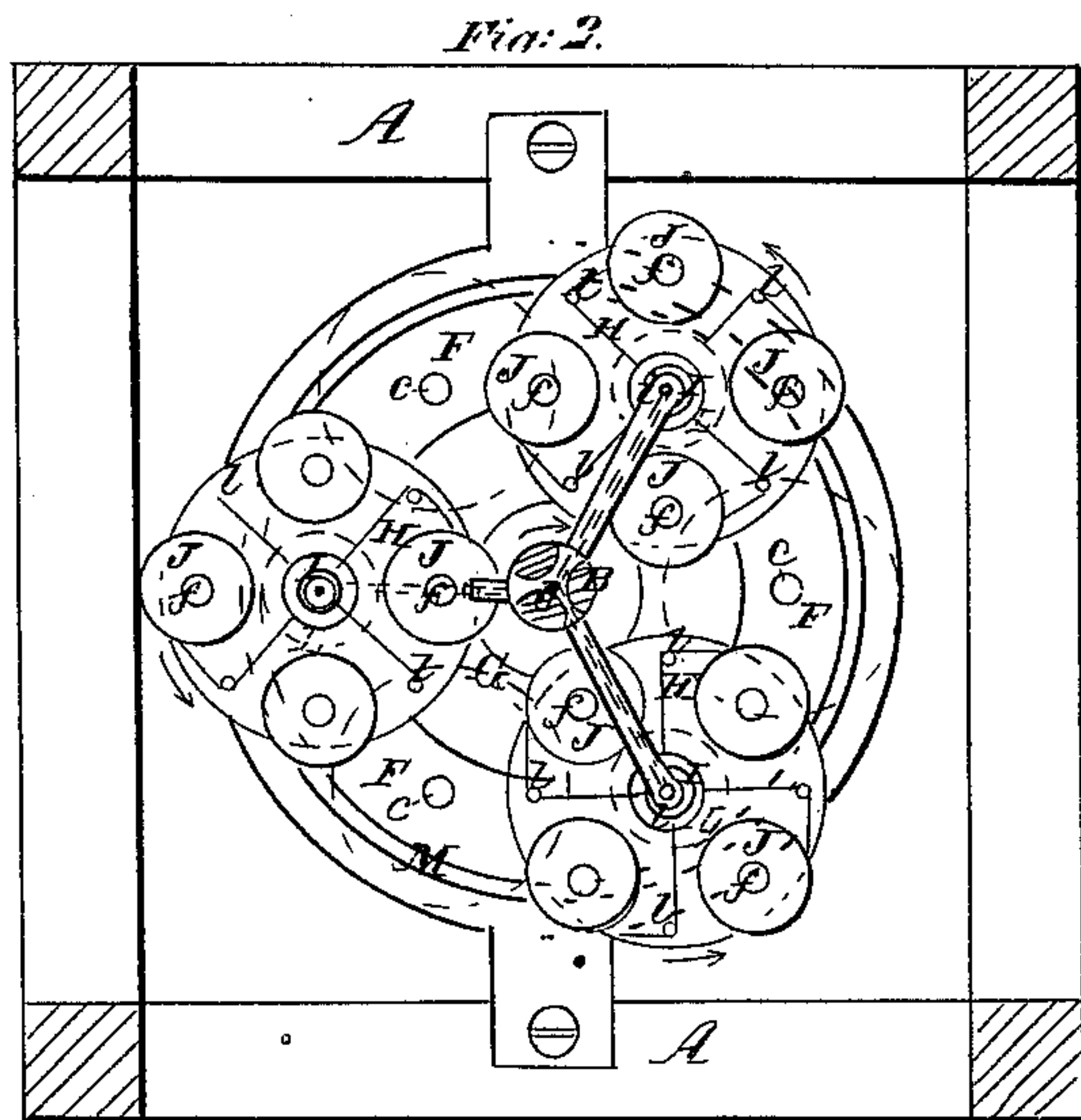
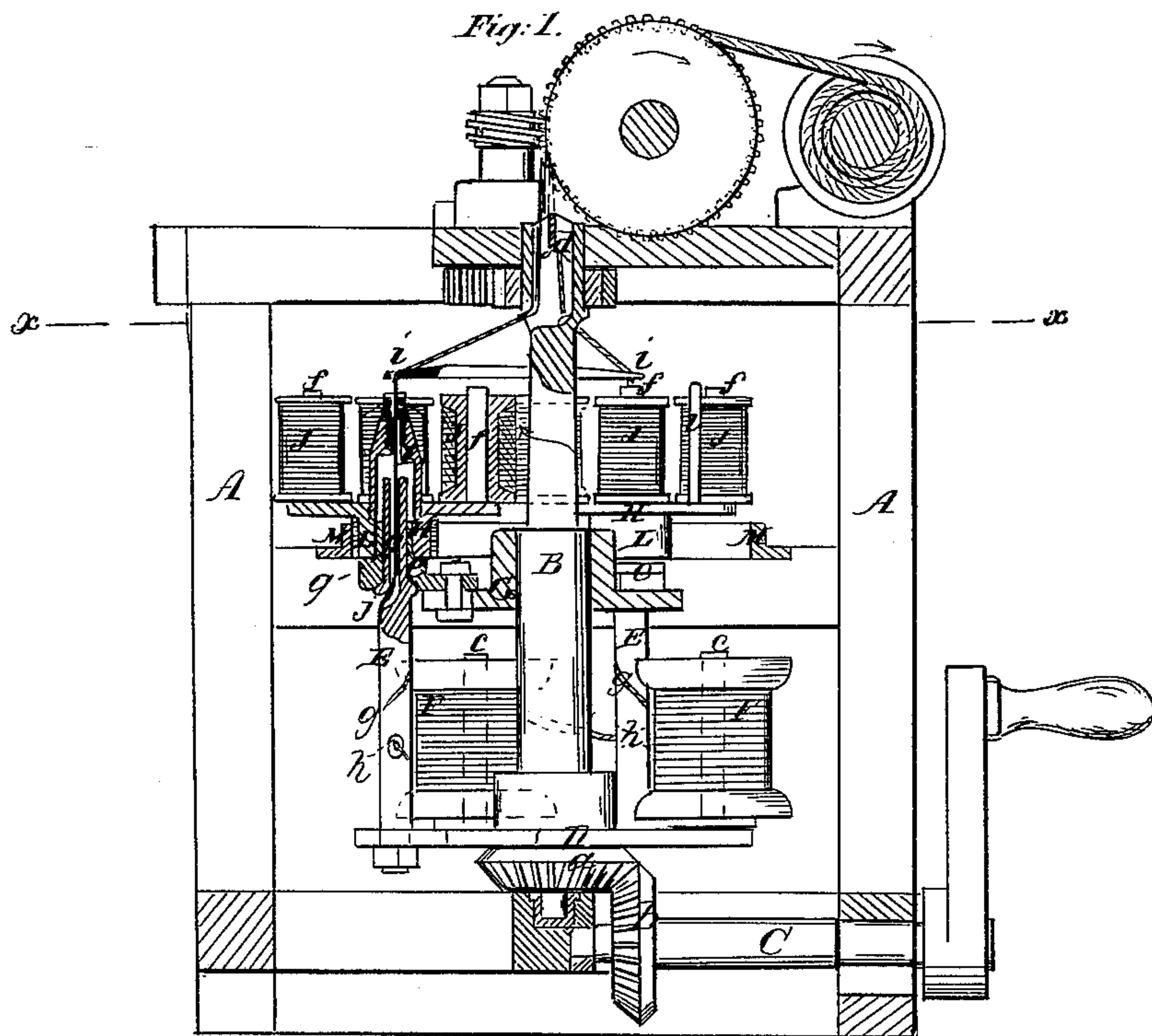


*J. Turner,  
Covering Cord.*

*No. 9,498.*

*Patented June 15, 1869.*



*Witnesses.  
J. M. Coombs  
Fred. Haynes*

*John Turner  
per Chas. Coombs & Co.*



# United States Patent Office.

JOHN TURNER, OF NORWICH, CONNECTICUT.

Letters Patent No. 91,498, dated June 15, 1869.

## IMPROVEMENT IN MACHINES FOR MAKING COVERED CORD.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, JOHN TURNER, of Norwich, in the county of New London, and State of Connecticut, have invented a new and useful Improvement in "Machinery for Making Covered Cord;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a vertical section of a machine constructed according to my invention.

Figure 2 is a horizontal section of the same, in the plane indicated by the line *x x* in fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists in a novel combination of strand-carrying devices which do not twist the strands, strand-covering devices, and a laying-device, whereby a number of strands is first covered, and afterward laid together into a cord.

By this combination, several important advantages are obtained over those machines in which the strands are twisted, covered, and laid at the same time, among which may be mentioned—

First, the use, for the strands, of a cheaper material, such as hemp, which cannot be spun or twisted at the same time that the covering is performed;

Secondly, the covering and laying of a greater length of cord, without stopping to piece-up, owing to the greater quantity of the strand, or body-material which can be worked in the machine at one time;

Thirdly, the reduction of the compass of the machine, by dispensing with the strand-twisting devices; and

Fourthly, the provision made for the covering of strands of wire, and laying them into a cord.

To enable others skilled in the art to make and use my invention, I will proceed to describe the example of it represented in the drawings.

A is the frame of the machine, in the centre of which is arranged, in suitable bearings, the upright laying-spindle B, which has rotary motion imparted to it, by bevel-gears *a b*, from the horizontal driving-shaft C, arranged in bearings in the lower part of the framing.

The upper part of this spindle is constructed with a laying-top, *d*, like that of an ordinary cordage-machine.

Upon the lower part of the laying-spindle there is rigidly secured a disk, D, in which is firmly secured a number of spindles, E E, corresponding with the number of strands to be made into the cord, arranged parallel with the laying-spindle; and between these spindles there is firmly secured, into the said disk, a corresponding number of smaller and shorter spindles, *e e*, upon which are placed loosely the bobbins F F, which carry the twine, *g*, or wire of which the strands are to be composed.

Some distance above the bobbins F F, there is secured firmly upon the laying-spindle a disk, G, and to this disk there is firmly secured a number of upright hollow studs, *e*, which are so arranged and constructed that the spindles E E pass through, fit, and are held steady by them.

The exteriors of the said studs are turned to fit the central bores of the base-plates H H, of the hollow upright covering-spindles I I, which correspond in number with the strands, and which rotate about their respective spindles E E.

These base-plates have each firmly secured in it a number of spindles, *f f*, upon which are arranged, one upon each, the bobbins J J, which carry the silk or worsted with which the strands are to be covered, and which is represented in red color.

Between the covering-bobbins there are secured to the base-plates H, of the hollow covering-spindles, upright guide-pins *ll*, to guide the covering-material from its bobbin.

In the sides of the upper parts of the hollow covering-spindles I I, there are holes, corresponding with the number of bobbins, J J, on each, for the passage of the covering-threads to the strands; and above each of the covering-spindles there is arranged a guide, *i*, secured to the laying-spindle, for the purpose of conducting the covered strands to the laying-top *d*.

The spindles E E have each, about opposite the middle of the length of the bobbins F F, a hole, *h*, made transversely through it, to serve as a guide for the strand, coming from its respective strand-bobbin F.

The upper parts of the spindles E E, commencing below the studs *e*, are hollow, and there is a hole, *j*, in one side of each, communicating with the internal cavity.

Below and attached to the base-plates H, of the hollow covering-spindles, there are pulleys L L, the peripheries of which are covered with India rubber or other soft material, and are in contact with the interior of a stationary ring, M, which is concentric with the main spindle.

The friction of these pulleys against the said ring M, caused by the rotation of the laying-spindle B, produces the rotation of each covering-spindle upon its axis, as it revolves with and around the laying-spindle.

Above the laying-spindle there is a take-up apparatus, which may be like that common to cordage-machines.

I will remark that this machine resembles that described for the same purpose, in the patent to myself and I. E. Palmer, issued April 14, 1863, except that the spindles E E are fixed relatively to the laying-spindle, instead of rotating upon their own axes, and, instead of having strand-twisting apparatus, it has simply the bobbins F F, for carrying the strand-material.

The operation is as follows:



The machine being set in motion, the strand-material, which may be either common hardware-twine, or any twine made for the purpose or otherwise, or wire, is unwound from the spools *F*, and drawn, by the action of the take-up apparatus, through the guide-holes *h* and *j*, and through the hollow upper parts of the spindles *E E*, through the guides *i i*, and through the laying-top *d*, above which they are laid together into cord.

The separate strands *g*, as they pass through the upper parts of the hollow covering-spindles, receive the covering which is wound upon them by the rotary motion of the covering-spindles around them.

I do not confine myself to the precise construction of the machine herein described; but

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

1. The combination, in a machine for making covered cord, of two or more strand-carrying devices, which do not twist the strands, covering-devices for each strand, and laying-devices, whereby the strands are covered, and all subsequently laid into cord, substantially as herein described.

2. The strand-carrying bobbins, in combination with the laying-spindle, and with the spindles *E E*, occupying a fixed relation to the laying-spindle, and arranged in line with the axis of the covering-spindles, substantially as herein specified.

JOHN TURNER.

Witnesses:

JOHN G. BAKER,  
MARIA L. BUTTON.