

March 13, 1945.

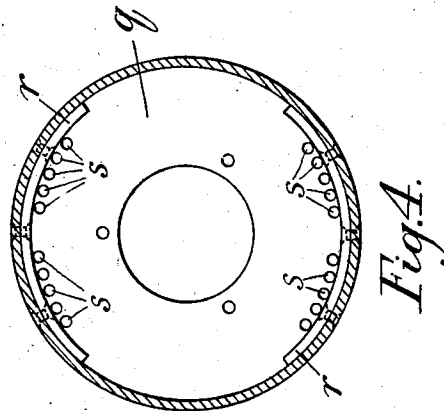
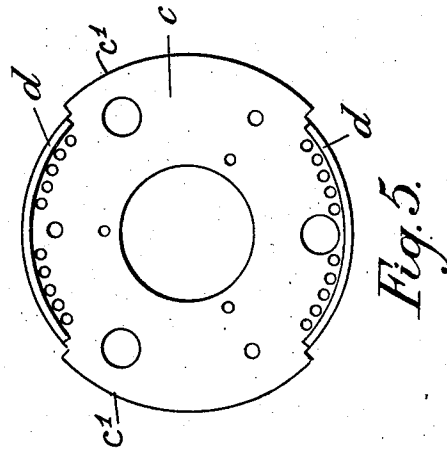
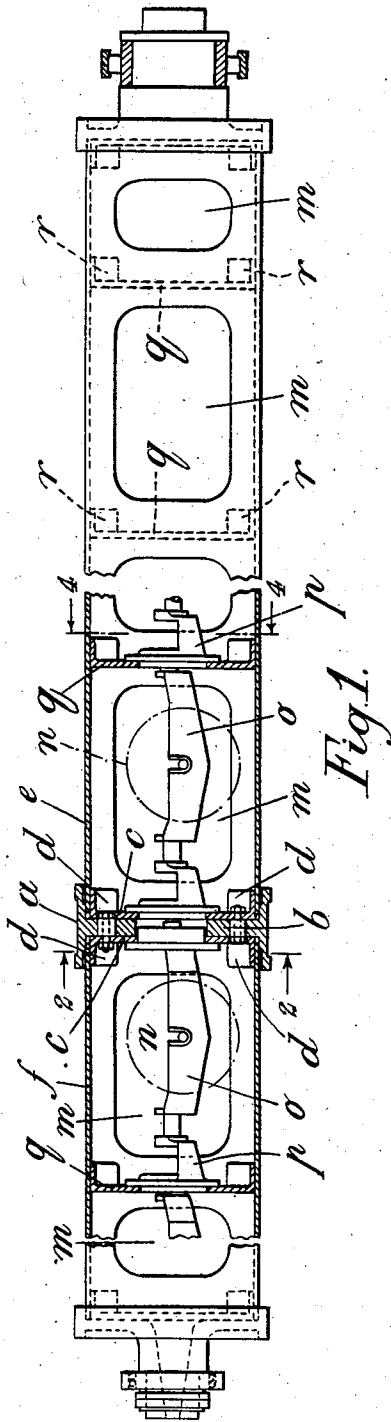
C. JONES

2,371,523

TUBULAR WIRE STRANDING MACHINE

Filed Jan. 7, 1944

2 Sheets--Sheet 1



Inventor
C. Jones
By G. S. Downing, Atty

March 13, 1945.

C. JONES

2,371,523

TUBULAR WIRE STRANDING MACHINE

Filed Jan. 7, 1944

2 Sheets-Sheet 2

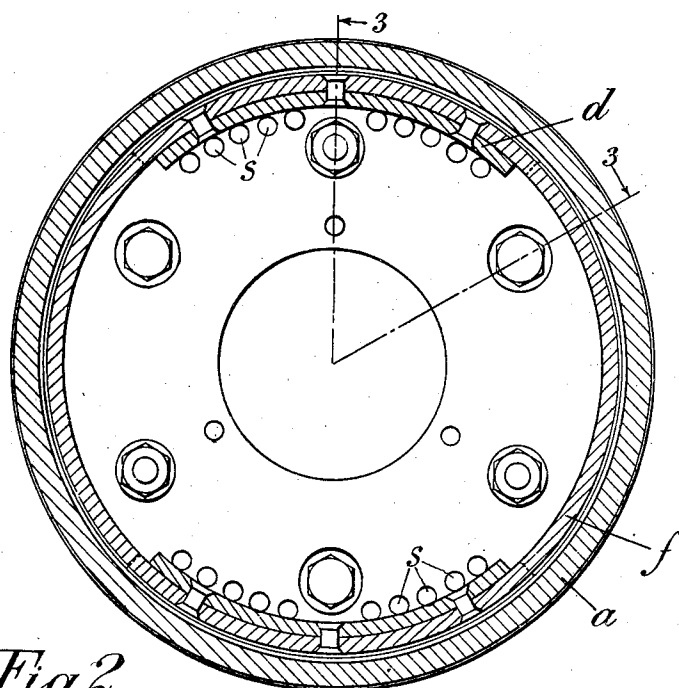


Fig. 2.

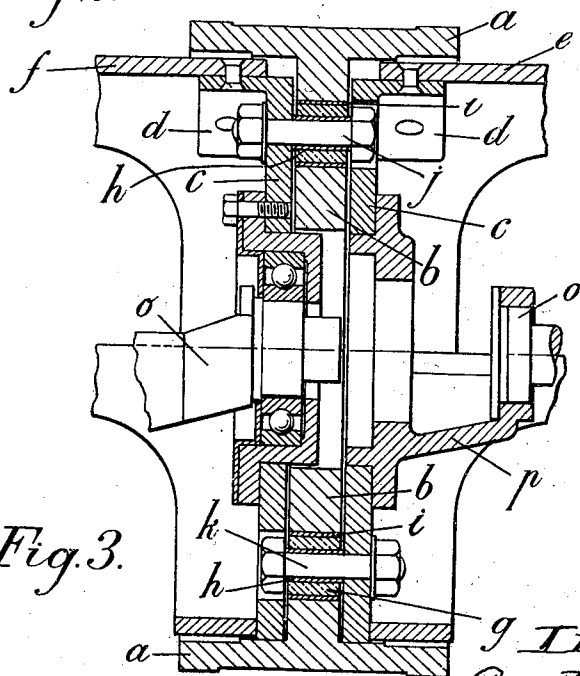


Fig. 3.

I Inventor
C. Jones
By *Glascott Downing & Co.*
Attys.

UNITED STATES PATENT OFFICE

2,371,523

TUBULAR WIRE STRANDING MACHINE

Charles Jones, Warrington, England, assignor to
Hanson & Edwards Limited, Warrington,
Lancashire, England, a company of Great
Britain

Application January 7, 1944, Serial No. 517,457
In Great Britain January 13, 1943

2 Claims. (Cl. 57—59)

This invention relates to wire stranding machines of the high speed tubular type in which the wire reels are mounted within a revolving tube built up from a number of sections. More particularly this invention relates to the construction of machine described and claimed in prior Specification No. 2,218,278 in which there is a roller bearing assembly for the revolving tube, such assembly comprising an intermediate runner ring which surrounds the adjacent ends of two sections of the tube to which the ring is secured. In the said prior construction, the web of the intermediate runner ring is bolted to internal flanges of the adjacent sections of the tube. The latter is usually bored, and turned and cut away at various points to give access to the interior of the tube. The cutting away of the tube leads to distortion which creates difficulty in fitting and assembling the various parts which depend upon the accuracy of the tube bore and exterior.

The object of my present invention is to prevent the setting up of heavy stresses in the tube during its movements such as will result in relatively rapid fatigue and fracture thereof. A further object of my invention is to make the machine stronger, more silent and reliable in service and capable of being run at higher speeds than at present usual.

The invention consists in a wire stranding machine of the type specified in which there is a roller bearing assembly for the ends of the revolving tubes which come adjacent to one another comprising, in combination, a runner ring (for the said roller bearing assembly) with an internal web projecting inwards between the adjacent ends of two tubes, the runner ring being clear of the exterior of the tubes, two disc like parts with projections at one side each of which comes within and is secured in the end of a tube, parts of each disc projecting over the end of the tube to form an abutment between the tube and the web of the runner ring, rubber bushes secured to outer and inner metal sleeves located in holes in the runner ring, and bolts securing alternate inner sleeves to a disc in the end of one tube and the other sleeves to the disc in the end of the other tube.

Referring to the accompanying explanatory drawings:

Figure 1 is a longitudinal sectional elevation of a tubular wire stranding machine constructed in accordance with this invention.

Figure 2 is a cross sectional view on the line 2—2 of Figure 1 drawn to a larger scale.

Figure 3 is a sectional view on the line 3—3 of Figure 2.

Figure 4 is a cross sectional view on the line 4—4 of Figure 1 drawn to a larger scale.

Figure 5 is an end view of one of the discs at an end of a tube length drawn to a larger scale than Figure 1.

The runner ring *a* which carries the inner race of a roller bearing as in prior Specification No. 2,218,278 has its internal web *b* disposed between but slightly clear of two disc like parts *c*, each of which has a flange like projection *d* at two points by which it is secured by riveting or otherwise in the ends of the two tubes *e* and *f* to be connected together. Parts *c'* of the discs *c* between the flanges *d* project beyond the ends of the tubes *e* and *f*, and in conjunction with the means for securing the internal web to the discs act as yielding abutments for the tube ends. The discs, which are larger in diameter than the tubes, are after being secured in position, turned true on the outer diameter and act as the true guide for boring and facing all the discs in position. The outer diameter of the discs *c* is slightly rounded so as to be free to allow the slight articulation movements for which the rubber bushes are provided.

Within the internal web *b* are holes into which fit rubber bushes *g* secured to internal and external metal sleeves *h* and *i*, the internal sleeves being longer than the external ones and projecting beyond the rubber bushes. Alternate rubber bushes are bolted to the disc *c* in the end of one tube, as *e*, and the other rubber bushes are bolted to the disc in the other tube. The bolt *j* at the upper part of Figure 3 holds the internal sleeve *h* firmly to the disc *c* in the tube *f* and the bolt *k* at the lower part of Figure 3 holds the internal sleeve *h* firmly to the disc *c* in the tube *e*. The rubber bushes *g* which are secured to the internal and external sleeves *h* and *i* allow of limited relative movements between the discs and the internal rib *b* which obviate fracture and fatigue of the tubes *e* and *f* where they are connected to the discs *c*.

The tubes *e* and *f* are solid drawn steel tubes which are not bored and turned but are faced at their opposite ends and cut away at *m* to give access to their interiors for placing the bobbins as *n* and other parts in and removing them from position in the tube.

Secured in the tubes at intervals to suit the cradles *o* and their housings *p* are disc like parts *q*, each of which has part cylindrical flanges *r* projecting from one side into which studs or

rivets passing through the tube are secured to hold the disc in place. Holes *s* are for the passage of the wire in the usual manner.

When the discs *q* have been secured in place in the tubes they are bored and faced at one setting to receive the cradle housings *p*. This ensures that all the housings are axially in line. The cradles *o* are then supported in the usual ball or roller bearings in the housings. It will be appreciated that the cradles *o* are weighted so that they do not turn as the tubes revolve.

What I claim is:

1. In a wire stranding machine of the type specified in which there is a roller bearing assembly for the ends of the revolving tubes which come adjacent to one another, in combination, a runner ring for the said roller bearing assembly with an internal web projecting inwards between the adjacent ends of two tubes, the runner ring being clear of the exterior of the tubes, two disc like parts with projections at one side each of

which comes within and is secured in the end of a tube, parts of each disc projecting over the end of the tube to form an abutment between the tube and the web of the runner ring, outer and inner metal sleeves located coaxially in holes in the runner ring, rubber bushes secured to said outer and inner sleeves, and bolts securing alternate inner sleeves to a disc in the end of one tube and the other sleeves to the disc in the end of the other tube.

2. In a wire stranding machine as claimed in claim 1, the construction of each tube in the form of a solid drawn steel tube faced at its ends where the discs are secured, and cut away for passing parts into the tube, and the arrangement of discs with part flanges at one side at points within the tube to suit the bobbin cradles and holders, the discs being secured to the tube and then bored and faced to receive the carrier holders.

CHARLES JONES.