May 15, 1951 S. H. CASEY, SR 2,553,511

DOOR OPERATING MECHANISM

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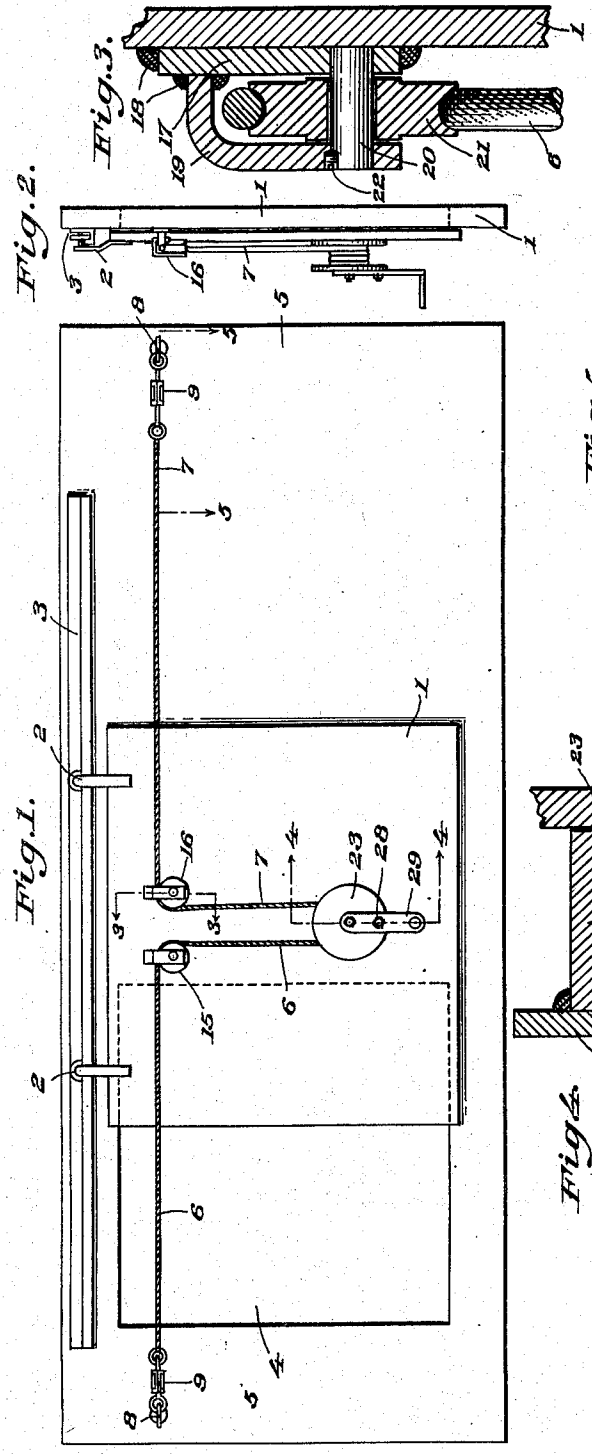


Fig. 1.

Fig. 2.

Fig. 3.

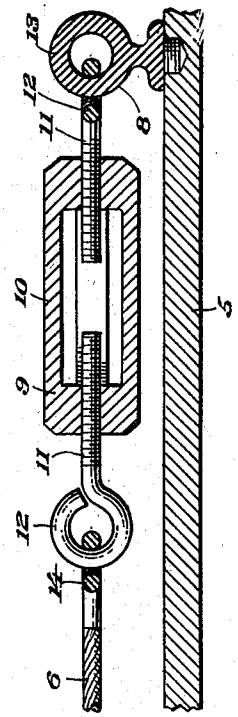


Fig. 5.

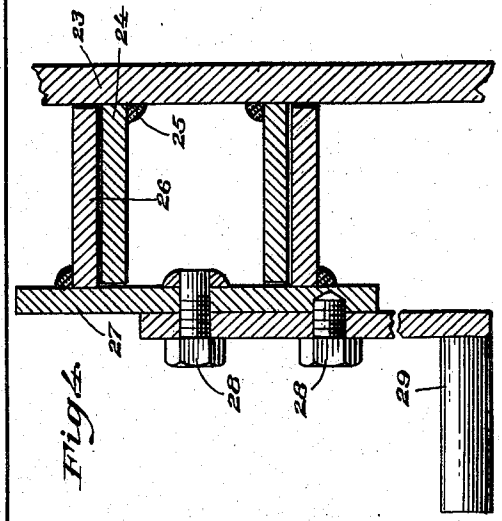


Fig. 4.

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DOOR OPERATING MECHANISM

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1 Claim. (Cl. 268—44)

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My present invention, in its broad aspect has to do with improvements in door operating mechanisms, and is especially indicated for opening and closing exceptionally heavy and cumbersome doors which are ordinarily beyond one man's strength to operate, such for instance, as ships cargo doors, and the like. My device is designed to build up the necessary leverage for operating the door with ease through the provision of an improved cable arrangement and winch or sheave operating mechanism which may be conveniently and easily operated by one man. My device may be made in any size desired for the work to be accomplished, and is simple, practical, and efficient, and has no parts which are likely to get out of order or become broken or deranged.

Other and equally important objects and advantages of my invention will be apparent from the following description and drawings, but it is pointed out that changes in form, size, shape, materials, and construction and arrangement of parts may be made and are contemplated within the purview of my broad inventive concept, and the scope of the appended claim.

In the drawings, wherein I have illustrated a preferred form of my invention—

Figure 1 is an elevation showing my device applied to a sliding door;

Figure 2 is an end view;

Figure 3 is a section on the line 3—3 of Figure 1;

Figure 4 is a section on the line 4—4 of Figure 1, and

Figure 5 is a view of one of the cable turnbuckles.

In the drawings, wherein like characters of reference are used to designate like or similar parts:

The numeral 1 designates a sliding door, which is suspended from rollers 2 from an overhead track 3, and covers the door opening 4 in the building or other object 5. My two cable ends 6 and 7 are attached as at 8 to the building wall 5, or the like on either side of the door, and have turnbuckles 9—see Figure 5—for creating the proper tension. These turnbuckles have the usual bodies 10 into which are threaded the rods 11, having eyes 12, one connected to an eye 13 or the like, and the other to the cable terminal eye 14. In spaced relation, at about the middle of the door, are two sheaves 15 and 16 over which the cable ends 6 and 7 are trained. The sheaves—see Figure 3—each has a base plate 17 which may be welded as at 18 to the door, a hood 19, a pin 20, and a grooved roller 21 rotatable on the pin. The pin is locked as at 22 by a threaded stud.

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The cable ends are then led down and lead into the cables on the winch 23—see Fig. 4—the hollow hub 24 of which is welded as at 25 to the door, and over which fits the sheave part which has a sleeve 26 welded to the face plate 27. To the face plate 27 is bolted as at 28 the operating handle 29, the head of the bolt being connected by welding through a member positioned behind the bolt head, shown in Figure 4, to the inner surface of the hub 24. By these means sufficient leverage is imparted to slide the door with ease, irrespective of its weight and mannerisms.

From the foregoing it is believed that the operation and advantages of my invention will be apparent, but it is again pointed out that interpretation of the scope of my invention should only be conclusive when made in the light of the subjoined claim.

I claim:

A mechanism for opening or closing a door slidably mounted on a wall in which the door opening is located comprising a drum journaled on the door below the horizontal center of the door and on the vertical center of the door, a pair of spaced idler pulleys mounted on the door at opposite sides of said vertical center, a cable extended several times around the drum, upwardly from the drum over the said idler pulleys and extended horizontally from the said pulleys to points spaced from the edges of the said door opening, and means securing the ends of the cable to the said wall in which the door opening is positioned with the cable close to the upper edge of the wall to provide head room for unobstructed passage through the said door opening, said means including turnbuckles in the ends of the cable for providing sufficient tension in the cable to insure travel of the door as the drum is rotated.

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