LE ROY CLARK.

TAPING MACHINE.

APPLICATION FILED MAR. 12, 1909.

986,690. Patented Mar. 14, 1911.

Fig. 1.

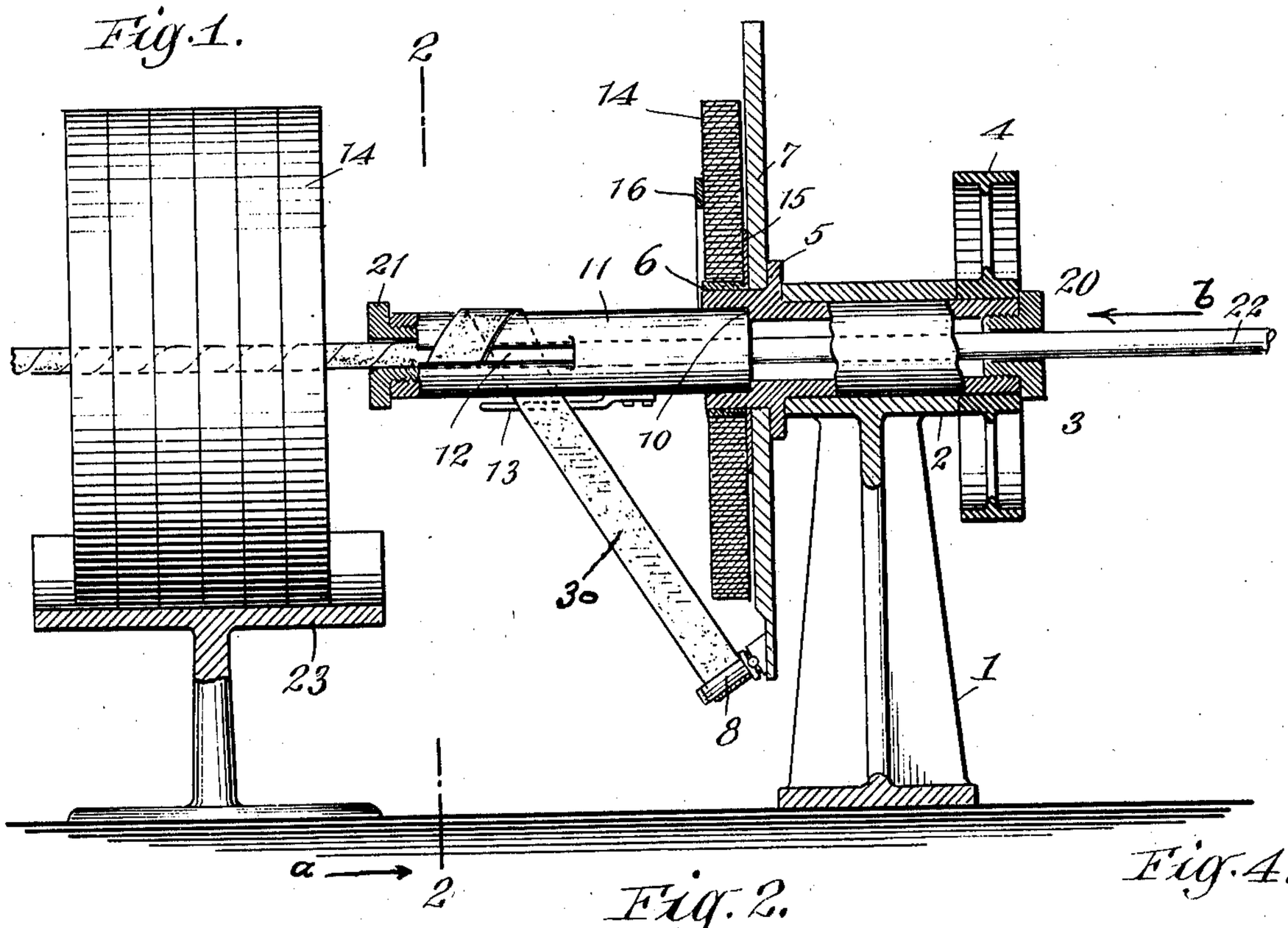
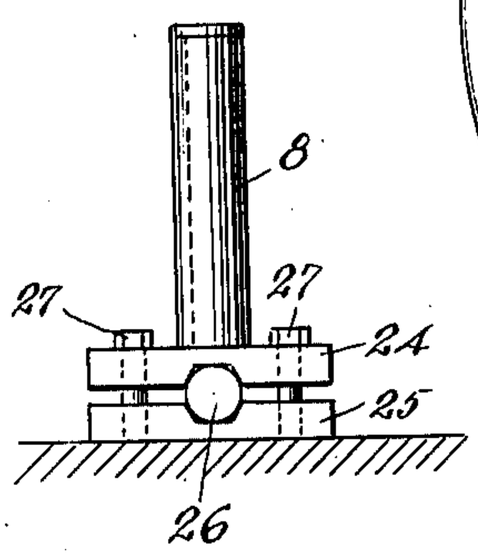


Fig. 2.

Fig. 4.

Fig. 3.



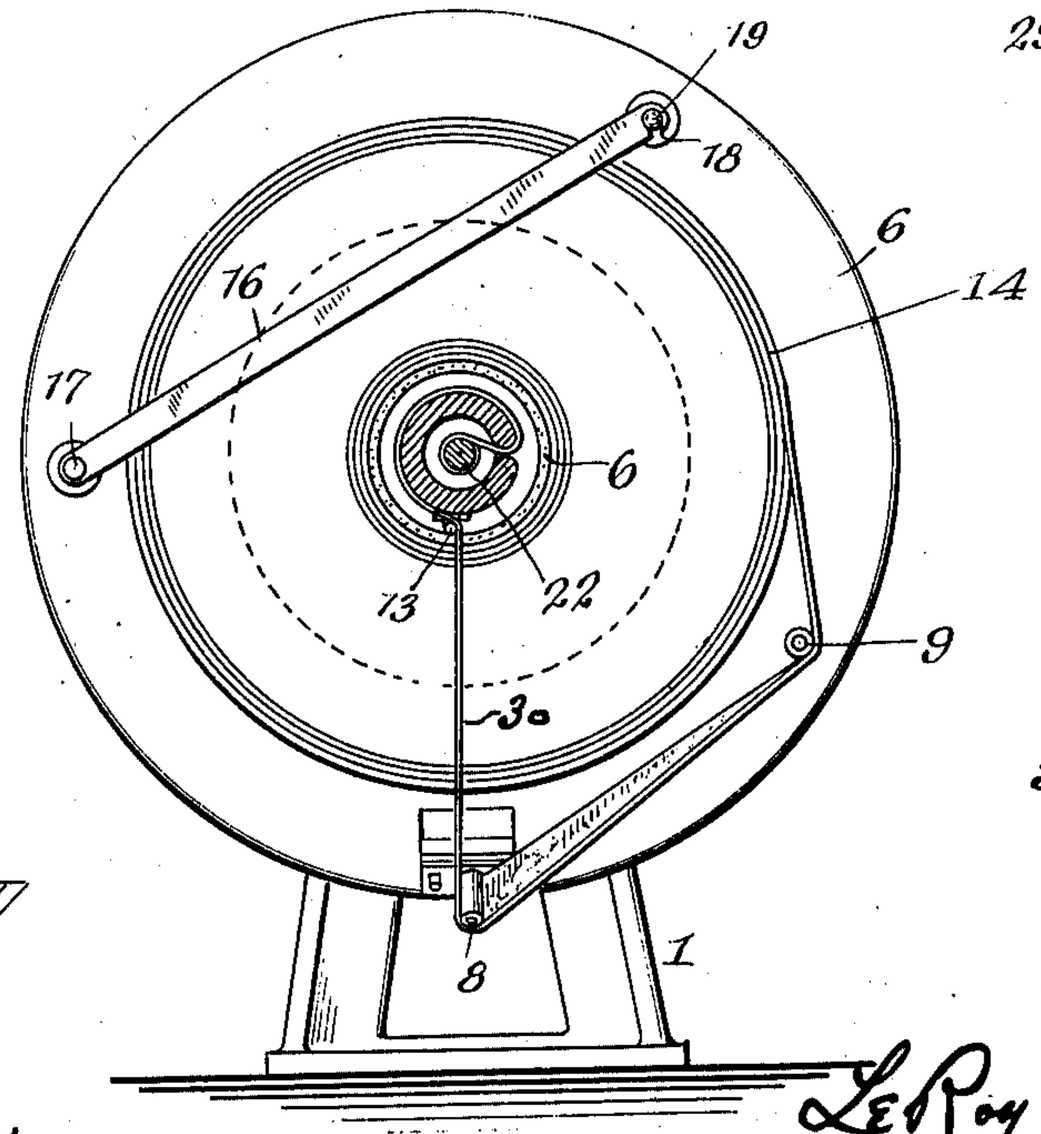
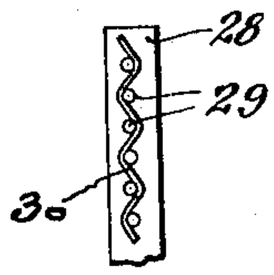


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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TAPING-MACHINE.

986,690. Specification of Letters Patent. Patented Mar. 14, 1911.

Application filed March 12, 1909. Serial No. 483,018.

To all whom it may concern:

Be it known that I, LE ROY CLARK, a citizen of the United States of America, residing at New York city, in the county and State of New York, have invented certain new and useful Improvements in Taping-Machines, of which the following is a specification.

My invention relates to improvements in taping machines.

The invention has special reference to means for securing uniformity in the tension to which the tape is necessarily subjected during the wrapping operation; for relieving the tape of unequal or uneven strains as it is fed from the delivery roll to the wire; and for steadying and guiding the tape into correct position on the wire.

My invention also relates to means whereby the tape is continuously fed to the wire from a spindle mounted concentric to the axis of the wire in combination with means for supporting tape rolls concentric to the axis of the same wire and adjacent to the spindle so that when one tape roll carried by the spindle is exhausted another may take its place without intersecting the path of the wire.

These and other objects of the invention, and the means by which they are effected, will presently and more at large appear in connection with the accompanying drawings, in which—

Figure 1 is a view in side elevation, partly cross-sectional of the assembled taping head. Fig. 2 is a view on the line 2—2 of Fig. 1, looking in the direction of the arrow *a*. Fig. 3 is a detail view of one of the tape guides, and of the means for adjusting the angular position of the same. Fig. 4 is a detail view showing a modified form of tension device. Fig. 5 is a side view of the device shown in Fig. 4, the tape being shown in place.

Referring to the drawings; in the standard 1, is a journal or bearing 2, in which is adapted to rotate the sleeve 3, on to the end of which sleeve is keyed a driving pulley 4, connected to any suitable source of power. On the other end of the sleeve 3 is a flange 5 and an extension or spindle bearing 6. Fixedly mounted on the extension 6 against the flange 5, is a disk or spider 7, which carries certain tape guides 8 and 9, and a locking device hereinafter more particularly mentioned. Adapted to be fitted within the sleeve formed by the extension 6, and resting against a shoulder 10 therein, is a second hollow member, or sleeve 11, through which, and through the sleeve 3, the wire 22 is fed in the direction of the arrow *b*. The sleeve 11 is slotted at one end, as at 12, for purposes presently to be described, and attached to the outside of this sleeve near the slot, is a tape guide or friction device 13.

The tape delivery rolls 14 are adapted to be slipped over the bearing 6, and to have frictional engagement with the same, sufficient to prevent over-feeding of the roll, but not sufficient to prevent the roll from being easily turned on the bearing. A washer 15, also on the extension 6, between the roll and the disk 7, holds the tape roll from contact with the disk, and prevents any rubbing or binding of roll and disk. A locking arm 16 (see Fig. 2), pivotally mounted on a stud 17 on the disk, and slotted at 18, to engage another stud 19 on the disk, holds the roll 14 upon the bearing 6. Bushing 20, threaded into the outer end of the sleeve 3, and bushing 21, threaded into the outer end of the sleeve 11, serve to guide and support the wire 22. The holes through the bushings are of a size according to the wire, and where a different size of wire is to be introduced, another size of bushing may be substituted. The interior bore of the sleeve 11 is of a size adapted to receive the more common sizes of wire. The sleeve 11 may, however, be removed from engagement with the sleeve 6, and a sleeve of larger or smaller bore substituted, a suitable bushing being inserted in the sleeve 6, if necessary. A bracket 23 serves to hold a number of rolls 14, and as fast as the roll on the bearing 6 is exhausted the cardboard spool thereof may be ripped from the bearing 6, and another roll 14, from the standard 23, passed over the sleeve 11 and on to the bearing 6, to take the place of the exhausted spool.

In operation, the wire is fed through the sleeves 3 and 11 in the direction of the arrow *b* (Fig. 1). The tape 30 from the roll 14 (see Fig. 2) is led over the idler 9, and then over the idler 8, whence it passes down to the sleeve 11, under and partly around the guide 13, with which it has frictional engagement, thence partly around the sleeve

11 and into the slot 12, whence it passes on to the wire as shown in the drawings. In order that the tape may be passed from the idler 8 to the sleeve 11 at precisely the correct angle, the idler 8, as shown in Figs. 1 and 3, is attached to the disk or spider 7, by means of a universal joint composed of plates 24 and 25, ball 26 and screws 27. To adjust idler 8 to any desired angular position, it is simply necessary to loosen the screws 27, move the idler to the angle desired, and tighten the screws again.

The guide or friction device 13 on the sleeve 11 is at a constant distance from the wire, and turns with the pulley 4 at a constant speed regardless of the size of the delivery roll. The latter roll has enough frictional engagement with the bearing 6 to prevent over-speeding and consequent slack in the tape. The tension on the tape between the outer surface of the sleeve 11 and the wire is uniform and cannot vary with the size of the delivery roll. Heretofore in the art where the tension device has engaged the roll, or the paper near the periphery of the roll, the tension has varied as the roll diminished in size so that often the tape has been broken. This varying tension is not possible in the present invention. Again, the proximity of the tension device to the point where the tape is delivered to the wire, and the guide for the tape offered by the surface of the sleeve 11, steadies the tape, preventing uneven strains, and insuring the correct positioning of the same on the wire.

Instead of using the member 13, I may mount upon the sleeve 11, or in other suitable manner, a device such as is shown in Figs. 4 and 5, which consists of an arm 28, carrying a number of pins 29, which serve as a tension device for the tape. The tape is laid in and out between the pins, as shown in Fig. 5, and there is a sufficient contact of the pins with the tape to maintain the tension at all times constant.

The device 13 or its equivalent may in some instances be omitted, as the rotating sleeve 11, may, by reason of its tape engaging surface, itself act as a tension device.

What I claim is:

1. A taping machine head having a passage therethrough for the wire, a support for the tape roll concentric with the wire, guides for the tape from the periphery of the roll to the wire, and a standard for supporting additional tape rolls concentric to the wire, said additional tape rolls being adapted to be passed on to the first named tape support when the roll thereon is exhausted.

2. In a taping machine, means for mounting the tape roll to embrace the wire to be wound and means for supporting a number of other rolls so that the same also embrace the wire and may be successively mounted on the bearing to replace exhausted rolls.

3. In a taping machine, a spindle mounted concentric to the axis of the wire to be wound in combination with means for supporting tape-rolls concentric to the axis of the same wire and adjacent to the spindle so that when a tape-roll carried by the spindle is exhausted another tape-roll may be run on the spindle without intersecting the path of the wire.

Signed by me at New York city, in the county and State of New York, this 11th day of March 1909.

LE ROY CLARK.

Witnesses:
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