(No Model.)

F. E. DAVIS & J. SCOTT, Jr.

MACHINE FOR COVERING WIRE.

No. 428,201. Patented May 20, 1890.

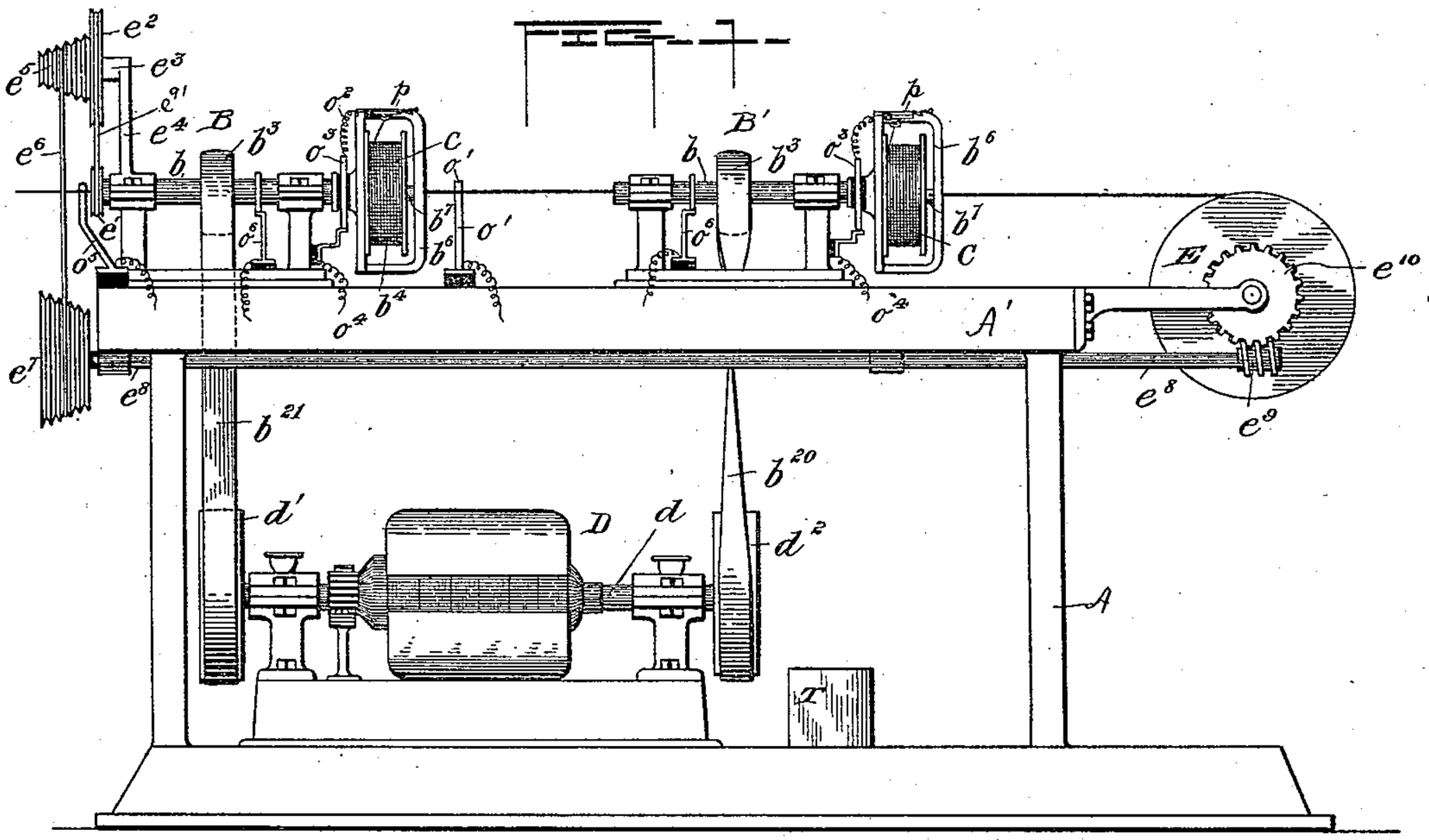


FIG. 2.

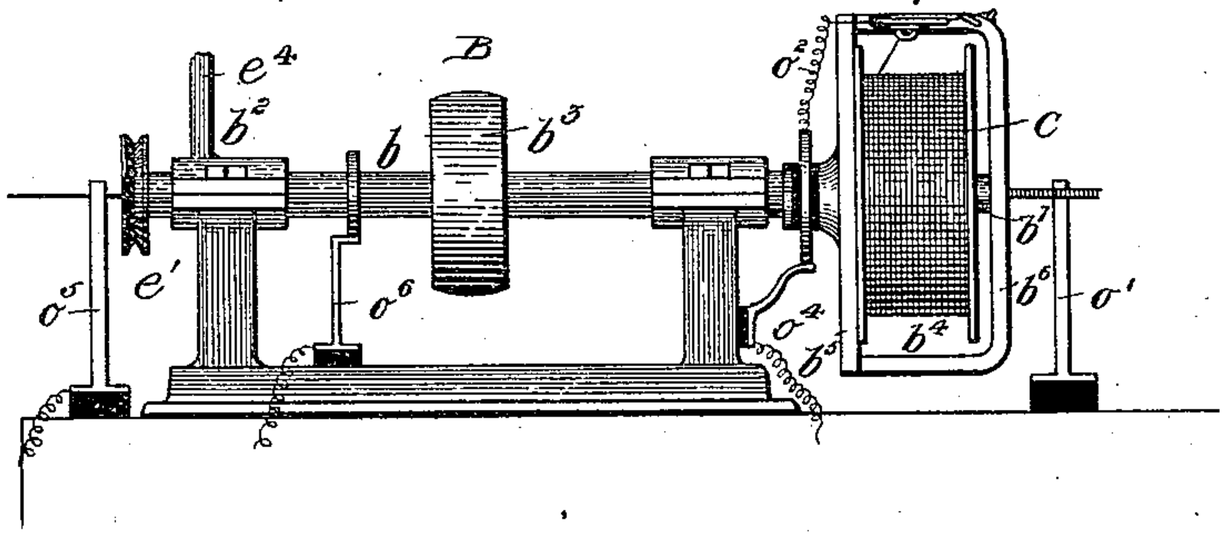


FIG. 3.

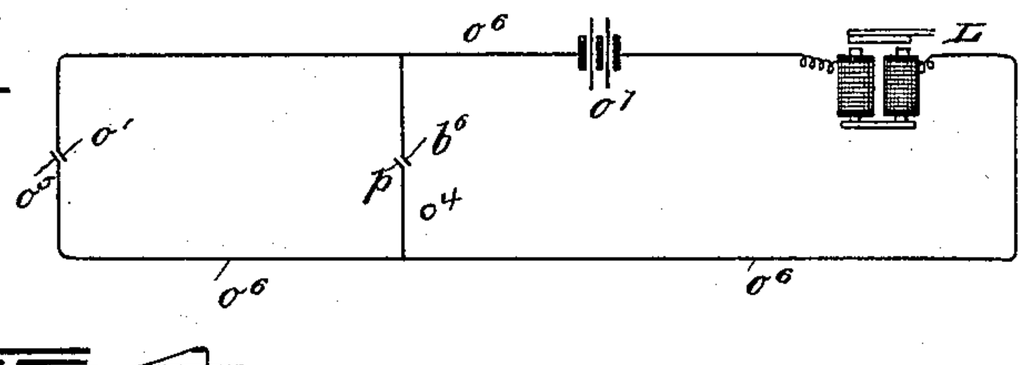
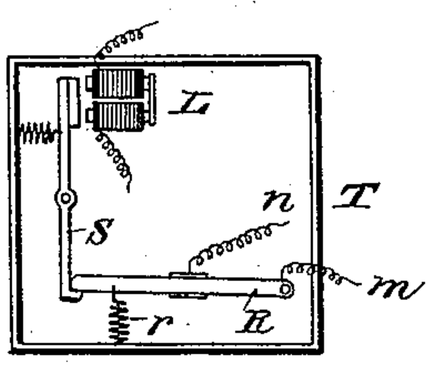


FIG. 4.



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UNITED STATES PATENT OFFICE.

FRANK E. DAVIS, OF BOSTON, AND JOHN SCOTT, JR., OF PLYMOUTH, MASSACHUSETTS.

MACHINE FOR COVERING WIRE.

SPECIFICATION forming part of Letters Patent No. 428,201, dated May 20, 1890.

Application filed August 12, 1889. Serial No. 320,494. (No model.)

To all whom it may concern:

Be it known that we, FRANK E. DAVIS, of Boston, State of Massachusetts, and JOHN SCOTT, Jr., of Plymouth, State of Massachusetts, have invented certain new and useful Improvements in Machines for Covering Wire and other Cores, of which the following, taken in connection with the accompanying drawings, wherein like letters of reference designate like parts in the several figures, is a specification.

Our invention relates to machines for covering a wire, cord, or other core with a thread or like material; and it consists in the combinations and arrangements of parts hereinafter described and claimed.

The object is to provide improvements on the machine which we have described in another application for Letters Patent, filed July 8, 1889, and bearing the Serial number 316,810, and particularly to provide means for stopping machines of the form herein shown.

In the drawings, Figure 1 is a view in elevation of a machine embodying our improvements. Fig. 2 is a view, on a larger scale, of one of the winding-heads. Fig. 3 is a diagram of the electric circuit for the stopping devices, and Fig. 4 is a detail view of the devices for releasing the switch of the motor-circuit.

The letter A designates the frame, which is constructed to support upon itself all the parts of the machine.

Upon the plate A′ of the frame are carried the two winding-heads or fliers B and B′, each of which may consist, as in our said application, of a hollow shaft b, journaled in suitable bearings b^2, provided with a driving-pulley b^3, and carrying the yoke b^4 b^5 b^6, within which is sustained upon a hollow spindle b^7 the spool C of covering material.

Upon the yoke is insulatingly secured the contact-point p, which is connected through the conductor o^2, insulated ring o^3, and conductor o^4 o^6, with the generator o^7 and magnet L, and is held by the thread from contact with the yoke or a contact-point thereon, which also is in circuit with the magnet and generator through the yoke, the spindle, and the conductor o^6. We have also shown in Fig. 2 the contact-piece o', which is adapted to rest upon the covered wire, and the contact-piece o^5, which rests upon the bare wire, the said pieces being connected with the generator and magnet through the conductor o^6. It will be observed that these two contact points or pieces are virtually held separated by the thread, for when the thread fails to cover completely the wire core the circuit is completed through the wire itself, which thus forms an extension of the contact-piece o^5.

Instead of driving the fliers and feed-drum from a counter-shaft or other source of power outside of the machine, which restricts the use of the machine in respect of place and position, we support upon the same frame A an electric motor D, the shaft of which we extend beyond the motor in both directions and arm with the pulleys d' and d^2. To one of these pulleys the flier B is belted by a straight belt b^{21}, while the flier B is belted to the other pulley by a crossed belt b^{20}. This arrangement of driving means enables us to obviate the disadvantages referred to above.

In order to maintain the desired relation between the speed of travel of the wire through the fliers and the speed of rotation of the fliers, and thereby to secure a proper covering of the wire, we drive the feed-drum from one of the fliers by the driving mechanism shown in Fig. 1. Upon the end of the shaft of flier B is secured a pulley e', which drives, through the belt e^{91}, a pulley e^2 upon a stud e^3, supported by a bracket e^4. Secured to the pulley e^2 is a cone or stepped pulley e^5, which drives, through the belt e^6, a second cone or stepped pulley e^7 upon the end of a shaft e^8, which carries a worm e^9, meshing with a worm-wheel e^{10} upon the hub of the feed-drum. The belt e^6 may be shifted to regulate the speed of the feed-drum E.

The means for shutting down the motor and stopping the whole machine have been described in part above, and so far are substantially the same as the means described in our said application. The further means necessary in this machine are as follows: In the circuit of the motor we interpose a circuit-breaker or switch R, which, as shown, is acted upon by a spring r to shut down the motor

and stop the machine, but is held normally by a detent S, which is actuated by the magnet L, before mentioned, to release the spring-actuated switch when the thread breaks or fails. This switch and its detent are inclosed in a suitable box or casing, (represented at T in Fig. 1.)

What we claim, and desire to secure by Letters Patent, is—

1. The combination of a flier, an electric motor and connections for driving the flier, a circuit-breaker for shutting down the electric motor, an electric circuit including contact-pieces normally held separated by the material, and a magnet to act upon said circuit-breaker, substantially as shown and described.

2. The combination of a flier, an electric motor and connections for driving the flier, a switch for shutting down the electric motor, a detent for said switch, an electric circuit including a generator, contact-pieces normally held separated by the covering material, and a magnet to act upon said detent, substantially as shown and described.

3. The combination of a flier, an electric motor and connections for driving the flier, a feed-drum and means for driving it from the shaft of the flier, a switch for shutting down the electric motor, a detent for said switch, and an electric circuit including a generator, contact-points normally held apart by the covering material, and a magnet to act upon said detent, substantially as shown and described.

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