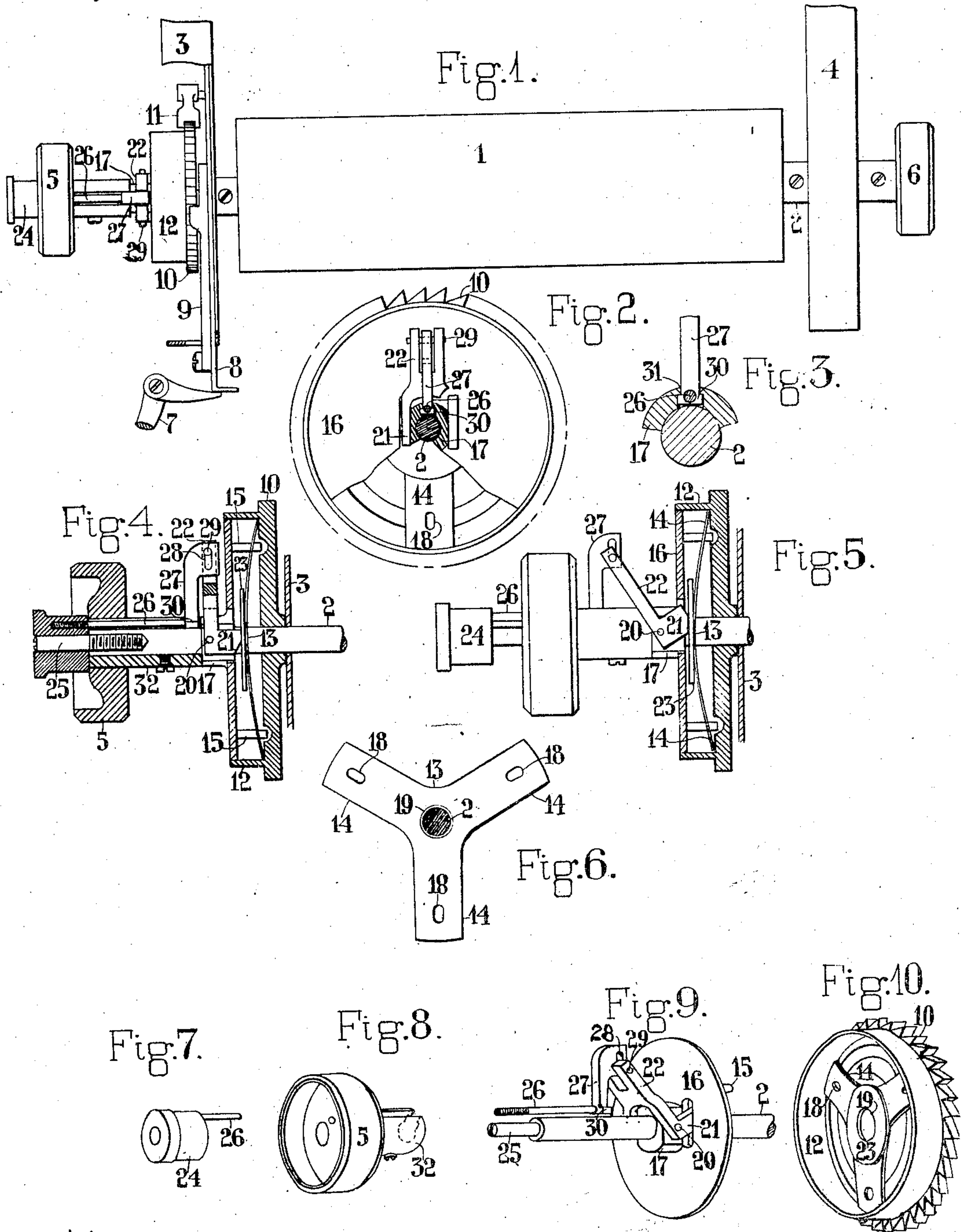


R. W. UHLIG.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 22, 1909.

965,346.

Patented July 26, 1910.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RICHARD W. UHLIG, OF RUTHERFORD, NEW JERSEY, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

965,346.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed July 22, 1909. Serial No. 508,902.

To all whom it may concern:

Be it known that I, RICHARD W. UHLIG, a citizen of the United States, residing in Rutherford, in the county of Bergen 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 the line-spacing mechanism of typewriting machines, and particularly to means for releasably clutching the line-space wheel to the platen.

The principal object of the invention is to provide a simple, inexpensive, compact device for this purpose, readily applicable to existing machines.

According to the present invention, the main clutch member consists of a dished spring-plate, preferably having three radial arms, the plate connected to the platen and constructed to be buckled to cause said arms to spread out or lengthen to bite an annular flange which is provided on the line-space wheel, thereby effectually locking the latter to the platen. The buckling of the clutch plate is effected by a lever mounted upon the platen axle and operated by a finger-piece, which is preferably mounted on the end of said axle outside of the finger wheel which usually turns the platen. The lever, in buckling said plate, moves to a dead center position, and is there held by the reaction of the plate thereon.

The parts are cheaply made and assembled, especially the buckling plate, which does not need to be fitted at its clutching points, and which when buckled will expand and fit itself at such points to the flange in the line-space wheel, so that a rigid connection is effected between the latter and the platen.

In the accompanying drawings, Figure 1 is a plan of the platen mechanism of an Underwood front strike writing machine, with the present improvements applied thereto. Fig. 2 is a sectional elevation of the clutch devices. Fig. 3 is a diagram to illustrate the manner of supporting a sliding arm which is operated by a finger-piece to turn the clutching lever. Fig. 4 is a longitudinal sectional elevation showing the line-space wheel clutched to the platen axle. Fig. 5 is a part-sectional elevation showing the line-space wheel released from the platen axle. Fig. 6 is an elevation of the buckling

clutch plate. Fig. 7 is a perspective view of the clutch-releasing finger-piece. Fig. 8 is a perspective view of the platen-rotating finger-wheel. Fig. 9 is a perspective view of the clutching lever and its connections. Fig. 10 is a perspective view of the line-space wheel drum and the buckling clutch plate contained therein.

The usual cylindrical platen 1 is fixed upon an axle 2, which is journaled in a platen frame whose ends are seen at 3, 4; finger wheels 5, 6 being secured upon the ends of the axle which project from the platen frame, for rotating the platen. The line-space movements of the platen are effected by a lever 7, slide 8, pawl 9 and line-space wheel 10, the latter loosely mounted upon the platen axle 2, and held against turning by means of a spring check or detent 11. Upon the line-space wheel is formed an annular projecting flange or rim 12, forming the periphery of a drum; and within this drum is confined a buckling plate 13, dished or bowed, as seen at Figs. 5, 6, and preferably comprising three equidistant arms 14, radiating from the platen axle 2. When relaxed, as at Fig. 5, the arms 14 do not bind upon the flange 12; but they may be pressed against the line-space wheel 10 and buckled or straightened sufficiently to cause them to spread and bite effectually the inner periphery of said flange 12, whereby the clutch member 13 is locked to the line-space wheel.

The clutch is connected to turn with the platen axle by means of pins 15, projecting parallel with the axle 2 from a disk or head 16, having a hub 17 whereby it is fixed upon the platen axle; said head forming the closing member of the drum 10, 12. The pins 15 pass through radial slots 18 in the clutch member, and permit free buckling and unbuckling movement thereof, while preventing the clutch member from turning relatively to the platen axle. The clutch member is provided with a central perforation 19, considerably larger than the platen axle, with which it need never contact. Pressure applied to the middle portion of the clutching plate clamps it against the line-space wheel and causes it to expand in diameter, so that each of the tips of the arms 14 presses radially forcibly against the flange 12.

As a convenient means for operating said clutch, I pivot at 20 upon the hub 17 an 11.

elbow-lever comprising a short arm 21 and a long arm 22; said short arm extending longitudinally of the platen axle 2 when in effective position, as at Fig. 4. A stiff washer 23 may be used between the lever arm 21 and the buckling plate 13. It will be seen at Fig. 9 that the lever is forked to bestride the hub 17; and it will be understood that the arm 21 is also forked, one member on each side of the hub 17, so that force is applied by one arm on opposite sides of the axle 2 against the clutch-plate 13 or the washer 23.

A button or finger piece 24 is mounted upon a stud 25 to slide longitudinally of the platen axle, said stud extending from the end of the axle. An arm extends from said finger-piece to the long arm 22 of the clutching member, and consists of a rod 26 and a lug 27 thereon having a slot 28 to engage a pin 29 on the lever. The lug is provided with a supporting shoulder 30 to fit in an undercut portion of a groove 31 (Fig. 3) formed in the hub 32 of the finger wheel 5.

When the button is pulled out from the position at Fig. 4 to that at Fig. 5, the clutch lever arm 22 is swung to the left, the arm 21 is lifted, and the dished spring clutch plate 13 is relaxed, thus permitting the head 16, axle 2 and platen 1 to be rotated freely while the line-space wheel 10 is held stationary by the check 11. Both hands of the operator are left free for manipulating the paper or the platen. Upon pressing the button 24 to the right from the Fig. 5 position to the normal position at Fig. 4, the lug 27 is forced to the right, the long arm 22 is swung in the same direction, and the arm 21 is swung about the pivot 20 to buckle the plate 13 and cause it to bite the flange 12, as already explained. At this time the arm 21 is in a dead-center position, where it is held by the reaction or resiliency of said clutch plate 13; so that the platen will remain locked to the line-space wheel without further attention from the operator.

It is obvious that the clutching plate can be otherwise formed, mounted and operated 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 a platen element and a line-space wheel element, of an intervening clutch in the form of a flexible buckling plate connected to one of said elements and bearing at its edge or border against a flange or rim provided on the other of said elements, and a finger-piece having means to buckle said plate, to force it radially against said flange or rim to lock the line-space wheel to the platen.

2. In a typewriting machine, the combina-

tion with a platen element and a line-space wheel element, of an intervening clutch in the form of a dished springy buckling plate connected to one of said elements, the other of said elements having a flange or rim, and a finger piece connected to means to press on the bulge of said plate to flatten it and thereby enlarge its diameter, to cause it to bite said flange or rim and thereby lock the line-space wheel to the platen.

3. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel, a clutch in the form of a dished springy buckling plate comprising a set of arms radiating from the platen axle and connected thereto, said line-space wheel having an annular flange or rim around said plate, and a finger-piece having means to press on said plate to flatten it against said line-space wheel and thereby force the arms to spread outwardly to bite the inner periphery of said flange or rim.

4. In a typewriting machine, the combination with a platen and a platen axle, of a loose line space wheel having a flange or rim, a clutch in the form of a springy buckling plate connected to the platen axle, and a lever upon said platen axle to buckle said plate and force it against said flange or rim to lock the line-space wheel to the platen, said lever provided with a finger-piece.

5. In a typewriting machine, the combination with a platen and a platen axle, of a loose line space wheel having a flange or rim, a clutch in the form of a springy buckling plate connected to the platen axle, and a lever upon said platen axle to buckle said plate and force it against said flange or rim to lock the line-space wheel to the platen, said lever provided with a finger-piece, and being so mounted and formed that the reaction of the buckling plate thereon holds the lever in effective position.

6. In a typewriting machine, the combination with a platen element and a line-space wheel element, of an intervening clutch in the form of a flexible buckling plate connected to one of said elements and bearing at its edge or border against a flange or rim provided on the other of said elements, and a finger-piece having means to buckle said plate, to force it radially against said flange or rim to lock the line-space wheel to the platen; means being provided to cause said buckling plate to hold said buckling means in effective position.

7. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular flange or rim, a clutch in the form of a dished springy buckling plate comprising a set of arms radiating from the platen axle, said clutch connected to said axle, a lever pivoted upon said platen axle, and a finger-piece connected to said lever to cause it to

force said buckling plate against said line space wheel to buckle the plate and force said arms outwardly to engage said flange and lock the line-space wheel to said platen; said finger piece mounted to slide on a stud or bearing at the end of the platen axle and having an arm to operate said lever.

8. In a typewriting machine, the combination with a platen and a platen axle, of a loose line space wheel having an annular flange or rim, a clutch in the form of a 10
dished springy buckling plate comprising a set of arms radiating from the platen axle, said clutch connected to said axle, a lever 15
pivoted upon said platen axle, and a finger-piece connected to said lever to cause it to force said buckling plate against said line-space wheel to buckle the plate and force 20
said arms outwardly to engage said flange and lock the line-space wheel to said platen; said lever being formed so that it reaches a dead center position at the time that said clutch becomes effective and is held in such 25
dead center position by the reaction of said buckling plate.

9. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular flange or rim, a clutch in the form of a 30
dished springy buckling plate comprising a set of arms radiating from the platen axle, a head upon said platen axle and having means to engage said arms, a lever pivoted 35
upon said head, and a finger-piece connected to said lever to cause it to force said buckling plate against said line space wheel to buckle the plate and force said arms out- 40
wardly to engage said flange and lock the line-space wheel to said head.

10. In a typewriting machine, the combination with a platen and a platen axle, of a loose line space wheel having a flange or rim, a clutch in the form of a springy buckling plate connected to the platen axle, and 45
a lever upon said platen axle to buckle said plate and force it against said flange or rim to lock the line-space wheel to the platen, said lever provided with a finger-piece; said lever being formed so that it reaches a dead 50
center position at the time that said clutch becomes effective and is held in such dead center position by the reaction of said buckling plate.

11. In a typewriting machine, the combination with a platen and a platen axle, of a loose line space wheel having an annular flange or rim, a clutch in the form of a 55
dished springy buckling plate comprising a set of arms radiating from the platen axle, a head upon said platen axle and having means to engage said arms, a lever pivoted 60
upon said head, and a finger-piece connected to said lever to cause it to force said buckling plate against said line space wheel to buckle the plate and force said arms out-

wardly to engage said flange and lock the line-space wheel to said head; said head in the form of a disk confined within said flange and having a hub upon which said lever is pivoted.

12. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular flange or rim, a clutch in the form of a 70
dished springy buckling plate comprising a set of arms radiating from the platen axle, a head upon said platen axle and having means to engage said arms, a lever pivoted 75
upon said head, and a finger-piece connected to said lever to cause it to force said buckling plate against said line space wheel to buckle the plate and force said arms out- 80
wardly to engage said flange and lock the line-space wheel to said head; said head in the form of a disk confined within said 85
flange and having a hub upon which said lever is pivoted; said lever of elbow form, one arm extending along the platen axle, when in working position.

13. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular flange or rim and forming a drum, a clutch 90
in the form of a dished springy buckling plate comprising a set of arms radiating from the platen axle, a head to close said drum, said head having a hub and also hav- 95
ing holding pins to engage openings in said arms, a lever pivoted upon said hub, a washer between said lever and said buckling 100
plate, a finger-piece connected to said lever to cause it to force said buckling plate against said line-space wheel to buckle the plate and force said arms outwardly to en- 105
gage said flange and lock the line-space wheel to said head.

14. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular flange or rim and forming a drum, a clutch 110
in the form of a dished springy buckling plate comprising a set of arms radiating from the platen axle, a head to close said drum, said head having a hub and also hav- 115
ing holding pins to engage openings in said arms, a lever pivoted upon said hub, a washer between said lever and said buckling plate, a finger piece connected to said lever 120
to cause it to force said buckling plate against said line-space wheel to buckle the plate and force said arms outwardly to en- 125
gage said flange and lock the line-space wheel to said head; said lever being formed so that it reaches a dead center position at the time that said clutch becomes effective 130
and is held in such dead center position by the reaction of said plate.

15. In a typewriting machine, the combination with a platen and a platen axle, of a loose line-space wheel having an annular 130

flange or rim and forming a drum, a clutch
 in the form of a dished springy buckling
 plate comprising a set of arms radiating
 from the platen axle, a head to close said
 5 drum, said head having a hub and also hav-
 ing holding pins to engage openings in said
 arms, a lever pivoted upon said hub, a
 washer between said lever and said buckling
 plate, a finger-piece connected to said lever
 10 to cause it to force said buckling plate
 against said line-space wheel to buckle the
 plate and force said arms outwardly to en-
 gage said flange and lock the line-space
 wheel to said head; said lever forked to be-
 15 stride said hub and bear against said washer.

16. In a typewriting machine, the combi-
 nation with two primary elements consisting
 of a platen and a line-space wheel, of an in-
 tervening clutch in the form of a plurality
 of flexible diverging arms integral with one 20
 another, and connected to one of said pri-
 mary elements to bear at their ends against
 a flange or rim provided on the other of said
 primary elements, to force them radially
 against said flange or rim to lock the line- 25
 space wheel to the platen.

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Witnesses:

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