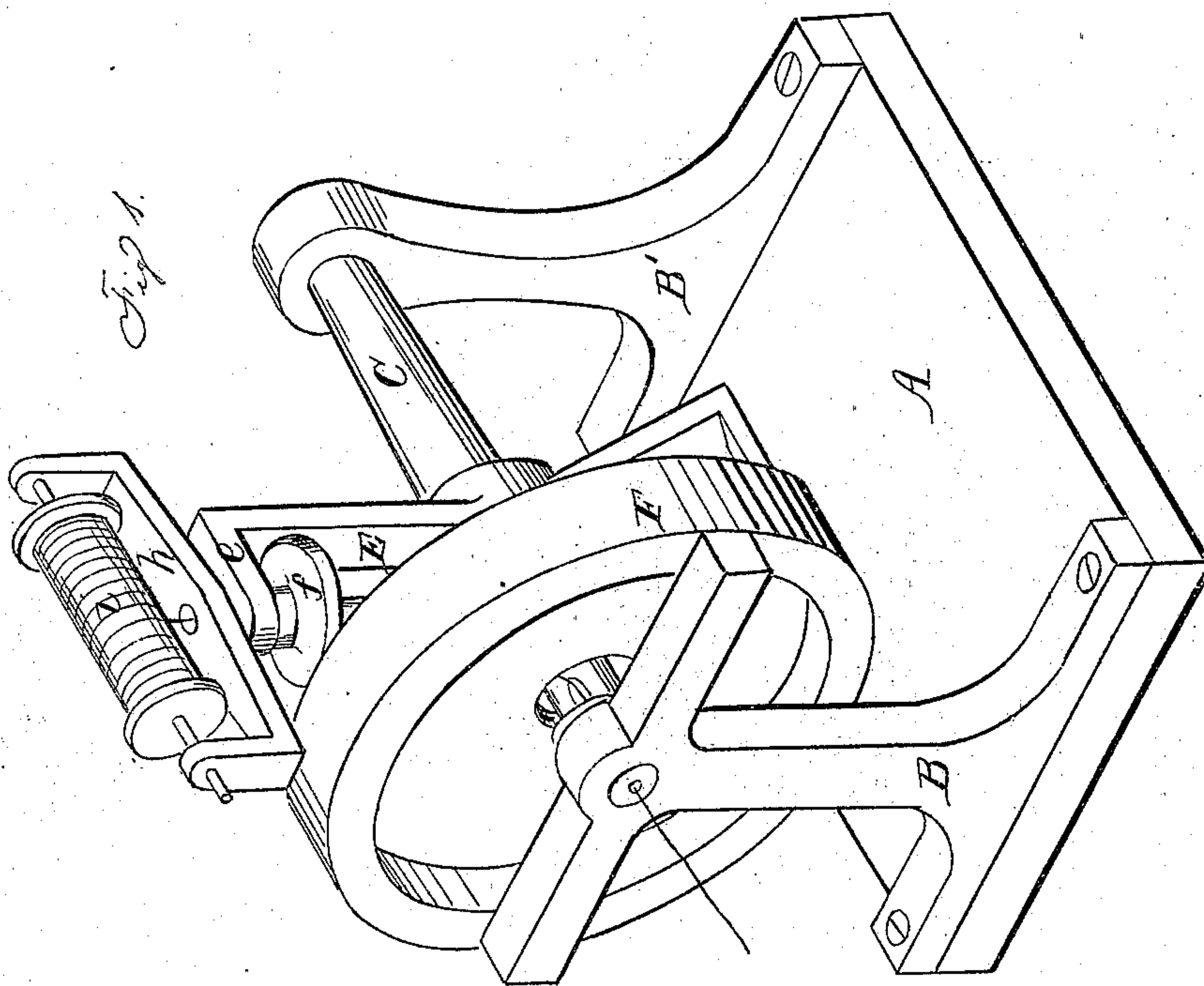
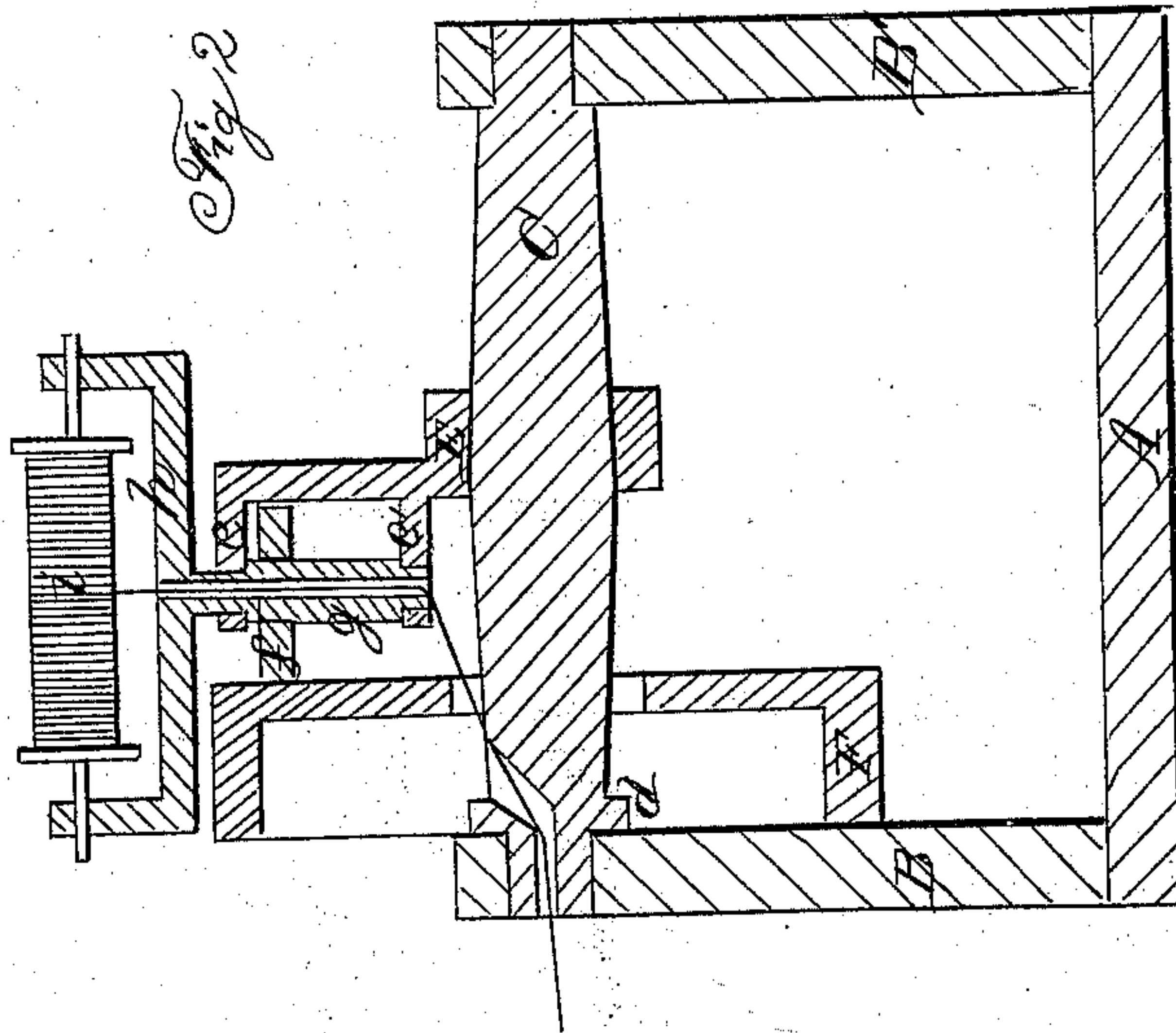


H. W. Fowler
Rope Machine.

No. 17084.

Patented Apr. 21. 1857.



UNITED STATES PATENT OFFICE.

HARVEY W. FOWLER, OF HOOSICK FALLS, NEW YORK.

IMPROVEMENT IN MACHINES FOR MAKING ROPE.

Specification forming part of Letters Patent No. 17,084, dated April 21, 1857.

To all whom it may concern:

Be it known that I, HARVEY W. FOWLER, of Hoosick Falls, in the county of Rensselaer and State of New York, have invented a new and useful Machine for Making Rope and Cordage; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective and Fig. 2 a vertical sectional view.

A is the bed or frame of the machine, having standards B B' at its ends, in the top of which are fitted journal-boxes, in which the layer-shaft revolves and operates.

C is the layer-shaft, having journals formed upon each of its ends to fit and revolve in the journal-boxes in the standards B B'. The left-hand end of the shaft is made hollow as far in as the inner side of the flange *d*, the diameter of the aperture being equal to the diameter of the rope or cord to be made. If it is desired to make different sizes of rope or cord with one machine, the hole in the end of the shaft may be made larger than the diameter of the largest size of rope to be made, and the requisite size of the aperture may be obtained by the use of thimbles, each having different-sized holes through them equal to the sizes of the different ropes and cords to be made, which are secured into the hole in the end of the shaft by keys or set-screws.

E is a spider, having three arms radiating from the center of the layer-shaft and placed equidistant from each other. It is secured to the layer-shaft by keys or set-screws, so that it can be readily removed and another one substituted in its place when required.

e e' are brackets or supports secured to the face of each of the arms of the spider and of sufficient length from the face to allow the pulley *f* to revolve within the line of the face.

g is a hollow shaft supported by and working in the brackets *e e'*, on the head of which is secured and fastened the flier *h*, which flier is for the purpose of holding the spool or bobbin *i* upon which the thread or strand which is to be made up into rope or cordage is wound. *f* is pulley by which the flier-shaft is operated. It is secured to its shaft so that it can be adjusted in position nearer to or farther from the center of the layer-shaft, as

may be desired, to effect the purposes hereafter named.

F is a disk of a diameter about equal to the diameter of the spider E, which is turned or otherwise made perfectly true and straight upon its inner face, and which is firmly secured to the standard B, and, if necessary, to the frame A, at exact right angles to the layer-shaft C. The purpose and object of this stationary disk is to communicate motion to the periphery of the pulley *f* on the flier-shaft through the friction induced by the pulley bearing against its face when the layer-shaft and its attachments are revolved by a proper application of power.

The operation of the machine is as follows: The spools or bobbins, with the requisite supply of thread or strands wound upon them, being placed in their position in the fliers and a thread or strand from each being led down through the flier-shafts and taken into the hollow end of the layer-shaft through apertures made for the purpose, as shown in Fig. 2, the layer-shaft is then revolved by the application of any power that may be desired. The spider having been so adjusted in position on the layer-shaft as to allow the pulleys on the flier-shafts to bear firmly against the face of the stationary disk F, the revolutions of the flier-shafts caused by the pulleys on them coming into contact with the face of the disk gives to the thread or strand wound off from the spool or bobbin the required degree of twist, the degree of twist being capable of being changed by moving the pulleys up or down on their shafts to bring them nearer to or farther from the layer-shaft and to cause the pulley to traverse a larger or smaller circle on the face of the disk, while the revolutions of the layer-shaft give to the combined threads or strands their proper lay as they issue from the hollow end of the shaft. The size of the aperture in the end of the shaft being made equal to the size of the rope or cord desired, gives to the cord or rope its proper size and degree of compression. The cord or rope as it is delivered at the end of the layer-shaft is wound upon a reel or stretcher in the manner ordinarily practiced.

For making cordage four fliers and spools are required, and a spider with four arms to receive the flier-shafts is placed upon the layer-shaft instead and in place of the triple-

armed one shown in the drawings. But one flier-shaft and its attachments are represented in the drawings for the purpose of making the drawings more clear and perspicuous; but it will be observed and understood that a flier-shaft and its attachments are attached and secured to each arm of the spider in a similar manner to the one shown and described.

This machine effects the objects for which it is designed superior to any other devised or used for the same purpose, while it is more simple and inexpensive in its construction, is less liable to derangement when in operation from its lesser number of working parts, and requires less power to operate it.

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

1. The stationary disk F, arranged in relation to the layer-shaft C and the spider E in the manner described, for the purpose of com-

municating motion to the fliers *h* through the flier-pulleys *f*, as herein set forth.

2. Arranging the series of flier-shafts *g* radially to the layer-shaft C and revolving them when the layer-shaft is revolved so as to give the proper degree of twist to the threads or strands as they leave the spools or bobbins in the fliers by the peripheries of the flier-pulleys *f* being kept in contact with the face of the stationary disk F, the said pulleys being adjustable nearer to or farther from the center of the layer-shaft to decrease or increase the speed of the fliers and through that to give a less or greater degree of twist to the thread or strand, as herein described and set forth.

HARVEY W. FOWLER. [L. S.]

Witnesses:

SIDNEY LOW,
FRANCIS S. LOW.