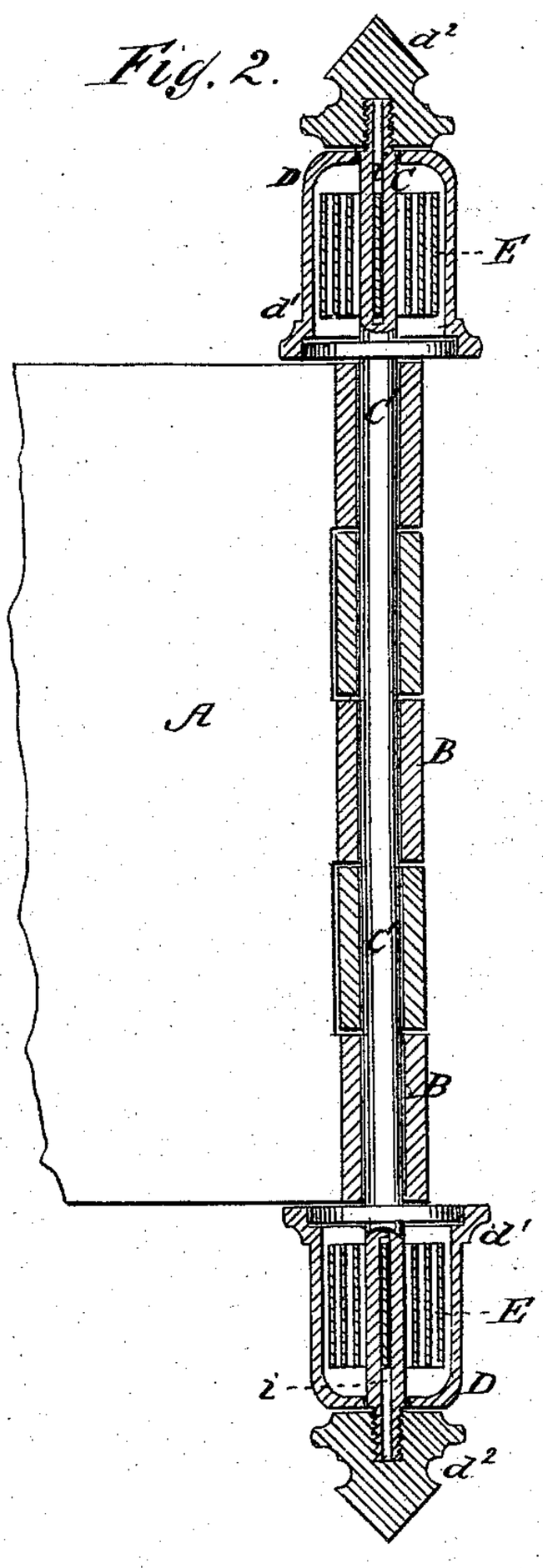
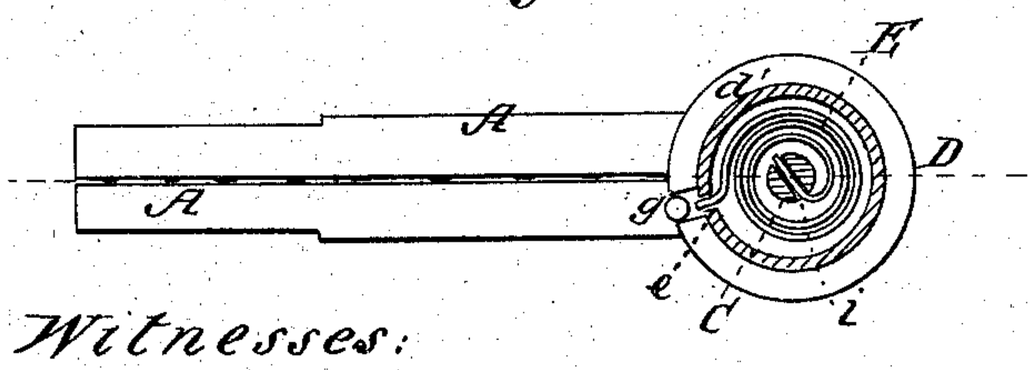


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN COLLINS, OF HOHOKUS TOWNSHIP, BERGEN COUNTY, NEW JERSEY,
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IMPROVEMENT IN SPRING-HINGES.

Specification forming part of Letters Patent No. **156,539**, dated November 3, 1874; application filed September 19, 1874.

To all whom it may concern:

Be it known that I, JOHN COLLINS, of Hohokus township, of Bergen county, in the State of New Jersey, have invented an Improvement in Spring-Hinges; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Previous to my invention spring-hinges have been made usually in two ways, viz., either with a spiral spring arranged around the pintle of the hinge, (the knuckles being large enough to incase said spring,) or with a coiled flat or plate spring arranged about the pintle near one end, and attached to the pintle, and also to the plate or body portion of the hinge. To both kinds of spring-hinge as thus heretofore made there are serious objections.

In that kind in which a spiral spring is incased by the knuckle portion of the hinge, this portion of the hinge is necessarily very large and cumbersome; and in that kind in which a flat coiled spring is used, as mentioned, not only is the spring exposed to view, (and to the weather when the hinge is used on an outside door,) but the plate of the hinge has to be cut away at one corner to accommodate the spring, and the whole appearance of the hinge is unsightly.

I propose to provide for use a spring-hinge which shall embody, in a greater degree, utility and beauty of appearance than any kind heretofore made; and to this end and object my invention consists in a hinge having the spring or springs incased wholly within the ornamental "tips," as will be hereinafter more fully described.

To enable those skilled in the art to make and use my invention I will proceed to more fully describe it, referring by letters to the accompanying drawings, in which—

Figure 1 is a side view or elevation, Fig. 2 a vertical section, and Fig. 3 a horizontal section, (at *x x*, Fig. 1,) of one of my improved spring-hinges.

In the several figures the same part will be found designated by the same letter of reference.

A are the plate portions of the two halves of the hinge; B, the knuckles, and C the pintle. D D are the tips, each of which is composed, as seen in Fig. 2, of two parts, d^1 d^2, the former of which, d^1, contains the spring E, and fits properly over the pintle C, taking a bearing at its base, and also at its outer end, and the latter of which, d^2, screws onto the end of pintle C, and serves as a nut to hold the parts securely together.

The spring E, (one in each tip D,) it will be seen, is composed of a coiled plate arranged wholly within the case-like portion d^1 of the tip, with its outer end or edge secured in a slot or slit, *e*, in said tip portion, and its inner end or edge *f* so shaped as to be adapted to slide down into a slit or vertical slot, *i*, in the pintle C. Thus the opposite ends of the spring E are secured, respectively, to the pintle C and top piece d^1.

On the edge of one of the plates A is arranged a small projection or lug, *g*, which interlocks with a notch in the base or flange portion of piece d^1, as seen, and by means of which the swing or motion of the hinge-plate is made to rotate said tip-piece d^1, and wind up or make taut the spring E.

The operation will be understood to be as follows: When the hinge is opened out, or its plates A swung apart, the stud *g* will cause the tip portion d^1 to turn with it on the pintle C, and wind up the spring E, so that the latter will exercise their motive power to bring the hinge back to its normal condition.

It will be seen that, by the arrangement of the springs within the tips, as described, two springs may be employed entirely hidden from view, and unexposed to weather, while at the same time the knuckles of the hinge need not be as large as if they had to incase a spring.

The working parts can be lubricated and put together, and kept in a perfect working condition, without the necessity of putting on oil or grease, the use of which in fine work, such as bronzed hinges, is objectionable.

Having so explained the construction and

operation of my improved spring-hinge that one skilled in the art can make and use it, what I claim as new, and desire to secure by Letters Patent, is—

A spring-hinge, in which the spring is combined with the pintle-tip and plates, and arranged within the tip, substantially in the manner and for the purpose described.

In testimony whereof I have hereunto set my hand and seal this 16th day of September, 1874.

JOHN COLLINS. [L. S.]

In presence of—
HENRY R. WANMAKER,
W. H. HOPKINS.