

(No Model.)

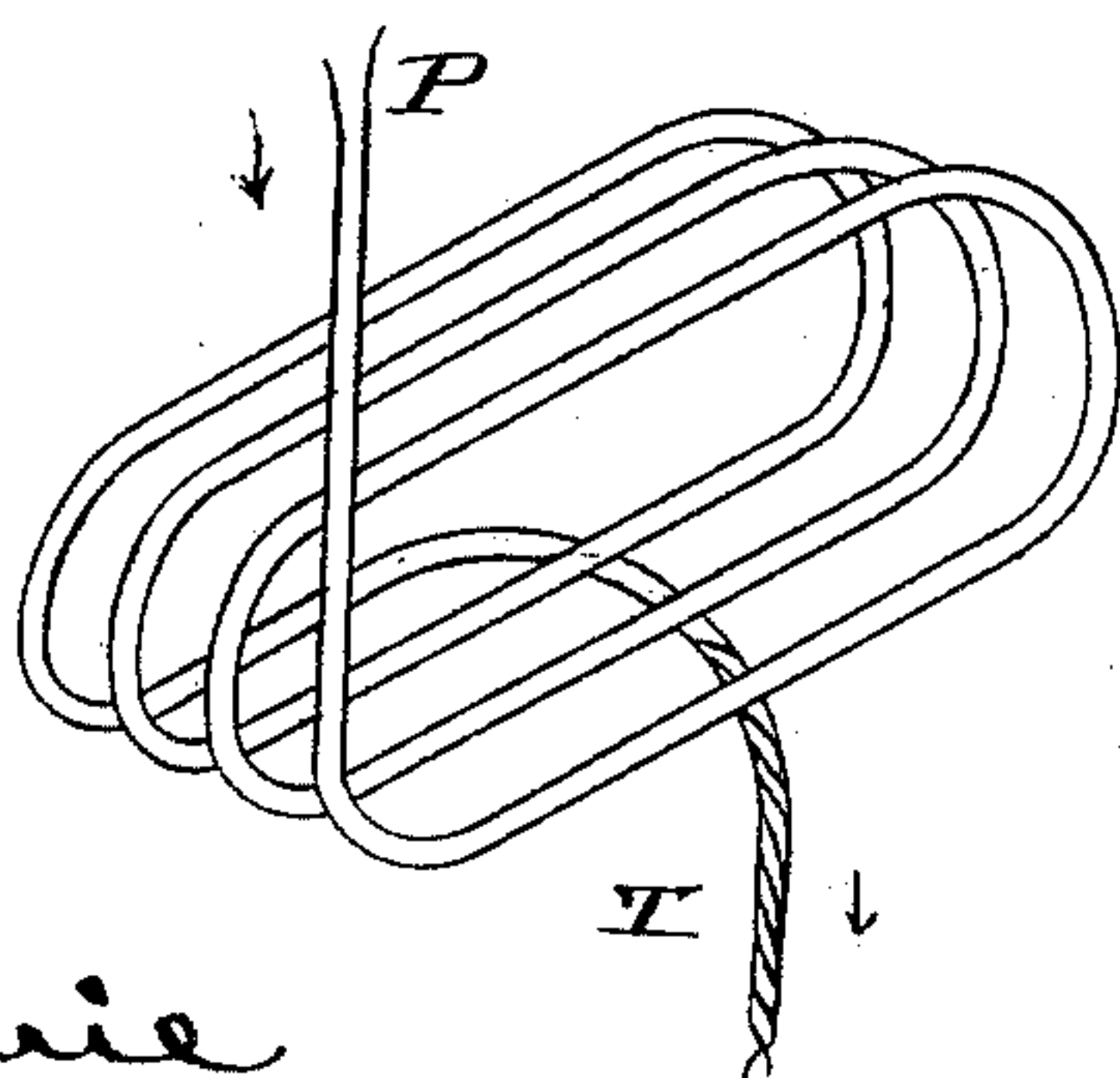
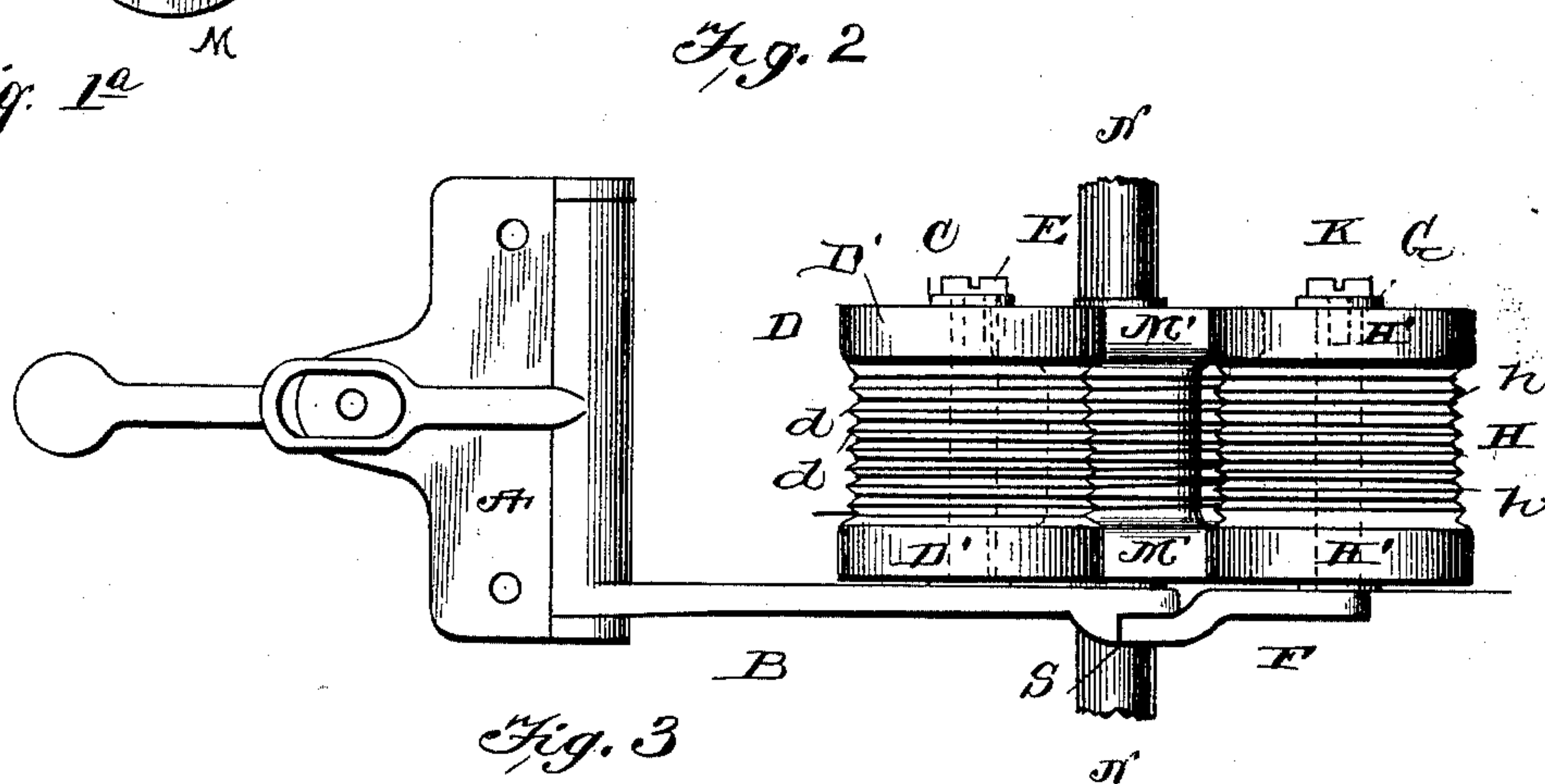
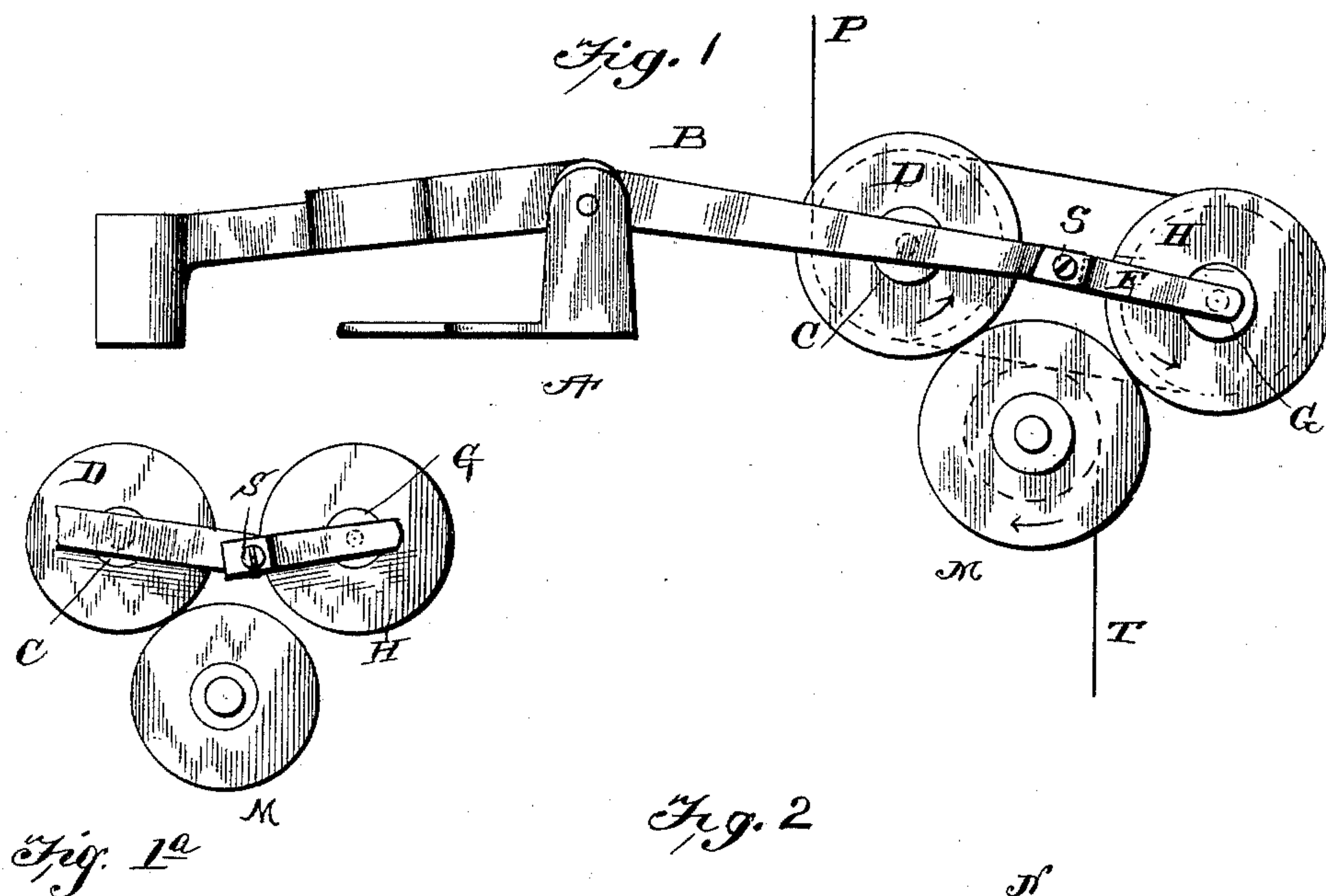
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J. N. LEONARD.

## ROLLS FOR DOUBLING AND TWISTING MACHINES.

No. 483,809.

Patented Oct. 4, 1892.



Witnesses

John Dowie  
E. C. Wells

E. C. Wells

Inventor

John N. Leonard

By his Attorney

W A Barlett

(No Model.)

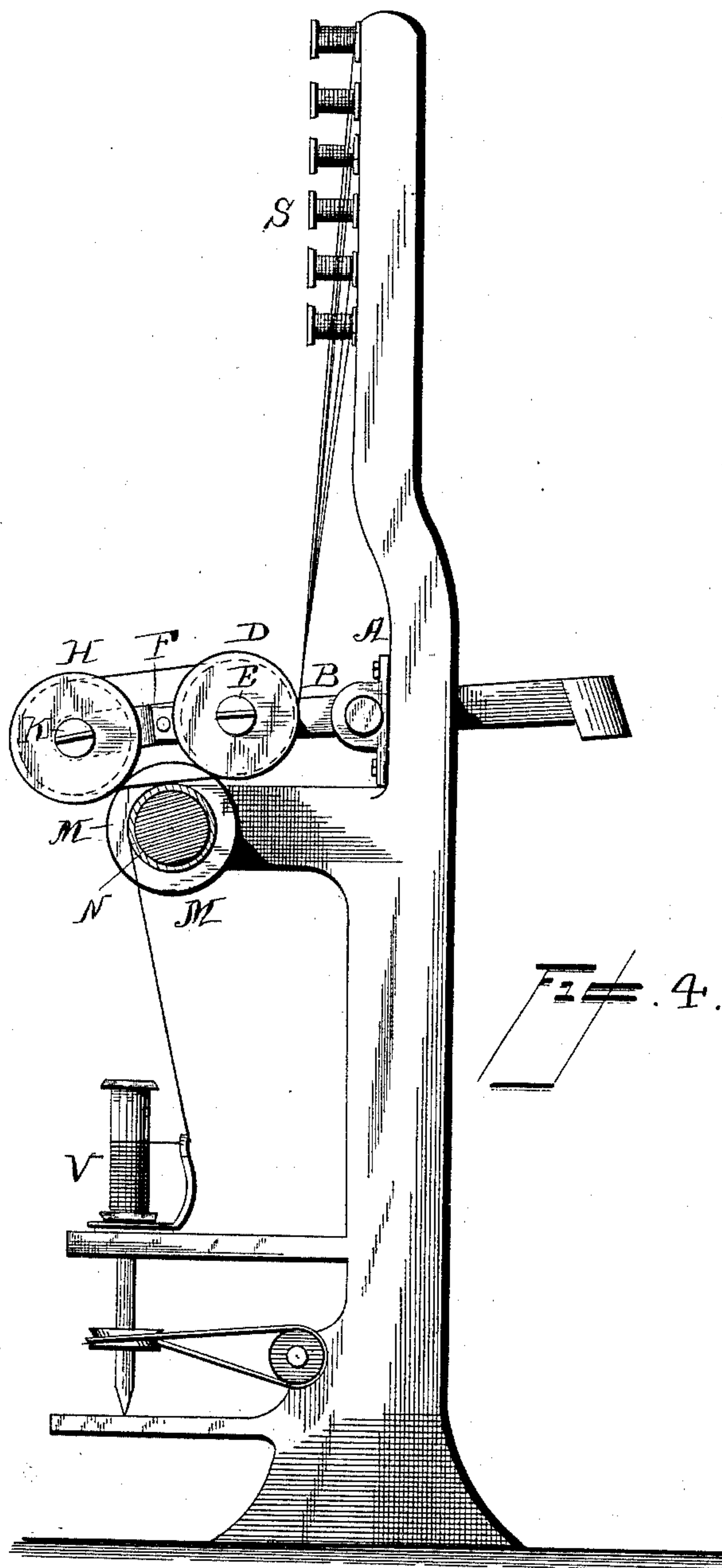
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ROLLS FOR DOUBLING AND TWISTING MACHINES.

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Witnesses  
O. W. Johnson.  
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# UNITED STATES PATENT OFFICE.

JOHN N. LEONARD, OF NORTHAMPTON, MASSACHUSETTS.

## ROLLS FOR DOUBLING AND TWISTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 483,809, dated October 4, 1892.

Application filed November 19, 1891. Serial No. 412,416. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN N. LEONARD, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Rolls for Doubling and Twisting Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to doubling and twisting threads or silk, and especially to the rolls used therefor.

15 The object of the invention is to so improve the machine for doubling and twisting fibers, and especially silk, that there will be little or no tendency for the threads or fibers to catch and break near the drawing and evening rolls.

20 In a specification filed of even date herewith, to which reference is made, I have described in a general way the method now pursued of conveying threads from the spools to the cop, past the drawing and evening rolls, and certain improvements I have made therein. My present improvement is a modification 25 thereof and the same general description applies hereto, this improvement being applicable to the same class of machines.

30 In the drawings, Figure 1 is a side elevation of my improved rolls and support, showing the course of the cord around the same. Fig. 1<sup>a</sup> is a detail of a modification. Fig. 2 is a top plan of the same. Fig. 3 is a diagrammatic detail showing the direction of the cord or thread around the roll. Fig. 4 is an end 35 elevation, partly in section, of so much of a spinning-frame as is necessary to illustrate my invention.

40 Referring to the drawings, A denotes a bracket or support of any usual construction connected to the main frame of the machine. The lever B is pivoted in this bracket and is so connected to the stop device as to swing slightly on its pivot when any thread breaks, as is common in this art, especially in 45 the well-known Morrison machine. The lever B has a fixed pivot or pintle C, which serves as an axle for grooved roll D, the roll being held on its axle by a screw E, entering the end of the axle or in any other suitable 50 manner. A second lever F is hung to the end of lever b by a suitable pivot or hinge, so

that lever F may have a slight swing upward with reference to its supporting-lever B; but preferably the joint will be rigid as against a downward movement. The lever F has a fixed 55 pintle G, which forms the axis for a second grooved roller H, the axes of the two rolls being parallel and their cylindrical faces being also parallel. The roll H may be held on its shaft or pintle by a screw-head K. 60

As the rollers D and H are supported on axes fixed at one end only to their supporting-levers, the ends of these rolls away from the levers are easily accessible, so that threads or cords can be readily carried round both 65 rolls.

The rolls D and H are hung a little above a driving-roll M, which roll is fixed to a shaft N, extending from end to end of the machine. The roll M is something like a spool in form, 70 having rings or flanges M' M' at its ends and being of reduced diameter between said ends.

The rollers D and H have rings D' D' and H' H', aligning with the rings on the driving-roll and in position to rest thereon when held 75 down by gravity, so that the rolls D and H shall be driven directly as by friction from the driving-roll.

The faces of the rolls D and H between the rings referred to are provided with grooves 80 *d d* and *h h*, as many in number as desirable.

In cording up the rolls the cord or cords P, extending from a number of spools and through suitable stop devices, will be carried under roller D, resting in a groove *d*, and 85 thence under roller H, resting in the corresponding groove *h*. Thence the cord is carried back over the top of both rollers and again under the bottom of both, the separate turns of the cord each resting in a groove in 90 each wheel. Having passed the desired number of times around both rollers, the cord is passed in the direction of the thread T toward the spindle or cop. It is not very material which roller the thread leaves to go to 95 ward the cop. It is shown as passing away from the driving-roll after leaving roller D. As the connection between levers B and F is jointed or yielding, the roller H will adjust itself to the surface of driving-roll M when 100 dropped. The joint S may be so constructed, however, that the roller H will not be permit-



ted to drop onto the driving-roll by a mere change of the angle of the bearing-surfaces, as shown in Fig. 1<sup>a</sup>, in which case it will run as an idler and be rotated by the friction of the thread or cord P, passing around it from the driven roll D. Of course either one of the rolls D H may be the idler.

The diagram Fig. 3 shows the general direction of the cord or thread around the two rollers, and so toward the spindle.

The levers B and F constitute the frame to support the rolls D and H, and both these rolls can be lifted with the frame without moving the driving-roll.

What I claim is—

1. The jointed frame having a spindle connected to each part thereof, the grooved roll

on each spindle, and a driving-roll engaging one of the grooved rolls, in combination, substantially as described.

2. The pivoted frame carrying a plurality of rollers supported from said frame at one end only, in combination with the driving-roller on a shaft practically parallel with the rolls on the frame and against which one of the rolls on the frame bears when in operation, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN N. LEONARD.

Witnesses:

S. BRASHEARS,  
W. A. BARTLETT.