J. C. McLAUGHLIN.

TYPE WRITING MACHINE.

APPLICATION FILED MAR. 11, 1908.

Patented June 22, 1909.

926,014.

Fig. 1.

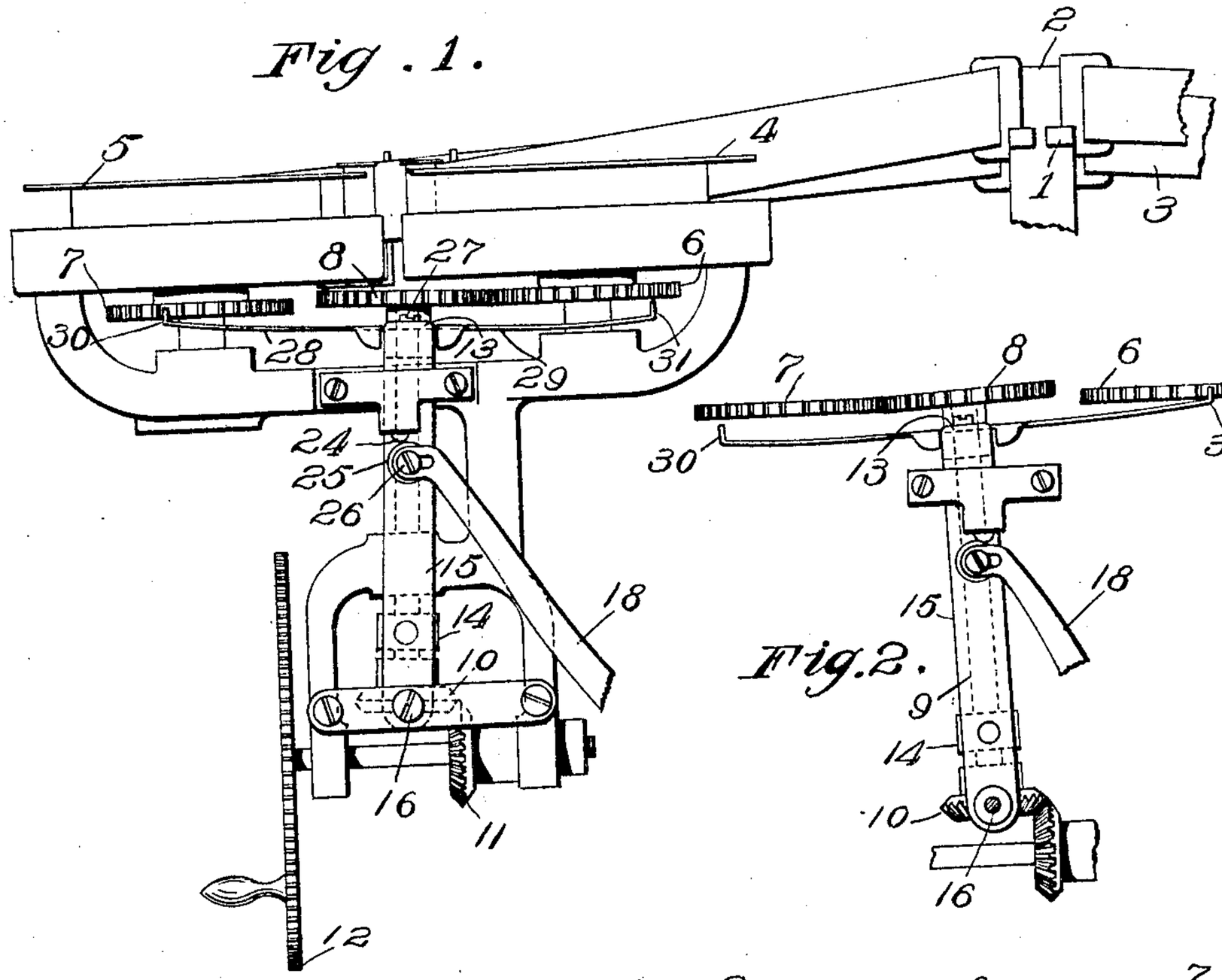


Fig. 2.

Fig. 3.

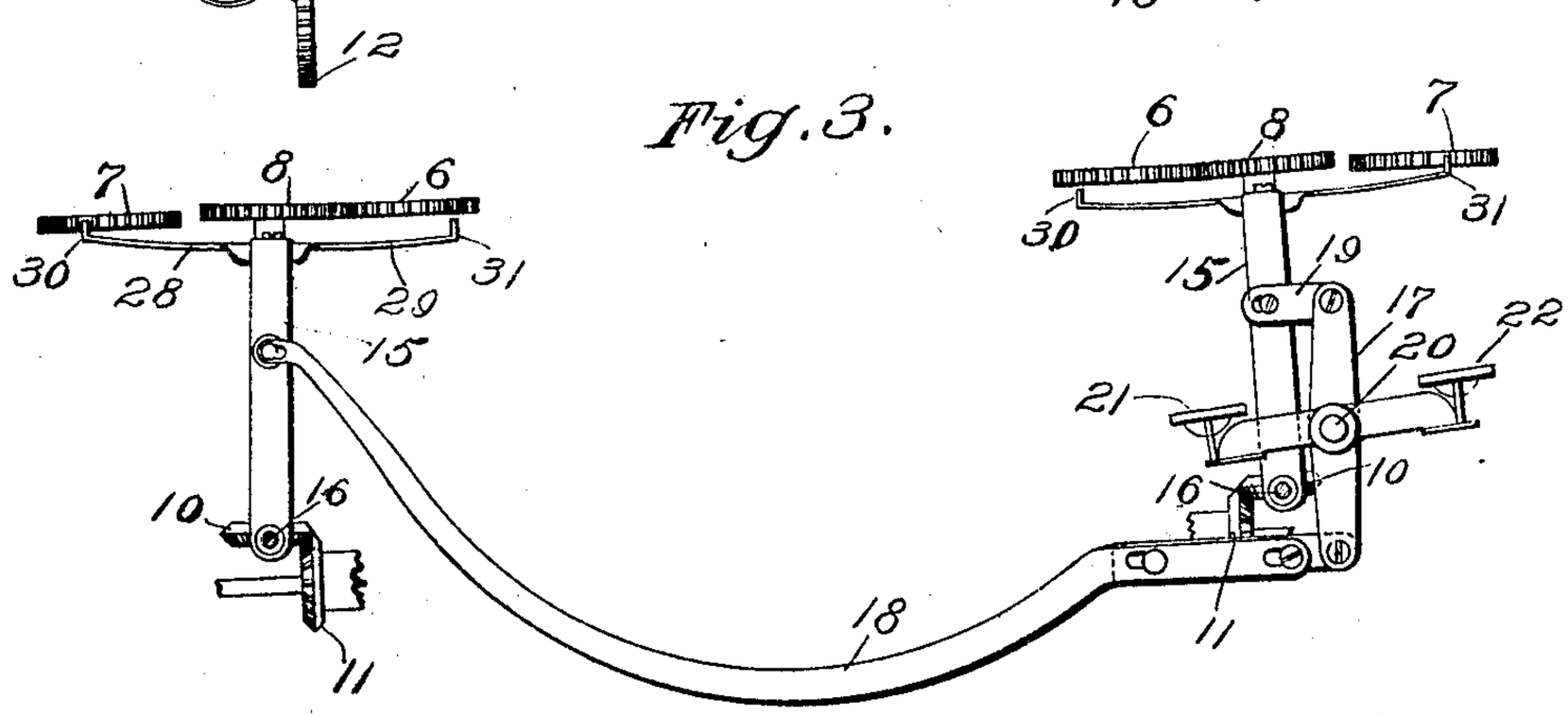


Fig. 4.

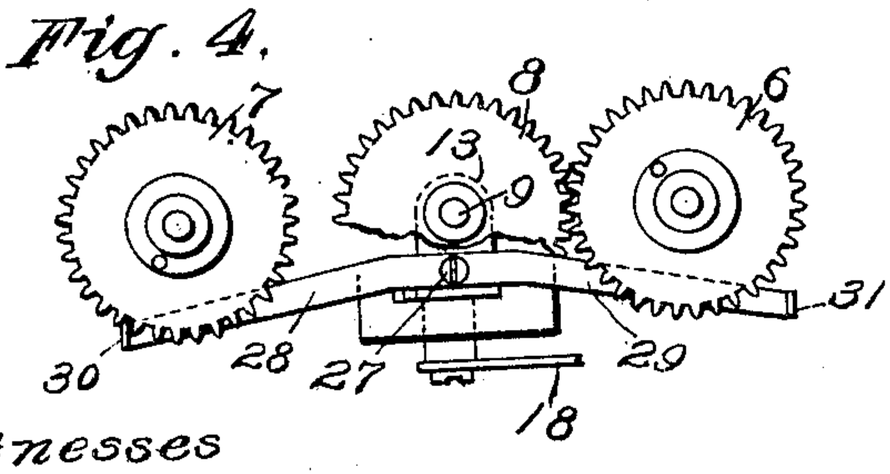
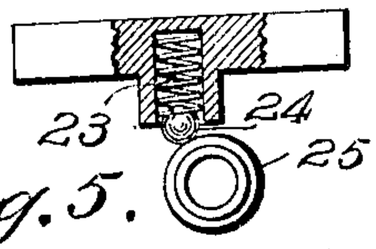


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN C. McLAUGHLIN, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

No. 926,014. Specification of Letters Patent. Patented June 22, 1909.

Application filed March 11, 1908. Serial No. 420,310.

To all whom it may concern:

Be it known that I, JOHN C. McLAUGHLIN, a citizen of the United States, residing in Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to two-ribbon mechanisms for typewriting machines, such for instance as disclosed in Letters Patent No. 878,988, in which either of two ribbons may be caused to vibrate at the type strokes to cover the printing point, and may also be caused to wind while the other ribbon remains idle.

It has been found in practice that trouble is liable to arise from accidental movement of the idle ribbon or of the spools which carry it, since that portion of the ribbon extending between the spools is liable to sag down into the paths of the type bars and otherwise to cause trouble.

The object of the invention is to overcome this difficulty and to prevent accidental longitudinal movement of the idle ribbon.

In carrying out my invention, I mount upon the shifter which brings either pair of spools into use devices which automatically move into engagement with the idle spools; or a part connected thereto, to lock the same, while simultaneously the other spools are released so that they may turn freely.

My improvement may be carried out in various forms, but is herein illustrated in connection with the detailed ribbon-shifting mechanism illustrated in an application filed by John C. Doane, No. 420,337, in which winding gears are mounted upon swiveled hangers, whereby they may be shifted back and forth between the spool gears. Upon each of the hangers I mount a pair of locks, preferably of somewhat yielding construction, which are swung by the hangers into and out of engagement with the spool gears, so as always to release the active spools and lock the inactive spools.

In the accompanying drawings, Figure 1 is a front view showing the ribbon-winding mechanism at the left hand side of a front strike writing machine of the Underwood type; the outer spools being shown locked and the inner spools released and winding. Fig. 2 shows the winding gear swung to the outer spool gear, the latter being released and the inner spool gear locked. Fig. 3 is a diagrammatic front elevation of the two pairs of spools and winding devices. Fig. 4 is a plan illustrating one set of gears in the Fig. 1 position. Fig. 5 is a detail of a detent for the shifting mechanism.

The types (not shown) strike rearwardly through a type guide 1 upon either a front ribbon 2 or a back ribbon 3. The front ribbon is carried upon spools 4, one at each side of the printing point. The rear ribbon is carried upon spools 5, between which the spools 4 are located. The spools are provided respectively with gears 6, 7.

Between the spool gears at each side of the printing point is arranged a winding gear 8, carried upon an upstanding shaft 9, which is rotated by means of a bevel gear 10, the latter constantly in mesh with a gear 11, which is rotated by a ratchet wheel 12 in the usual manner. The shaft 9 is journaled in ears 13, 14, provided upon a hanger 15, which is swiveled at its lower end upon a fixed stud or bearing 16. The shafts and hangers are duplicated at opposite sides of the machine, and the hangers are operated by a lever 17, whose lower end is connected by a link 18 to the left hand hanger. The upper end of 17 is connected by a link 19 to the right hand hanger 15. The lever is mounted upon a rock shaft 20 operated by keys 21, 22; and the hangers are held in either position by means of a detent in the form of a spring 23 pressing a ball 24 against a boss 25 provided upon the left hand hanger 15 to receive the pivot screw 26 to which this end of the link 18 is attached.

When the hangers 15 are swung toward each other, the winding gears 8 are brought into mesh with the gears 6 of the inner spools 4; and when the hangers are shifted away from each other they are brought into mesh with the gears 7 of the outer spools 5.

Upon the top of each hanger, I secure by a screw 27 a piece of spring metal which extends in both directions from the hanger in the form of arms 28, 29, which carry upturned fingers 30, 31 in position to be swung by the hanger alternately into mesh with the gears 6, 7, so as to lock one of the gears and release the other, whereby when the inner gears 6 are winding the outer gears 7 are locked and vice versa. The movement of the fingers 30, 31 is up and down about the pivot 16 sufficiently to lift them into and drop

them out of engagement with the spool gears at the swinging movements of the hangers 15. The arms 28, 29 are preferably springy to enable them to yield a trifle if the teeth 30, 31 should engage the under sides of the gear teeth during the swinging of the hanger. Either arm will yield sufficiently to permit the completion of the movement of the hanger, and thereafter will snap its tooth up between the gear teeth.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with two pairs of ribbon spool gears and a pair of winding gears shiftable into and out of mesh with either pair of spool gears, of means connected to be shifted with the winding gears to lock the idle spool gears against rotation.

2. In a typewriting machine, the combination with two pairs of ribbon spools, of shiftable means for causing either pair to wind while the other pair remains idle at the type strokes, and means connected to said shiftable means for locking the idle spools against rotation.

3. In a typewriting machine, the combination with two pairs of ribbon spool gears and a pair of winding gears, of shiftable means to effect engagement between either pair of spool gears and said winding gears, and means connected to said shiftable means for engaging the idle gears to lock them against rotation.

4. In a typewriting machine, the combination with two pairs of ribbon spool gears and a pair of winding gears, of a pair of swiveled hangers upon which the winding gears are mounted, means connecting said hangers to shift the winding gears to either pair of spool gears, and locks upon said hangers and moved thereby into mesh with the idle spool gears, and out of mesh with the active spool gears.

5. In a typewriting machine, the combination with two pairs of ribbon spool gears and a pair of winding gears, of a pair of swiveled hangers upon which the winding gears are mounted, means connecting said hangers to shift the winding gears to either pair of spool gears, and locks upon said hangers and moved thereby into mesh with the idle spool gears, and out of mesh with the active spool gears; said locks in the form of yielding fingers mounted upon said hangers.

6. In a typewriting machine, the combination with two pairs of ribbon spools, of means for locking the spools of either pair simultaneously against rotation, and means to release said locking means.

7. In a typewriting machine, the combination with two pairs of ribbon spools, of means for simultaneously locking the spools of either pair against rotation and releasing the spools of the other pair for rotation.

8. In a typewriting machine, the combination with two pairs of ribbon spool gears and a pair of winding gears, of shiftable means to effect engagement between either pair of spool gears and said winding gears, and means connected to said shiftable means for engaging the idle gears to lock them against rotation; said locking means in the form of yielding devices moved into mesh with the teeth of the gears.

9. In a typewriting machine, the combination with two pairs of spool gears, and a pair of winding gears, of connected swiveled hangers upon which the winding gears are mounted to shift from one pair of spool gears to the other, and spring-arms secured upon the hangers and extending in both directions from each thereof to be swung by the hangers alternately into mesh with the idle spool gears to lock them against rotation.

10. In a typewriting machine, the combination with two pairs of spool gears, and a pair of winding gears, of connected swiveled hangers upon which the winding gears are mounted to shift from one pair of spool gears to the other, and spring-arms secured upon the hangers and extending in both directions from each thereof to be swung by the hangers alternately into mesh with the idle spool gears to lock them against rotation; said arms having fingers to engage the spool gears and being of springy construction to enable them to yield.

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