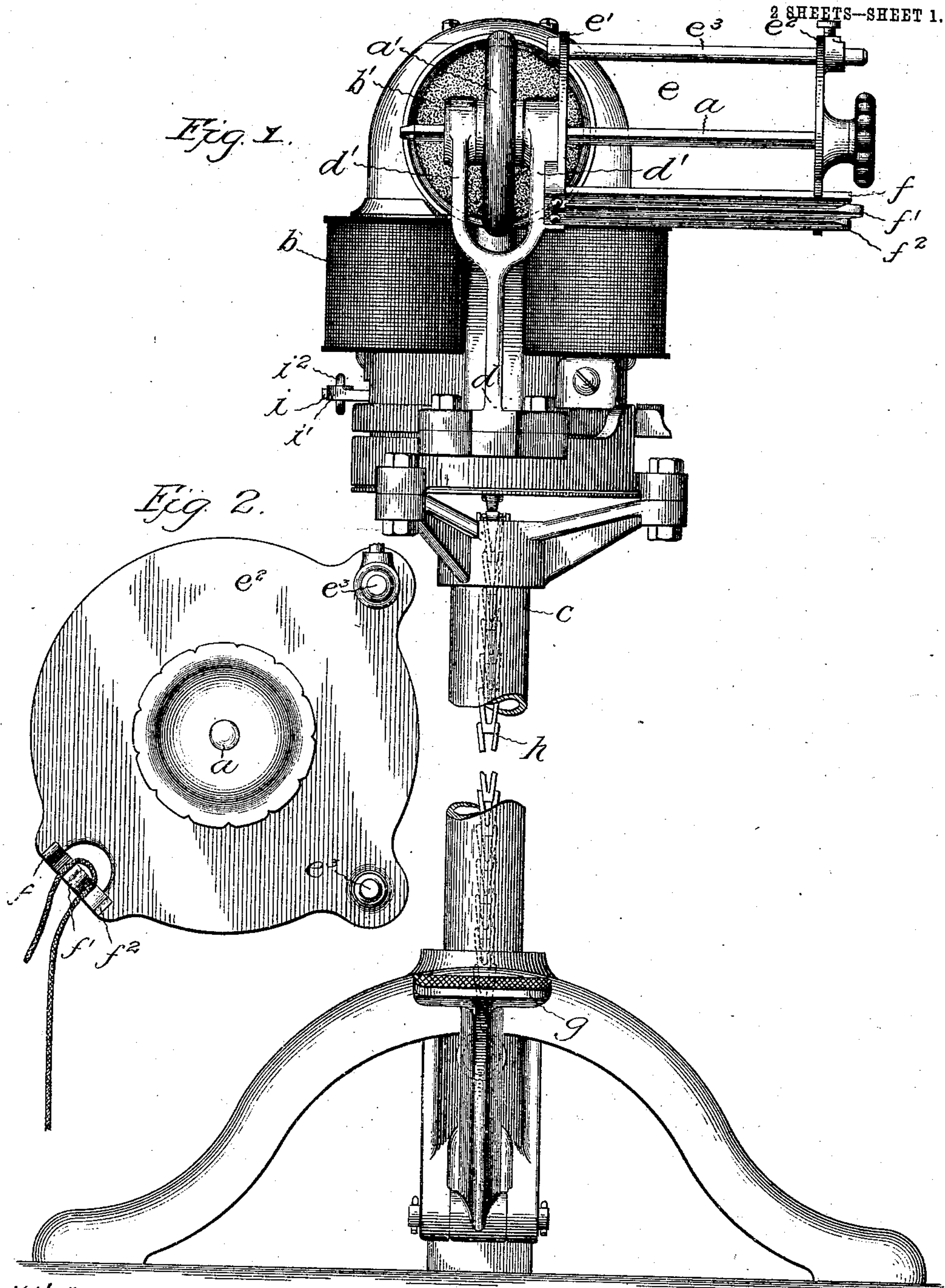


No. 842,302.

PATENTED JAN. 29, 1907.

J. G. CRAWFORD.
BANDAGE WINDING MACHINE.
APPLICATION FILED MAR. 25, 1905.

2 SHEETS—SHEET 1.



Witnesses:

W. H. Leach
Geo. C. Dawson

Inventor:
John G. Crawford,
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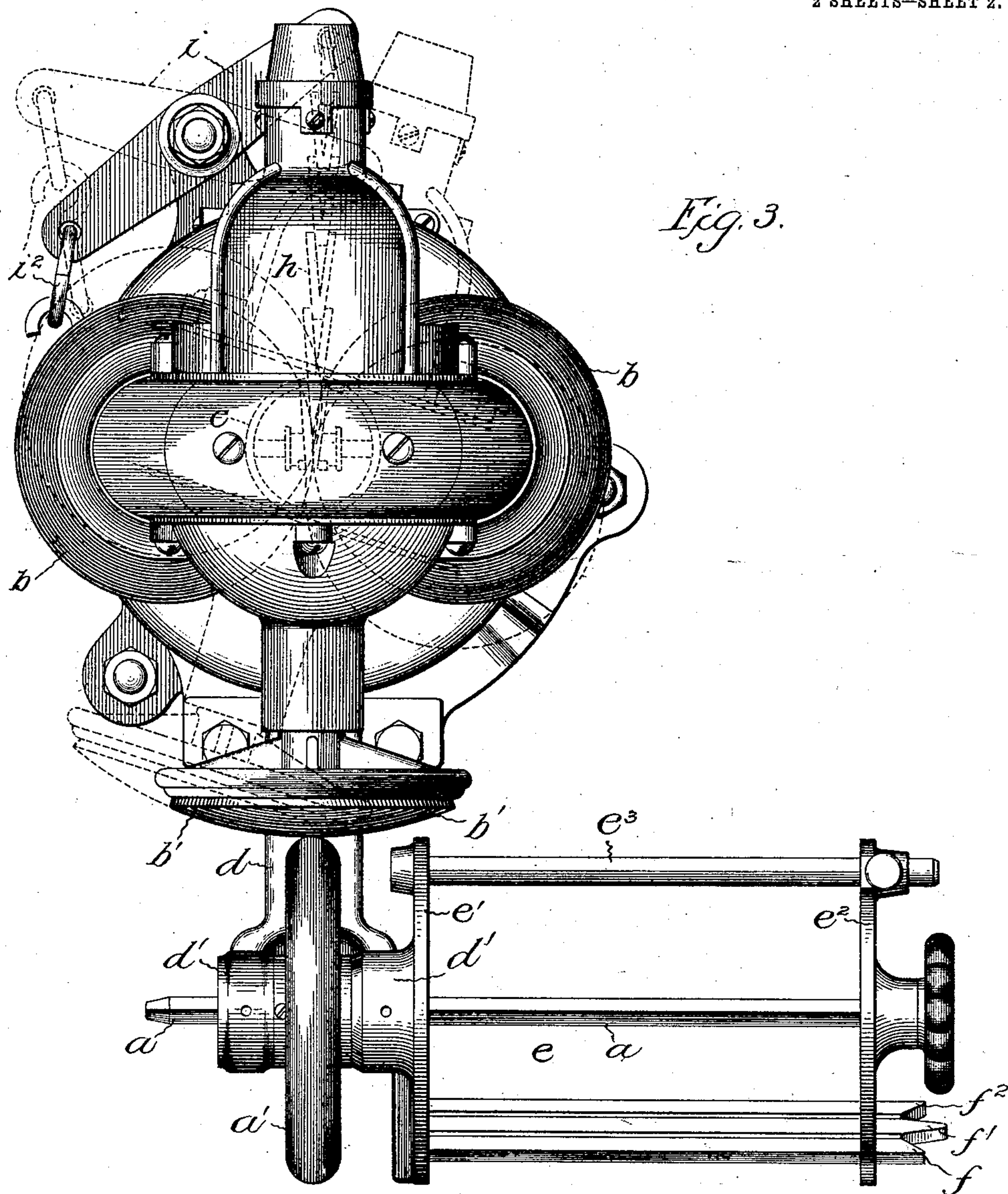
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2 SHEETS—SHEET 2.



Witnesses
W. W. Leach
Geo. C. Johnson.

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UNITED STATES PATENT OFFICE.

JOHN G. CRAWFORD, OF LA GRANGE, ILLINOIS, ASSIGNOR TO WESTERN ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BANDAGE-WINDING MACHINE.

No. 842,302.

Specification of Letters Patent.

Patented Jan. 29, 1907.

Application filed March 25, 1905. Serial No. 252,055.

To all whom it may concern:

Be it known that I, JOHN G. CRAWFORD, a citizen of the United States, residing at La Grange, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Bandage-Winding Machines, of which the following is a full, clear, concise, and exact description.

My invention relates to a bandage-winding machine, and has for its object to provide a power-driven machine which will be easy to regulate and control and which will be capable of winding bandages with uniformity and great rapidity.

My invention contemplates in general a bandage-winding machine comprising a rotatable spindle, upon which bandages are to be wound, and a motor for operating the same, a standard supporting said motor and spindle, and mechanism carried by said standard for controlling and regulating the coöperation of said motor and spindle to regulate and vary the speed of the spindle. I thus provide a single and compact machine by means of which an operator can wind bandages faster and better than has been possible heretofore, leaving both hands free to manipulate the bandage.

My invention also contemplates an improved construction of the spindle-frame and winding-fingers whereby the bandage to be wound may be threaded through the guiding-fingers on the outside of the frame and moved to the interior of the frame and fastened to the spindle ready to be wound without requiring the end plate of the frame to be removed, as has been necessary in the bandage-winding machines of the art.

I will describe my invention by reference to the accompanying drawings, wherein—

Figure 1 is a front elevation of a bandage-winding machine embodying my invention. Fig. 2 is a detail end view of the spindle-frame, showing the manner of threading a bandage through the guide-fingers. Fig. 3 is a plan view of the machine, showing the motor dotted in its alternative position to vary the speed of the winding-spindle.

The same letters of reference are used to indicate the same parts wherever shown.

The rotatable winding-spindle *a* of the machine is arranged to be driven by a motor *b*, carried by a supporting-standard *c*. The said standard also serves to support the spin-

dle *a*, which may be provided with a driving-wheel *a'*, mounted in operative relation to the friction-disk *b'*, carried by the driving-shaft of the motor *b*. An arm *d* may be carried by the standard and serve as a support or journal for the driving-wheel of the spindle, the said arm being preferably forked and the driving-wheel journaled between the two members *d'* thereof in position to engage the friction-disk *b'* of the motor.

The spindle *a* may be provided with a frame *e*, secured to the arm *d* and comprising end plates *e'* *e''*, the end plate *e'* being secured to one of the members *d'*, supporting the driving-wheel. The spindle passes through the two end plates and the forked members *d'* of the arm *d* and through the axis of the wheel *a'*, being secured to the wheel to rotate therewith. Said spindle is preferably of square cross-section and fits tightly within an aperture through the axis of the driving-wheel. The end plate *e''* is slidably mounted upon the cross-bars *e'''* to adjust the frame to varying widths of bandages and is adapted to be secured in any of its adjusted positions by a suitable set-screw.

Fingers *f* *f'* *f''* are provided for guiding a bandage to be wound to the winding-spindle, such bandage being passed or slipped between the guide-fingers and connected with the spindle. Said fingers are supported parallel to the winding-spindle at the edges of the two end plates, being preferably secured to the stationary end plate *e'*. The fingers project beyond the adjustable end plate, which is cut away so as not to engage the middle finger *f''*, said finger preferably extending a slight distance beyond the ends of the outer fingers, which the end plate *e''* alone engages. It will thus be seen that to thread a bandage between the guide-fingers and connect the same with the winding-spindle it is simply necessary to slip the bandage between the outer fingers and around the middle finger, outside the end plate *e''*, and then move the bandage-loop along the middle finger into the interior of the frame, when it may be fastened to the spindle *a*. This may be done without in any way disturbing the adjustment of the end plate *e''* or removing the same, which was necessary in winding-machines of the prior art.

Mechanism is carried by the supporting-standard *c* for controlling and regulating the

coöperation between the friction-disk b' and the driving-wheel a' to regulate and vary the speed of the driving-wheel and the winding-spindle a driven thereby, or, in other words, to vary the speed of the driving-wheel without altering the speed of the motor. To this end I preferably mount the motor b in such manner that it may be moved to vary the radial engagement of the friction-disk b' with the driving-wheel and so to increase or decrease the speed of the rotating spindle. In the present instance the motor is mounted to turn on a vertical axis, as shown in dotted lines in Fig. 3, a spring in the base of the motor-frame serving to return the motor to its normal position. A treadle g is supported at the lower portion of the standard c , being preferably pivoted thereto, and is adapted when operated to turn the motor on its axis. The treadle may be connected with the motor by means of a chain h , extending through the hollow body of the standard and connected with one end of a lever i , pivoted to the standard at the base of the motor, the other end of the lever being connected with the controlling-arm i' of the motor, which is adapted when operated to close a circuit for the motor and turn the same on its axis, a chain i^2 preferably connecting the controlling-arm and lever i .

In the operation of the machine the adjustable end plate e^2 is first set to adjust the frame to the particular width of bandage to be wound and a bandage slipped through the guide-fingers $f f' f^2$, as previously described, and the end wrapped around the spindle. By operating the treadle g the motor is started to drive the wheel a' , the speed being controlled by the extent of movement of the motor about its axis, as already described. After the bandage is wound on the spindle into a roll the operator grasps the spindle and gives it a turn in a direction reverse to that in which it is rotated by the motor to loosen the connection of the bandage with the spindle, and the spindle may thereupon be withdrawn and the roll removed. The bandage is thus wound evenly and tightly into a neat roll.

I claim—

1. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a motor for operating said spindle, mechanism for controlling the coöperation of said motor and spindle to regulate the speed of the spindle, and a common standard supporting all of said parts.

2. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a driving-wheel therefor, a motor mounted to oscillate and carrying on its driving-shaft a friction-disk bearing against said driving-wheel to operate the same, mechanism for oscillating said motor to regulate the speed of the driving-wheel without varying

the speed of the motor, and a common standard supporting all of said parts.

3. In a bandage-winding machine, the combination in a unitary structure, of a rotatable winding-spindle, a supporting-standard, an arm carried thereby supporting said spindle, a driving-wheel for said spindle supported by said arm, an electric motor mounted upon said standard having a friction-disk engaging said driving-wheel to operate the same, said motor being movably mounted to vary the coöperation of said disk and driving-wheel to regulate the speed of said wheel, and mechanism carried by said standard for moving said motor.

4. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a supporting-frame therefor comprising united end plates in which the spindle is rotatably and removably mounted, a supporting-standard for the machine, a forked arm carried thereby to which one of said end plates is secured, a driving-wheel for said spindle journaled in the forked members, said spindle passing through said end plates and the axis of the wheel to rotate with said wheel, an electric motor supported by said standard having a friction-disk engaging said driving-wheel to operate the same, said motor being movably mounted to vary the speed of the driving-wheel, and a treadle mounted at the lower portion of said standard and adapted to move said motor to vary the speed of the driving-wheel.

5. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a driving-wheel for said spindle to which said spindle is removably connected, a hollow supporting-standard for the machine, an electric motor carried by said standard, a friction-disk carried by the driving-shaft of said motor, an arm carried by said standard supporting said driving-wheel in operative relation to said friction-disk, said motor being mounted to turn on a vertical axis, a controlling-arm for the motor adapted to turn the same to vary the speed of the driving-wheel, a chain passing through the interior of said standard and connected with said controlling-arm, and a treadle pivoted at the lower portion of the standard and connected with said chain to operate said controlling-arm.

6. In a bandage-winding machine, the combination with a winding-spindle, of a supporting-frame therefor comprising end plates in which the spindle is rotatably mounted and cross-bars uniting said end plates, one of said end plates being adjustable upon said bars to adapt the frame to the width of the bandage to be wound, a hollow supporting-standard for the machine, a forked arm carried thereby to which the stationary end plate of the frame is secured, a driving-wheel for said spindle journaled in the forked members of said arm, the spindle

being of square cross-section and passing through said arms and the axis of said wheel to rotate with said wheel, an electric motor mounted upon said standard having a frictional disk engaging said driving-wheel to operate the same, said motor being mounted to turn on a vertical axis to vary the speed of the driving-wheel, a controlling-arm for the motor adapted to turn the same on its axis, a lever pivoted to the standard and connected at one end with the controlling-arm, a chain passing through the interior of said standard and connected with the other end of said lever, and a treadle pivoted at the lower portion of the standard and connected with said chain to effect a movement of said motor to vary the speed of the driving-wheel.

7. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a supporting-frame therefor, comprising united end plates in which the spindle is rotatably and removably mounted, and fingers supported at the edges of said end plates for guiding a bandage to the spindle, said fingers projecting beyond one of said end plates, which engages only the outer fingers; whereby a bandage may be slipped over the middle or free finger outside the frame and moved along the finger to the interior of the frame and fastened to the spindle ready to be wound.

8. In a bandage-winding machine, the combination with a rotatable winding-spindle, of a supporting-frame therefor comprising end plates in which the spindle is mounted and cross-bars uniting said end plates, one of said end plates being movable on said cross-bars to adjust the frame to the width of the bandage to be wound, and three fingers extending between the peripheries of said end plates and secured to the stationary

end plate, the fingers projecting beyond the adjustable end plate which is cut away to engage the outer fingers only, the middle or free finger projecting beyond the ends of the outer fingers; whereby a bandage may be slipped over said middle finger outside the frame and moved along said finger to the inside of the frame and fastened to the spindle ready to be wound without disturbing the adjustable end plate.

9. In a bandage-winding machine, the combination with a rotatable spindle, of a motor for operating said spindle, a standard supporting said motor and spindle, a chain carried by the standard for moving said motor to control its cooperation with said spindle, and a treadle carried by said standard for operating said chain.

10. In a bandage-winding machine, the combination with a rotatable spindle, of a supporting-frame therefor, a motor carrying a friction-disk for driving said spindle, and a standard supporting said parts, said frame comprising united end plates in which the spindle is rotatably and removably mounted, and fingers supported at the edges of said end plates for guiding the bandage to the spindle, said fingers projecting beyond one of said end plates, which is free from engagement with one of said fingers; whereby a bandage may be slipped over said free finger outside the frame and moved along the finger to the interior of the frame and fastened to the spindle ready to be wound.

In witness whereof I hereunto subscribe my name this 28th day of January, A. D. 1905.

JOHN G. CRAWFORD.

Witnesses:

FREDERICK P. McINTOSH,
E. F. BEAUBIEN.