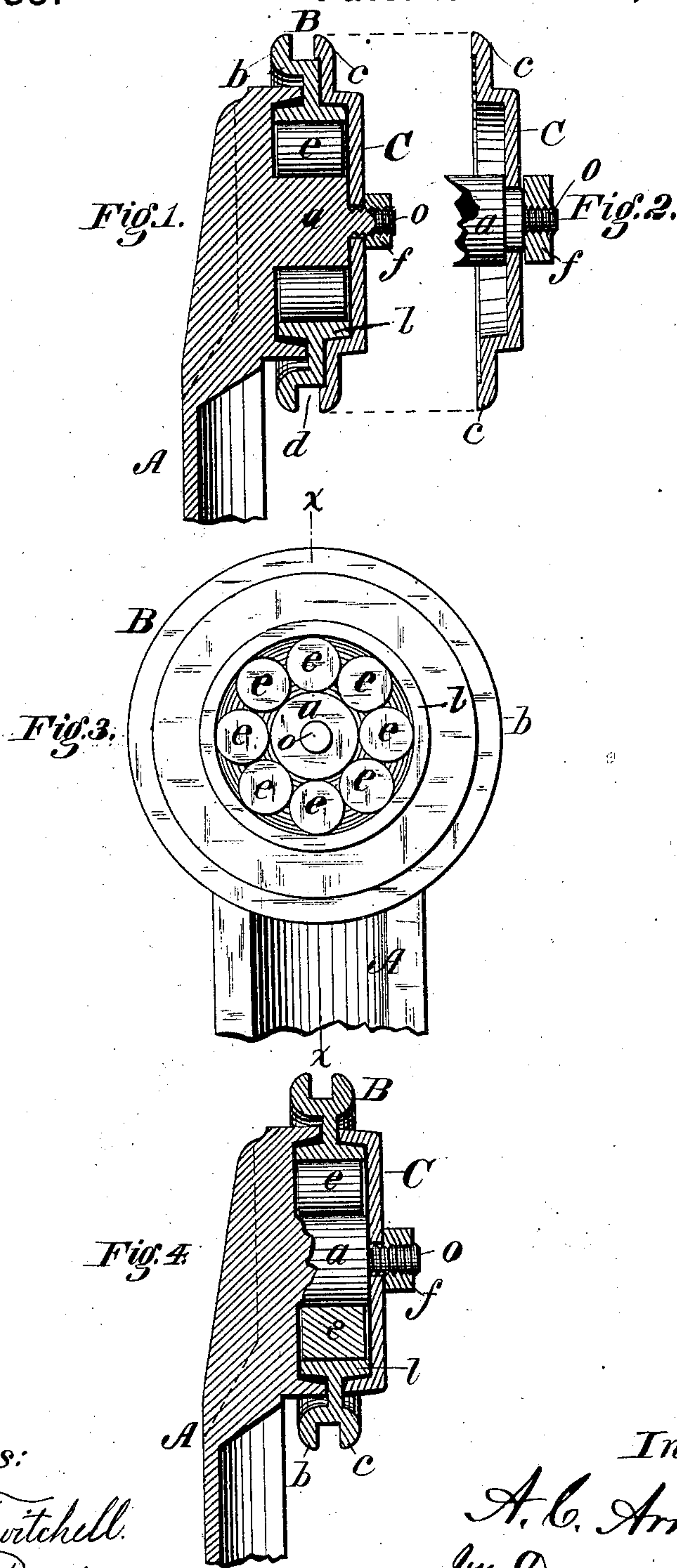


A. C. ARNOLD.  
Door-Hanger.

No. 210,485.

Patented Dec. 3, 1878.



*Witnesses:*  
Donn P. Twitchell.  
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# UNITED STATES PATENT OFFICE.

ALONZO C. ARNOLD, OF NORWALK, CONNECTICUT.

## IMPROVEMENT IN DOOR-HANGERS.

Specification forming part of Letters Patent No. **210,485**, dated December 3, 1878; application filed September 23, 1878.

*To all whom it may concern:*

Be it known that I, ALONZO C. ARNOLD, of Norwalk, in the county of Fairfield and State of Connecticut, have invented certain Improvements in Hangers for Gates and Doors, of which the following is a specification:

My invention consists in certain improvements in hangers for sliding doors, gates, &c., patented to me July 23, 1872, No. 129,777, the improvements consisting in the introduction of friction-rolls, and in the peculiar construction of the sheave, and of the means for securing it and the friction-rolls in place, all as hereinafter more fully described.

Figure 1 is a vertical central section of my improved device on the line *xx* of Fig. 3. Fig. 2 represents a slight modification of the same, and Fig. 3 is a face view of the same with the cap-plate removed. Fig. 4 is a vertical central section of the same, showing a modification in the construction of the sheave and cap-plate.

As constructed in my patent above referred to, the sheave or bearing-roller was constructed with a single flange to operate on one side of the rail, with a small roller arranged at right angles thereto; to bear against the opposite side of the sheave and the rail, there being also another friction-roller arranged to bear against the inner side of the sheave at the upper side.

In constructing a hanger on my improved plan, I make the body A, as in my former patent, of cast-iron, with the journal *a* cast around a wrought-iron pin, *o*, which has a screw-thread on its outer end, as shown in Fig. 1.

The sheave B may be made in either of the ways shown in Figs. 1 and 4, the difference being simply that, as shown in Fig. 4, it is cast with its flanges *b* *c* made solid with the body in the usual manner, while in Fig. 1 it is shown as having but one of its flanges, *b*, cast solid with the body, the other flange, *c*, being formed by extending the periphery of the cap-plate C from the point where it fits over the hub *l* of the sheave out even with the edge of the flange *b*, as clearly shown in Fig. 1, and in either case the sheave B is provided with a central hole enough larger than the journal *a*

to admit the insertion of a series of plain anti-friction rolls, *e*, as shown in Figs. 1, 3, and 4. The sheave and friction-rolls *e*, being mounted on the journal *a*, are held in place by a cap or plate, C, the periphery of which projects so as to form a cover fitting over the end of the friction-rolls *e* and the hub *l*, as shown in Figs. 1 and 4, this plate C being secured in place by a nut, *f*, as shown. In this case it will be seen that the plate C, being screwed tight against the shoulder of the journal *a*, is not intended to rotate, but to remain stationary. If, however, it is desired to have this plate rotate with the part *b*, it will be arranged as shown in Fig. 2, in which the journal *a* is shown made with a reduced portion at its outer end, on which the plate C may turn freely, the nut *f* in that case being screwed up against the shoulder of the journal instead of against the plate C. This modification is designed to obviate any friction that might occur between the rail on which the sheave runs and the inner face of the flange *c*, though in practice I do not find this necessary, as there is but little friction between the rail and the flange *c*.

When the sheave B is made with a double flange, as shown in Fig. 4, the plate C will be made less in diameter, as there shown, there being in that case no necessity for it to project to form a flange. I prefer, however, to make the sheave as shown in Fig. 1, for the reason that it can be cast more perfect and true with a single than when made with the double flange, and with less trouble, and it saves the necessity of turning it in a lathe to make it true and perfect. In all other respects it is to be constructed the same as that shown in Fig. 1, and as hereinbefore described.

With care in molding and casting, the whole thing, including the friction-rolls, can be cast ready to be put together, with the exception of the stud *o* and nut *f*, and thus these hangers, while being exceedingly efficient and easy in their working, are at the same time very durable and cheap of manufacture.

Having thus described my invention, what I claim is—

1. A sheave, B, composed of two parts, *b* and *c*, of equal diameters, with an offset on

one of said parts to form the tread of the sheave, the said parts being constructed to fit side by side, so that one shall form a flange on one side of the tread and the other on the other side, substantially as shown and described.

2. The combination, in a door-hanger, of the body A, provided with the rigid stud or journal *a*, the anti-friction rolls *e*, arranged to bear directly on the stud *a*, the sheave B, with a central opening to inclose and bear on said

rolls, and the plate C, whether said plate terminates below the flange of the sheave, as in Fig. 4, or extends out so as to form one of the flanges, as in Fig. 1, the same being secured to the stud *a* and fitting over the end of the rolls and the hub *l* of the sheave, all substantially as herein set forth.

ALONZO C. ARNOLD.

Witnesses:

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