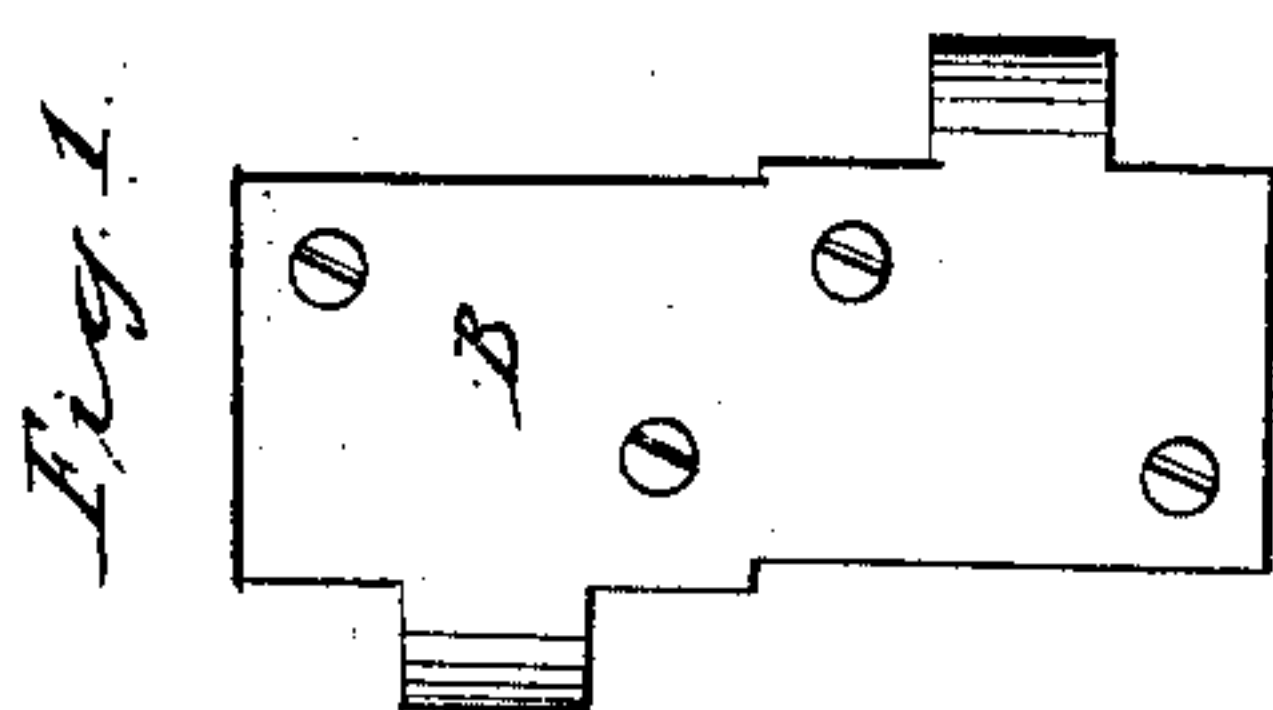
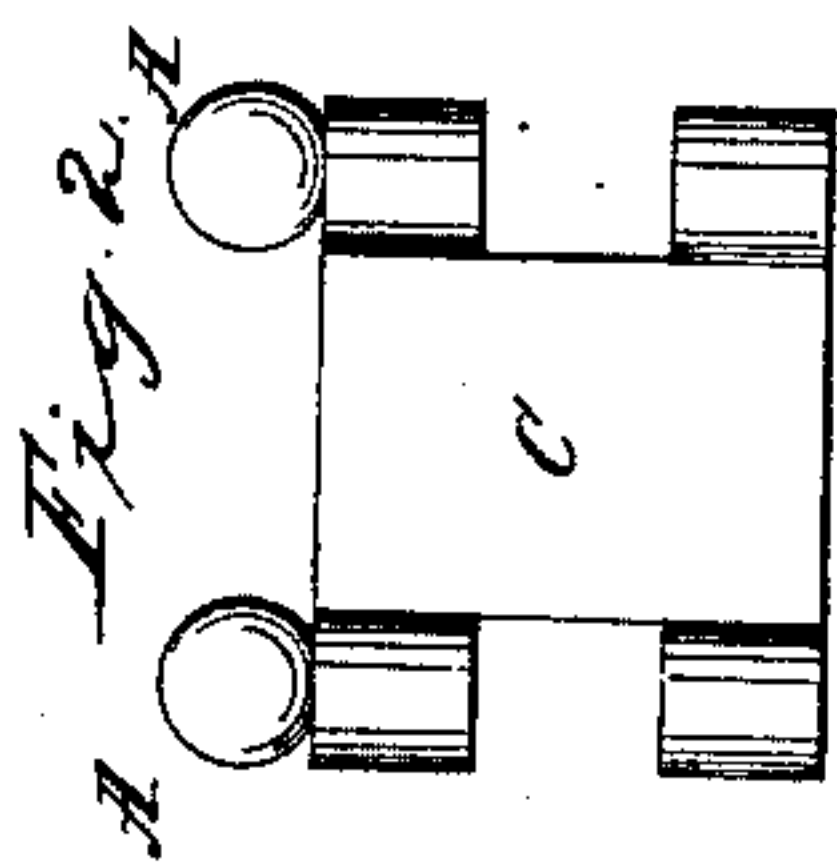
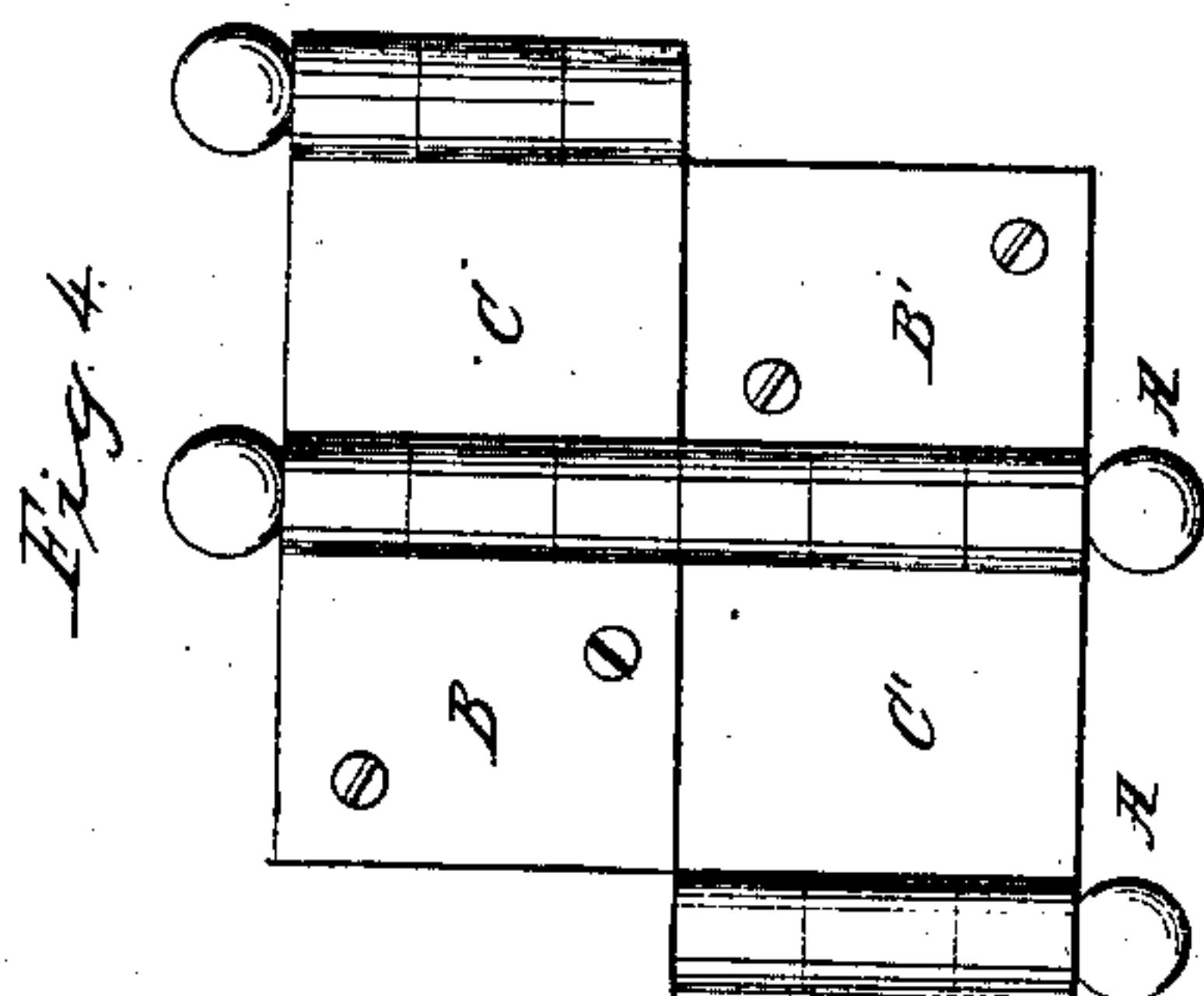
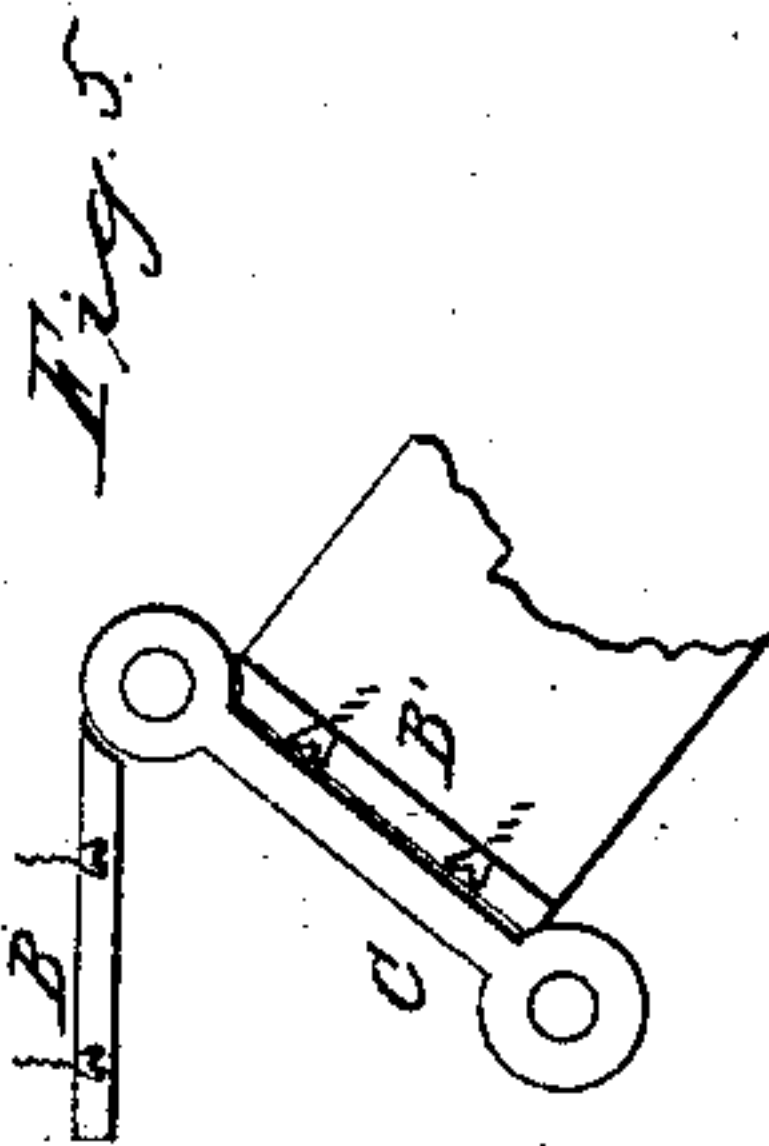
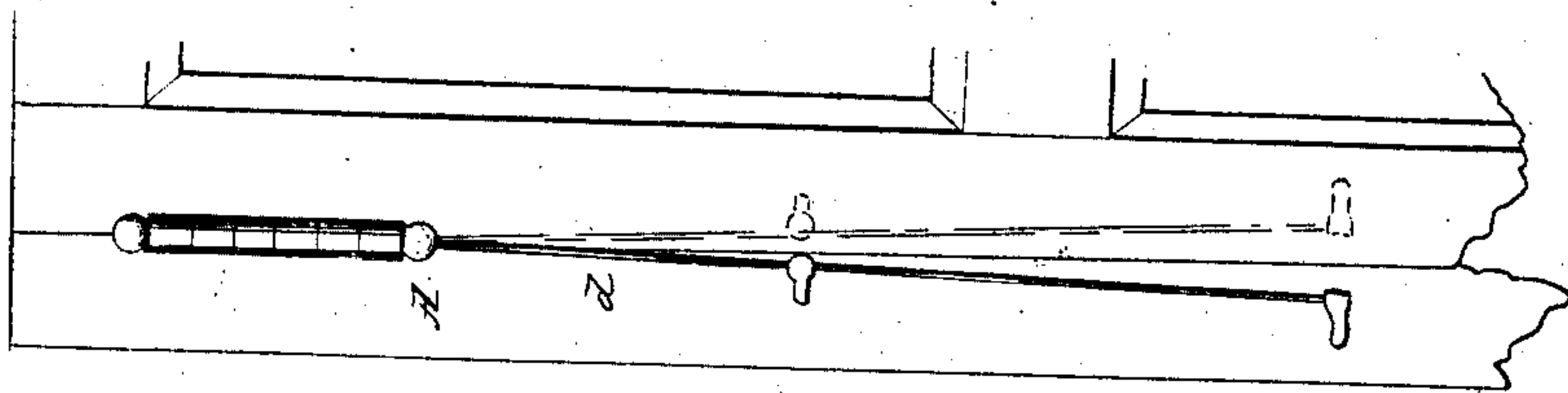


G. Dumbolton,

Door Spring.

N<sup>o</sup> 76,422.

Patented Apr. 7, 1868.



Witnesses:  
Wm. F. Clark  
Chas. Taylor

Inventor:  
Geo. Dumbolton

# United States Patent Office.

GEORGE DUMBOLTON, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF  
AND C. H. SLICER, OF SAME PLACE.

*Letters Patent No. 76,422, dated April 7, 1868.*

## IMPROVED DOUBLE-ACTING HINGE.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE DUMBOLTON, of the city and county of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Hinges for Doors, Windows, &c., which I denominate as a Double-Action Hinge; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this application.

The object of my improvement is to furnish a cheap, simple, and easily-attached, removed, or repaired spring to a hinge for doors of public buildings, stores, and offices, &c., that will open either way, and admit of ingress and egress by pushing the door in either direction. It has all the simplicity and durability of the ordinary butt-hinge, is readily adapted to the plain door and jamb in use, and to which the common torsion spring-rod may be easily applied in keeping the door closed.

My invention is applicable to the ordinary square-edged door, is simple in its construction, and, at little cost, allows of the opening of the door in either direction. It consists in part of a hinge resembling, in its joints and leaves, the common butt-hinge, but, instead of two, it has a third leaf interposed between the others. This centre leaf is divided at its half length. Said half length interlocks or couples with the screw or whole-length plates, upon opposite sides of said plates, in such a manner that while the upper half leaf is hinged to the left-hand screw-plate at its upper and right-hand side, the lower half leaf is hinged to the left side of the right-hand screw-plate at its lower end. In this way, either the upper or lower part of the centre leaf alternately forms a strap or connection of the plates, and moves with the door in either direction, thus carrying or throwing the centre of motion or pivots of the hinge to the front or back of the door.

It is to be noticed that the only connection or coupling of the screw-plates is through the strap-plates or centre leaves, and it is also to be observed that while the right screw-plate couples with one strap, the left one also couples with the other plate, thus giving full strength and bearing of the whole length of the hinge.

In the drawings, B' represents what I designate the right-hand screw-plate, and B the left-hand one. The joints of the hinges or knuckles are simple in their character. C is the upper strap or part of the third leaf, and C' the lower strap. These straps are double knuckled, that is, they interlock with both screw-plates, allowing one leaf to fold on one side, and the other on the opposite side of the centre leaf or strap.

In determining the size of the hinge for a door, the length of the strap between the knuckles should correspond with the thickness of the door. Should it be desirable to only allow of the opening of the door in one direction, it is only necessary to pass a screw through a hole to be made in the strap C, and thus fasten it to the door or jamb.

In double-acting hinges as heretofore constructed, the springs for returning the door to its shut position are so united with the hinge itself as to make it expensive, heavy, and very difficult to repair, as easy access to it cannot be had, or, indeed, any access, without taking off the hinge from the jamb and door. I remedy these objections by arranging and combining with the centre or swinging leaf of a double-action hinge, when upon the door, two torsion-springs in a way entirely different from what has been heretofore done, viz, the end of one of these springs is fastened to the door-frame or jamb, and the opposite end is attached to the swinging leaf or strap of the hinge by means of its pivot or knuckle, as shown in Figure 6. By this connection a spring-pivot or knuckle is formed for closing the door in one direction. The other spring is used on the reverse side of the door, and has one of its ends attached to and operates the opposite pivot or knuckle of the same hinge in the same manner as in the first instance, but this spring has its other end fastened directly to the door, as shown in red lines, fig. 6, and closes the door in the opposite direction.

These two springs, arranged in the manner described, centre or close the door to its proper place. These springs can be removed, repaired, or replaced without disturbing or removing the hinge or door. Another advantage in this method of applying torsion-springs to the double-acting hinge is that the hinge can readily be relieved of the action of the springs when the door is required to be kept open, and thereby get rid of unnecessary strain upon the hinge when the door is not in use.

What I claim as my invention, and desire to secure by Letters Patent, is—  
The applying of two torsion-springs to the swinging leaves or straps of a double-action hinge, substantially  
as and for the purpose described.

GEO. DUMBOLTON.

Witnesses:

JOHN F. CLARK,  
W. H. HAYWARD.