Feb. 25, 1958 W. V. KENNEDY 2,824,707

SHEET METAL SPOOL

Filed Dec. 2, 1955

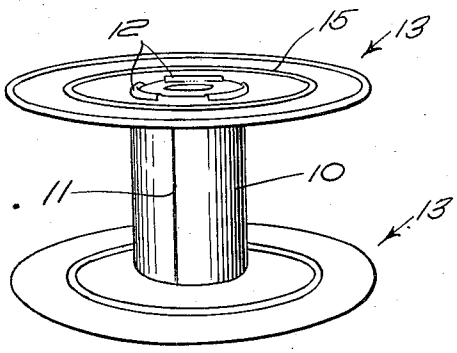

FIG. 1

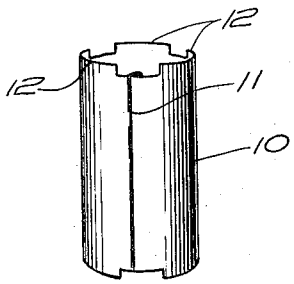

FIG. 2

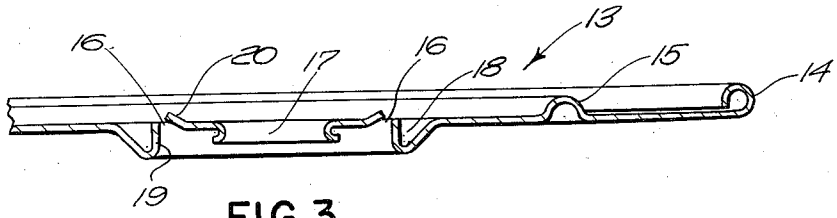

FIG. 3

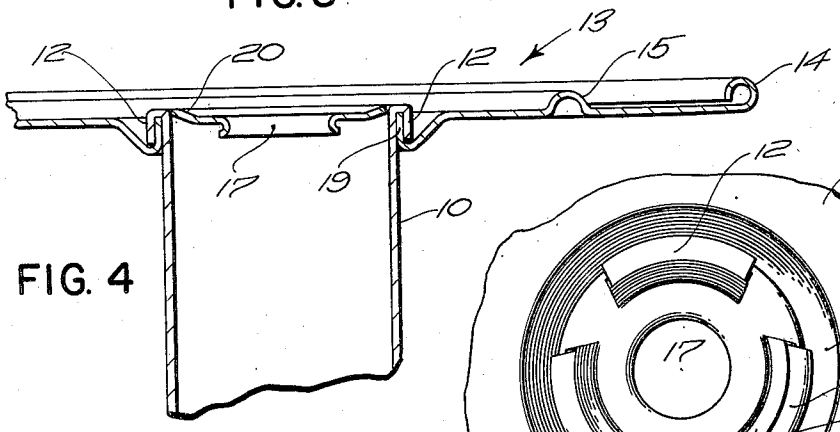

FIG. 4

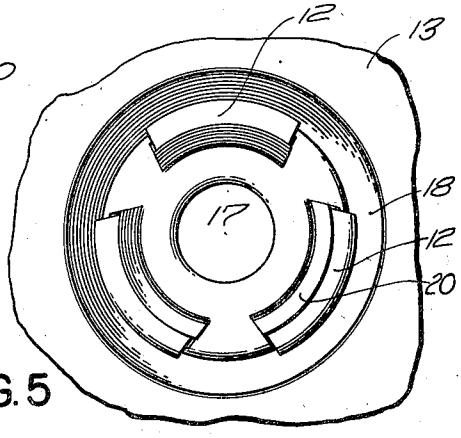

FIG. 5

INVENTOR.

WALTER V. KENNEDY

BY

Charles B. Willson

ATTORNEY

United States Patent Office 2,824,707 Patented Feb. 25, 1958

2,824,707

SHEET METAL SPOOL

Walter V. Kennedy, Central Falls, R. I., assignor to Fram Corporation, Providence, R. I., a corporation of Rhode Island

Application December 2, 1955, Serial No. 550,575

3 Claims. (Cl. 242—118.8)

This invention relates to sheet metal spools, and more particularly to means for firmly securing the spool heads to the spool barrel.

The spool of the present invention is designed more particularly to have conductor wires or other heavy strand material wound thereon and which may exert considerable pressure outwardly against the spool heads. In spools used for this purpose it is important that the heads be strongly secured to the spool barrel.

It has been common practice heretofore to provide a metal barrel having tabs projecting from each end thereof, and to form curved slots in the heads through which the tabs may project. In some of these constructions the tabs have been bent laterally away from the drum axis, and in other constructions these tabs have been bent laterally towards the drum axis to lie against the outer face of the spool head. In such constructions a substantial outward pressure upon the spool heads will bend the tabs and loosen the heads. Furthermore, when the tabs are bent laterally towards the drum axis they will overlie the central disc portion of the head which is weakened by cutting the curved slot above mentioned.

Having in mind the foregoing, the present invention contemplates a spool formed entirely of relatively thin sheet metal, but having the heads very strongly secured to the spool barrel. This is accomplished by providing each head with an annular channel disposed outside of the usual curved slots through which the tabs project, and which channel is provided with a wall disposed at right angles to the plane of the head to form a ring that embraces and supports an end portion of the barrel. The tabs are bent laterally away from the axis of the drum to overlie the wall just mentioned, and then downwardly into the channel to embrace said wall, and with the ends of the tabs abutting against the bottom of the channel. This provides an exceptionally strong connection between the barrel and heads.

The above and other features of the present invention will be further understood from the following description when read in connection with the accompanying drawings; wherein,

Fig. 1 is a perspective view of a sheet metal spool constructed in accordance with the present invention.

Fig. 2 is a perspective view of the barrel of such spool.

Fig. 3 is a transverse sectional view of one spool head.

Fig. 4 is a view similar to Fig. 3 but shows the barrel firmly secured to this head; and

Fig. 5, on a larger scale, is a plan view of the central portion of the upper head shown in Fig. 1.

Referring to the drawing, **10** designates the sheet metal barrel having the usual seam **11** and the projecting tabs **12**, three tabs being shown at each end of the spool. These tabs are relatively short and as shown form more than fifty percent of the end portion of the barrel.

The two heads **13** are preferably identical in construction, and each comprises a sheet metal disc having the beaded outer periphery **14** and one or more annular stiffening ribs **15**. Each head is provided with the arcuate slots **16** adapted to receive the tabs **12**, and each head may have the central opening **17**.

An important construction of each head **13** resides in the inwardly extending annular channel **18** which is formed to provide a wall disposed at right angles to the plane of the head. This wall provides a ring **19** that embraces an end portion of the barrel **10** as shown in Fig. 4.

The heads **13** are rigidly secured to the ends of the barrel **10** by the tabs **12** which project through the slots **16** and are then bent laterally through an angle of 90° away from the drum axis to contact the edge of the ring **19** as shown. Each tab is bent at its base line where it begins to protrude from the barrel. These tabs are then bent at a second angle of 90° to extend downwardly into the channel **18** in embracing engagement with the ring **19** as shown. The end of each tab abuts against the bottom of the channel as shown. As the operation of bending the tabs **12** in the manner just described approaches completion, the lip **20** of each slot **16** is forced downwardly from the position in which it is shown in Fig. 3 to the position in which it is shown in Fig. 4, to provide a smooth outer face at the ends of the spool.

Upon examining Fig. 4 of the drawing it will be seen that the tabs **12** secure the heads very strongly to the spool barrel, and that it would require a strong outward pressure against the heads to displace the tabs from the locked position in which they are shown. It will be apparent from the foregoing that the present invention provides an inexpensive means for strongly securing metal heads to the opposite ends of a metal barrel.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. A spool comprising a metal barrel having projecting tabs at the ends thereof and a metal head at each end of the barrel, each head being provided with slots to receive the tabs and with an annular channel having a wall disposed at right angles to the plane of the head and forming a ring that embraces an end portion of the barrel, and wherein said tabs project through said slots and are bent laterally away from the drum axis and downward into the channel to lie parallel to the body of the barrel to embrace said wall with the ends of the tabs abutting against the bottom of the channel.

2. A spool according to claim 1 wherein the tabs are bent laterally at an angle of 90° and downwardly through another angle of 90°.

3. A spool comprising a metal barrel having projecting tabs at the ends thereof and a metal head at each end of the barrel, each head being provided with a sunken annular channel having a wall disposed at right angles to the plane of the head and forming a ring that embraces an end portion of the barrel, each head also having at least three arcuate slots disposed within said wall, and wherein said tabs project through said slots and are bent laterally away from the axis of the drum at an angle of 90° and downwardly at a second angle of 90° into the channel to lie parallel to the body of the barrel to embrace said wall with the ends of the tabs abutting against the bottom of the channel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,036,969 Mungen ---------- Apr. 7, 1936