March 4, 1941. C. S. GLENNY 2,233,449

KNOCK-DOWN REEL CONSTRUCTION

Filed Dec. 21, 1940

Fig. 1

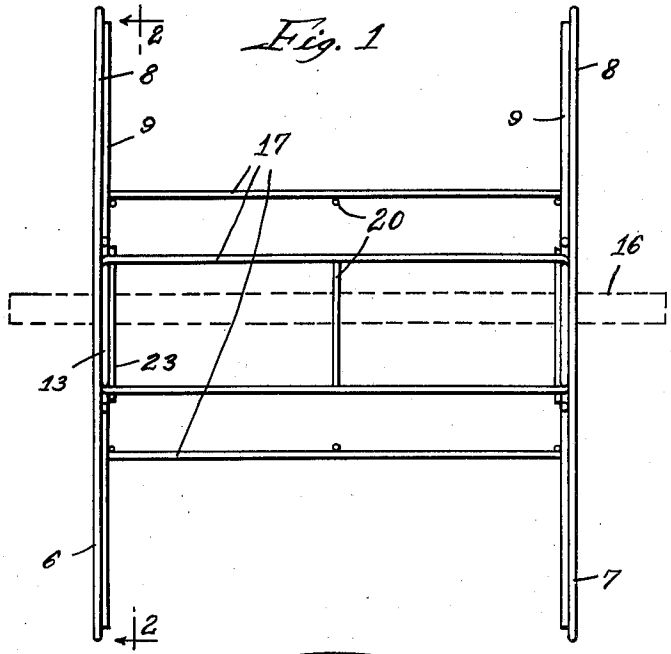


Fig. 3

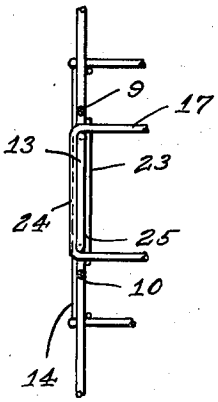


Fig. 2

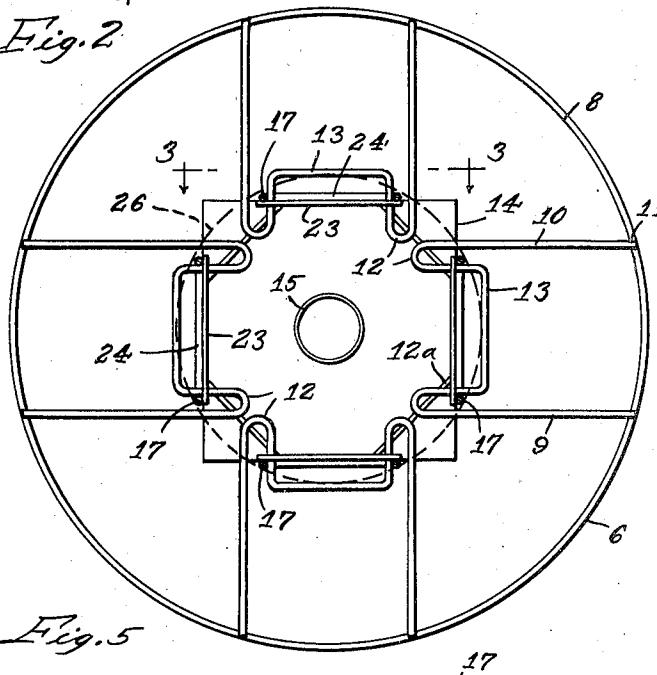


Fig. 4

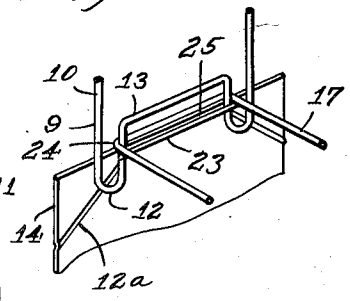
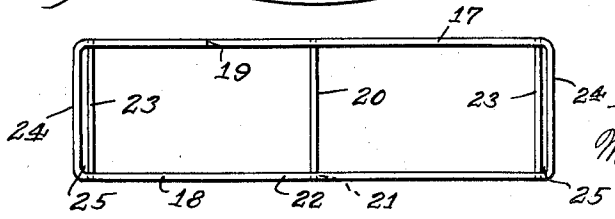


Fig. 5



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KNOCK-DOWN REEL CONSTRUCTION

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7 Claims. (Cl. 242—115)

This invention relates to a new and improved knock-down reel construction.

The principal object of my invention is to provide a reel substantially entirely of wire construction and one which may be made economically and can be put together or taken apart quickly and easily and when assembled is quite rigid and will furthermore hold together satisfactorily even prior to the winding thereon of the material to be supported by and dispensed from the reel.

Another object is to provide a reel of knock-down construction which when disassembled will form a very compact bundle so that it takes up very little storage space and can be shipped readily.

The invention is illustrated in the accompanying drawing, in which—

Fig. 1 is a front view of the assembled reel made in accordance with my invention;

Figs. 2 and 3 are sections on the correspondingly numbered lines of Figs. 1 and 2, respectively;

Fig. 4 is a fragmentary perspective view to better illustrate the detachable connection between the ends of the cross-frames and end members, and

Fig. 5 is a view of one of the cross-frames removed from the reel.

The same reference numerals are applied to corresponding parts throughout the views.

The present reel is one designed especially for use with rubber hose such as is used for automobile hot water heaters, in connection with which it is desirable to have the reel of a knock-down type which the hose manufacturer can set up quickly to wind the hose thereon and ship it, the reel in knocked down form taking up very little storage space up to the time of use. Then the customer after using or selling the hose can disassemble the reel and ship it back to the hose manufacturer in knocked down form at low cost and without much likelihood of damage to the reel, so that the reel can be used again and again. Such reels are commonly used in connection with a supporting rack and placed on the counter or floor so that the hose can be dispensed therefrom conveniently, the reel being rotatably mounted in the rack. However, it will soon appear that the reel of my invention, while especially designed for heater hose, may be used for rope, wire, and any other product dispensed in a similar manner.

The reel is made up of two circular end members 6 and 7 of identical construction, each consisting of a circular wire rim 8 having generally U-shaped wire spokes 9, the parallel arms 10 of which are welded at their outer ends 11 to the rim 8. The bight portion 12 of each spoke 9 is bent outwardly in the plane of the spoke to provide a projecting ear portion 13 between the arms 10 of the spoke. Each end member has a square sheet metal center plate 14 having a center hole 15 punched therein for the purpose of rotatably mounting the reel on a rack, as, for example, on a cross-bar 16, indicated in dotted lines in Fig. 1. The bight portions 12 of the spokes 9 are welded to the edge portions of the plates 14 on ribs 12a formed in the plates, leaving an appreciable portion of each of the ears 13 projecting radially from the edges of the plates 14, as clearly appears in Figs. 2 and 4. It is onto these ears 13 that the ends of cross-frames 17 are arranged to be frictionally mounted whereby rigidly to secure the end members 6 and 7 together in fixed spaced relation, the cross-frames 17 being, however, easily detachably from the ears 13 when it is desired to disassemble the reel.

Each of the cross-frames 17 comprises a one-piece rectangular wire frame 18 the ends of which are welded together, as indicated at 19 in Fig. 5. A cross-brace wire 20 is preferably provided extending transversely across the middle of each frame and welded at its ends 21 to the longitudinal portions 22 thereof. Another wire 23 is also welded onto each end of the frame in closely spaced parallel relation to the end portion 24 whereby to provide openings or eyes 25 to receive the ears 13. There are four cross-frames 17 spaced 90° apart and cooperating with each of the four ears 13 in the four spokes 9, and these cross-frames rigidly interconnect the circular end members 6 and 7 when attached to the ears 13. The ears 13, it will of course be understood, have a close friction fit in the openings or eyes 25.

In operation, the reel is assembled by entering the ears 13 in the openings or eyes 25 provided in the ends of the cross-frames 17, the fit being tight enough in each instance to avoid likelihood of the cross-frames felling off the ears before the hose or other material in connection with which the reel is to be used is wound thereon. In actual practice, a piece of cardboard is usually wound around the cross-frames 17 to form a generally cylindrical hub, as indicated at 26 in Fig. 2, before the hose is wound onto the reel, thus avoiding likelihood of kinking the hose. The customer to whom the reel loaded with hose is shipped will have no difficulty in disassembling the reel after the hose has been used or sold, the reel being

shipped back to the hose manufacturer in knocked down form at low cost and without likelihood of any serious damage to the reel in shipment. The reel parts can be laid flatly on one another to form a compact bundle, and it is obvious that the reel in such form is not nearly so apt to get bent as an ordinary assembled reel subjected to the same rough handling in shipment. In the assembled reel, the cross-frames 17 hold the circular end members 6 and 7 rigidly in accurate parallel relationship so that there is no likelihood of the reel becoming distorted in shipment or during its use. The disassembled reel takes up very little storage space at the hose manufacturer's plant and it takes very little time to assembled a reel ready for use.

It is believed the foregoing description conveys a good understanding of the objects and advantages of my invention. The appended claims have been drawn with a view to covering all legitimate modification and adaptations.

I claim:

1. A reel comprising generally circular end members each of which consists of a rim and a plurality of open spokes joined at their outer ends to the rim and having radially projecting ears at the inner ends of the openings therein, and cross-members for detachably securing the end members together in spaced parallel relation having openings in the ends thereof receiving said ears.

2. A reel comprising generally circular end members each of which comprises a circular rim, a sheet metal center plate having a circular opening at the center thereof, and a plurality of one-piece wire spokes joining the center plate to the rim, each spoke being bent to substantially U-shaped form, the spokes being radially disposed with the bight portions innermost, the outer ends of the arms of each spoke being secured to the rim, the bight portion of each spoke being bent radially outwardly in the plane of the spoke to provide an ear portion between and spaced from the arms and projecting radially from the edge portion of the center plate, the bight portion of each spoke being secured to said plate, and cross-members for detachably securing the end members together in spaced parallel relation having openings in the ends thereof receiving said ears.

3. A reel comprising generally circular end members each of which consists of a rim and a plurality of open spokes joined at their outer ends to the rim and having radially projecting ears at the inner ends of the openings therein, and cross-members for securing the end members rigidly in spaced substantially parallel relation by means of said ears, each of said cross-members comprising a generally rectangular wire frame having cross-wires secured onto the end portions thereof in spaced parallel relation to the ends of the frame whereby to provide openings at the ends of the cross-members receiving said ears.

4. A reel comprising generally circular end members each of which comprises a circular rim, a sheet metal center plate having a circular opening at the center thereof, and a plurality of one-piece wire spokes joining the center plate to the rim, each spoke being bent to substantially U-shaped form, the spokes being radially disposed with the bight portions innermost, the outer ends of the arms of each spoke being secured to the rim, the bight portion of each spoke being bent radially outwardly in the plane of the spoke to provide an ear portion between and spaced from the arms and projecting radially from the edge portion of the center plate, the bight portion of each spoke being secured to said plate, and cross-members for detachably securing the end members rigidly in spaced substantially parallel relation by means of said ears, each of said cross-members comprising a generally rectangular wire frame having cross-wires secured onto the end portions thereof in spaced parallel relation to the ends of the frame whereby to provide openings at the ends of the cross-members receiving said ears.

5. A reel comprising generally circular end members each of which consists of a rim and a plurality of open spokes joined at their outer ends to the rim and having radially projecting ears at the inner ends of the openings therein, cross-members for detachably securing the end members together in spaced parallel relation having openings in the ends thereof receiving said ears, and a hollow cylindrical hub between the end members and in substantially concentric relation therewith circumscribing the cross-members and adapted to have material wound therearound.

6. A reel comprising generally circular end members each of which comprises a circular rim, a sheet metal center plate having a circular opening at the center thereof, and a plurality of one-piece wire spokes joining the center plate to the rim, each spoke being bent to substantially U-shaped form, the spokes being radially disposed with the bight portions innermost, the outer ends of the arms of each spoke being secured to the rim, the bight portion of each spoke being bent radially outwardly in the plane of the spoke to provide an ear portion between and spaced from the arms and projecting radially from the edge portion of the center plate, the bight portion of each spoke being secured to said plate, cross-members for detachably securing the end members together in spaced parallel relation having openings in the ends thereof receiving said ears, and a hollow cylindrical hub between the end members and in substantially concentric relation therewith circumscribing the cross-members and adapted to have material wound therearound.

7. A reel comprising end members, each of which comprises a rim and a center bearing plate connected therewith in substantially concentric relation, there being radially projecting ears rigid with said center plate, and cross-members for rigidly detachably securing said end members in spaced substantially parallel relation, each having open end portions frictionally engageable over said ears.

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