

M. H. Johnson.

Rope Mach.

N<sup>o</sup> 16,842.

Patented Mar. 17, 1857.

Fig. 1.

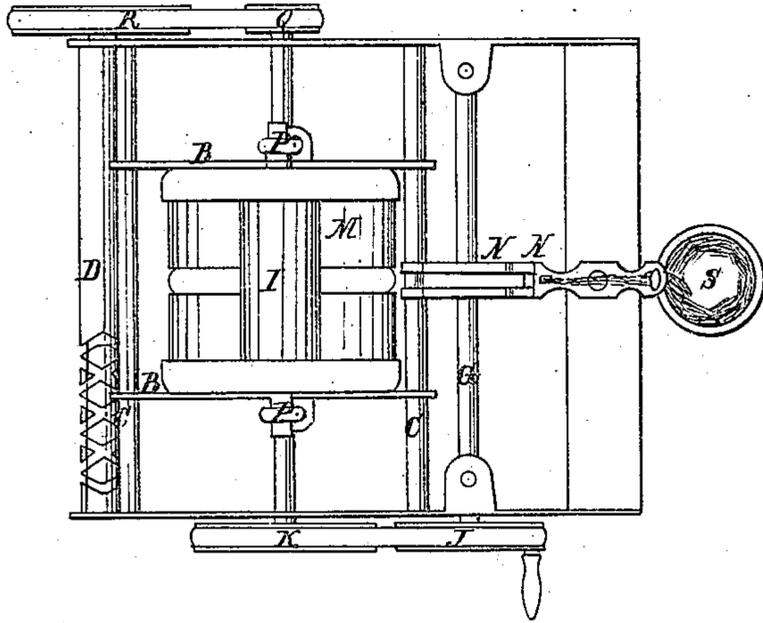


Fig. 2.

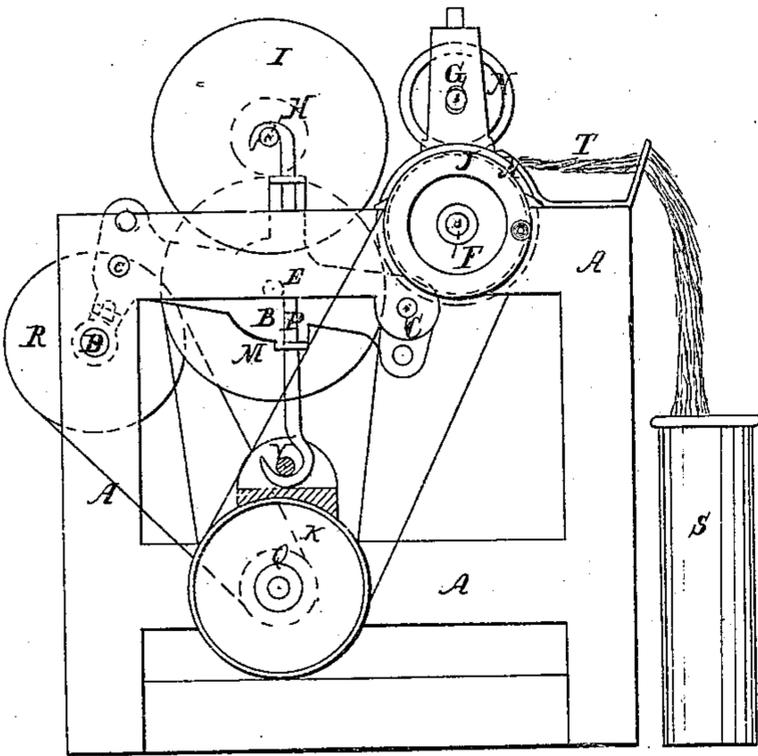
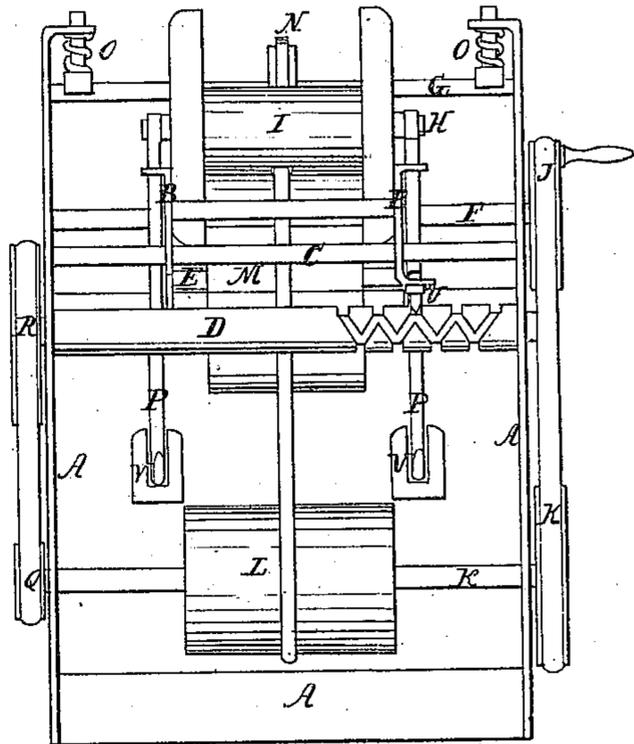


Fig. 3.



# UNITED STATES PATENT OFFICE.

MICHAEL H. JOHNSON, OF ST. LOUIS, MISSOURI.

## ROPE MANUFACTURE.

Specification of Letters Patent No. 16,842, dated March 17, 1857.

*To all whom it may concern:*

Be it known that I, MICHAEL H. JOHNSON, of the city of St. Louis, State of Missouri, have invented a new and Improved Machine, to be used in Making Rope from the Raw Sliver, which I denominate a "Condensing-Calender;" and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a plan, Fig. 2 a side, and Fig. 3 a front elevation.

The process used in making rope from the raw sliver is distinct from that used in making it from yarn. In the last method, the yarn is first spun, and then twisted into a rope, thus requiring two distinct operations. But in the first method the yarn or sliver, and the rope is twisted in one and the same operation. In the process now employed in making rope by the first of the above methods the hemp after leaving the card in the form of a sliver, is passed through what is termed a condensing machine, so as to compress it in a more compact body. This machine consists simply of a frame, having a pair of tongues and grooved rollers, which are made so as to mesh together. The hemp or sliver is drawn from a can through the condensing rollers, and deposited in another can on the opposite side of the machine. The sliver in falling into the can after leaving the condensing machine, and while revolving on the spinning and twisting machine, is loosened and is arranged so as to destroy to a great extent the effect of the condensing rollers. The ends of the fiber are thus allowed to project beyond the body of the sliver, so that the rope when made has a rough and uneven exterior.

The object of my invention, is to overcome the objections above pointed out, and also to decrease the cost and size of the machine, for spinning and twisting, and to offer facilities by which its velocity may be increased. This I propose to effect by receiving the raw sliver immediately from the condensing rollers, on a calender bobbin, instead of in a can as is now the practice. This bobbin I place on a carriage having a reciprocating motion, so as to wind the sliver around it in regular spiral layers. I also place on the reciprocating carriage, a calender roller, upon which the bobbin is made

to work. With the weights suspended on its axis as shown, and as hereafter described, each layer of sliver is thus calendered and compressed as the work advances, and the fiber is straightened and compressed in a compact mass, so that when the bobbin is placed in the spinning machine, the sliver leaves it in a smooth unbroken body. The end of the fiber is thus spun, and twisted in the body of the rope, which increases its durability and strength, and adds to its beauty.

Instead of using the can in the spinning and twisting machine as is now the practice, I propose using the bobbin containing the raw sliver in the same style of machine as is used with the can—placing the bobbin in a horizontal position—so as to revolve freely on its axis, and using as many of them as there are slivers entering into the composition of the rope. By this means I am enabled to drive the spinning and twisting machine to a much higher velocity than when the can is used, because the sliver will not mangle when the bobbin is used, as is the case with the can, at high velocities. I also reduce the size and cost of the spinning machine, because the bobbin will not occupy more than one third as much space as the can, and will moreover hold more than three times as much sliver, which may be placed upon it without the least attention of the operative, thereby effecting an economy in operation.

Having thus explained the utility and application of my invention, I will proceed to describe its construction and operation.

A A A, is the frame, N N are the two condensing rollers having their axis at F, G. B B, is the reciprocating carriage upon which the calender roller, M, and the bobbin I are placed.

C C are the guides upon which the carriage traverses; the hooks P P having the weights V V attached are suspended on the axis of the bobbin at H. The calender roller has its axis in the carriage at E.

D is an endless screw which communicates the reciprocating motion to the carriage, B B through the medium of the "dog" U.

The power is applied to the pulley J, which communicates motion to the pulleys K, Q, and R, and also to the drum L, the calender M and the bobbin I, by means of belts, all shown on the drawing. The ma-

chine being thus in operation, the sliver T is drawn from the can S, through the condensing rollers and wound around the bobbin in regular spiral layers, by the action of  
5 the endless screw, on the reciprocating carriage and is calendered, by the action of the weights on the axis of the bobbin, as before described. The springs o o are placed on the axis of the condensing roller N, so that  
10 it may accommodate itself to any irregularity in the sliver. If from experience I should find it necessary I design placing the calender roller and the bobbin on fixed revolving axis, and the condensing rollers on  
15 a carriage, with a reciprocating motion so as to wind the sliver on the bobbin as before described.

I do not claim the condensing rollers, nor

do I claim of themselves, the bobbin and calender roller; but 20

What I do claim and desire to secure by Letters Patent is—

An improvement in the manufacture of hemp rope from the raw sliver, is the combination of the condensing rollers, with the  
25 calender roller and bobbin as described; whereby the sliver may be condensed to a greater degree, than is admitted under the ordinary circumstances governing the afore-  
30 said manufacture, with advantages hereinbefore set forth.

M. H. JOHNSON.

Witnesses:

JAMES CORNWELL,  
AMOS BROADNAX.