C. BIRD.

Improvement in Combined Door-Spring and Retainer.

No. 132,046. Patented Oct. 8, 1872.

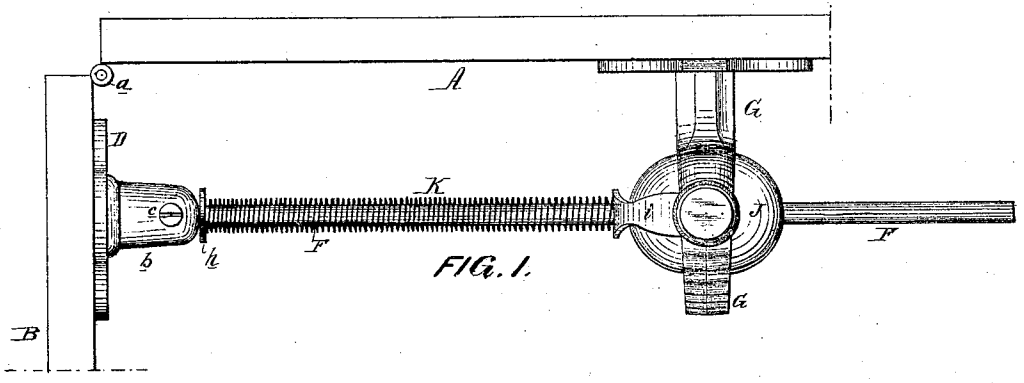


FIG. 1.

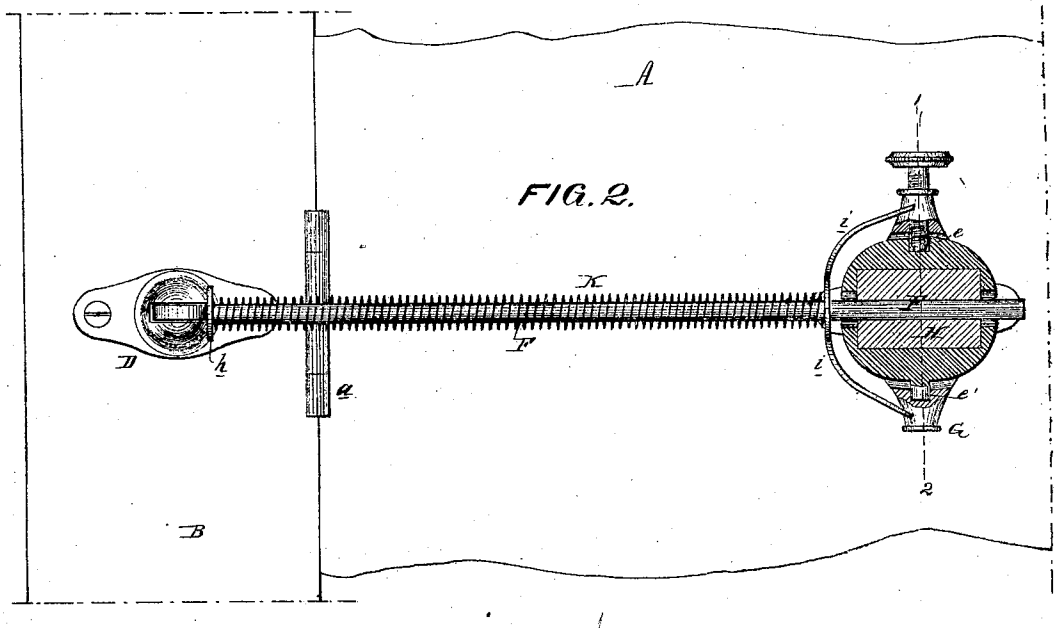


FIG. 2.

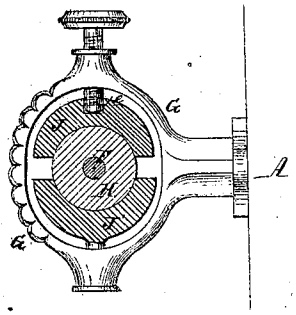


FIG. 3.

WITNESSES{

Thomas McIlvain

Harry Smith

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by his Attys

Howson & Sons

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

CHARLES BIRD, OF LOWER MERION TOWNSHIP, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND CHARLES J. FIELD, OF SAME PLACE.

IMPROVEMENT IN COMBINED DOOR SPRINGS AND RETAINERS.

Specification forming part of Letters Patent No. **132,046**, dated October 8, 1872.

To all whom it may concern:

Be it known that I, CHARLES BIRD, of Lower Merion township, Montgomery county, Pennsylvania, have invented a Combined Door-Spring and Door-Retainer, of which the following is a specification:

My invention consists, first, of a rod, hung to a stud sliding between clamps and encircled by a spring, which, bearing against both shed and clamps, will close the door to which the device is attached, or which may be removed so as to permit the door to be retained, by the pressure of the clamps, at any position to which it is adjusted. Second, in the combination of the rod, hinged clamps, between which the rod passes, and rubber or other packing, which, by the action of the clamps, is compressed on the rod.

In the accompanying drawing, Figure 1 is a plan view of part of a door and door-frame with my combined retainer and spring; Fig. 2, a side view of the same, partly in section; and Fig. 3, a transverse section on the line 1 2, Fig. 2.

A represents part of a door, and *a* one of the hinges by which it is connected to the post or frame B. To a stud, *b*, projecting from a plate, D, secured to the frame adjacent to the door, is hinged, at *c*, one end of a rod, F, in such a manner that it can be turned freely in a horizontal plane. The outer end of this hinged rod passes through and is guided by a bracket, G, secured to the door, so that the said rod must follow the latter in all of its movements. As the hinging-point *c* of the rod, however, is at one side of, or eccentric, in respect to the hinges *a* of the door, the said rod must, necessarily, in following the movements of the latter, slide through the bracket G. It follows, therefore, that when the rod is secured to the bracket in such a manner as to prevent this sliding movement, the door will be retained and prevented from turning in either direction upon its hinges. It follows, also, that if this sliding movement be compelled instead of checked—as, for instance, by a spring acting against the bracket and tending to force the same outward over the rod, and to draw the latter inward through the bracket, the result will be an immediate and sudden closing of the door.

By combining a retarding device and a spring with the hinged rod and bracket, I am enabled to attain both of the above ends, and to form in one appliance both a door-retainer and a door-spring, as I will now proceed to describe.

The rod passes through a block, H, of rubber, or through any suitable packing confined between two cup-shaped clamps, J and J′, adapted to a central recess, *d*, in the bracket, and provided at top and bottom with trunnions *e* and *e′*, upon which the said clamps can turn in order to adapt themselves to the angle of the rod as the door is opened and closed. The uppermost trunnion *e* is made in the form of a set-screw, which, when forced down upon the clamps, so compresses the packing H as to prevent the hinged rod from sliding through the same, thus, consequently, retaining the door.

The advantage possessed by this method of retaining over that described in my patent of February 28, 1871, is, that the door can be instantly freed by releasing the clamps, and retained in any position, instead of only at certain determined positions. The clamps might be caused to bear directly upon the sliding rod without the intervening packing, but I prefer to employ the latter.

A spring, K, wound upon the rod F between a collar, *h*, on the same, and a yoke, *i*, embracing the rod and bearing against the bracket G, exerts a constant pressure upon the latter, and consequently causes an immediate closing of the door when the clamps are released and the rod permitted to slide through the packing.

The hinged rod and spring, and the bracket, might be used independently of the clamping devices, and would form an effective door-spring where the latter only was required; and, in like manner, owing to the detachability of the spring K, the hinged rod, bracket, and clamping devices could be used as a door-retainer without the spring. In some cases, the bracket might be secured to the frame instead of to the door, and the hinged rod be connected to the latter.

I claim as my invention—

1. The combination of the rod F hinged to the stud *b*, the clamps between which the rod

slides, and the spring K encircling the rod between the stud and clamps and detachable from the rod, for the purpose specified.

2. The combination, with the rod F and bracket G, of rubber or other packing H, confined between clamps J and J′ pivoted to the bracket, and capable of being forced together and released by a set-screw or its equivalent.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHAS. BIRD.

Witnesses:
WM. A. STEEL,
HARRY SMITH.