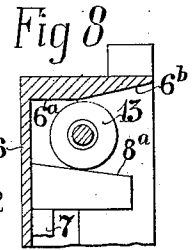
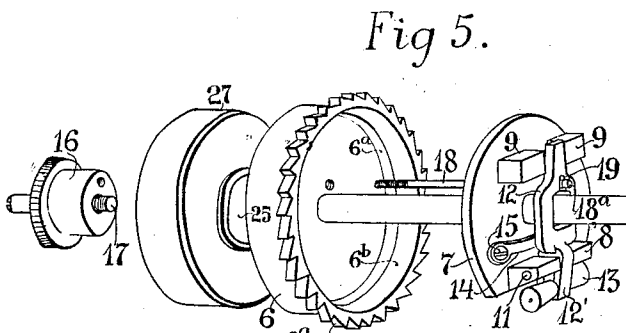
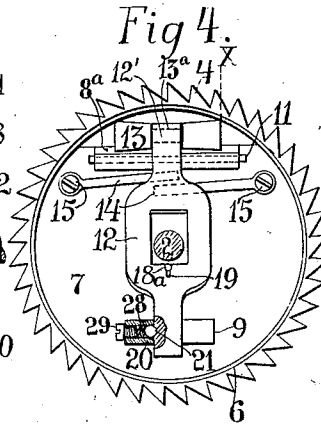
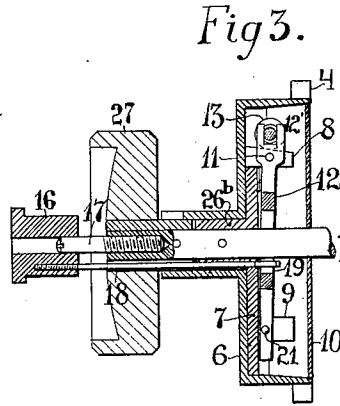
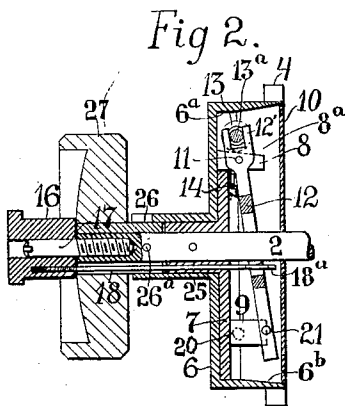
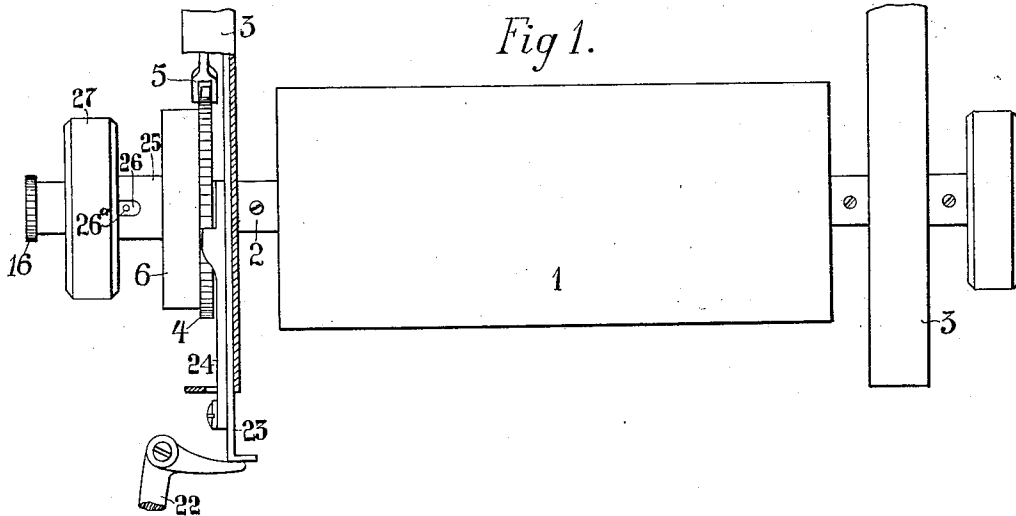


R. W. UHLIG.
TYPE WRITING MACHINE.
APPLICATION FILED JULY 19, 1909.

962,727.

Patented June 28, 1910.



WITNESSES:
John O. Seifert.
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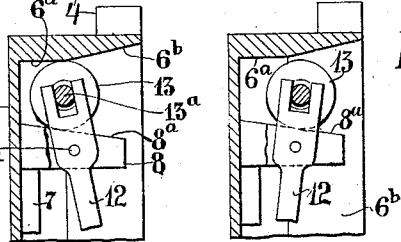


Fig 7. INVENTOR:
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UNITED STATES PATENT OFFICE.

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.

962,727.

Specification of Letters Patent. Patented June 28, 1910.

Application filed July 19, 1909. Serial No. 508,374.

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.

The present invention relates to clutch mechanism for releasably connecting the platen to the line-space wheel of a type-writing machine, to permit the platen to be rotated independently of the line-space wheel.

The principal object of the invention is to provide a clutching mechanism for this purpose that will be simple, positive, inexpensive, and readily applicable to existing machines.

By means of a platen-releasing button at the end of the platen axle and outside of the usual hand wheel, I operate a wedging or jamming mechanism which is contained within a drum that is carried by or forms part of the line space wheel, whereby said wheel is releasably wedged or jammed to a part fixed upon the platen axle. Said button is movable in the direction of the platen axis. A spring tends always to jam or lock said axle to said line-space wheel; and this spring returns said button to normal position when it is released. An extra movement given to the button will lock the jamming members in inoperative positions, so that the platen will remain released from the line-space wheel, without attention from the operator. The line-space wheel is loosely mounted on the platen axle and is formed or provided with a drum, within which is a disk or head having a cam or wedge surface. A lever in the drum operates a pair of conjoint rollers to run upon said wedge surfaces in a direction longitudinal of the platen and wedge or jam between the same and the inner periphery of the drum.

In the accompanying drawings, Figure 1 is a view of the platen and platen frame of an Underwood front strike writing machine embodying the features of my present invention. Fig. 2 is a longitudinal sectional view showing the clutching mechanism in platen locking or connecting position. Fig. 3 is a similar view showing the clutching mechanism in the released or disconnected

position. Fig. 4 is an end view taken about on line A—A of Fig. 2, showing the clutching mechanism in locked or connected position. Fig. 5 is a perspective view illustrating the several parts of the invention in disassembled positions. Fig. 6 is a diagrammatic view on a larger scale, to illustrate the locking or wedging action of the clutch. It is taken at about the line X of Fig. 4. Fig. 7 is a view similar to Fig. 6, but showing the parts at their extreme releasing positions. Fig. 8 shows the parts in midway positions.

The usual cylindrical platen 1 is mounted rigidly upon the platen axle 2 which is journaled in the platen frame 3. Loose upon the platen axle 2 is a toothed line space wheel 4 engaged by a spring detent 5 and operated by a lever 22 through a slide 23 and pawl 24 in the usual manner. This line space wheel is illustrated in the form of a ring or drum 6 on whose periphery is formed the teeth 4 of the wheel; said drum having a hub 25 to turn loosely upon a hub or collar 26, which is fixed by a pin 26^a to the axle 2, whereby the axle and the platen which is fixed there- to may be rotated while the line-space wheel or drum 6 remains stationary.

The clutching mechanism includes a jamming or biting device to engage the inner periphery of the drum. Preferably, a part is forcibly wedged between said inner periphery and a fixture on the platen axle, so that looseness or play between the line space wheel and the platen axle is avoided. The part fixed upon the platen axle consists of a lug 8 formed upon a disk 7, whose hub 26^b is fixed to the platen axle as above described. Said lug 8 has a slightly inclined face 8^a, upon which the conjoint rolls 13 run toward and from the head of the drum. The inclination is such that the movement of the rolls to the left at Figs. 2 and 3 or toward the head of the drum carries or forces them outwardly toward and against the inner periphery of the drum; and they are preferably made of cone shape, as illustrated, to give them sharp corners or edges at their extreme ends to bite the drum and the incline 8^a more effectually, and to enable the rolls to serve, by reason of their conjoint construction, as an unyielding connection between the drum and the axle plate or head 7. It will be perceived that any tendency of the

platen and line-space wheel to move relatively to one another is checked largely because of the resistance offered by the conjoined rolls 13 to being turned end over end, and also because of the fact that any pressure endwise upon either end of the double roll or conjoined rolls tends to force the other end of the same more tightly between the converging surfaces, Fig. 4. The sharp bearing edges or corners of the rolls render them highly efficient for this purpose.

The jamming or biting rolls 13 are normally held in effective position by means of a pair of springs 14, secured by screws 15 to said plate 7 and bearing against a lever 12, which is forked at 12', to receive loosely the middle pivot portion 13^a of the double roll or pair of conjoint rolls 13. Said lever is fulcrumed upon a pin 11, which is inserted in the lug 8, the latter being divided into two parts between which the lever 12 fits. In the locked position, the rolls 13 ride upon a cylindrical portion 6^a of the inner periphery of the drum; and divergence between said cylindrical portion and the incline 8^a is so slight, as seen best at Fig. 6, that the springs 14, may be made very weak and still resist effectually all liability of the roll to work loose during the operation of the typewriter. From the cylindrical portion 6^a, the inner face of the drum is slightly beveled at 6^b, to increase the clearance at the releasing operation, so that a slight movement of the rolls may enable them to effect disconnection between the drum and the axle plate 7. The lever 12 is utilized for the purpose of releasing the jamming rolls 13, and for this purpose is extended past the axle 2, having a perforation, through which said axle extends; and a releasing pull rod 18 is loosely connected to said lever passing through a slot 19 in the latter and having a head 18^a catching over the edges of said slot 19. At its outer end said pull rod 18 is threaded into a button or finger-piece 16, which is slidable upon a stud 17, from the position at Fig. 2 to the position at Fig. 3; said stud extending in the direction of the axle 2, and being threaded into the end of the latter. The rod 18 extends through suitable perforations in the hub 26 and in the hub of the usual line-space wheel 25, as will be understood. When the finger-piece 16 is drawn out to the position at Fig. 3, the lever 12 is swung against the tension of the springs 14, and the biting roll or rolls 13 are forced down the incline 8^a and out of contact with the inner periphery of the drum 6. Upon releasing the finger-piece said springs 14 restore the parts to the locking position at Fig. 2.

In an extension of the lever 12, which plays in a notch formed in a lug 9 on the plate 7, is formed a depression 21, Fig. 3; and a ball 20 is forced by a spring 28 into

said depression, whenever the finger-piece 16 is pulled far enough to the left to draw the lever 12 to the Fig. 3 position. A screw 29 is used to confine the spring 28. The lug 9 is formed with a perforation to receive the ball, the spring and the screw; but said perforation is constricted at its inner end to prevent the ball from escaping, as seen at Fig. 4.

It will be understood that when the finger-piece 16 is pulled out only to the Fig. 8 position, the roll 13 is released, and that the spring 14 will return the parts when the finger-piece 16 is released; but upon pulling the finger-piece 16 out still farther to the position shown at Figs. 3 and 7, the detent 20 will catch in the depression 21 and hold the lever against the tension of the springs 14, so that the operator may use both hands in manipulating the paper or turning the platen by means of a knob 27. Upon thereafter giving the button 16 a slight pressure toward the right, the lever will be forced out of engagement with the detent 20, and the springs 14 will return the parts to the normal locking positions. A disk 10 mounted upon the shaft 2 serves as a cover for the drum 6.

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. The combination with a platen and an axle, of a head on the axle, a hand-wheel on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button sliding on the end of the platen axle at the outer side of said hand-wheel, to move longitudinally of said axle, a connection extending from said button through said hand-wheel to said lever, and a clutch device operating between said head and said line-space wheel and releasable by said lever.

2. The combination with a platen and an axle, of a head on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button mounted on the end of the platen axle to move longitudinally thereof, a connection between said button and said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, and a spring to render the clutching device effective; said clutching device in the form of a pair of conjoined rolls, and a bearing surface being provided on said head along which the rolls run in a direction longitudinal of the platen axle; said bearing surface being inclined relatively to an inner periphery formed or provided on the line-space wheel, to enable the rolls to wedge between said bearing surface and said inner periphery.

3. The combination with a platen and an axle, of a head on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button mounted on the end of the platen axle to move longitudinally thereof, a connection between said button and said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, and a spring to render the clutching device effective; said clutching device in the form of a roll, and a bearing surface being provided on said head along which the roll runs in a direction longitudinal of the platen axle; said bearing surface being inclined relatively to an inner periphery formed or provided on the line-space wheel, to enable the roll to wedge between said bearing surface and said inner periphery, said roll having sharpened outer edges to bite said bearing surface and said inner periphery.

4. The combination with a platen and an axle, of a head on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button mounted on the end of the platen axle to move longitudinally thereof, a connection between said button and said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, and a spring to render the clutching device effective; said clutching device in the form of a pair of conjoined rolls, and a bearing surface being provided on said head along which the rolls run in a direction longitudinal of the platen axle; said bearing surface being inclined relatively to an inner periphery formed or provided on the line-space wheel, to enable the rolls to wedge between said bearing surface and said inner periphery, said lever connected to said rolls between the ends of the latter.

5. The combination with a platen and an axle, of a head on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button mounted on the end of the platen axle to move longitudinally thereof, a connection between said button and said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, a spring to render the clutching device effective; said clutching device in the form of a roll, and a bearing surface being provided on said head along which the roll runs in a direction longitudinal of the platen axle; said bearing surface being inclined relatively to an inner periphery formed or provided on the line-space wheel, to enable the roll to wedge between said bearing surface and said inner periphery, said lever connected to said roll between the ends of the latter, and a yield-

ing detent to hold said lever in roll-releasing position.

6. The combination with a platen and an axle, of a head on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button mounted on the end of the platen axle to move longitudinally thereof, a connection between said button and said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, a spring to render the clutching device effective, and a yielding detent to hold said lever in clutch-releasing position.

7. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, a pair of conjoined clutching rolls between said periphery and said bearing surface, said rolls mounted to run upon said bearing surface in a direction longitudinal of the platen axis, and said bearing surface being relatively inclined to said periphery to enable said rolls to bite both the bearing surface and said periphery.

8. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, a pair of conjoined clutching rolls between said periphery and said bearing surface, said rolls mounted to run upon said bearing surface in a direction longitudinal of the platen axis, and said bearing surface being relatively inclined to said periphery to enable said rolls to bite both the bearing surface and said periphery, and a spring to render said rolls effective.

9. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, a clutching roll between said periphery and said bearing, said roll mounted to run upon said bearing surface in a direction longitudinal of the platen axis, and said bearing surface being relatively inclined to said periphery to enable said roll to bite both the bearing surface and said periphery, said roll mounted so as to engage said periphery only at the ends or corners of the roll.

10. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, a clutching roll between said periphery and said bearing, said roll mounted to run upon said bearing surface in a direction longitudinal of the platen axis, and said bearing surface being relatively inclined to said periphery to enable said roll to bite both the bearing surface and said periphery, and means to render said roll effective, said roll mounted so as to engage said periphery only at the ends or corners of the roll, said corners being sharpened to enable the roll

to bite both said periphery and said bearing.

11. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel having a drum and loosely mounted on the platen axle, a head provided with a cam or wedge projection and fixed to the platen axle, a lever having a forked end, a double roller loosely mounted therein and disposed between the cam projection and the inner periphery of the drum, and a spring bearing upon said lever, to force the roller into the bite of said cam and said periphery.

12. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel having a drum and loosely mounted on the platen axle, a head provided with a cam or wedge projection and fixed to the platen axle, a lever having a forked end, a double roller loosely mounted therein and disposed between the cam projection and the inner periphery of the drum, a spring bearing upon said lever, to force the roller into the bite of said cam and said periphery, means for rocking the lever to release the line-space wheel, including a rod engaging the lever, and a button connected to the rod and movable longitudinally of the platen axle.

13. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel having a drum and loosely mounted on the platen axle, a head provided with two pairs of projections, a slotted lever fulcrumed near one of its extremities between one pair of projections and guided at its other extremity between the other pair of projections, a yoke or fork formed at the fulcrumed end portion of the lever, a double tapered roller loosely mounted in said yoke or fork and working between the inner periphery of the drum and a bearing surface formed on one pair of said projections, a spring bearing upon the lever and tending to hold the roller in engagement with the drum, and means for rocking the lever to release the roller.

14. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel having a drum and loosely mounted on the platen axle, a head provided with two pairs of projections, a slotted lever fulcrumed near one of its extremities between one pair of projections and guided at its other extremity between the other pair of projections, a yoke or fork formed at the fulcrumed end portion of the lever, a double tapered roller loosely mounted in said yoke or fork and working between the inner periphery of the drum and a bearing surface formed on one pair of said projections, a spring bearing upon the lever and tending to hold the roller

in engagement with the drum, and means for rocking the lever to release the roller, said rocking means including a button movably mounted at one end of the platen axle, a rod fastened to the button and extending to the lever.

15. In a typewriting machine, the combination with a platen and an axle therefor, of a line-space wheel having a drum and loosely mounted on the platen axle, a head provided with two pairs of projections, a slotted lever fulcrumed near one of its extremities between one pair of projections and guided at its other extremity between the other pair of projections, a yoke or fork formed at the fulcrumed end portion of the lever, a double tapered roller loosely mounted in said yoke or fork and working between the inner periphery of the drum and a bearing surface formed on one pair of said projections, a spring bearing upon the lever and tending to hold the roller in engagement with the drum, means for rocking the lever to release the roller, and means for detaining the lever when rocked to free the roller, said detaining means comprising a spring-pressed ball or detent mounted or seated in one of the guiding projections, and a depression being provided in the lever to receive the detent.

16. The combination with a platen, of a platen axle, a loose line-space wheel, a button at the end of the platen axle and mounted for movement longitudinally of the axle, a clutching device between the axle and the line-space wheel, a spring tending to render the clutching device effective, means connected to the button to release the clutching device, and a yielding detent to hold the clutching device and button in released positions, said detent rendered effective by an additional movement of the button beyond the movement necessary to release the clutch, and said spring capable of returning the button to normal position upon being released from said detent.

17. The combination with a platen and an axle, of a head on the axle, a hand-wheel on the axle, a loose line-space wheel, a clutching lever pivoted on said head to swing in a plane longitudinal of the platen axle, a button sliding on the end of the platen axle at the outer side of said hand-wheel, to move longitudinally of said axle, a connection extending from said button through said hand-wheel to said lever, a clutch device operating between said head and said line-space wheel and releasable by said lever, and a spring to render the clutching device effective.

18. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, and a pair of conjoined clutching rolls between said periphery and said bear-

ing, said rolls mounted to run upon said bearing surface in a direction longitudinal of the platen axis.

19. The combination with a platen, of a head connected thereto and having a bearing surface, a loose line-space wheel having a periphery, a pair of conjoined clutching rolls between said periphery and said bearing,

said rolls mounted to run upon said bearing surface in a direction longitudinal of the platen axis, and a spring to render said rolls effective. 10

RICHARD W. UHLIG.

Witnesses:

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K. FRANKFORT.