No. 885,633. PATENTED APR. 21, 1908.

J. MONTGOMERY & R. LEED.

DOOR HANGER.

APPLICATION FILED JULY 29, 1907.

Fig. 1.

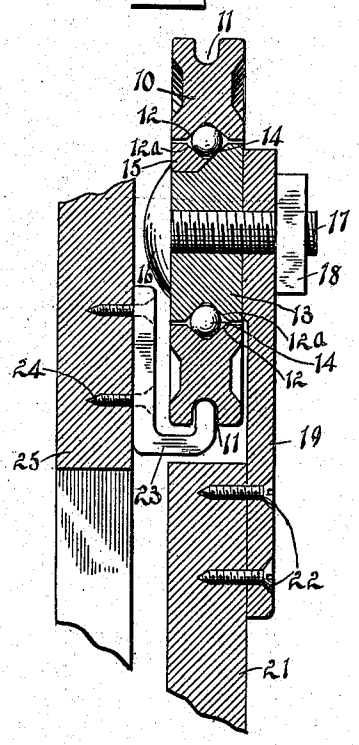


Fig. 2.

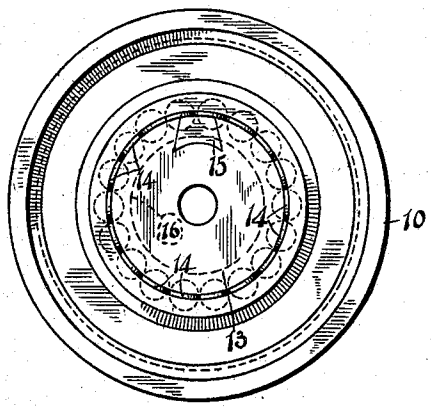


Fig. 4.

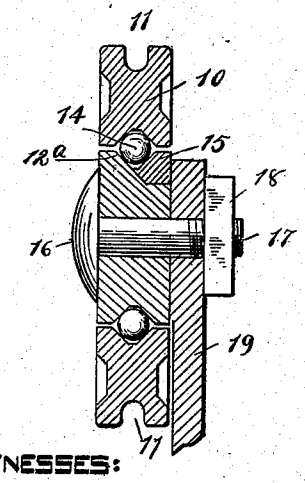
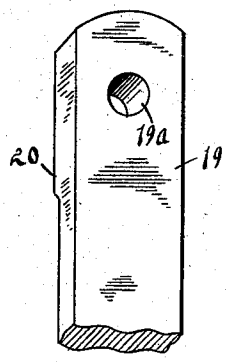


Fig. 3.



WITNESSES:

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DOOR-HANGER.

No. 885,633. Specification of Letters Patent. Patented April 21, 1908.

Application filed July 29, 1907. Serial No. 386,063.

To all whom it may concern:

Be it known that we, JAMES MONTGOMERY and ROSCOE LEED, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Door-Hangers, of which the following is a specification.

This invention relates to the construction of door-hangers.

The especial object of the improvements which form the subject matter of this application is to produce a ball bearing sheave of simple and economical construction in which the balls may be readily placed in the ball-race and effectively retained therein by the hanger strap or a bolt attaching the strap to the sheave.

In the accompanying drawing which forms a part of this application:—Figure 1 is a vertical section through our door hanger showing sections of a supporting structure and a door suspended from the hanger frame; Fig. 2 is a face view of the hanger sheave alone; Fig. 3 is a fragmentary view of the hanger strap, and Fig. 4 shows a reversal of some of the parts shown in Fig. 1.

Referring to the details of the drawing 10 represents an annular rim forming the tread surface of our improved hanger sheave, in the outer periphery of which is cut a track-groove 11, and in the inner edge of which is cut a ball race groove 12. The rim 10 is mounted upon a hub 13, in the periphery of which is formed a ball-race groove 12^a. The grooves 12, 12^a, register with each other and together form a complete race for the balls 14 arranged therein. In one face of the hub 13 is cut a socket or recess into which is closely fitted a retaining plug or block 15, the inner face of which is chamfered to coincide with the adjacent face of the ball race groove 12^a. The socket is cut sufficiently large to permit the insertion and removal of the balls in the race provided therefor between the members 10 and 13.

To hold the block 15 in position in its socket, we provide a bolt 17 having an enlarged head 16 the edge of which overlaps the block as indicated by dotted lines in Fig. 2. On the threaded end of the bolt is mounted a nut 18, and a hanger strap 19 provided with a hole 19^a through which the bolt 17 passes. The inner face 20 of the strap fits snugly against the hub portion of the sheave 13 as shown in Fig. 1, but the lower portion of the strap is cut away sufficiently to permit the free rotation of the member 10 around the hub.

21 represents a portion of the door which is secured to the hanger by screws 22.

23 represents a track on which the hanger is mounted, the track being secured to a supporting structure 25 by screws 24.

In a device constructed substantially as described it will be apparent that the rim 10 will rotate freely on the balls 14 arranged in the grooved rim and the hub 13, the latter remaining stationary. It will be apparent also that by loosening the nut 18 and partially or entirely removing the bolt 17 from the hanger 19 and member 13, the block 15 may be readily removed and the balls 14 taken out for cleaning or for insertion of new balls in the race. It will also be apparent that when the head 16 of the screw 17 is brought up tightly against the block 15 by screwing up the nut 18 against the hanger 19, the block will be effectively held in position against accidental displacement. Instead of utilizing the head of the bolt for holding the block in place as shown in Fig. 1 we may arrange the block 15 so that it will be held by the face 26 of the hanger 19, as shown in Fig. 4.

What we claim and desire to secure by Letters Patent, is:—

1. In a door-hanger, a hanger-arm, a sheave consisting of a hub having a socket in one side, a rim rotatably mounted on said hub, said rim and hub each having an annular groove formed in their contiguous edges, balls arranged in said grooves, a block removably arranged in said socket and having its inner face adapted to register with said hub groove, and a bolt securing said hanger arm to said sheave and adapted to hold said block in place.

2. In a door-hanger, a sheave consisting of a hub having a threaded bore, an annular groove in its periphery and a socket entering said groove at one point, a block removably fitting said socket and having its inner face

beveled, a rim surrounding said hub and having an annular groove registering with the groove in the hub, antifrictional bearings mounted in the hub and rim grooves, a bolt having a threaded engagement with said hub, means on said bolt overlapping said block when the parts are assembled, a hanger-arm and a nut mounted on said bolt.

In testimony whereof we affix our signatures in the presence of two witnesses.

JAMES MONTGOMERY.
ROSCOE LEED.

Witnesses:
H. H. HUNSBERGER,
ERNEST STEWART.