No. 818,463. PATENTED APR. 24, 1906.

E. A. PAGE.

WIRE COILING MACHINE.

APPLICATION FILED AUG. 9, 1904.

Fig. 1.

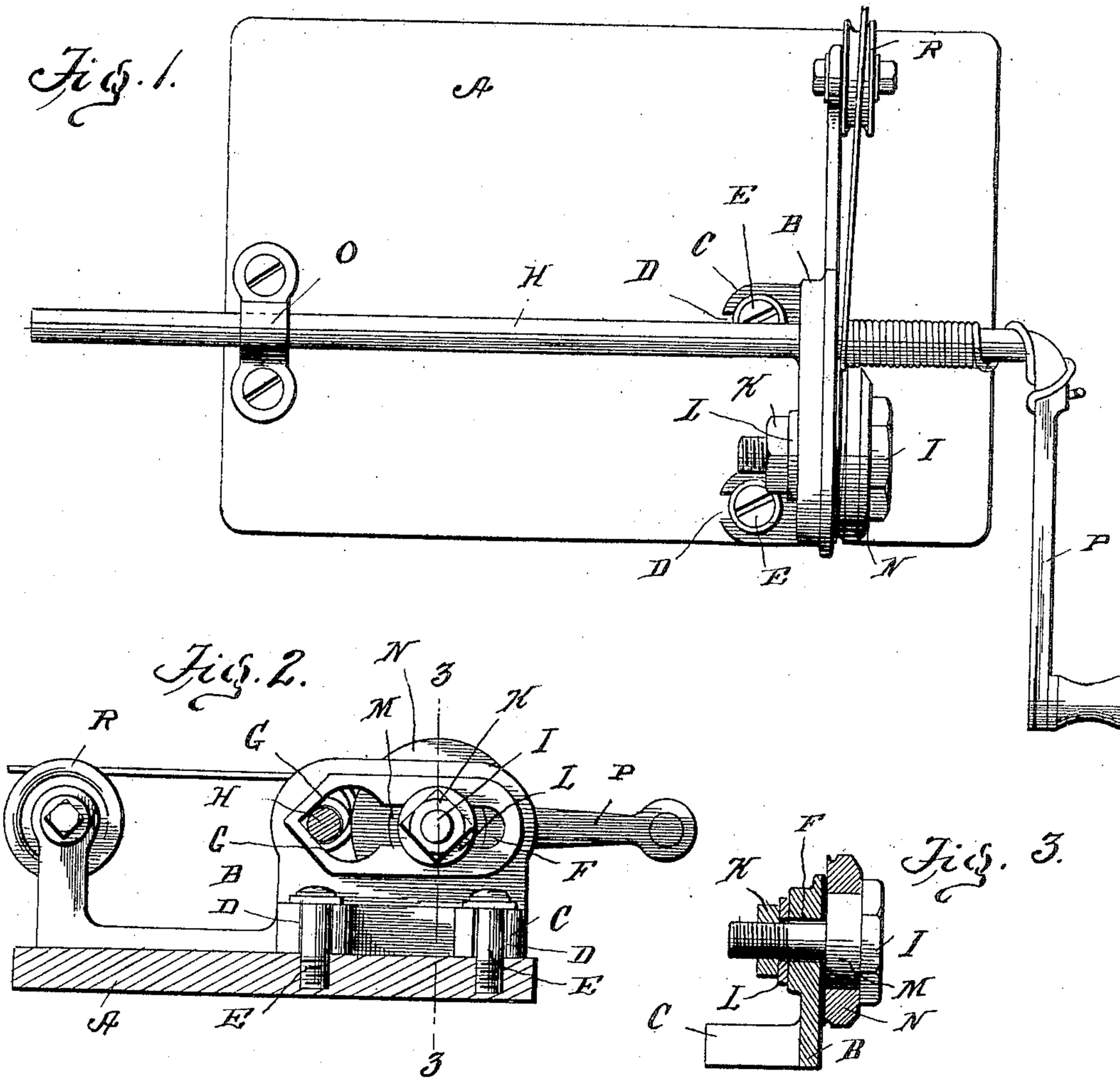
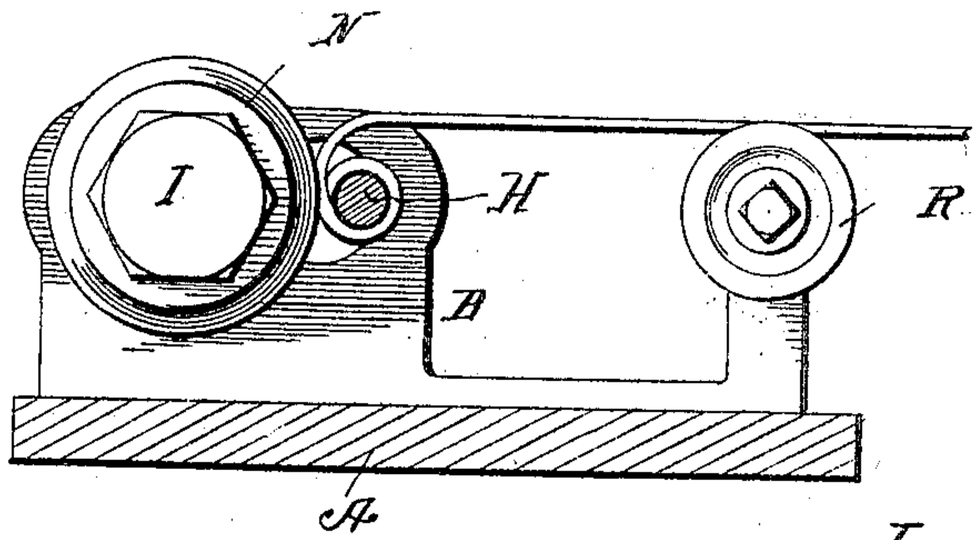


Fig. 2.

Fig. 3.

Fig. 4.



Witnesses.

Chas. K. Davis.

M. E. Brown

Inventor.

E. A. Page

By W. A. Bartlett

Attorney.

UNITED STATES PATENT OFFICE.

ERNEST A. PAGE, OF WILLIAMSPORT, PENNSYLVANIA.

WIRE-COILING MACHINE.

No. 818,463. Specification of Letters Patent. Patented April 24, 1906.

Application filed August 9, 1904. Serial No. 220,142.

To all whom it may concern:

Be it known that I, ERNEST A. PAGE, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Wire-Coiling Machines, of which the following is a specification.

This invention relates to machines for coiling wire.

The object of the invention is to produce a simple machine by means of which wire can be wound into spiral coils, as for springs and the like; and the invention consists in certain constructions and combinations by which the machine can be used for the purpose described and adjusted to adapt it to different-sized coils or wires.

Figure 1 is a plan view showing my invention in simple form. Fig. 2 is a rear end elevation showing parts in section. Fig. 3 is a section through the bearing for the axis of the coiling-drum. Fig. 4 is a front end elevation showing coiling-spindle in section.

Let A indicate the base or floor of any suitable size and form. To this base a frame or standard B is connected in suitable manner. As shown, the standard B has a flange C provided with notches D, and screws E pass through these notches into the base A. The standard B can be adjusted to some extent by moving the notches along the screws or by moving the screws. Through the standard B there is an opening or slot, which has parallel sides, as at F, for part of its length and terminates at the other end in an enlargement having inner faces G, inclined relatively to each other so as to form a V-bearing for the coiling-spindle. A coiling-spindle H passes through the opening in standard B and has a bearing against the inclined sides of the V-shaped part of the slot. By this means the spindle may be removed and replaced by another of different size, and no matter what the size of the spindle may be it will find a bearing against the inclined sides of the V-shaped slot when pressed from the other direction, as will be explained.

The parallel-sided part of the slot forms a seat for a clamping-bolt I, which passes through the slot and may be held in any adjusted position therein by nut K, a washer L being interposed, if desirable. Bolt I has a hub M, on which a pulley or drum N is journaled. The pulley N is preferably grooved at its periphery and is adjusted at such distance from the spindle H as to admit the wire to pass between the pulley and coiling-spindle.

Spindle H passes loosely through a bearing or guide O in rear of the V-shaped bearing should the latter be an insufficient guide. The spindle H is provided with means for rotation. A crank P is shown and is an efficient means for driving a small machine; but in a larger machine any desired power may be utilized to rotate the spindle.

The wire to be coiled may be borne on a spool R, suitably supported on the machine, or may be drawn from any convenient location.

The operation is as follows: Suppose the wire to have an end secured to the spindle near the crank P and to pass around the spindle between the pulley N and said spindle. Then by turning crank P the spindle will be rotated and the wire will be drawn in between the spindle and drum. The wire preferably runs in a groove in the drum, and as the wire before coiling is somewhat stiff it crowds its body into the groove in drum N. The coiling of the wire on the spindle H causes said spindle to move lengthwise while rotating. As it moves along the turns of the coil which surround the spindle are pressed or rubbed down against said spindle by the smooth body of the drum or pulley N, bearing on the coiled wire. The wire coming to the spindle running in a groove in the pulley or drum is packed against preceding turns of the coil and acts as would a screw-thread to cause the spindle to move along in its bearings or guides in the direction of the length of the shaft. If another means than a crank is used to rotate the spindle, provision is made for this lengthwise movement of the spindle, as is common with many kinds of machinery.

It will be seen that my coiling-machine is very simple and is adapted to a wide variety of adjustments. The wire is not only coiled spirally, but the coiled wire is pressed or burnished down to the spindle.

By having a number of spindles coils of various sizes may be made. Some latitude of size of coil may be effected with a single spindle by adjusting the pulley or drum nearer to or farther from the spindle H in the slot F. The pulley N is also changeable, so that the groove therein may be adapted to the wire to be coiled.

The spool R is not essential to the operation of the machine, as the wire can be other-

wise fed between the coiling drum or pulley and the spindle. Neither is it essential that the coiling-drum can rotate, although its rotation greatly diminishes friction in coiling wire.

What I claim is—

1. The combination in a machine for coiling wire, of a spindle-bearing having inclined sides and adapted to receive spindles varying in size, a coiling-spindle of a size to enter said bearing, means to press the coiling-spindle to a seat against the inclined bearing sides, and means for rotating the spindle.

2. In a machine for coiling wire, the combination of a bearing-piece having bearing-surfaces inclined toward each other, a coiling-drum adjustably secured to said bearing-piece at the side remote from such bearing-surfaces, a coiling-spindle bearing on said inclined surfaces, and means for rotating the spindle.

3. In a wire-coiling machine, a standard having a slot therein provided with inclined bearing-surfaces, a coiling-spindle passing through said slot and bearing on said surfaces, and a coiling-drum held on a journal or pintle adjustable in said slot, all combined.

4. The combination, in a machine for coiling wire, of a standard having a bearing in which the coiling-spindle is both laterally and longitudinally movable, a spindle-guide in rear of said standard, a spindle rotatable in the standard and guide and means for rotating the spindle.

5. In a wire-coiling machine, the combination of a standard having inclined bearing-surfaces for the spindle, a spindle having bearing on said surfaces, and a coiling-drum provided with a grooved face and a smooth burnished surface, adjustably supported alongside the coiling-spindle.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST A. PAGE.

Witnesses:

CHRISTIAN K. KARN,

SAMUEL H. ULMER.