March 28, 1961 F. E. KIMMEL 2,977,066

KNOCK-DOWN REEL

Filed Dec. 13, 1956 2 Sheets-Sheet 1

FIG. 1

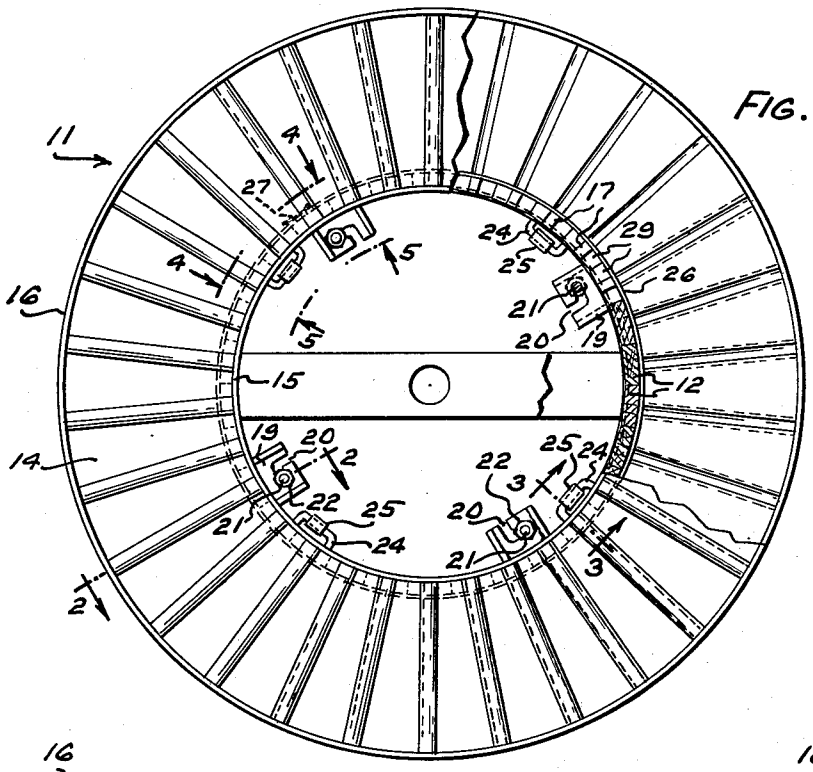


FIG. 2

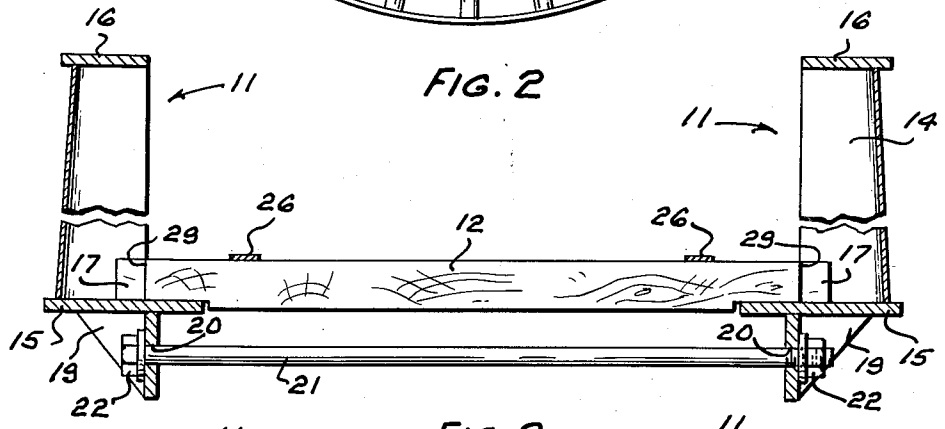
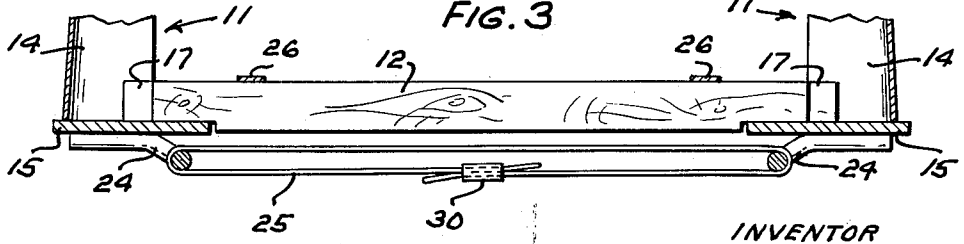


FIG. 3



INVENTOR
F. E. KIMMEL
BY C. B. Hamilton
ATTORNEY

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FIG. 4

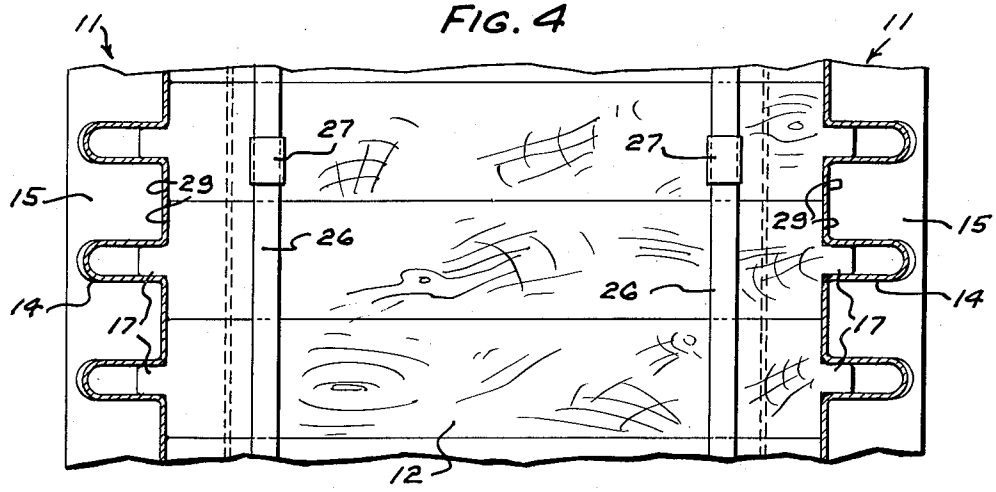
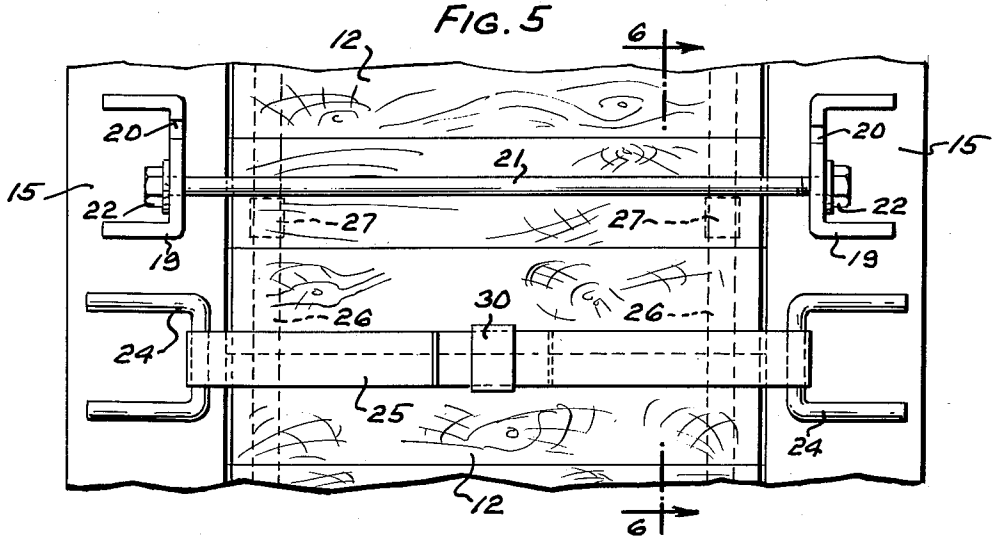


FIG. 5



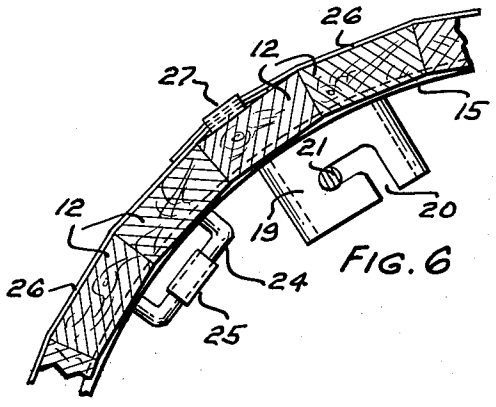


FIG. 6

INVENTOR
F. E. KIMMEL
BY C. B. Hamilton
ATTORNEY

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2,977,066

KNOCK-DOWN REEL

Frank E. Kimmel, North Riverside, Ill., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

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4 Claims. (Cl. 242—115)

This invention relates to reels, and more particularly to reels for supporting material such as telephone cable, which may be collapsed and portions thereof discarded to occupy a smaller volume.

When telephone or other cable is manufactured, it is generally wound upon reels as this provides a convenient and compact means for shipment. After the reel of cable arrives at the point at which the cable is to be utilized, the cable is unwound from the reel. When the reel is empty, it must then be returned to the manufacturing organization as the cost of using reels only once would be prohibitive. Manifestly, when an empty reel is shipped, the majority of the shipping space is wasted inasmuch as the space between the heads and within the interior of the drum is unoccupied. Consequently, a considerable saving in shipping expense could be effected if means for permitting rapid disassembly of cable reels could be provided so that it would be possible to ship the disassembled reels in a much more compact configuration. Further, additional space could be saved if portions of the reel were made of inexpensive material that could be discarded after the cable was used.

It is therefore a principal object of this invention to provide a knock-down reel which is susceptible of rapid assembly and disassembly.

It is another object of this invention to provide a cable reel in which the means utilized to secure the parts together are expendible.

It is a further object of this invention to provide a cable reel wherein the drum is formed by a plurality of slats extending between the heads and in which the heads and slats are held in their assembled positions by expendible means.

With these and other objects in view, the present invention contemplates a cable reel wherein a plurality of slats, interposed between the reel heads, form the drum of the reel. Expendible steel bands are provided to maintain the slats in a cylindrical configuration adjacent the inner flanges of the reel heads. The reel heads are drawn against the ends of the slats by means of additional steel bands running between brackets secured to the inner flanges of the reel heads. Alternatively, the reel heads may be held against the ends of the slats by means of draw bolts positioned in bayonet slots in slotted brackets secured to the inner flanges of the reel heads. The reel components may be rapidly secured in assembled relationship by application of the steel bands. Disassembly of the assembled reel is simply a matter of severing the steel bands or loosening the draw bolts.

Other objects, advantages, and features of the invention will become apparent upon consideration of the following detailed description in conjunction with the accompanying drawings wherein:

Fig. 1 is a side elevation view, partially in section, of a knock-down reel embodying the principal features of the invention;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1 illustrating the draw bolts which may be used to hold the reel heads against the slats forming the drum;

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 1 illustrating the steel bands which may be used to hold the reel heads against the slats forming the drum;

Fig. 4 is a sectional view taken along the line 4—4 of Fig. 1 illustrating the manner in which the tongues on the ends of the slats interlock with the fluted or corrugated reel heads;

Fig. 5 is a view taken along the line 5—5 of Fig. 1 illustrating a draw bolt and a steel band in their assembled positions; and

Fig. 6 is a sectional view taken along the line 6—6 of Fig. 5.

Attention now is directed to the drawings wherein like numerals of reference designate like parts throughout the several views and wherein is disclosed a reel comprising reel heads constructed of steel or other suitable material, designated generally by the reference numeral **11**, and a drum portion made up of a plurality of wooden slats **12**. The reel heads **11** are formed of annular corrugated or fluted members **14** (see Fig. 4) and are reinforced by inner and outer rings **15** and **16**, respectively, welded thereto. The slats **12** are provided with tongues **17** on the extremities thereof which fit within the channels or flutes formed in the members **14** and abut the inner rings **15**.

A plurality of angular brackets **19** are welded or otherwise secured in spaced positions on the interior surface of the ring **15**. As most clearly illustrated in Figs. 1, 2 and 6, these brackets **19** are provided with bayonet slots **20** for reception of draw bolts **21** provided with tightening nuts **22**. The ring **15** is further provided with a plurality of U-shaped brackets **24** (Figs. 3 and 5) welded thereto. These brackets **24** are adapted to receive head clamping bands **25**.

Assembly and disassembly

In order that a better understanding of the invention may be had, the methods of assembly and disassembly will now be explained. The reel heads **11** are first positioned in spaced relationship with the distance between them approximately equal to the length of the wide portions of the slats **12**. The slats **12** are then interposed between the reel heads **11** in such a manner that the tongues **17** fit within the channels or flutes formed in the corrugated annular members **14**. A pair of narrow drum clamping bands **26** are then placed around the slats **12** and drawn tight. The ends thereof are then secured together by means of clamps **27** in the well known manner. The reel heads **11** are then pulled into abutting relationship with the shoulders **29** on the slats **12** by means of either the draw bolts **21** and tightening nuts **22** or the head clamping bands **25** with the ends thereof secured by clamps **30**. The reel is then completely assembled and ready to have cable wound thereon.

Whenever it is desired to ship the reels without cable wound thereon, the reels may be dismantled in the following manner. The bands **26** are first cut and removed. Then, if the reel heads **11** are clamped against the shoulders **29** by means of the draw bolts **21**, the nuts **22** are backed off and the draw bolts removed from the bayonet slots **20** to complete the disassembly. If the reel heads **11** are clamped by means of the clamping bands **25**, they are severed and removed to complete the disassembly.

The steel bands **25** and **26** are, of course, expendible. The wooden slats **12** and draw bolts **21** may or may not be expendible; depending upon the economics involved. Manifestly, this invention provides a cable reel capable of rapid assembly and disassembly and one which utilizes inexpensive expendible components to achieve this result.

It is to be understood that the above-described arrangements are simply illustrative of the application of the principles of this invention. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

What is claimed is:

1. A knock-down reel designed for rapid assembly and disassembly, which comprises a pair of annular reel heads, each of said reel heads having a plurality of radially extending, laterally projecting, spaced stiffening portions defining a series of radial channels therebetween and an annular, reinforcing portion forming a cylindrical flange disposed coaxially with respect to a central opening in the reel head and arranged to close the inner end of each of said channels to form series of circumferentially spaced pockets, a plurality of slats of equal lengths extending between the pair of reel heads and having opposite end portions thereof projecting into corresponding aligned pockets in the pair of reel heads arranged in parallel juxtaposition, each end of each of said slats being confined between adjacent stiffening portions and overlapping the flange-like reinforcing portion so that the slats define a substantially cylindrical reel drum interposed between the reel heads, a plurality of flexible straps closely surrounding and drawn tightly about the cylindrical array of slats to clamp them radially against the flange-like reinforcing portions of the reel heads, and tie means interconnecting said reel heads and urging the reel heads toward one another in abutting relationship with the opposite end portions of said slats.

2. A knock-down reel designed for rapid assembly and disassembly, which comprises a pair of annular reel heads, each of said reel heads having spaced, radially extending corrugations defining a series of radial channels therebetween and an annular, reinforcing portion forming a cylindrical flange disposed coaxially with respect to a central opening in the reel head and arranged to close the inner end of each of said channels to form series of circumferentially spaced pockets, a plurality of slats of equal lengths extending between the pair of reel heads, said slats having tongues on the opposite end portions thereof projecting into corresponding aligned pockets in the pair of reel heads arranged in parallel juxtaposition, each tongue of each of said slats being closely confined between adjacent corrugations so that the end portions of said slats are in overlapping relationship with the flange-like reinforcing portion, a plurality of flexible straps closely surrounding and drawn tightly about the cylindrical array of slats to clamp them radially against the flange-like reinforcing portion of the reel head so that the slats define a reel drum having a substantially cylindrical continuous outer surface interposed between the reel heads, and tie means interconnecting said reel heads and urging the reel heads toward one another in abutting relationship with the opposite end portions of said slats.

3. A knock-down reel designed for rapid assembly and disassembly, which comprises a pair of annular reel heads, each of said reel heads having a plurality of radially extending, laterally projecting spaced stiffening portions defining a series of radial channels therebetween and an annular, reinforcing portion forming a cylindrical flange disposed coaxially with respect to a central opening in the reel head and arranged to close the inner end of each of said channels to form series of circumferentially spaced pockets, a plurality of slats of equal lengths extending between the pair of reel heads and having opposite end portions thereof projecting into corresponding aligned pockets on the pair of reel heads arranged in parallel juxtaposition, each end of each of said slats being confined between adjacent stiffening portions and overlapping the flange-like reinforcing portion so that the slats define a substantially cylindrical reel drum interposed between the reel heads, a plurality of flexible straps closely surrounding and drawn tightly about the cylindrical array of slats to clamp them radially against the flange-like reinforcing portions of the reel head, a plurality of brackets secured to the flange-like reinforcing portion of each reel head, and a plurality of bolts substantially parallel to said slats and interconnecting corresponding aligned brackets on the pair of reel heads for holding said reel heads against the extremities of said slats, said brackets having bayonet-type slots therein for allowing rapid insertion and removal of said bolts to facilitate rapid assembly and disassembly of the reel.

4. A knock-down reel designed for rapid assembly and disassembly, which comprises a pair of annular reel heads, each of said reel heads having a plurality of spaced radially extending, corrugations defining a series of radial channels therebetween and an annular, reinforcing portion forming a cylindrical flange disposed coaxially with respect to a central opening in the reel head and arranged to close the inner end of each of said channels to form series of circumferentially spaced pockets, a plurality of slats of equal lengths extending between the pair of reel heads, said slats having tongues on the opposite end portions thereof projecting into corresponding aligned pockets in the pair of reel heads arranged in parallel spaced juxtaposition, each tongue of each of said slats being closely confined between adjacent corrugations so that the end portions of said slats are in overlapping relationship with the flange-like reinforcing portion, a plurality of band-like retaining members closely surrounding and drawn tightly about the cylindrical array of slats to clamp them radially against the flange-like reinforcing portions of the reel head, so that the slats define a reel drum having a substantially cylindrical continuous outer surface interposed between the reel heads, a plurality of brackets secured to the flange-like reinforcing portion of each reel head, and a plurality of flexible straps substantially parallel to said slats and interconnecting corresponding brackets disposed on opposite reel heads for holding said reel heads against the extremities of said slats.

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