Nov. 25, 1924. 1,516,576

D. O. PEASE

METHOD OF AND APPARATUS FOR MAKING COMPOSITE THREADS

Filed Nov. 3, 1923

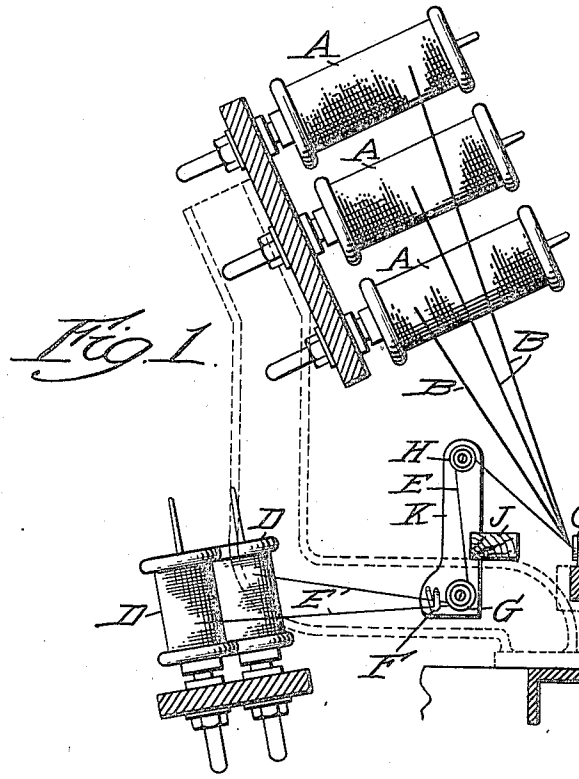


Fig. 1.



Fig. 4.

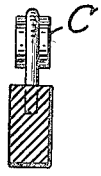


Fig. 5.

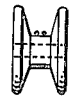


Fig. 6.

Fig. 2.

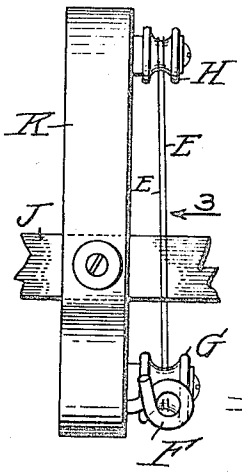
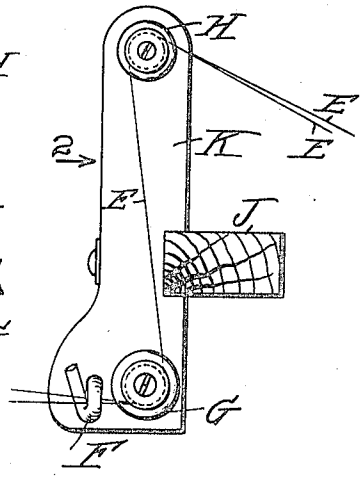
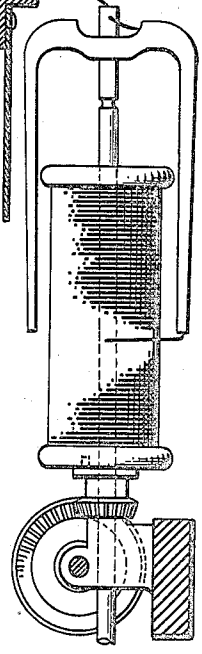


Fig. 3.





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UNITED STATES PATENT OFFICE.

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METHOD OF AND APPARATUS FOR MAKING COMPOSITE THREADS.

Application filed November 3, 1923. Serial No. 672,460.

To all whom it may concern:

Be it known that I, DURELL O. PEASE, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Method of and Apparatus for Making Composite Threads, of which the following is a specification.

This invention relates to a method of and apparatus for making a composite thread, especially a thread having a plurality of metallic wires twisted and combined with one or more threads of fibrous material. Heretofore in the manufacture of threads of this character trouble has been experienced from the unequal delivery of the wires as the same are pulled forward by the drawing rolls especially when the bobbins or spools of wire are unequally unwound which has impaired the quality of the resulting thread and has weakened the same as if one wire is longer than the other, or kinked, the strain will have to come on the shorter or straight wire which leads to difficulty and breakage in the weaving.

My improved method overcomes this difficulty by the employment of a means for laying the two wires exactly parallel and then looping them under the same tension to secure equality of length or remove the kinks.

Apparatus by which my invention may be practiced is illustrated in the accompanying drawing, in which—

Fig. 1 is a diagrammatic vertical sectional view of a portion of a flier twisting machine arranged for the practicing of my invention;

Fig. 2 is a front view, and Fig. 3 a side elevation respectively on an enlarged scale showing the mechanism which I employ for the above stated apparatus;

Fig. 4 is a front elevation and Fig. 5 a side elevation on the same enlarged scale of the assembled parts; and

Fig. 6 illustrates a modified form of guiding roller.

Referring to the drawing and in detail A represents one or more bobbins from which one or more strands B are led to an assembing thread guide C. As many strands may be employed as desired, three being illustrated as employed for making up a completed thread. D designates a plurality of spools or bobbins wound with wire strands E. The wire strands are led from the spools through a pig-tail or wire guide F, then around a roller G, then up around the roller H to the assembling thread guide C. It will be noticed that the wire strands are thus led between the roller G and the assembling thread guide C. The strands B and E are drawn forward from the assembling thread guide by positively driven top or friction rollers I and then the assembled strands are led to a spinning couple which preferably is of the differential flier or throstle type or it may be a ring and traveller. It will be noticed that each roller G and H is provided with a groove which is curved in cross-section and which is shaped so as to lay the two wire strands E closely together and parallel. The two wire strands being looped in this position the kinks or inequalities of length are removed as the looping is done under the tension of the drawing or top rollers I. The grooves in the rollers G and H may have curved bottoms as illustrated in Fig. 2 or may have a flat bottom with reentrant sides as illustrated in Fig. 6. J designates a railing which may be secured in the spinning frame and the wire guide F and the spindles or pins for the rollers G and H for each spindle may be secured in a bracket K attached to said rail J. By assembling the strands in this manner and by laying the two metallic strands parallel and looping them under tension before they are assembled with the strands B, a composite thread of the character described may be spun or manufactured with practically no kinks or irregularities thereby producing a smooth evenly twisted composite thread with each wire strand of equal length.

The details and arrangements herein shown and described may be greatly varied by a skilled mechanic without departing from the scope of the invention as expressed in the claims.

Having thus described my invention what I declare and desire to secure by Letters Patent is:—

1. The method of making a composite thread which consists in drawing a plurality of wire strands forward through loop form to equalize and remove kinks therefrom, applying a fibrous strand or strands therewith and twisting the strands together to make a composite thread.

2. The method of making a composite thread which consists in drawing a plurality of wire strands forward in parallel position through loop form to equalize and remove

kinks therefrom, assembling a fibrous strand or strands therewith, and twisting the strands together to make a composite thread.

3. The combination of drawing rolls arranged to draw forward a plurality of metallic and fibrous strands and associate them together, a looping device applied to the metallic strands before the drawing rolls, and a twisting couple for twisting the strands together.

4. The combination of drawing rolls arranged to draw forward a plurality of metallic and fibrous strands and associate them together, and a looping device applied to the metallic strands before the drawing rolls consisting of rolls and an assembling thread guide.

5. The combination of drawing rollers arranged to draw forward a plurality of metallic and fibrous strands and associate them together, and a looping device applied to the metallic strands before the drawing rollers consisting of rollers having grooves tapered in cross-section and an assembling thread guide.

6. The combination of drawing rolls arranged to draw forward a plurality of metallic and fibrous strands and associate them together, a looping device applied to the metallic strands before the drawing rolls consisting of a wire guide, grooved rollers and an assembling thread guide to which latter the fibrous strands are led, and a twisting couple for twisting the strands together.

7. A spinning frame having drawing rolls, a rail carried by the spinning frame, brackets carried by the rail, each having grooved rollers, and a wire guide and assembling thread guide to which the fibrous strands are led, and a twisting couple for twisting the strands together.

In testimony whereof I have hereunto affixed my signature.

DURELL O. PEASE.