Dec. 26, 1950 C. J. MANNEY 2,535,985

HOIST

Filed April 12, 1947 2 Sheets-Sheet 1

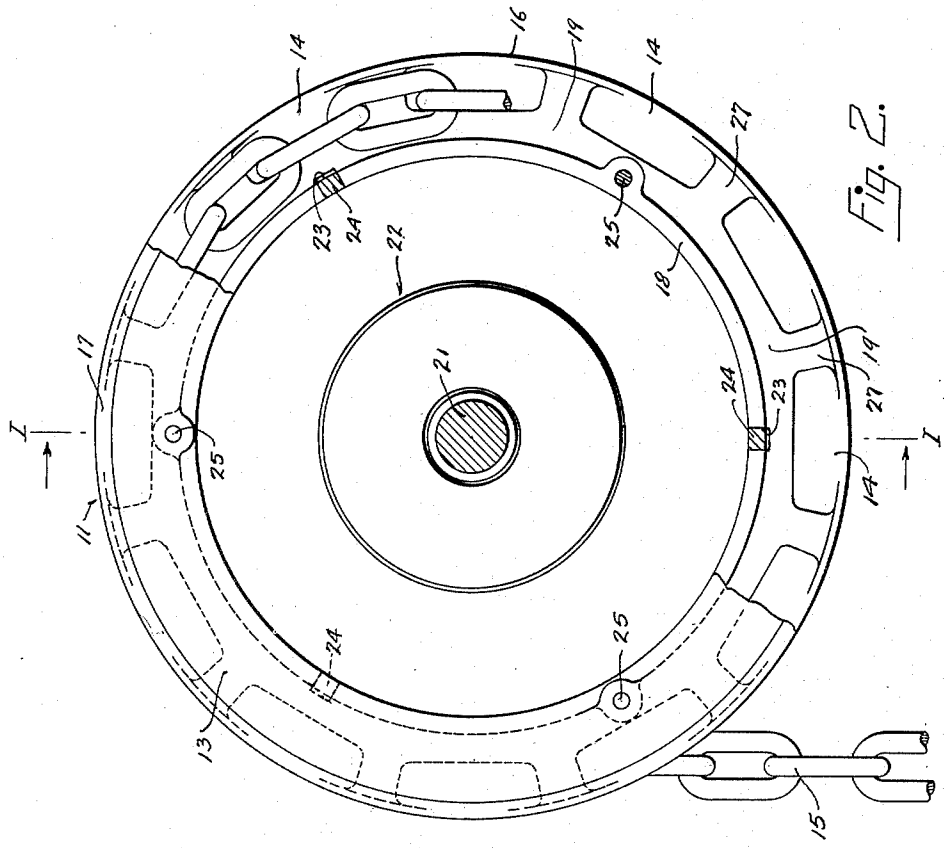


Fig. 2.

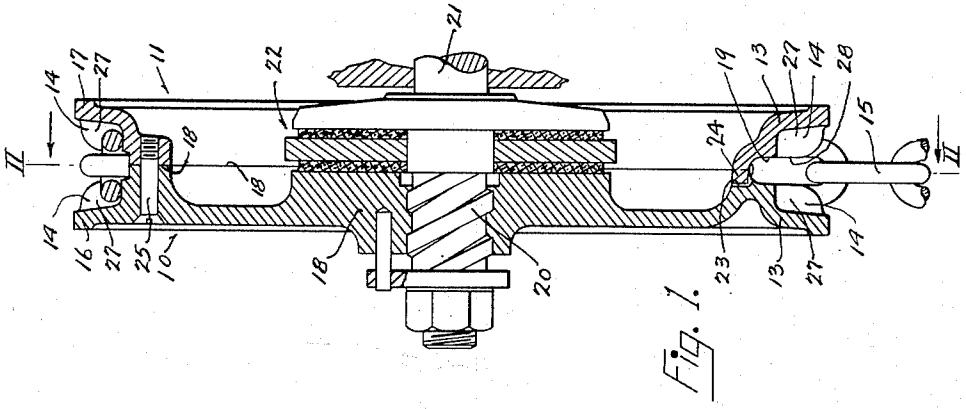


Fig. 1.

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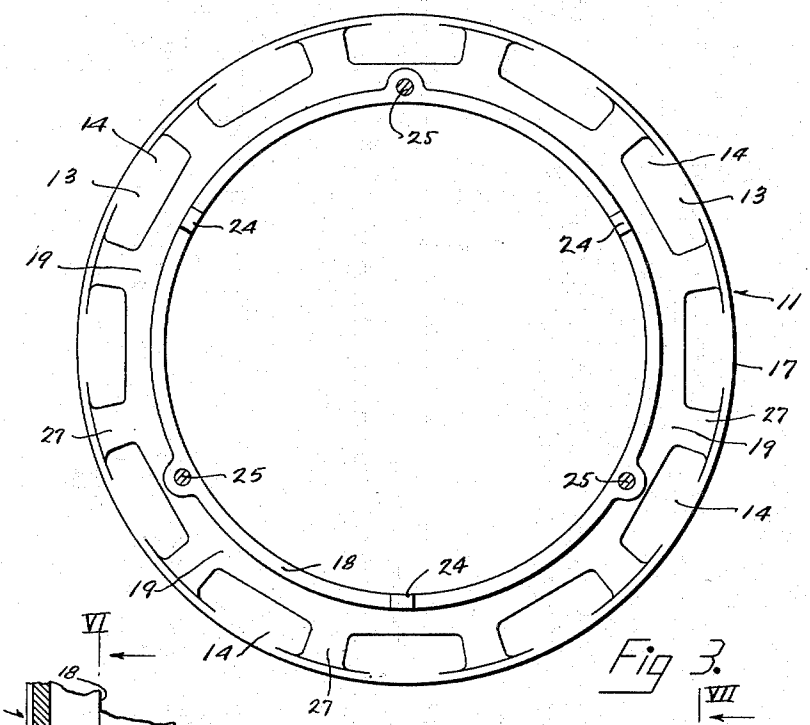


Fig 3.

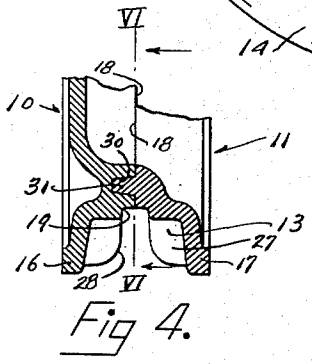


Fig 4.

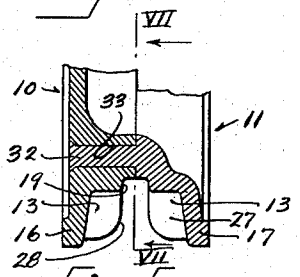


Fig 5.

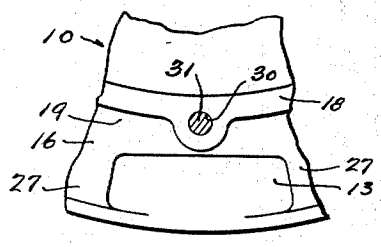


Fig 6.

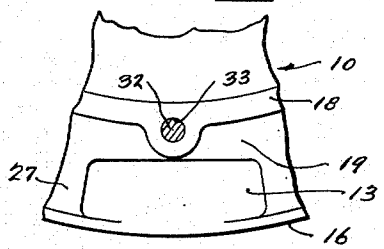


Fig 7.

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UNITED STATES PATENT OFFICE

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HOIST

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Application April 12, 1947, Serial No. 741,046

2 Claims. (Cl. 74—243)

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My invention relates in general to hoists, and in particular to the hand wheels thereof which support and are operated by the hand chain of the hoist.

As is well known to those skilled in the art, it has been the custom to mold hand wheels of chain hoists in one piece requiring the use of intricate patterns and core boxes and resulting in the exercise of great care in the preparation of the mold.

The principal object of my invention has been to construct the hand wheel of a chain hoist in two parts, each capable of being formed by a simple molding process without the use of any removable cores.

Another object has been to provide each wheel part with registering detent means for aligning the parts and resisting torque between them.

The above objects and advantages, as well as others which will be apparent to those skilled in the art, have been accomplished by the device shown in the accompanying drawings, of which:

Fig. 1 is a sectional elevation of my invention, taken on line I—I of Fig. 2;

Fig. 2 is an inside face view of my hand wheel, showing portions of the inner part thereof broken away and sectioned on line II—II of Fig. 1;

Fig. 3 is an inside face view of one portion of my hand wheel showing it as a sectional view taken on line II—II of Fig. 1 viewed in a direction opposite to the direction indicated by the arrows;

Fig. 4 is a fragmentary sectional elevation of a modified form of the invention;

Fig. 5 is a fragmentary sectional view of a further modification of the invention;

Fig. 6 is a fragmentary sectional view taken on line VI—VI of Fig. 4; and

Fig. 7 is a fragmentary sectional view taken on line VII—VII of Fig. 5.

My hand wheel 12 comprises a hub part 10 and a flange part 11. The joint between these parts is in a plane substantially at the lateral center of the hand wheel and is formed between an abutting surface provided on each part. Each of the hand wheel parts is provided with a rim portion 13 formed with an abutting surface 18 located at the lateral center of the wheel. Each rim portion is also formed with an annular chain groove 19 and spaced partitions 27 separated laterally by spaces 28 in registration with the groove 19 thereby forming chain link pockets 14 for the accommodation of the links of the hand chain 15. Face flanges 16 and 17 serve to close the link pockets at one side. Due to the separation of these wheel parts at the chain center line, each

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may be molded without the use of cores, having the mold parting line for each part substantially at the outer face of the flanges 16 or 17 thereof. Suitable draft may be provided in the mold of each part to permit the finished casting to be easily withdrawn therefrom.

The hub portion of the wheel is provided with a hub 18 having the usual screw-threaded opening at its center for the reception of the screw 20 formed on the shaft 21 of the Weston brake 22 usually employed on hoists of this type.

Various means may be employed to align the parts 10 and 11 of the hand wheel and to receive any torque between them. The means may also embody fastening means to secure the parts together and to take the relatively slight axial load between them, or the fastening means may be made separate from the aligning means. The latter arrangement is illustrated in the form of invention shown in Figs. 1 and 2 where the hub portion 10 is formed with a plurality of equidistantly spaced recesses 23 with which a similar number of detent lugs 24 register and engage. Since these lugs are designed solely for the purpose of aligning the parts and taking any torque, additional fastening means are employed in the form of screws 25 which pass through the hub part 10 and are screw threaded into the flange portion 11. These screws are preferably equidistantly spaced from the lugs 24 and are preferably locked in set position by any suitable means.

As shown in Figs. 4 and 6, the means for aligning the two wheel parts 10 and 11 comprise a plurality of equidistantly spaced recesses 30 which are preferably of cylindrically tapered formation with which a similar number of tapered pins 31 are engaged. In this form of invention the tapered recesses and pins perform the function of alignment and torque resistance only, and suitable fastening means similar to those employed in the form of Figs. 1–3 must be provided to fasten the two parts together.

In the form of invention shown in Figs. 5 and 7, the parts 10 and 11 of the hand wheel are fastened together by means of a plurality of rivet studs 32 which are carried by the part 11 of the hand wheel and which engage and pass through a similar number of apertures 33 formed in the part 10. These rivet studs are preferably extended clear through the part 10 of the hand wheel where their ends are exposed and fastened in place by riveting or peening. The outer ends of the apertures 33 are preferably countersunk

for the reception of the riveted portions of the studs.

Thus it will be appreciated that since the continuous groove intersecting the bottoms of the chain pockets around the periphery of the wheel is located on the plane of contact between the half wheel parts, this groove simultaneously provides accommodation for the edgewise disposed links of the chain and facilitates casting of the wheel parts by simple two-part molding methods.

What is claimed is:

1. A chain hand wheel for hoists comprising a hub, a two part flange, each of the flange parts being formed with complemental chain link pockets and a complemental annular groove, the flange parts being joined together substantially at the center line of the engaging hand chain, each flange part having contiguous inwardly facing rim portions forming the bottom of the chain groove, one of said rim portions having at least three spaced recesses formed in its contiguous face, the other rim portion having an equal number of lugs for slip-fitted engagement with said recesses, and spaced fastening means for securing said parts together.

2. A chain hand wheel for hoists comprising a hub, a two part flange, each of the flange parts being formed with complemental chain link pockets and a complemental annular groove, the flange parts being joined together substantially at the center line of the engaging hand chain, each flange part having contiguous inwardly facing rim portions forming the bottom of the chain groove, one of said rim portions having at least three spaced recesses formed in its contiguous face and opening up into the bottom of the groove, the other rim portion having an equal number of lugs for slip-fitting engagement with said recesses, and spaced fastening means for securing said parts together.

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