J. B. STARKWEATHER.

DOOR SPRING.

No. 179,824. Patented July 11, 1876.

Fig. 1.

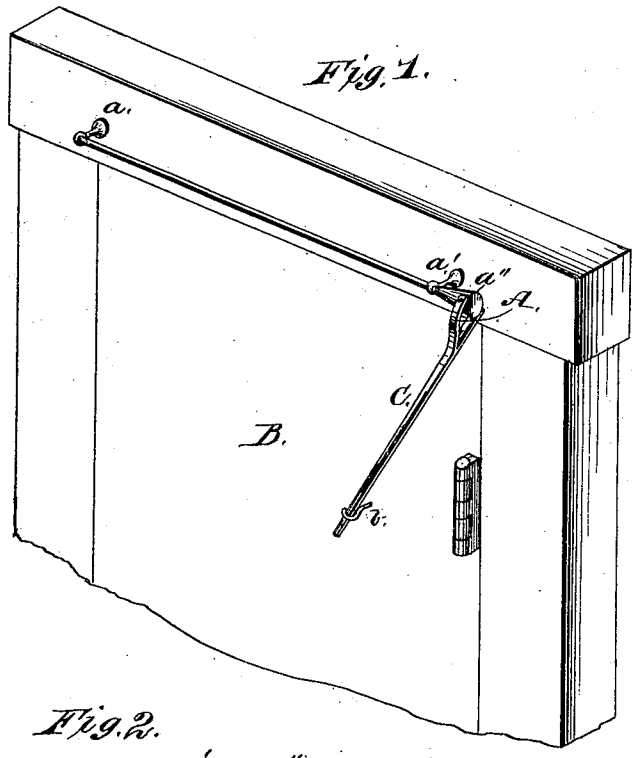
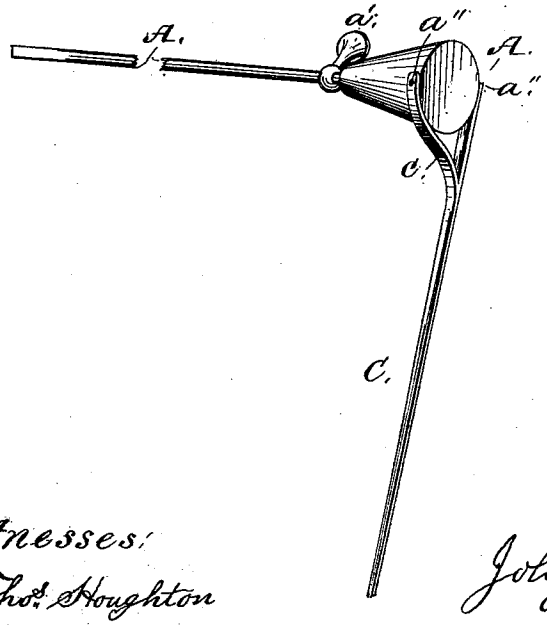


Fig. 2.



Witnesses:
Thos. Houghton
P. McNickle.

Inventor:
John B. Starkweather.
by L. Deane
Atty

UNITED STATES PATENT OFFICE.

JOHN B. STARKWEATHER, OF WINONA, MINNESOTA, ASSIGNOR TO HIMSELF AND WILLIAM H. STEVENS, OF SAME PLACE.

IMPROVEMENT IN DOOR-SPRINGS.

Specification forming part of Letters Patent No. **179,824**, dated July 11, 1876; application filed June 15, 1876.

To all whom it may concern:

Be it known that I, JOHN B. STARKWEATHER, of Winona, in the county of Winona and State of Minnesota, have invented certain new and useful Improvements in Door-Springs, of which the following is a specification:

Figure 1 is a perspective view, showing the device in position and door shut. Fig. 2 is a detail to show the head of the torsion-spring and arms of the actuating-rod.

The design of the present invention is to produce a cheap and durable door-spring, of few parts, strong, and easily applied; and to this end it consists in the detail of constructing the spring proper, and the parts connected to and operating in conjunction with the same, and in the combination of all said parts, and the special arrangement of said device, as will now be more fully explained.

In the drawings, A represents a torsion-spring, placed horizontally over the door B, and rigidly confined at the outer end in post *a*, and held by a guide or strap, *a'*, near the other, in such a manner as to allow it full and free motion in performing its usual function. At the inner end it is provided with a head, A', of proper shape and size, having any suitable number of pins or projections *a''* in its sides, to which the shoulders or notched or slotted ends of crotches or arms *c* on the end of rod C shall be applied or attached, and upon which they shall operate. The lower end of the arm C is held in guide *b* in such a manner as to be allowed free and sufficient motion for its purposes when the door B is moved in being opened or closed. The force of the spring will be exerted or communicated by means of the pins or projections in the head pressing on the arms of rod C, which rod thus constitutes the power to move the door in opening it wide, or closing it to hold it closed or opened, as the case may be.

There are many special advantages in placing this spring horizontally over the door: It will be more out of the way of harm, can be better adapted to exert its full force on the arm C, and will be more sightly in appearance. It will also be found in use that said spring will thus exert its greatest force when the door is closed or wide open.

From the above description the operation of my said device will be readily understood.

I am aware that ribbon-springs and spiral springs carrying a crotched arm on their shaft have been used for the same purpose; but objections on account of cost, and trouble of constructing the same, and in applying the same to the door, and the liability to wear or get out of order, are in a good degree overcome by the present invention. The office and purposes of said springs are, therefore, generally like those attained in all double-acting door-springs; but the novelty and simplicity of construction, and fewness of parts, its cheapness and strength, combine to render it a peculiarly desirable and most excellent device. It can be applied to any door. It will wear the longest time, and is not likely, under any ordinary use, to break, as there is no exposure to strain.

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

The torsion-spring A, having the head A' on its free end, provided with pins or projections *a''*, and combined with rod C, having crotched end or arms *c*, and adapted to be applied and used, all substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOHN B. STARKWEATHER.

Witnesses:
C. N. WAKEFIELD,
N. B. STEVENS.