

C. FRIZELL.

Stop-Joints for Stay-Rods.

No. 152,476.

Patented June 30, 1874.

Fig. 4

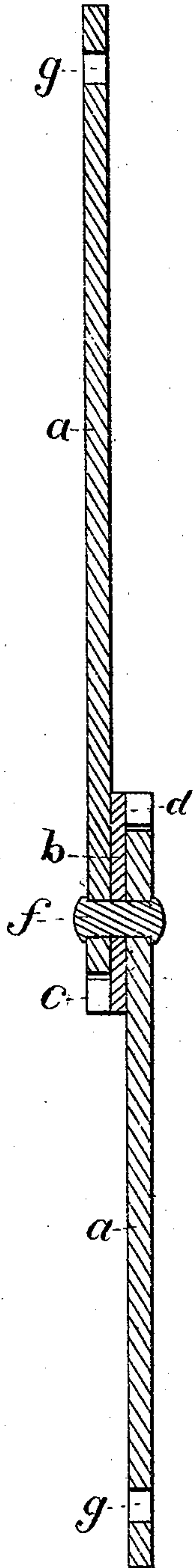


Fig. 3

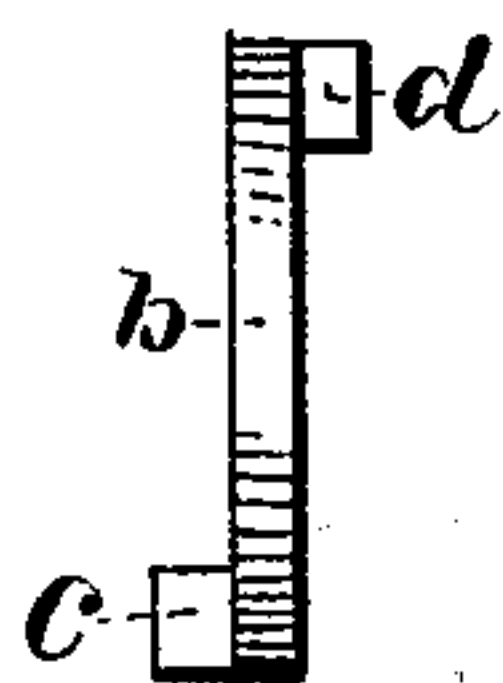


Fig. 1

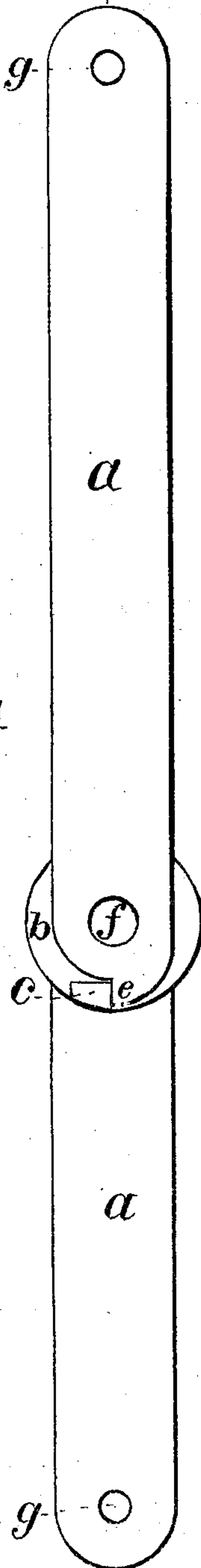
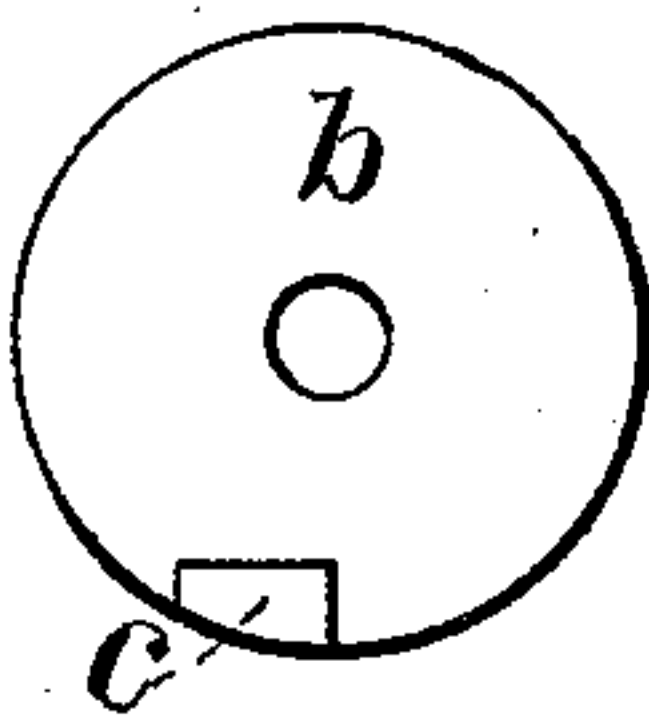


Fig. 2



WITNESSES.

H. K. Porter  
Eugene Humphrey

INVENTOR.

Charles Frizell  
By J. W. Porter, Atty.

# UNITED STATES PATENT OFFICE.

CHARLES FRIZELL, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN STOP-JOINTS FOR STAY-RODS.

Specification forming part of Letters Patent No. **152,476**, dated June 30, 1874; application filed April 24, 1874.

*To all whom it may concern:*

Be it known that I, CHARLES FRIZELL, of Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented a new and Improved Stop-Joint for Stay-Rods; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

This invention relates to the joint of stay-rods which move through half the arc of a circle when being opened or closed, and which are provided with a stop device that arrests the opening movement when the two parts of the rod are so far opened as to be brought in line with each other; and the invention consists in a disk or washer formed with a spur or stop on either side at the outer periphery, which washer is interposed between the two parts of the rod, all being united by a rivet, while the inner ends of the parts of the jointed rod are formed with bearings, which, when opened, engage with said spurs on the washer, thereby holding the rod in line, but admitting a folding movement.

Figure 1 is a side elevation of a completed stay-rod provided with my improvement. Fig. 2 is a side view of the stop-washer. Fig. 3 is an edge view of the washer; and Fig. 4 is a horizontal section taken on line A B, Fig. 1.

In the drawings, *a a* represent the posts or arms of the rod. *b* is the washer, and *c d* the stops or spurs formed one upon each side thereof. *e* is a projection or lip formed upon

each of the arms *a*, and *f* is the rivet which passes through the arms *a* and washer *b*, serving as the pivot of motion when the rod is opened or folded.

It is apparent that if the outer ends of arms *a* were pivoted, through holes *g*, to objects susceptible of moving toward or from each other, then by raising the inner ends of the arms, the outer ends would approach each other until the arms were side by side, or nearly so; and that, by opening apart the objects to which the outer ends of the rods were pivoted, it would assume the position shown in Figs. 1 and 4, when the stops *c* and *d* and pivot *f*, acting as the respective fulcrums of the rods, as shown and described, would serve to hold the parts of the rod in a right line, as shown.

By thus forming the stop-washer of cast metal, preferably of malleable iron, and the rods of rolled wrought-iron, I am enabled to construct a folding stop-joint stay-rod at greatly reduced cost from those formed wholly of either cast or wrought metal.

I claim as my invention—

1. In a stop-joint, the washer *b*, having the stops or spurs *c d* formed upon the respective faces thereof, substantially as and for the purposes specified.

2. In combination with rods *a a*, the stop-washer *b*, all constructed to operate in manner substantially as described and shown.

CHARLES FRIZELL.

Witnesses:

EUGENE HUMPHREY,  
EBEN HUTCHINSON.