(No Model.)

2 Sheets—Sheet 1.

J. GOOD.

ART OF MANUFACTURING CORDAGE.

No. 330,315. Patented Nov. 10, 1885.

Fig. 1.

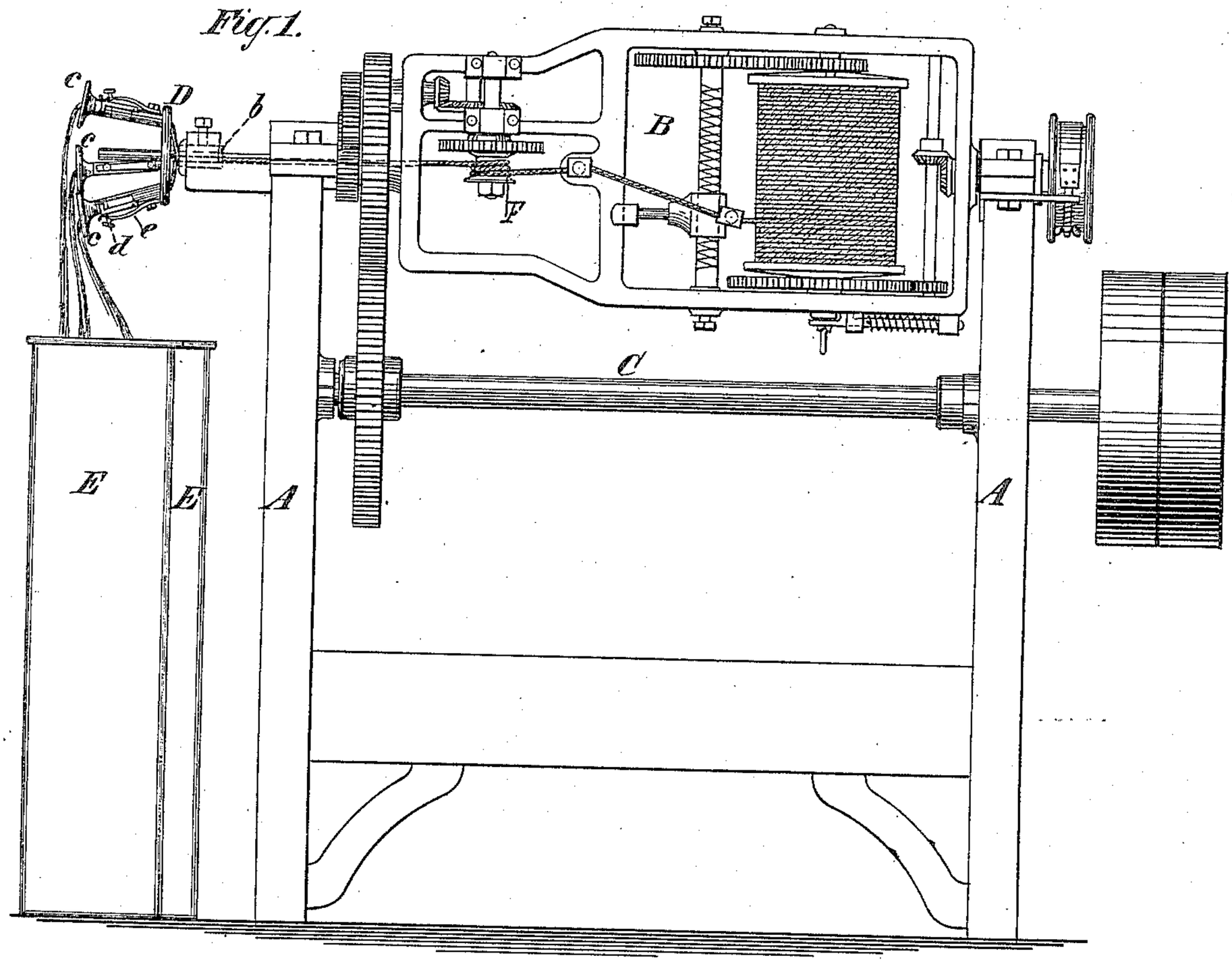


Fig. 3.

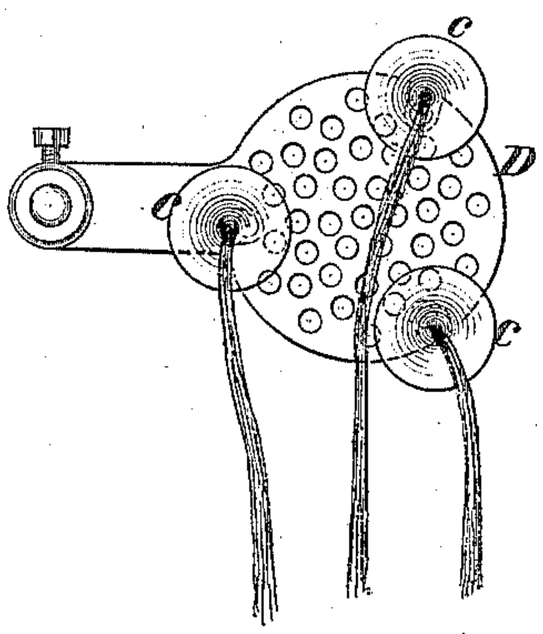
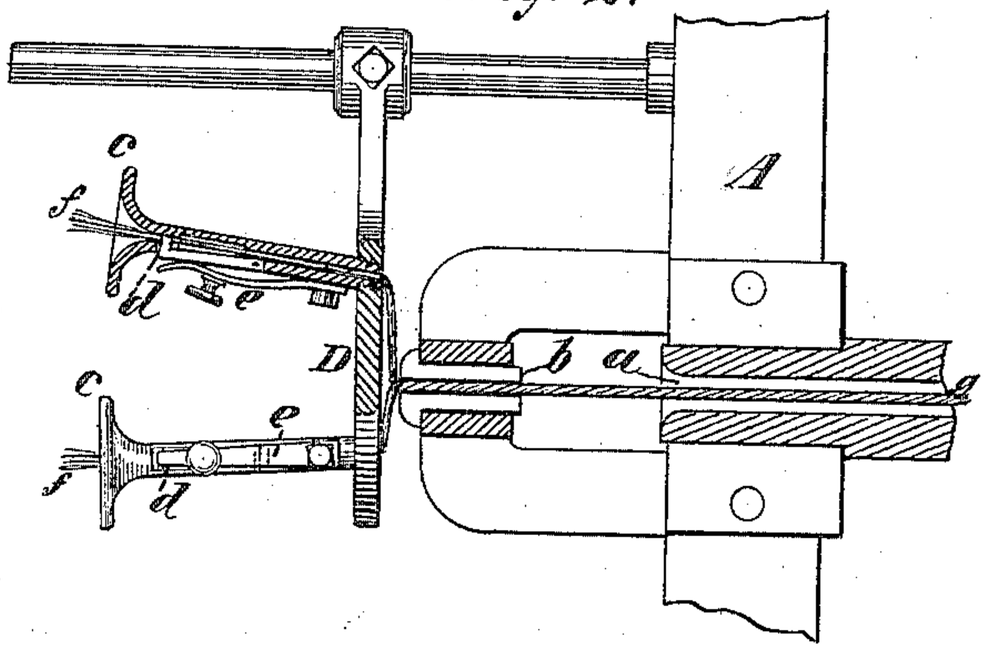


Fig. 2.



Witnesses
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(No Model.)

2 Sheets—Sheet 2.

J. GOOD.

ART OF MANUFACTURING CORDAGE.

No. 330,315. Patented Nov. 10, 1885.

Fig. 4.

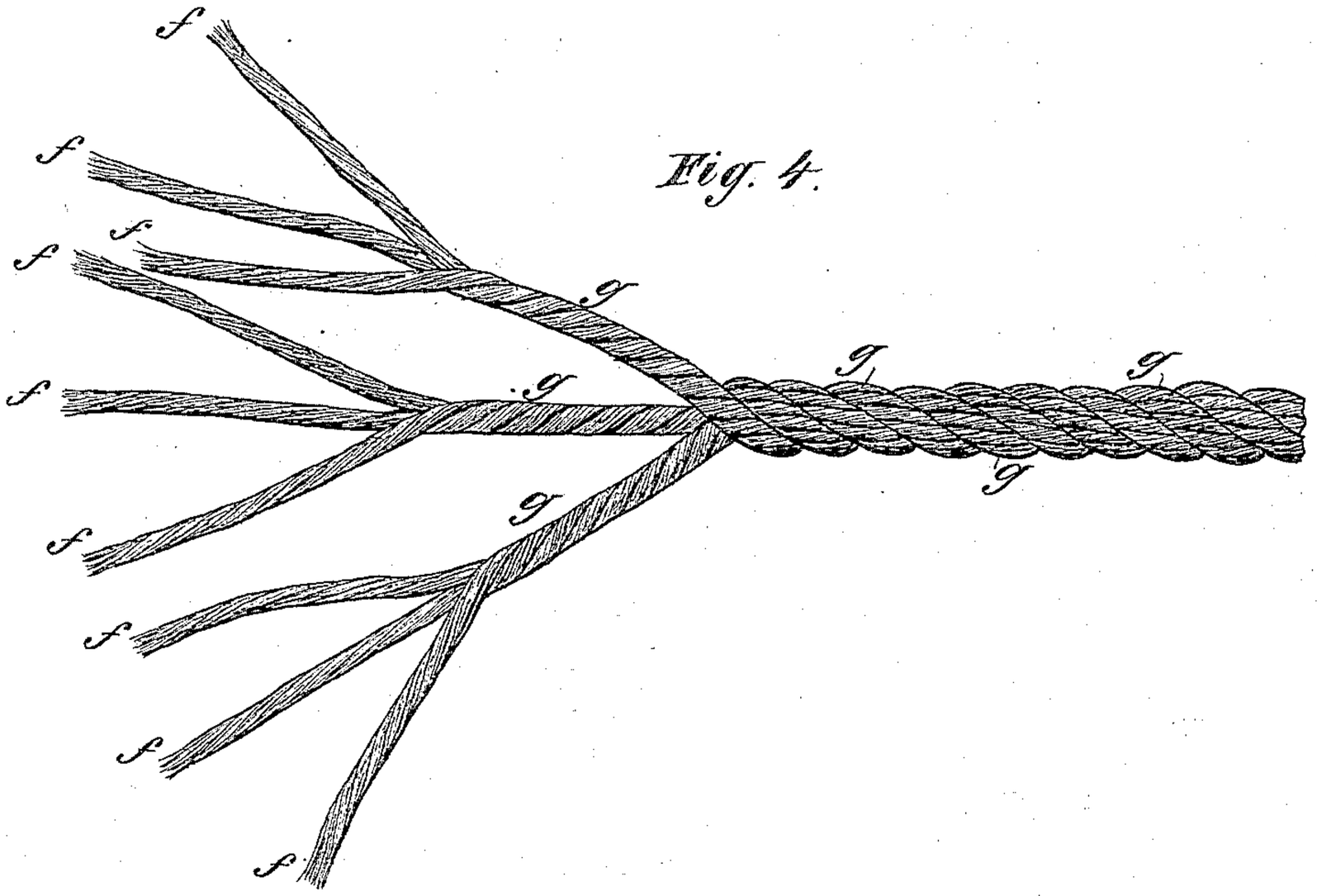
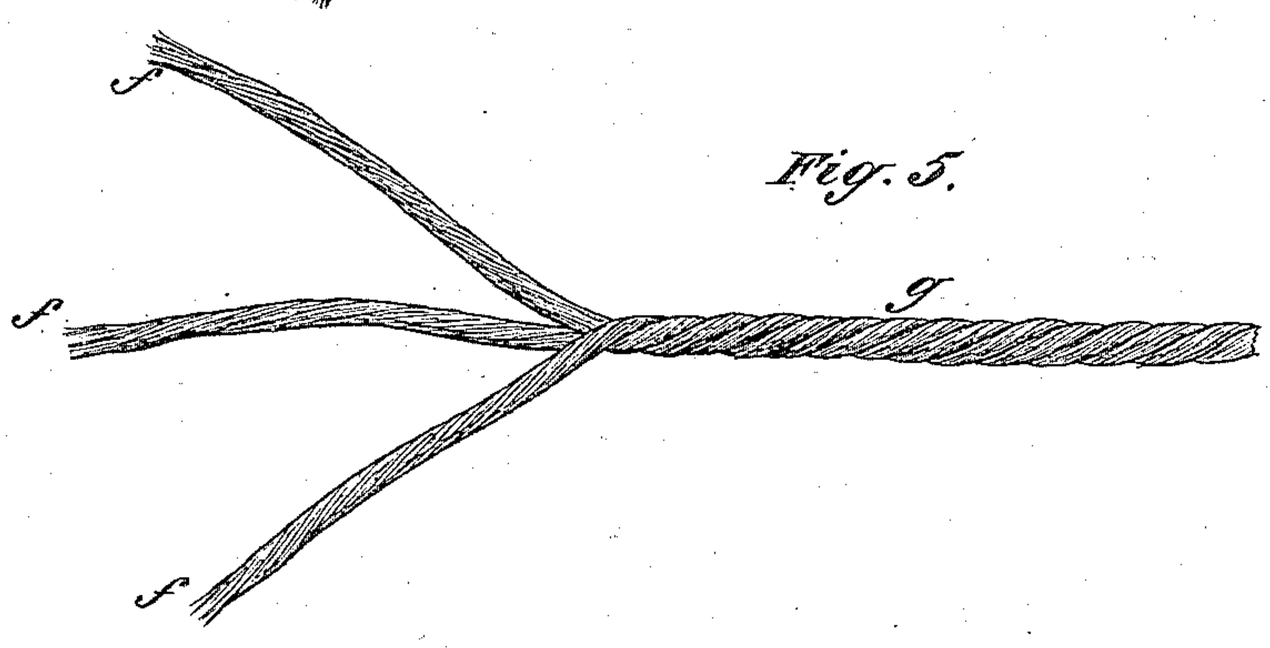


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN GOOD, OF BROOKLYN, NEW YORK.

ART OF MANUFACTURING CORDAGE.

SPECIFICATION forming part of Letters Patent No. 330,315, dated November 10, 1885.

Application filed January 29, 1884. Serial No. 119,098. (No model.) Patented in England February 21, 1884, No. 3,708; in Germany March 2, 1884, No. 28,710; in France October 24, 1884, No. 152,398, and in Canada January 31, 1885, No. 21,038.

To all whom it may concern:

Be it known that I, JOHN GOOD, a citizen of the United States, residing in the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in the Art of Manufacturing Cordage, (for which I have obtained Letters Patent of Great Britain, No. 3,708, dated February 21, 1884, a Brévét d' Invention of the Republic of France, No. 152,398, dated October 24, 1884, a patent of the Empire of Germany, No. 28,710, dated March 2, 1884, and Letters Patent of the Dominion of Canada, No. 21,038, dated January 31, 1885,) of which the following is a specification, reference being had to the accompanying drawings.

In the manufacture of strands for rope and in the manufacture of twine separate primary collections of straight fibers, commonly called "slivers," are twisted or, as it is termed, "spun" into yarns, and two or more of these yarns are placed together and collectively twisted to form the strand or twine. In such manufacture as heretofore conducted it has been most common to first spin the slivers into yarn in a separate machine, which only effects this spinning, and to afterward twist the yarns collectively to form the strand or twine in another separate machine; but sometimes the two operations of spinning the yarns and twisting a number of them collectively to form the strand or twine have been performed in the same machine. In both of these methods, however, the operation of spinning or separate preliminary twisting of the slivers or primary collections of fibers to produce the yarns has been performed by separate fliers or rotary twisting devices having operations of their own independent of the operation of the device by which the several yarns are collectively twisted to form the strand or twine.

The object of my invention is to enable less or simpler machinery to be used in this manufacture, and so to reduce the cost of the product. This I accomplish by causing a rotary movement given to the slivers or primary collections of fibers which have been previously without any twist to produce at the same time their separate twistings for producing the yarns and the twisting of the yarns together to form the strands, whereby I dispense altogether with the fliers or separate rotating devices heretofore employed for twisting the slivers into yarn, and make one flier produce the two operations of spinning the yarns and forming the strands.

In the accompanying drawings, which illustrate my invention, Figure 1 is a side elevation of a machine in which my invention is performed. Fig. 2 is a horizontal section, on a larger scale than Fig. 1, of a part of the flier by which the twistings are performed, and of the condensers through which the slivers pass to the said flier. Fig. 3 is a face view corresponding with Fig. 2. Fig. 4 is a longitudinal view of a piece of rope having its strands made according to my invention, a part being shown untwisted. Fig. 5 is a longitudinal view of a piece of one of the strands.

Similar letters of reference indicate corresponding parts in the several figures.

A is a frame containing bearings for the flier B and for the shaft C, from which the flier derives motion through suitable gearing. This flier is such as is commonly used for laying a number of yarns to form strand material or twine. In front of the hollow journal *a* of the said flier is arranged the ordinary cylindrically-bored stationary forming-tube *b*, and in front of said tube is arranged the guide-plate D, in which are the holes usually employed for conducting the yarns to the forming tube. In as many of these holes as there are slivers to be twisted and formed into the strand or twine, and at equal distances from the center of the plate, are placed condensing devices—one for each sliver. These devices, as represented, consist of trumpet-mouthed tubes *c c*, each fitted with a nipper, *d*, to which is applied a spring, *e*, for making it press upon the slivers *f f*, which are supplied from cans E E, which may be the same cans in which the slivers having no twist in them have been delivered from the head of a drawing-frame, such as is commonly used in drawing hemp. When the operation of the machine is to be commenced, the slivers *f f* are passed separately through the condensing-tubes *c c*, then altogether through the forming-tube *b*, through the hollow flier-journal *a*, around the capstan of the flier, and through the traverse guide thereof and attached to the bobbin, and the machine

is then set in motion. The rotation of the flier and the rotation of the bobbin therein produce at the same time the drawing of the slivers through the condensing-tubes, their separate twistings into yarns, and the twisting together of the yarns to form the strand or twine *g*, which, as it is formed, is wound on the bobbin of the flier, the separate twistings of the slivers into yarns, and the twisting of the yarns together to form the strand or twine being all produced by the simple rotary motion of the flier. It will thus be seen that the yarns are produced without any separate preliminary twisting operation by the same simple rotary movement of the flier which twists them collectively together to lay them into the strand.

What I claim as my invention, and desire to secure by Letters Patent, is—

The improvement in the art of manufacturing cordage, consisting in subjecting collectively several separate primary collections of fibers which have been previously without twist to a simple rotary motion, whereby they are separately twisted into yarns and twisted together into a strand or twine, substantially as herein described.

JOHN GOOD.

Witnesses:
FREDK. HAYNES,
HARRY BOGERT.