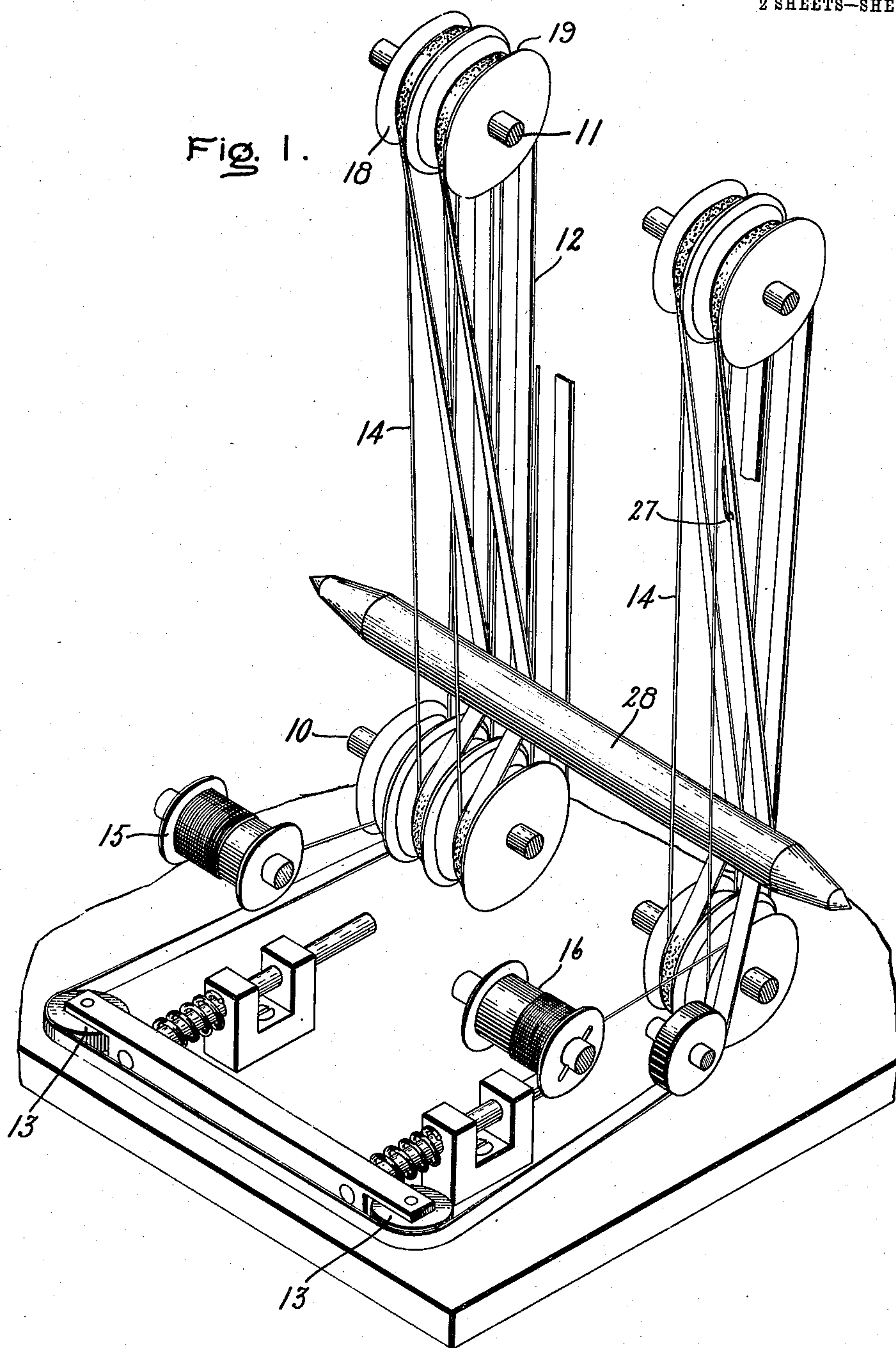


No. 894,593.

PATENTED JULY 28, 1908.

J. G. CALLAN.  
WIRE STRINGING DEVICE.  
APPLICATION FILED SEPT. 16, 1907.

2 SHEETS—SHEET 1.



Witnesses:  
*George W. Pilden*  
*Marcus L. Byng.*

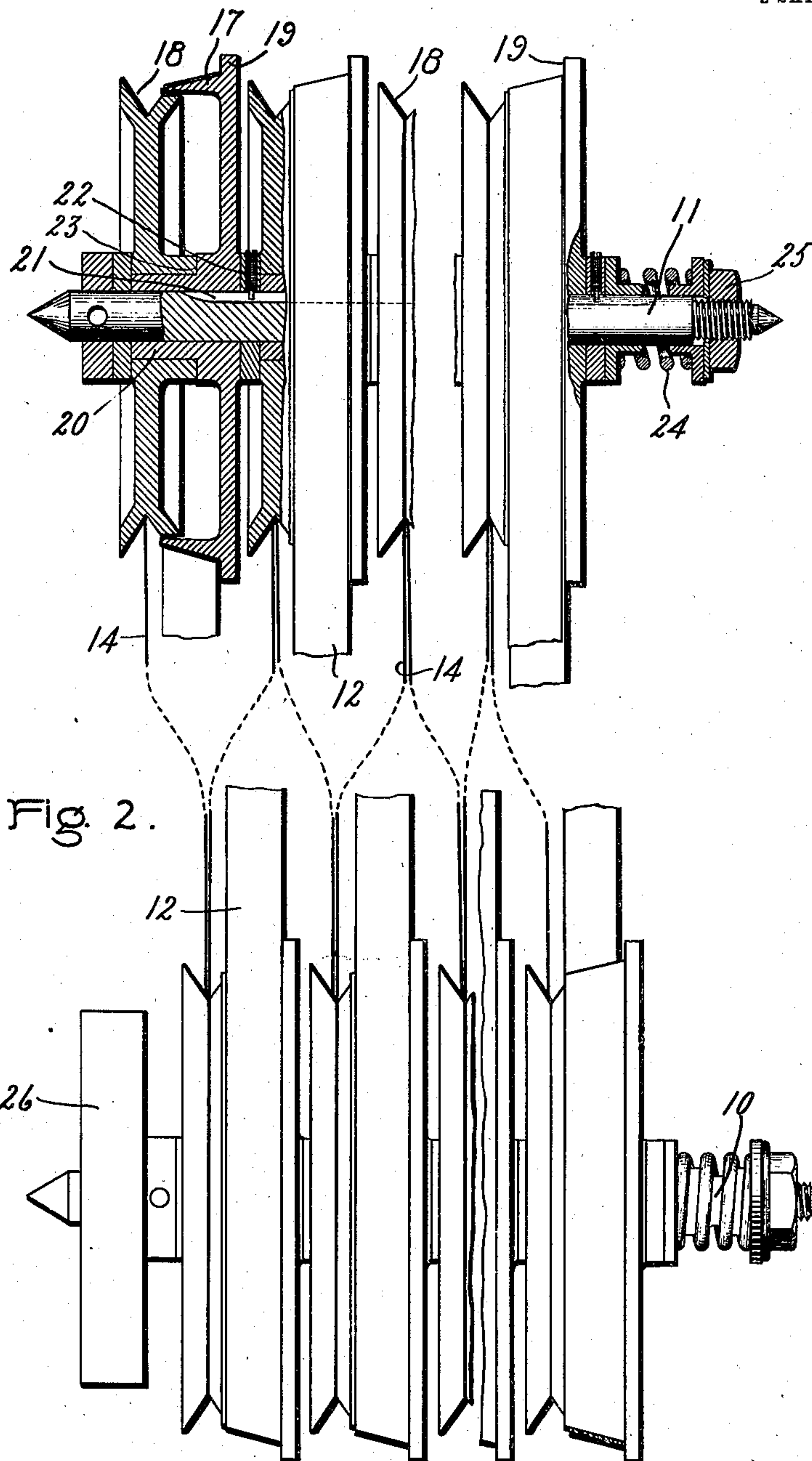
Inventor,  
John G. Callan,  
By *Albert H. Davis*  
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By *Alfred H. Davis*  
Atty



# UNITED STATES PATENT OFFICE.

JOHN G. CALLAN, OF NAHANT, MASSACHUSETTS, ASSIGNOR TO GENERAL ELECTRIC COMPANY,  
A CORPORATION OF NEW YORK.

## WIRE-STRINGING DEVICE.

No. 894,593.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed September 16, 1907. Serial No. 393,033.

*To all whom it may concern:*

Be it known that I, JOHN G. CALLAN, a citizen of the United States, residing at Nahant, county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Wire-Stringing Devices, of which the following is a specification.

This invention relates to means for supporting a wire and the like as it is carried along during a process of treatment, as for instance, coating with an electrical insulating material.

One of the objects of my invention is to provide means whereby the wire may be carried over and strung on the supports in a simple and efficient manner.

In the treating of wire and the like, as for instance, the insulating of wire, as shown in my co-pending application, Serial No. 398,968, it is frequently necessary that the supports or sheaves over which the wire is carried shall be a considerable distance apart. In some instances where the wire travels through an oven, the direction of travel of the wire is vertical and the upper sheaves are a considerable distance from the lower ones. Where the wire is carried back and forth over the sheaves a great many times, it is difficult to string the wire, and where the wire is thin it is constantly breaking and has to be re-strung.

In the carrying out of my invention I provide an endless carrier which travels along the path of the wire and is continuously in operation. The belt and the wire travel side by side over specially arranged sheaves composed of a cone-shaped pulley for the belt and a grooved wheel for the wire. The wire is fastened to the belt, and as the pulley is tapered or coned, and the belt has lateral stiffness the latter will travel towards the high side of the pulley whereas the wire itself will drop to the low side into the grooved wheel. In this way the wire is carried over the successive sheaves and back to the starting point where it is secured to the spool or bobbin.

In the accompanying drawings, in which I have shown my invention embodied in a concrete form, Figure 1 is a perspective view illustrating one form of my invention, and Fig. 2 is an elevation partly in section, showing the details of construction of the sheaves.

Referring to the drawings, 10 represents the lower shaft and 11 the upper shaft sup-

porting the sheaves over which the wire is to travel.

12 is an endless belt which runs over the sheaves and over the tension wheels 13 which keep it taut. The wire 14 is led off of the spool 15 over the sheaves and on to the spool 16. The arrangement for supporting the belt and the wire is shown in Fig. 2. It will be seen from an inspection of this figure that each sheave is composed of two parts, a pulley 17 and a grooved wheel 18. The pulley 17 is tapered or cone-shaped as shown, and is provided with a flange 19 to prevent the belt from running off. Mounted adjacent to this pulley and preferably so arranged that the pulley will overhang it is the grooved wheel 18. The pulley 17 has a long hub 20 upon which the wheel 18 is loosely mounted. The pulley 17 is adapted to rotate with the shaft 11 and is feathered to the shaft by means of the keyway 21 coöperating with a sliding key 22. The hub of the wheel 18 bears against a shoulder 23 on the upper pulley. These sheaves are arranged side by side upon the shaft and are pressed together by means of a spring 24 on the end of the shaft, the tension of which may be adjusted by means of the nut 25. Similarly arranged sheaves are mounted upon the shaft 10 which is positively rotated by means of the pulley 26.

In the operation of my device, when it is desired to string the wire over the upper and lower sheaves, the end of the wire is secured to the belt as at 27 by means of a hook or the like. The machine is then started and the lower shaft 10 is driven positively by means of the pulley 26. The belt 12 drives the entire set of the upper and lower sheaves, and the wire being hooked to the belt is carried upward therewith. As the wire and belt travel upward, the tendency of the belt is to travel towards the high side of the pulley into contact with the flange 19, while the wire will drop to the low side into the groove of the wheel 18. The wire will thus be led over the entire set of sheaves and finally when it returns it will be unhooked from the belt and secured to the spool 16. When the wire is thus strung over the sheaves, a bobbin-shaped piece 28 is secured in place so as to hold back the front side of the belt from the neighborhood of the wire at the point where it receives the coating, *i. e.*—the belt must be deflected from its path so as to be out of the way of the wire coating device.



It will be seen that the sheaves are all independently mounted and the grooved wheels are arranged to move independently of the pulleys so that there can be a slight relative movement of the wheel with reference to the belt and shaft. In this way any inequalities in the size of pulleys equalize themselves and still the wire receives some measure of driving impulse from each of the several sheaves. It will be seen that I have provided a very simple means which is always at hand to string the wire, regardless of the number of sheaves or the distance between them. The belt or endless carrier when it is always running is out of the way of the wire and requires very little power to drive it.

It will be, of course, understood that various modifications of my invention will suggest themselves to those skilled in the art without departing from the spirit of my invention, the scope of which is set forth in the annexed claims.

What I claim as new, and desire to secure by Letters Patent of the United States, is,—

1. A stringing device for wire coating machines comprising an endless carrier arranged to follow the path of the wire to be coated, and means whereby the carrier and wire are automatically separated from each other.

2. A wire stringing device comprising an endless carrier, a plurality of sheaves arranged to support the carrier and wire simultaneously, and means whereby the carrier and wire are automatically separated from each other.

3. A wire stringing device comprising an endless belt and a plurality of sheaves each having a cone-shaped face for the belt and a grooved face adjacent the smaller end of said cone for the wire.

4. A wire stringing device comprising an endless belt and a plurality of sheaves each consisting of a grooved wheel and a cone pulley adjacent each other and mounted for independent rotation.

5. A wire stringing device comprising an endless belt and a plurality of sheaves arranged to support the belt and wire simultaneously, means for securing the wire to the belt, and means whereby the wire and belt

automatically separate so as to engage different portions of the sheave.

6. A wire stringing device comprising a plurality of grooved wheels for carrying the wire, a plurality of cone pulleys mounted adjacent thereto, an endless belt arranged to travel over said pulleys, and means for securing the end of the wire to the belt.

7. A wire stringing device comprising a plurality of cone pulleys, an endless belt arranged to travel over said pulleys, a plurality of grooved wheels mounted adjacent to the small end of said pulleys and rotatable independently thereof, and means for securing the end of the wire to the belt.

8. A wire stringing device comprising an endless carrier, a plurality of sheaves arranged to support the carrier and wire simultaneously, means in connection with the sheaves whereby the carrier and wire are automatically separated from each other, and means independent of the sheaves for holding the belt out of the path of the wire.

9. A wire stringing device comprising a plurality of positively driven pulleys, an endless belt arranged to travel over said pulleys, a plurality of grooved wheels mounted adjacent to said pulleys and frictionally driven thereby, and means for securing the end of the wire to the belt.

10. A wire stringing device comprising a plurality of positively driven cone pulleys, an endless belt arranged to travel over said pulleys, a plurality of grooved wheels mounted adjacent to the small end of said pulleys and frictionally driven thereby, and means for securing the wire to the belt.

11. A wire stringing device comprising a plurality of positively driven cone pulleys, an endless belt arranged to travel over said pulleys, a plurality of grooved wheels mounted adjacent to the small end of said pulleys and frictionally driven thereby, means for securing the end of the wire to the belt, and means for holding the belt out of the path of the wire.

In witness whereof, I have hereunto set my hand this twelfth day of September, 1907.

JOHN G. CALLAN.

Witnesses:

JOHN A. McMANUS, Jr.,  
HENRY O. WESTENDARP.