

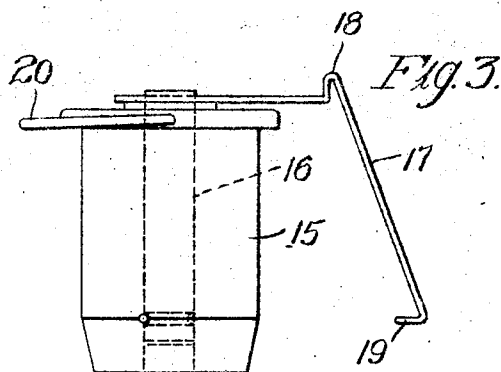
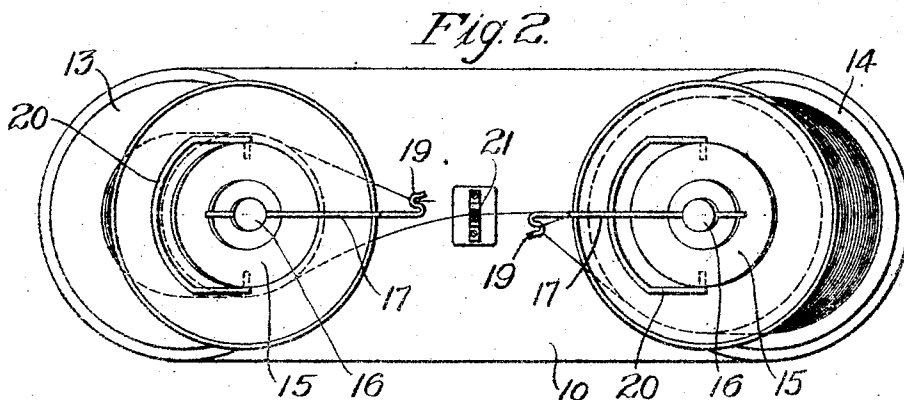
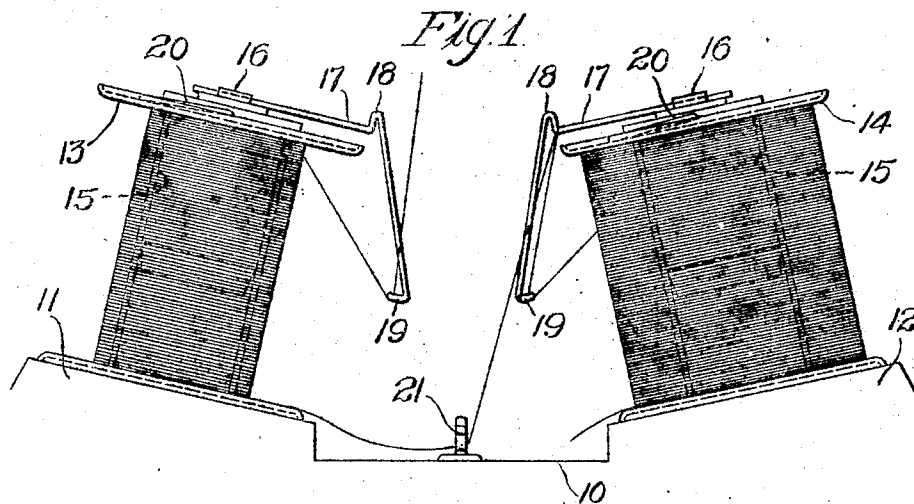
March 30, 1926.

1,578,488

H. G. WALKER

APPARATUS FOR HANDLING STRANDS

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Inventor
Howard G. Walker
by *H. G. Walker* Atty

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UNITED STATES PATENT OFFICE.

HOWARD GEORGE WALKER, OF BERWYN, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

APPARATUS FOR HANDLING STRANDS.

Application filed May 8, 1923. Serial No. 637,445.

To all whom it may concern:

Be it known that I, HOWARD GEORGE WALKER, a citizen of the United States, residing at Berwyn, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Apparatus for Handling Strands, of which the following is a full, clear, concise, and exact description.

This invention relates to apparatus for handling strands.

The object of the invention is to provide an apparatus for handling strands designed to feed strand material continuously.

Another object of the invention is to provide an apparatus for handling strands having a plurality of sources from which a strand may be fed without interruption, one of such sources being ineffective while strand is being fed from another source, but becoming immediately effective upon the exhaustion of the feeding source.

Another object of the invention is to provide an apparatus for handling strands comprising a plurality of spools, coils, cops, or the like of strand material, and means for transferring the feed of strand from one spool, upon its exhaustion, to an unexhausted spool.

Still another object of the invention is to provide an apparatus for handling strands comprising a plurality of spools, coils, cops, or the like of strand material so disposed that one spool upon its exhaustion may be replaced by a full spool, means being provided for transferring the feed of strand from one spool, upon its exhaustion, to an unexhausted spool.

An apparatus made in accordance with the invention may comprise a pair of adjacently mounted spools, the outer end of the strand material on one spool being connected to the inner end of the strand material on the other spool, suitable means being provided for first unwinding the strand material from one spool and then, upon its exhaustion, unwinding the strand material from the other spool. While strand material is being fed from the second spool, the exhausted spool may be replaced by a full spool, the outer end of the strand material on the full spool being connected to the inner end of the strand material on the feeding spool. Such an apparatus serves to supply strand material continuously. It may be used to ad-

vantage with a wide variety of machines operating on strand material and especially in connection with machines which are preferably run over long periods without stopping, such as machines for insulating wire with rubber, extrusion machines, wire drawing machines, etc. Since such machines utilize metallic strand material which must be joined by welding or brazing, either operation consuming considerable time, activity of the machine is materially lessened where it must be idle while a joint is being made. With the apparatus herein a joint may be made in the strand while the machine is in operation.

Other objects and advantages of the invention will more fully appear from the following description and will be particularly pointed out in the appended claims.

In the accompanying drawings,

Fig. 1 is a side-elevation illustrating one embodiment of the invention;

Fig. 2 is a top plan view thereof, and

Fig. 3 is an enlarged detail view of one of the removable fliers.

Referring now to the drawings in detail in which like reference numerals designate similar parts throughout the several views, 10 indicates a suitable base having inclined portions 11 and 12 adapted to support spools or other strand material supplies 13 and 14 respectively. Disposed within the hub of each spool is a flier comprising a plug member 15, more clearly shown in Fig. 3, provided with a rotatable stud 16 carrying at its upper end an L-shaped arm 17 having an integral projection 18, the lower end of the arm being shaped to form a guide 19 for the strand. A bail 20 is attached to the plug 15 to provide a means for removing or placing the flier within the hub of the spool.

The strand material on each of the spools 13 and 14 is wound in such manner that the end of the innermost layer of strand projects outside of the spool as shown in Fig. 1.

In setting up the apparatus the spools 13 and 14 are placed upon the inclined portions 11 and 12 of the base 10. The outer end of the strand on spool 13 is threaded in the guide 19 of the flier associated therewith. The end of the innermost layer of the strand on the spool 13 is attached to the end of the outermost layer of the strand on the spool 14. When the strand is of a fibrous nature this joint may be made by tying the two

ends together and when the strand is metallic the joint may be made by brazing, welding, or in any other suitable manner. The joined portion of the strand connecting the two spools is secured in a spring clip 21 carried by the base 10 equi-distant the spools 13 and 14, looped upwardly behind the projection 18 of the flier associated with spool 14, and then threaded within the guide 19 of said flier.

In Fig. 1 the spool 13 is feeding strand material, the pull of the strand serving to rotate the flier associated with the spool to unwind the strand therefrom in the usual manner. As the last layer of strand material on the spool 13 is unwound therefrom by its associated flier, the pull on the strand as it is fed will dislodge it from the guide 19 of said flier, withdraw it from the spring clip 21 and take up the portion thereof looped behind the projection 18 of the flier associated with spool 14. Since the strand is threaded in the guide 19 of the flier associated with the spool 14, as the feed of the strand material continues, the flier will be caused to revolve and unwind the strand material therefrom. While the strand material is being fed from the spool 14, the spool 13 may be removed from its position on the base member and a full spool of strand material substituted therefor, the flier associated with the spool 13 being lifted therefrom by the bail 20 and disposed within the hub of the full spool. The projecting end of the innermost layer of the strand on spool 14 is then suitably connected with the end of the outermost layer of strand material on the fresh spool and the connecting portion of the strand disposed within the clip 21, looped over the projection 18, and threaded in the guide 19 of the flier associated with the full spool. This operation of replacing exhausted spools with fresh ones and connecting them with the feeding spool as above described may be continued as long as desired so that strand material may be fed without interruption.

Since the joint in the strand is made while it is being fed, this operation does not reduce the activity of any machine which receives the fed strand.

The two spools are set at the angle illustrated, in order to focus on the same point the angle of feeding from both spools, thus maintaining the tension on the strand uniform as it is fed from each spool.

Although in the drawings the apparatus is shown as comprising only two spools it is to be understood that various number of spools may be interconnected in the manner previously described without departing from the spirit and scope of the invention.

What is claimed is:

1. In an apparatus for handling strands, a plurality of strand supply devices and in-

dependent drivable withdrawing means associated with each of said devices, said drivable withdrawing means so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

2. In an apparatus for handling strands, a plurality of strand supply devices, the outer end of strand material of one of said devices being connected to the inner end of strand material of another supply device, and independent drivable withdrawing means associated with each of said devices, said withdrawing devices so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices.

3. In an apparatus for handling strands, a plurality of strand supply devices and independent drivable withdrawing means associated with each of said devices, said withdrawing means driven by the strand material and so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

4. In an apparatus for handling strands, a plurality of strand supply devices and independent drivable withdrawing means associated with each of said devices, one of said withdrawing means normally operative, said withdrawing means so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

5. In an apparatus for handling strands, a plurality of strand supply devices and a flier associated with each of said devices, said fliers so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

6. In an apparatus for handling strands, a plurality of strand supply devices, the inner end of strand material of one of said devices being connected to the outer end of strand material of another supply device, means for yieldingly holding the connected ends of said strand material where they lead from one supply device to another, and independent drivable withdrawing means associated with each of said devices, said withdrawing means so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices.

7. In an apparatus for handling strands, a plurality of spools containing strand material, and a flier associated with each spool, the outer end of strand material on one spool being connected to the inner end of strand material on another spool, and said fliers so constructed and arranged as to permit uninterrupted feed of strand material from said spools.

8. In an apparatus for handling strands, a plurality of spools containing strand material, and a flier associated with each spool, the outer end of strand material on one spool

being connected to the inner end of strand material on another spool, and said fliers so constructed and arranged and controlled by the strand as to permit uninterrupted feed of strand material from said supply devices.

9. In an apparatus for handling strands, a plurality of spools containing strand material, a flier associated with each spool, each of said fliers having a strand guide and one of said fliers having a projection over which the strand may be looped, the outer end of strand material on one spool being connected to the inner end of strand material on another spool, and said fliers so constructed and arranged as to permit uninterrupted feed of strand material from said spools.

10. In an apparatus for handling strands, a plurality of strand supply devices and independent drivable withdrawing means associated with each of said devices, each of said withdrawing means having a guiding element and a member over which strand material may be looped, said withdrawing

means so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

11. In an apparatus for handling strands, a plurality of strand supply devices, said devices so disposed that the angle of feeding therefrom is focused on the same point, and independent drivable withdrawing means associated with each of said devices, said withdrawing means so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

12. In an apparatus for handling strands, a plurality of spools containing strand material, said spools so disposed that the angle of feeding therefrom is focused on the same point, a flier associated with each spool, said fliers so constructed and arranged as to permit uninterrupted feed of strand material from said supply devices serially.

In witness whereof, I hereunto subscribe my name this 28 day of April A. D., 1923.

HOWARD GEORGE WALKER.