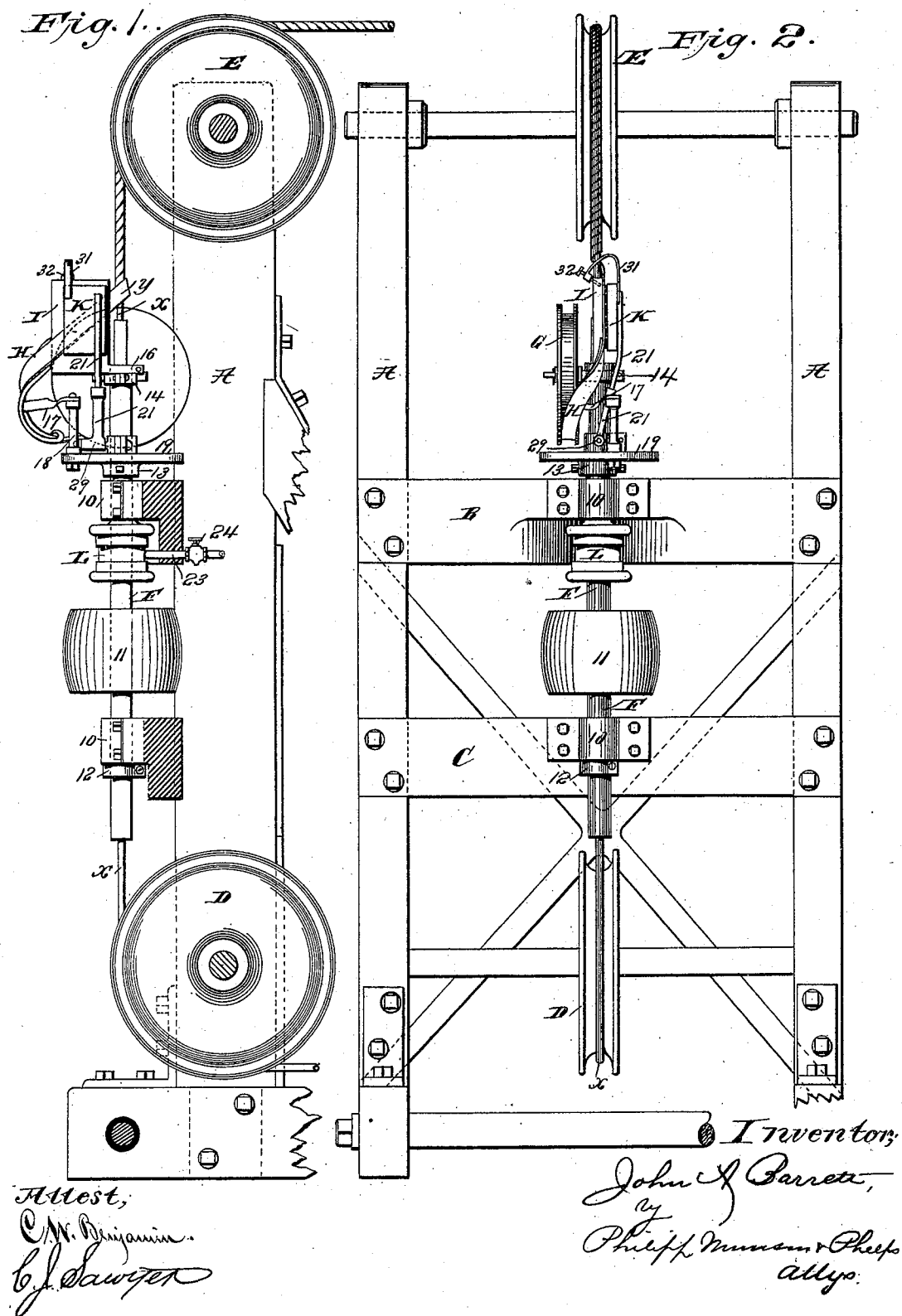


2 Sheets—Sheet 1.

No. 486,270.

Patented Nov. 15, 1892.



(No Model.)

2 Sheets—Sheet 2.

J. A. BARRETT.
WIRE COVERING MACHINE.

No. 486,270.

Patented Nov. 15, 1892.

Fig. 3.

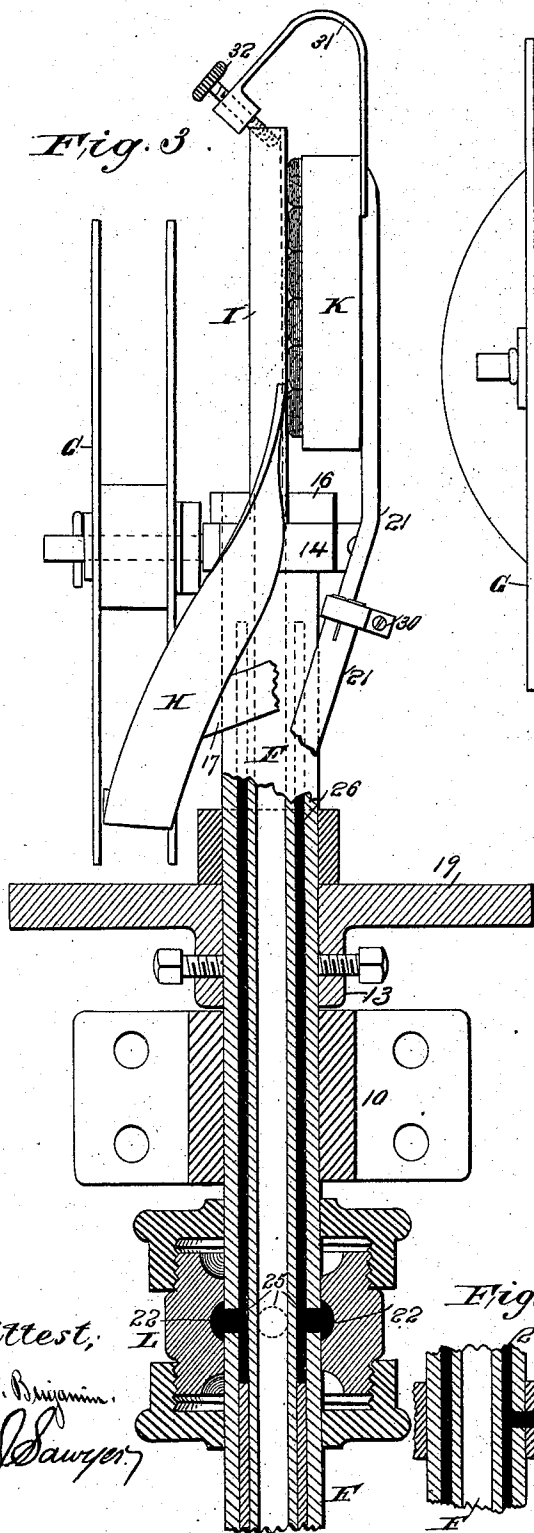


Fig. 4.

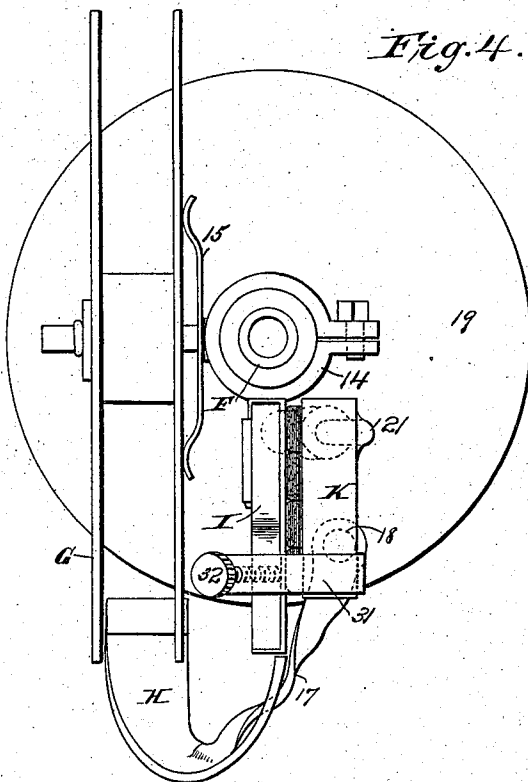


Fig. 5.

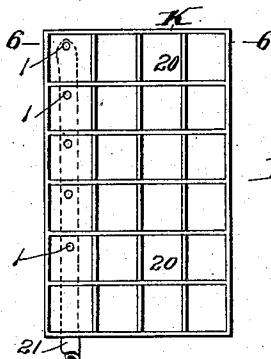


Fig. 6.

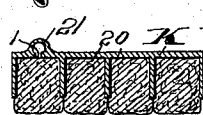
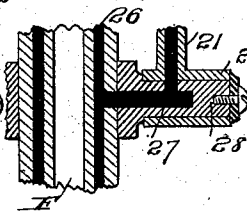


Fig. 7.



Attest:
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UNITED STATES PATENT OFFICE.

JOHN A. BARRETT, OF BROOKLYN, NEW YORK, ASSIGNOR TO THE STANDARD UNDERGROUND CABLE COMPANY, OF PITTSBURG, PENNSYLVANIA.

WIRE-COVERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 486,270, dated November 15, 1892.

Application filed May 2, 1892. Serial No. 431,547. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. BARRETT, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Machines for Applying Spiral Tape-Wrappings, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide a simple and efficient machine of high capacity for applying a spiral tape-wrapping to electric conductors and similar articles and securing it thereon.

As an understanding of the invention can best be conveyed by a description of a machine embodying the same, all preliminary description will be omitted and a detailed description of such a machine of the preferred form be given, and the features forming the invention specifically pointed out in the claims.

Referring to the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of the machine. Fig. 2 is a front elevation of the same. Fig. 3 is a longitudinal sectional front elevation on an enlarged scale, the section being taken centrally through the hollow shaft. Fig. 4 is a top end view on the same scale. Fig. 5 is a detail view of the sponge-cup. Fig. 6 is a section on the line 6 of Fig. 5 with the sponge in place. Fig. 7 is a detail hereinafter referred to.

The frame of the machine consists, in the form shown, of two vertical side frames A, connected by cross-pieces B C, the machine being arranged vertically, as is preferable, although not essential. At the bottom and top of the frame, respectively, are mounted pulleys D E, over which the electric conductor or other article to be wrapped passes to and from the wrapping mechanism, the conductor thus being properly guided.

Mounted in bearings 10 on the cross-pieces B C is a hollow shaft F, through which the conductor passes and by which all the parts of the wrapping mechanism are carried, this shaft being rotated at the required rate of speed by a belt-pulley 11, as shown, or in any other suitable manner. The shaft is held in position by sleeves 12 13 on the shaft outside the bearings

10. The reel G for the wrapping-tape of paper, cloth, or similar material is mounted on the upper end of the shaft F by a sleeve 14, this reel being preferably made removable, as usual in such constructions, and a flat tension-spring 15 being preferably employed to press upon the reel and prevent its overrunning in case of stoppage of the machine. The tape is led from the reel G to the conductor over a guide H, constructed to turn the wrapper through a quadrant, so as to bring it flat upon and at the proper angle to the conductor, this guide H being supported by an arm 17, carried by a stud 18 on a disk or arm 19, carried on the shaft F by the sleeve 13, previously referred to.

In applying spiral wrappings it is generally desirable that they should be secured by adhesive material, and I provide devices by which the tape may be rendered adhesive as it passes from the reel to the conductor. This may be done by applying any suitable gum or paste; but I preferably use a previously gummed and dried tape and render this tape adhesive by moistening it in the machine. I may use for this purpose either steam or water, and the latter may be hot or cold; but I preferably use cold water, as there is less tendency to render the paper brittle.

In my improved construction the tape does not pass directly from the guide H to the conductor, but a plate I is placed between them, this plate being supported upon shaft F by a sleeve 16, made adjustable, so that the plate may be positioned accurately relatively to the guide H, and the conductor and the tape lie flat upon the face of the plate for engagement of the sponges, which are preferably used for moistening the paper.

The sponge-box K is divided into a series of compartments 20 by partitions, each one of these compartments being filled with sponge, between which and the plate the tape is led. As shown, the sponge-box contains twenty-four compartments; but it will be understood that this may be varied as desired. The sponge-box is carried by and fed from a feed-pipe 21, connecting by openings 1 with the base of five of the first or inner row of compartments 20. The feed-pipe does not connect with the bottom compartment of the

inner row, so as to avoid the possible overflow and dripping of water which might result from such direct feed. It is evident that the tendency of centrifugal action as the sponge-box revolves with the shaft F is to carry the water to the outer side of the sponge-box, and if the feed-tube 21 were connected with each one of the compartments the water might overflow from the outer row. By the construction shown, in which the feed-tube connects only with the inner row, I prevent this, the water being fed from this row to the outer rows of compartments only as it fills one and overflows into or is carried by centrifugal action to the sponge of the next row.

The feed-pipe 21 is supplied with water by the following means: Upon the hollow shaft F is a loose stuffing-box L, provided with a circular inner groove 22, with which the water-supply pipe 23, controlled by cock 24, connects, and this circular groove 22 connects through ports 25 with a circular slot or chamber 26, extending longitudinally of and within the body of the shaft and closed at its ends. At its upper end above the cross-piece B this chamber 26 connects by a port 27 in a stud 28, mounted on the sleeve 13, with the feed-pipe 21, which is mounted to swing on the stud 28 by sleeve 29, the feed-pipe being preferably made in two parts adjustable longitudinally and circumferentially and secured in position by a clamping-sleeve 30 or in any other suitable manner, so that the sponge-box K may be adjusted as desired relatively to the plate I. It will be seen that the passage through port 27 to feed-pipe 21 is opened and closed by the swinging of the feed-pipe upon stud 28, the feed-pipe being connected with the chamber 26 only when the sponge-box is in position against the plate I. Whenever, therefore, the sponge-box K is thrown outward away from the plate I, the water-supply is cut off at port 27. The sponge-box K is held in position with the sponges pressing against the plate I, so as to engage the tape *y* with a yielding pressure, by spring-arm 31, carried by the sponge-box and engaging the outer side of the plate I, the pressure being preferably made adjustable by means of screw 32, carried by the end of the spring-arm and pressing against the plate. It is evident that by this means the tension upon the wrapping-tape may readily be adjusted, and I prefer to secure the proper tension upon the tape by this means instead of by the pressure-spring 15, the latter being used in this construction more especially to stop the tape-reel when the machine is thrown out of operation.

It is evident that the construction shown, may be used for applying fluid adhesive material to a tape not previously gummed and that steam or any other fluid desired, also, may be substituted for water, in which case the sponge-box K will be omitted and the feed-pipe 21 deliver steam directly upon the wrapping-tape on plate I or at any point between the

reel and conductor. It will be understood that two or more reels may be mounted on the shaft so as to apply two or more tapes, one or all of which may be moistened or rendered adhesive.

It is evident that many modifications may be made without departing from my invention, and I am not to be limited to the exact form of the devices shown.

What I claim is—

1. The combination, with a hollow rotating shaft, through which the conductor or other article to be wrapped is drawn, of a tape-reel carried by and rotating with said shaft, devices carried by said shaft for applying fluid to the tape, and connections whereby said devices may be fed from a stationary fluid-supply during the rotation of the shaft, substantially as described.

2. The combination, with a hollow rotating shaft, through which the conductor or other article to be wrapped is drawn, of a tape-reel carried by said shaft, a chamber in said shaft and connections for supplying fluid to said chamber, and a feed-pipe carried by the shaft, delivering the fluid from the chamber to the tape, substantially as described.

3. The combination, with a hollow rotating shaft, through which the conductor or other article to be wrapped is drawn, of a tape-reel carried by said shaft, a sponge-box carried by said shaft and provided with sponges engaging the tape, a chamber in said shaft and connections for supplying fluid thereto, and a feed-pipe connecting said chamber with said sponge-box, substantially as described.

4. The combination, with a hollow rotating shaft, through which the conductor or other article to be wrapped is drawn, of a tape-reel carried by said shaft, a plate over which the tape is led to the conductor, a sponge-box carried by said shaft and provided with sponges pressing against the tape on said plate, a chamber in said shaft and connections for supplying fluid thereto, and a feed-pipe connecting said chamber with said sponge-box, substantially as described.

5. The combination, with a hollow rotating shaft, of a tape-reel carried by said shaft, a chamber in said shaft and connections for supplying fluid to said chamber, a sponge-box provided with sponges engaging the tape, a swinging feed-pipe carrying said sponge-box and connecting with said chamber, and means whereby the movement of the sponge-box away from the tape closes the feed-pipe and cuts off the supply of fluid, substantially as described.

6. The combination, with hollow rotating shaft F, having chamber 26 outside the central chamber in the shaft, of pipe 23, stuffing-box L, loose on said shaft and connecting pipe 23 with said chamber 26, and feed-pipe 21, carried by said shaft and connecting with said chamber, substantially as described.

7. The combination, with the hollow rotat-

ing shaft F, having chamber 26 outside the central chamber in said shaft, pipe 23, and stuffing-box L, loose on said shaft and connecting pipe 23 with said chamber 26, of stud 5 28, having port 27, connecting with said chamber 26, and feed-pipe 21, mounted to swing on said stud and connecting with said port 27 in one position, substantially as described.

8. The combination, with rotating shaft F, 10 of sponge-box K, carried by said shaft and having a series of compartments, and a feed-pipe and connections for supplying fluid to said sponge-box, said feeding-pipe connecting with the inner row of compartments only, 15 substantially as described.

9. The combination, with hollow rotating shaft F, tape-reel G, carried by said shaft, and plate I, over which the tape is led, of a sponge-box K, provided with sponges pressing against 20 said plate and having a swinging support on said shaft F, connections for supplying fluid to said sponge-box, and spring-arm 31, hold-

ing said sponge-box against said plate I with a yielding pressure, substantially as described.

10. The combination, with hollow rotating 25 shaft F, tape-reel G, carried by said shaft, and plate I, over which the tape is led, of sponge-box K, provided with sponges pressing against said plate and having a swinging support on said shaft F, connections for supplying fluid 30 to said sponge-box, spring-arm 31, connected to said sponge-box, and screw 32, carried by the spring-arm and pressing against the outer side of plate I, whereby the sponge is pressed against the plate with a yielding adjustable 35 pressure, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHN A. BARRETT.

Witnesses:

T. F. KEHOE,
C. J. SAWYER.