

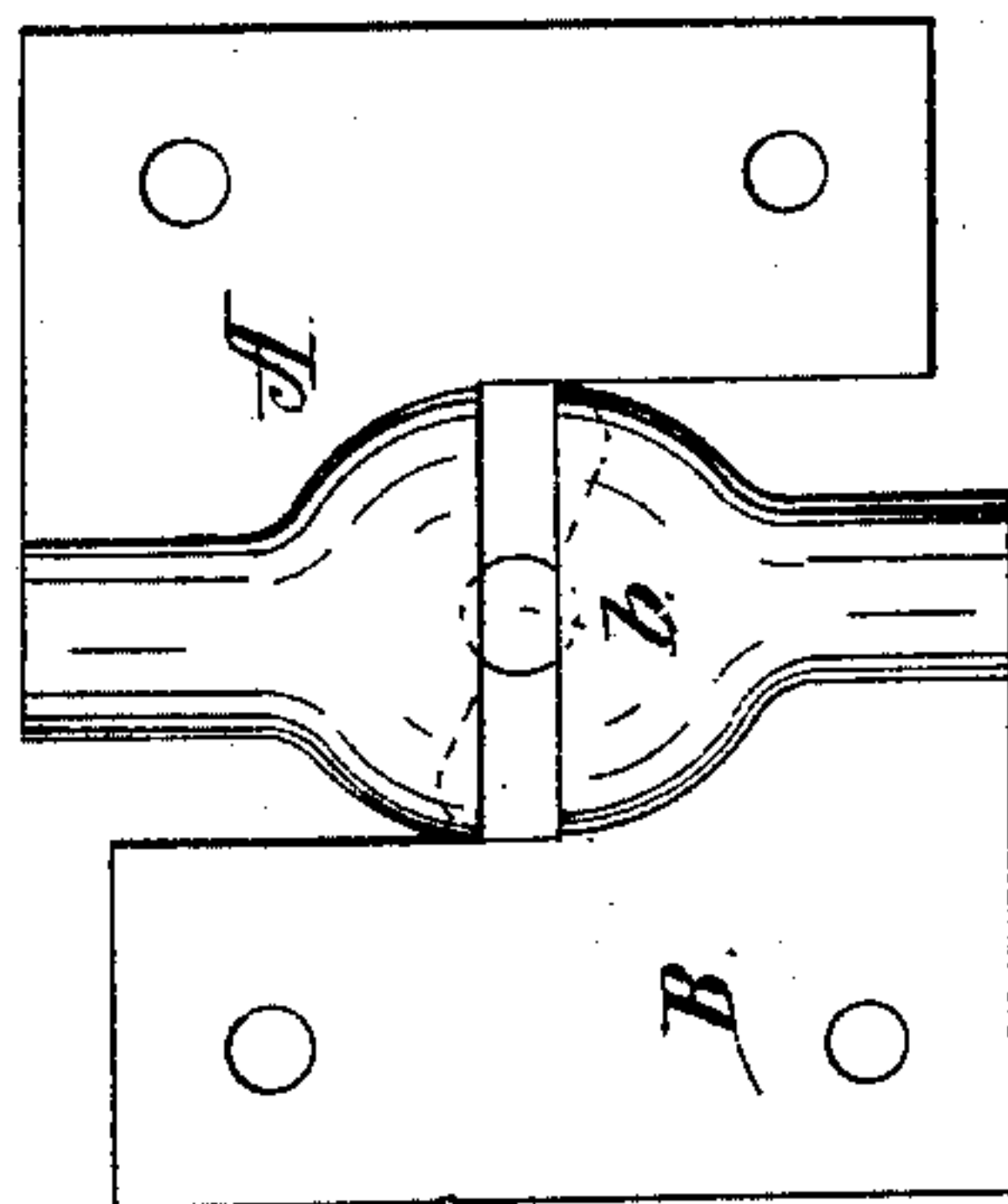
*J. Jones,*

*Hinge.*

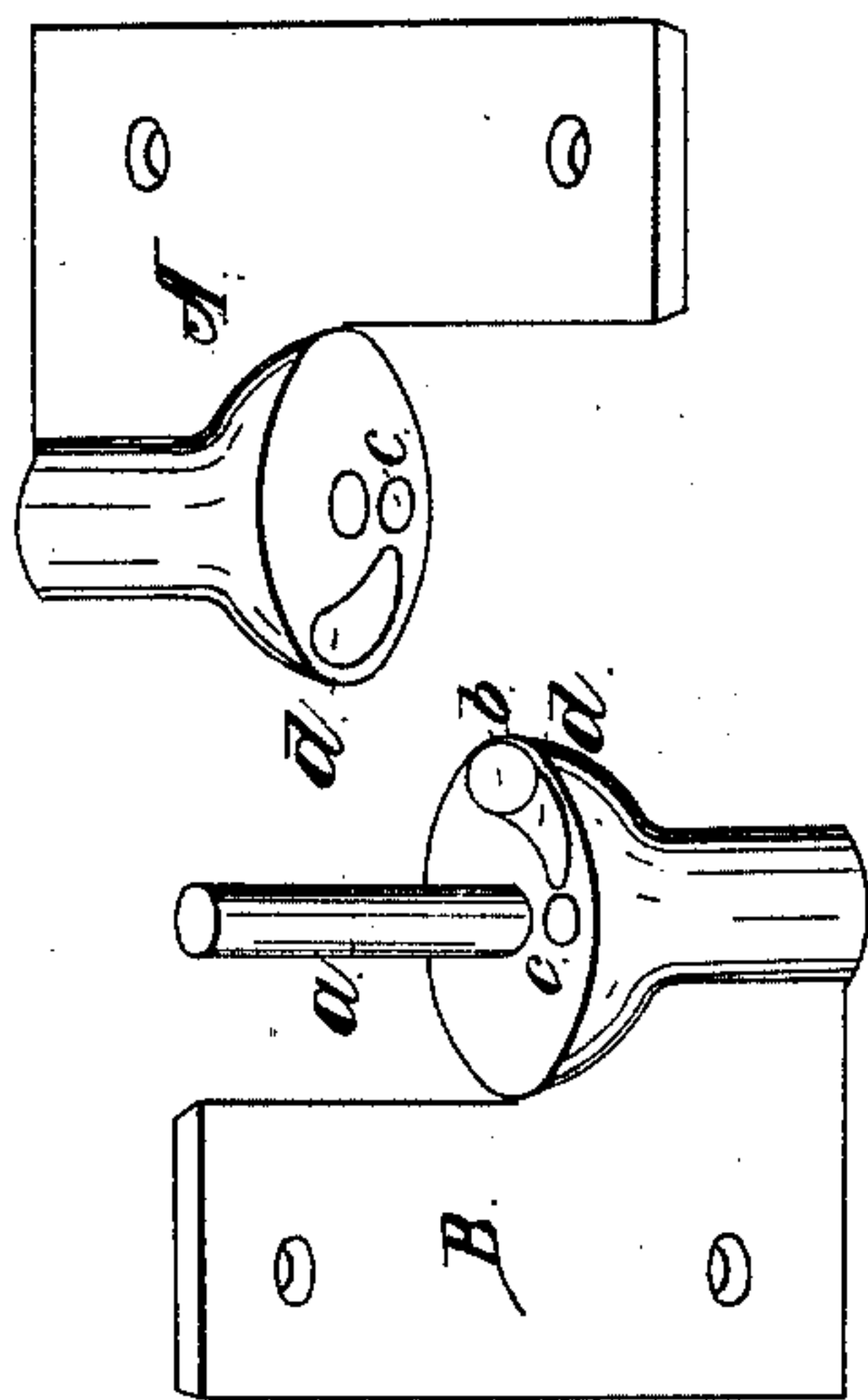
*N<sup>o</sup> 27,056.*

*Patented Feb 7, 1860.*

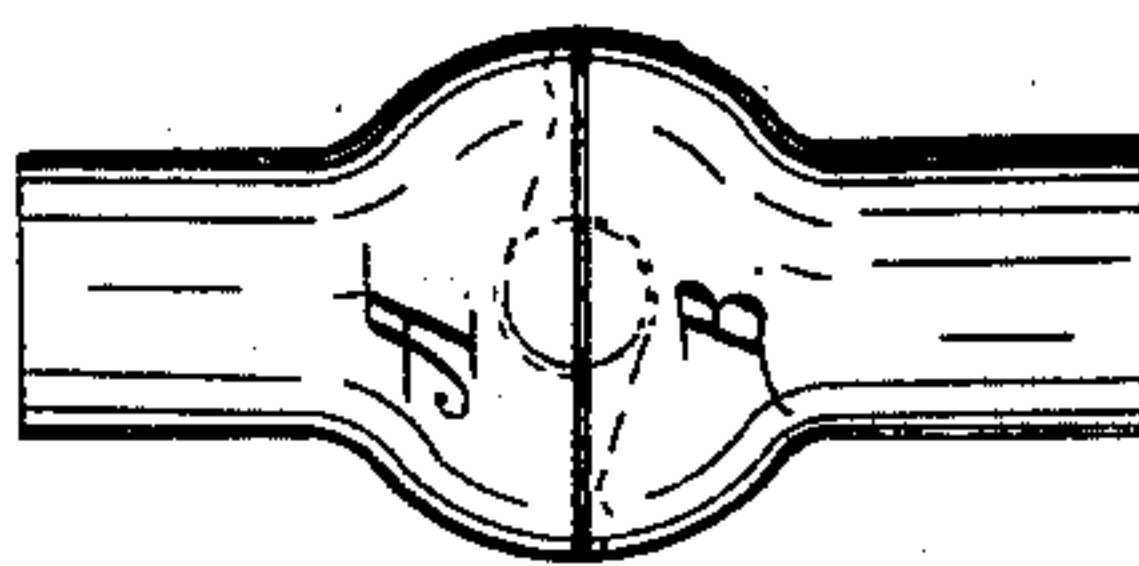
*Fig. 2.*



*Fig. 3.*



*Fig. 1.*



*Witnesses:*

*J. C. Maser.*

*S. J. Allen.*

*Inventor:*

*James Jones.*

# UNITED STATES PATENT OFFICE.

JAMES JONES, OF ROCHESTER, NEW YORK.

## HINGE.

Specification of Letters Patent No. 27,056, dated February 7, 1860.

*To all whom it may concern:*

Be it known that I, JAMES JONES, of Rochester, in the county of Monroe and State of New York, have invented a new and Improved Convertible Self-Closing Hinge for Doors, Window-Blinds, Gates, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making  
10 part of this specification, in which—

Figure 1 is an end elevation of the hinge closed, Fig. 2, a reverse side elevation of the same when opened, and Fig. 3, a perspective view of the parts separated, showing the  
15 form and position of the actuating parts.

Similar letters refer to corresponding parts in all the figures.

The object of my invention is to provide a hinge which shall be self-acting when all its  
20 parts act conjointly, and, at the same time answer equally well, as a hinge of ordinary construction when one of those parts is removed. It is made of the form of an ordinary loose jointed butt hinge, with the exception that, for convenience, I enlarge the bearing  
25 portion of the joint in each section, as shown in the drawings. In these contiguous surfaces I form circular inclined grooves, *d d*, Fig. 3, of reverse inclination, the deepest  
30 portions of which overlie each other when the hinge is closed, and contain the spherical metal ball, *b*, as shown by the dotted lines in Fig. 1. These inclines are concave, so as to coincide with the surface of the ball, and extend only a quarter of the circumference in  
35 each section, the ball traversing equal distances in both, thus giving a half revolution to the door or gate to which they are attached. At the smaller extremity of the inclined  
40 surfaces in each part I make a cavity, *c*, Fig. 3, of a size adapted to receive the ball, which, by falling into them as they are brought in juxtaposition by the opening of the hinge, forms a stop or fastening, for the  
45 door when fully opened. Fig. 2, exhibits the hinge in this situation, the door being thrown widely open. The dotted lines indicate the reverse inclined grooves *d d*.

The operation is as follows: The ball being  
50 placed in the grooves in the lower half of the hinge, the door, having the upper half attached, is placed on in the usual manner of loose-jointed butts, and closed. This brings the deepest portion of the two inclined

grooves together, one being directly above the  
other, and their united depth is just sufficient  
to bury the ball from observation, and allow  
the bearing surface of the hinge joint to  
come in contact. This position is shown in  
Fig. 1. Immediately, as the door begins to  
open, the ball bearing the weight, rolls up the  
inclined surface of either groove, raising the  
upper hinge and door a distance equal to the  
diameter of the ball until fully opened when  
that opening is diminished by its falling into  
65 the stop recesses previously described. If the door is not thrown fully open, as is generally the case in ordinary use, its weight upon the ball will cause it to move down the inclined  
surface of the groove in the lower or stationary  
half, carrying with it the upper half  
and thereby closing the door. The greater  
the weight the quicker and more effective its  
action, but so free is it from friction that the  
lightest door readily closes.  
75

In case the door is to be left open it is thrown back until the ball drops into the recesses, *c c*, where it will remain until some force is exerted to remove it. For inside  
doors these holes can be very shallow, but  
80 where it is desirable to fasten securely, as in the case of window blinds, gates or outside doors, their depth can be increased so as to resist the force of the wind, and only yield to the force exerted by the hand. This  
85 renders it very desirable as a hinge for blinds, as it saves the trouble and exposure to which a person is subject in using those of common construction. Another advantage is secured in its application to inside  
90 doors, as the moment the door is opened it begins to raise gradually, thus clearing the carpet and rendering it impossible for it to receive any injury by being caught or rubbed by the bottom of the door. With  
95 this hinge the threshold can also be dispensed with thus saving labor in construction and rendering the passage from one room to another more easy and pleasant as well as enabling that portion of the floor to  
100 be covered with carpeting the same as other parts.

In converting the hinge from a self-closing to a common hinge it is only necessary  
to remove the ball, when the two surfaces  
105 containing the inclined grooves are brought in contact and work together as an ordinary hinge. It is not essential that these inclined



grooves shall be formed in each part or section, as a similar effect is produced by forming a single inclined groove in one section. This method would simplify the construction and answer the purpose nearly as well though I prefer the method previously described.

Thus it will be seen that my improved hinge combines all the advantages of the common butt or hinge with those of a self acting hinge, and also furnishes a secure fastening or lock when opened without the aid of bolts, springs, or any of the contrivances in common use. Its additional cost is so trifling as hardly to be considered, consisting merely in the friction ball *b* and the trifling increase in the weight of the enlarged portion of the hinge. The ball is not liable to be lost as it cannot get out of place unless intentionally removed. In case the ball should be out of place or position when the door is replaced it is only necessary to close the door when it resumes its position, where it will remain until the door is again raised. The enlarged portion can be made ornamental by a molding, or other-

wise, so as to add to, rather than detract from its appearance.

I am aware that hinges have been constructed with inclined planes working together, and also with the addition of a friction roller working between such surfaces, as seen in the patent of S. M. Bullard, June 2d 1857, and these I do not claim; but

What I claim as my invention and desire to secure by Letters Patent is—

1. The use of the free removable ball *b* in combination with an inclined groove, or channel, *d*, or of two reverse inclined grooves, in the joint or bearing surfaces of the hinge, substantially in the manner and for the purposes set forth.

2. I also claim forming the recesses *c c* at suitable points in the contiguous surfaces of the parts in combination with the ball *b* for the purpose of fastening the hinge when opened substantially, as herein described.

JAMES JONES.

Witnesses:

J. FRASER,  
S. J. ALLIS.