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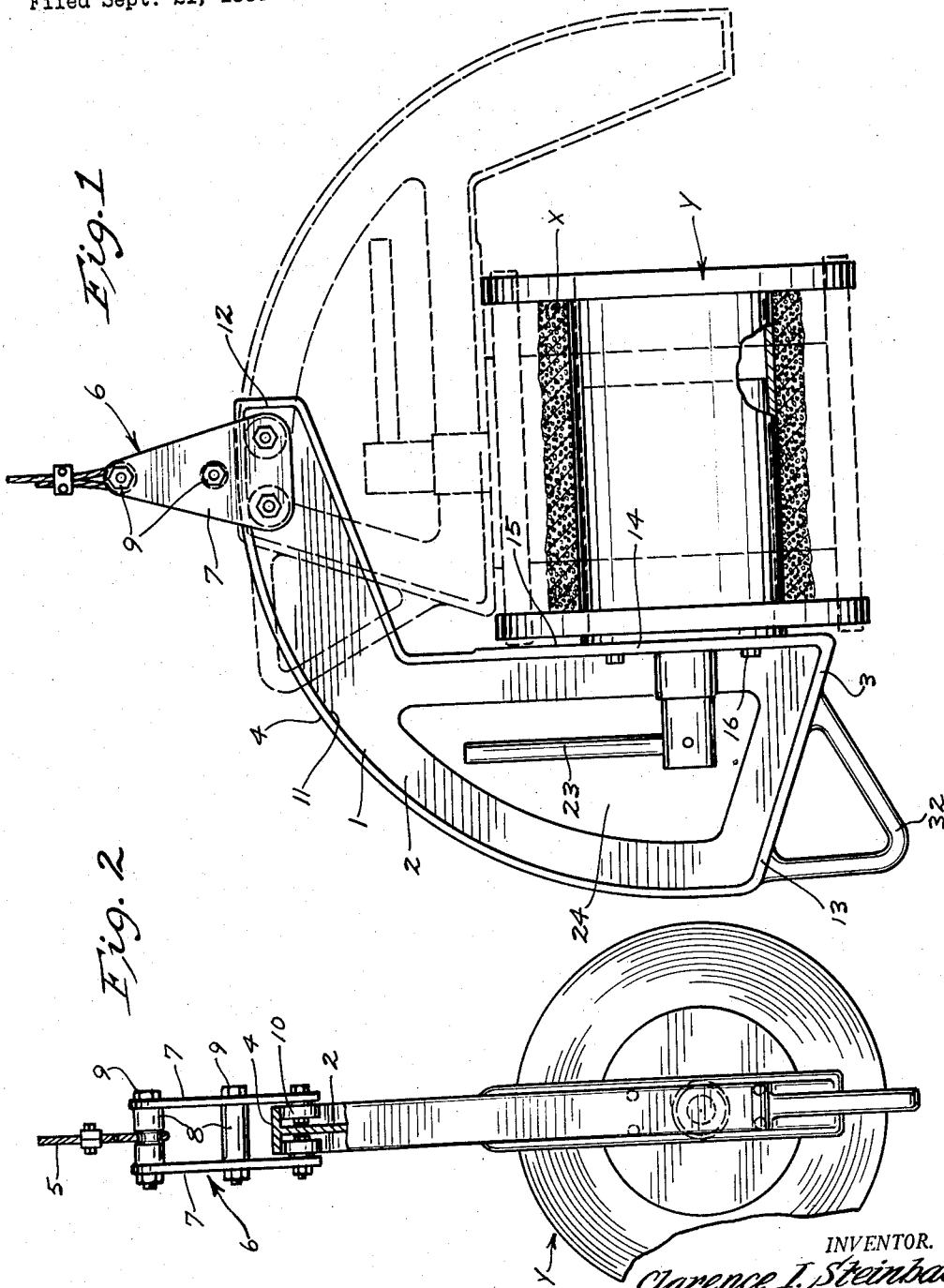
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2,882,086

CARRIER FOR SPOOLS AND THE LIKE

Filed Sept. 21, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

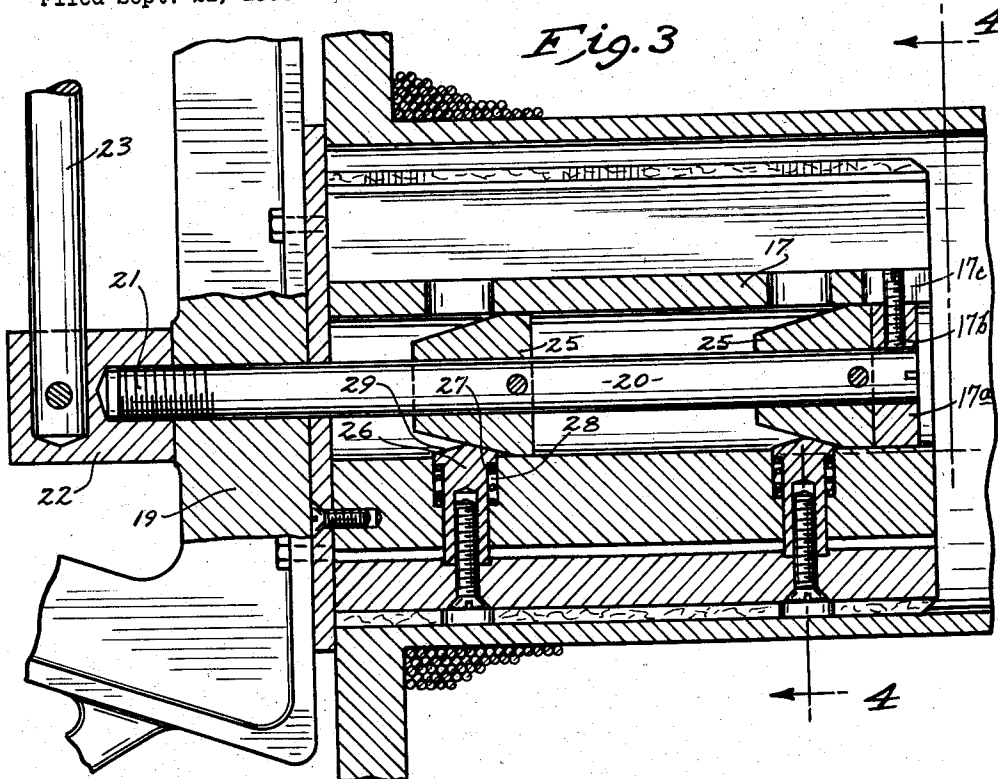
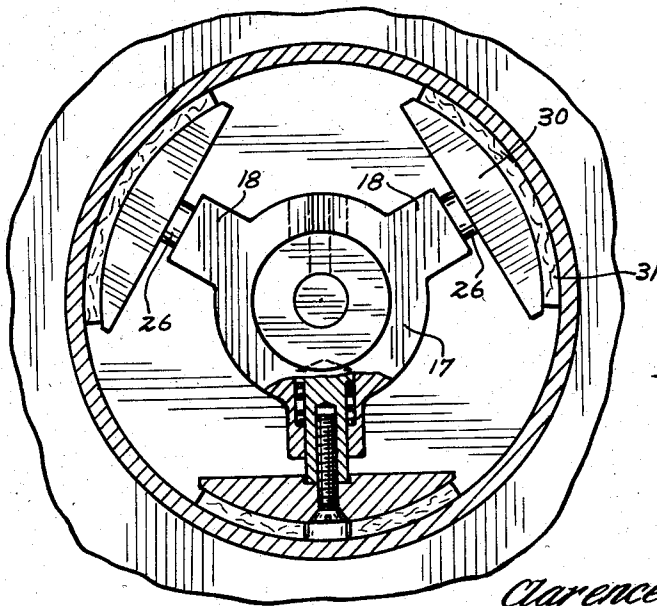


Fig. 4

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CARRIER FOR SPOOLS AND THE LIKE

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Application September 21, 1956, Serial No. 611,321

1 Claim. (Cl. 294—78)

My invention relates to mechanical devices for the handling of relatively heavy annular coils of wire or the like, and more particularly to manually operated devices of this character.

The primary object of my invention is the provision of a device of the class above described which is adapted to be suspended from a hoisting winch and which may pick up and deliver a relatively heavy coil of wire, and the tubular spool upon which it is wound, either in a vertical or horizontal position.

The further object of my invention is the provision of a device of the class described which is provided with an angular frame the outer edge portion of which defines an arcuate track, a carriage adapted to be suspended from a suitable support, track engaging frame supporting roller means on said carriage, stop means limiting movement of said frame with respect to said carriage in opposite directions longitudinally of said track, a supporting leg carried by said frame and projecting in a direction generally radially inwardly with respect to one end portion of said track, said leg being adapted to be received within an annular coil wire or the like, or the tubular spool upon which it is wound, and radially expansible and retractable coil engaging shoes on the said leg.

A further object of my invention is the provision of a device of the class immediately above described in which said frame comprises a relatively flat web portion and an integrally formed peripheral flange normal to the plane of said web and projecting radially outwardly from opposite sides thereof, a portion of said flange defining said arcuate track.

The still further object of my invention is the provision of a device of the class immediately above described in which said web portion defines an opening adjacent one end of said frame, and in further combination with means for imparting expanding and retracting movements to said shoes, said means including a shaft extending axially of said leg and mounted therein for movements in opposite directions, cam means carried by said shaft, cam followers carried by said shoes, and operating handle means in said opening in said web portion and operatively coupled to said shaft to move the same in opposite side directions.

A still further object of my invention is the provision of a device of the class generally above described which is simple in its operation, is rugged and durable, and which may be quickly operated with a minimum of skill and with a maximum of safety.

The above and still further objects of my invention will become apparent from the following detailed specification, appended claim, and attached drawings.

Referring to the drawings, wherein like parts indicate like characters throughout the several views:

Fig. 1 is a view in side elevation of my novel structure, some parts being broken away and some parts shown in section;

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Fig. 2 is a fragmentary view in rear end elevation of the structure of Fig. 1;

Fig. 3 is an enlarged fragmentary view in axial section of the structure of Fig. 1; and

Fig. 4 is a transverse sectional view as seen substantially from the line 4—4 of Fig. 3.

Referring with greater particularity to the drawings, the numeral 1 indicates in its entirety an angular frame which comprises web-like central portion 2 and an endless peripheral flange 3 which projects outwardly therefrom in opposite directions. As shown, a portion of the peripheral flange 3 defines an arcuate track 4. Adapted to be secured to a cable or the like 5, associated with the winch or winding drum of a hoist, not shown, is a carriage 6 comprising spaced mounting plates 7 and tubular spacer elements 8 through which nut-equipped bolts 9 are adapted to extend. As shown particularly in Figs. 1 and 2, the bifurcated lower end portion of the carriage 6 is provided with pairs of opposed spaced rollers 10 which are adapted to ride upon the under surface 11 of the track 4, on opposite sides of the web like portion 2 of the frame 1. The angularly disposed portions 12 and 13 respectively of the flange 3 limit movements in opposite directions of the carriage 6 with respect to the frame 1.

As indicated by the numeral 14, the peripheral flange 3 is enlarged providing a generally circular mounting plate. Rigidly secured to the inner surface 15 of the mounting plate 14 and projecting generally radially inwardly with respect to the end portion 13 of the track 4, is a tubular leg 17. Leg 17, as shown, is provided with integrally formed circumferentially spaced longitudinally extended bosses 18, see particularly Fig. 4.

Mounted for axial sliding movements within a bearing boss 19, preferably, and as shown, formed integrally with the frame 1, is a shaft 20, the forward end portion of which extends axially into the tubular leg 17. The forward end portion of the shaft 20 is provided with a collar 17a which is made fast thereon by means of a set screw 17b, see Fig. 3. As there shown, the set screw 17b is received within an axially extended slot 17c in the tubular leg 17. In this manner, axial movements of the shaft 20 with respect to the tubular leg 17 are permitted while preventing relative rotary movements therebetween. The rearward portion 21 of the shaft 20 project rearwardly of the bearing 19 and has threaded engagement with a nut 22. The nut 22 has keyed thereto for common rotation therewith, an operating handle 23. The operating handle 23 is normal to the axis of the shaft 20 and operates within a cut-away portion 24, adjacent one end portion of the frame 1. Keyed to the shaft 20 within the tubular leg 17 for axial movements therewith, are a pair of spaced cam elements 25, each of which works against a plurality of circumferentially spaced cam followers 26 mounted for radial movements through the wall of the tubular leg 17, and preferably, and as shown, working through the longitudinally extended bosses 18. As shown in particularity in Figs. 3 and 4, the cam followers 26 are biased radially inwardly toward engagement with their cooperating cam elements 25, by means of coil compression springs 27, received within annular sockets 28 and working against enlarged heads 29 on the radially inner ends of the cam followers 26.

Cam followers 26 are rigidly secured to expansible and retractable shoes 30 which extend generally longitudinally of the tubular leg 17 and are circumferentially spaced from each other. Preferably, and as shown, the shoes 30 are provided with anti-friction soles 31.

From the above, it should be clear that when my novel structure is operatively connected to a winding drum equipped hoisting, not shown, it is possible to pick up a

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coil of wire X wound about a tubular spool Y when said spool Y is in the horizontally disposed full line position of Fig. 1, or alternately when said spool Y is in the vertically disposed dotted line position thereof. Conversely, it is obviously possible to place the spool Y down upon a horizontal support in either of said positions. To pick up a loaded spool Y, the shoes 30 are first moved to their retracted positions, by rotation of the handle 23 so as to cause the shaft 20 and cam elements 25 carried thereby to move in a direction from left to right with respect to Fig. 3. The tubular leg 17 and the shoes 30 are then placed within the tubular winding drum Y, and the handle 23 moved in the opposite direction so as to cause radially outward movement of the cam followers 26 and the shoes 30 carried thereby, to cause the desired degree of frictional engagement between said shoes 30 and said spool Y. After elevation of the carriage 6, through the medium of the hoisting mechanism, not shown, the desired positioning of the loaded spool Y, for the purpose of discharging same, may be achieved by merely causing the frame 1 to rotate on the track 4 between the stops 12 and 13. For the purpose of facilitating such movement, I provide preferably, a hand grip 32.

My invention has been thoroughly tested and found to be completely satisfactory for the accomplishment of the above objects, and while I have disclosed a preferred embodiment thereof, I wish it to be specifically understood that same is capable of modification without departure from the scope and spirit of the invention as defined in the appended claim.

What I claim is:

In a device of the class described, an angular frame comprising a relatively flat web portion and an integrally formed peripheral flange normal to the plane of said

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web portion and extending marginally thereabout, the outer peripheral portion of said flange defining an arcuate track, a carriage adapted to be suspended from a suitable support, track engaging frame supporting roller means on said carriage, stop means limiting movement of said frame with respect to said carriage in opposite directions longitudinally of said track, said flange portion defining an enlarged mounting plate radially inwardly of one end of said track, said web portion intermediate said track and said mounting plate defining an opening, a supporting leg mounted on said mounting plate and projecting in a direction generally radially inwardly with respect to the adjacent end of said track, said leg being adapted to be received within an annular coil of wire or the like, radially expansible and retractable coil engaging shoes on said leg, and means for imparting expanding and retracting movements to said shoes, said means including a shaft extending axially of said leg and mounted therein for axial sliding movements in opposite directions, cam means carried by said shaft, cam followers carried by said shoes, and operating handle means mounted in said opening and operatively coupled to one end of said shaft through said mounting plate.

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