Aug. 10, 1926. 1,595,463

G. G. GOING

TYPEWRITING MACHINE

Filed March 30, 1925 2 Sheets-Sheet 1

Fig. 1

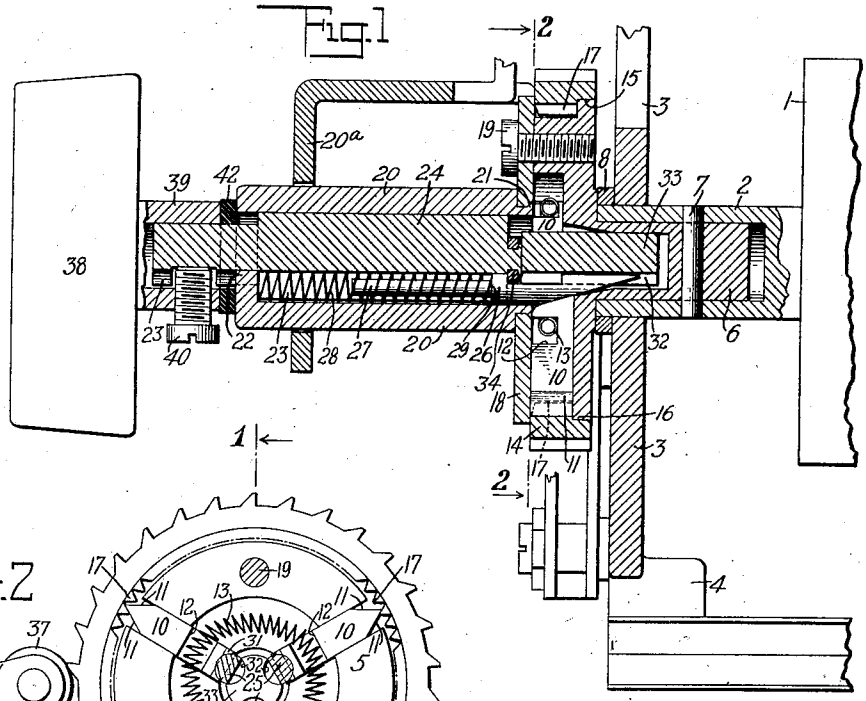
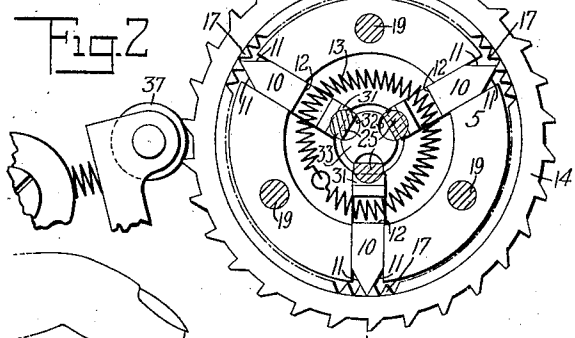


Fig. 2



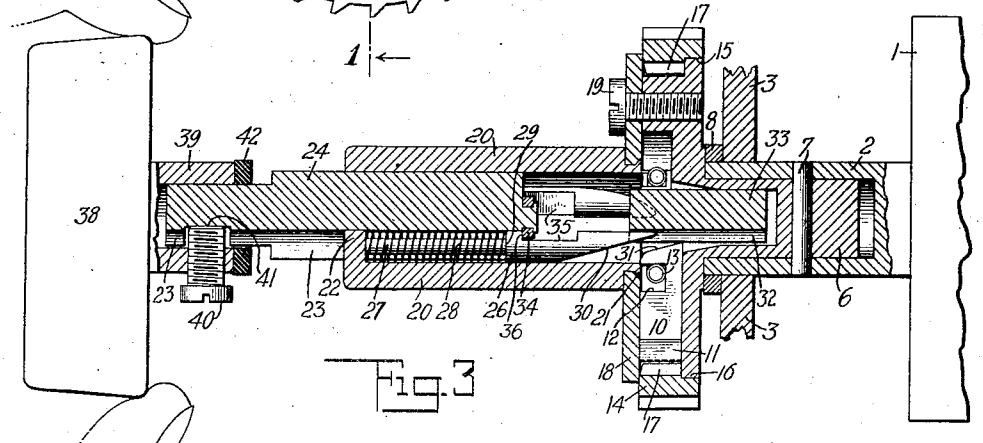


Fig. 3

WITNESSES

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Aug. 10, 1926.

1,595,463

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TYPEWRITING MACHINE

Filed March 30, 1925 2 Sheets-Sheet 2

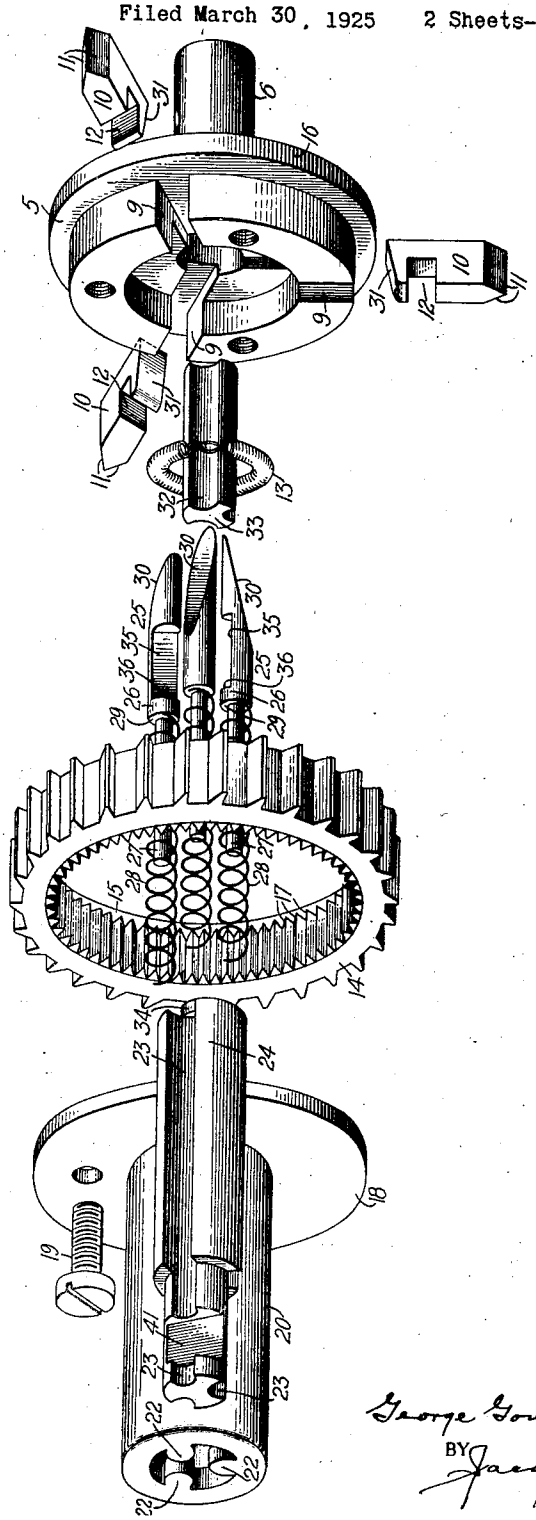


Fig 4

WITNESSES

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Patented Aug. 10, 1926. 1,595,463

UNITED STATES PATENT OFFICE.

GEORGE GOULD GOING, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR TO REMINGTON-NOISELESS TYPEWRITER CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

TYPEWRITING MACHINE.

Application filed March 30, 1925. Serial No. 19,204.

My invention relates to typewriting or like machines and more particularly to clutch mechanism by which the line spacing wheel and platen may be connected to turn together or the platen may be turned independently of the line spacing wheel for irregular spacing.

The main object of my invention, generally stated, is to provide a comparatively simple and highly efficient positively acting clutch mechanism of the character specified.

A further object of the invention is to provide a clutch mechanism of the character specified which even though it is located to the left of the platen may nevertheless be released by one hand without disturbing the carriage from the position it has assumed in its line of travel.

To the above and other ends which will hereinafter appear, my invention consists in the features of construction, arrangements of parts and combinations of devices set forth in the following description and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters designate corresponding parts in the different views,

Figure 1 is an enlarged detail vertical sectional view of the clutch mechanism and some of the associated parts as they appear when the clutch is closed; the section being taken on the line 1—1 of Fig. 2 and looking in the direction of the arrows at said line.

Figure 2 is a vertical transverse sectional view of the same taken on the line 2—2 of Fig. 1 and looking in the direction of the arrows at said line.

Figure 3 is a view corresponding in part to Fig. 1 except that the parts are shown disposed as they appear when the clutch is released.

Figure 4 is a view showing, in perspective and detached, various parts of the clutch mechanism.

I have shown my invention in the present instance embodied in a Remington-Noiseless machine. It should be understood, however, that the clutch mechanism of my invention is of general application and may be embodied in various makes of typewriting or like machines.

The present invention is in the nature of an improvement on the construction disclosed in the patent to H. N. Josleyn, No. 945,956, dated Jan. 11, 1910.

By the present invention I am enabled to provide clutch mechanism which is in the nature of a separate unit mounted wholly outside of the platen so that the interior of the latter is unobstructed and if desired may receive other devices, such, for example, as the damper contained within the hollow metallic platen of the Remington-Noiseless machine. Moreover, aside from the fact that a highly efficient positively acting clutch mechanism is provided, I am enabled by my present invention to release the clutch with one hand without displacing the carriage to the right, even though the finger wheel for controlling the clutch is located to the left of the platen, as will hereinafter more clearly appear.

In the drawings, 1 indicates a cylindrical platen which, in the present instance, is made of metal and has a hollow hub 2 formed integral therewith at its left-hand end. This hub receives a bearing in a bearing-opening in the left-hand end plate 3 of the carriage 4. A disk-like supporting member 5 is provided with a centrally located cylindrical hub or extension 6 that projects from the right-hand side thereof and is received in the hub 2 of the platen; the extension and hub being detachably fastened together by a pin 7. In this manner, the supporting member 5 is mounted outside of the left-hand end plate 3 of the carriage, a spacing washer 8 being interposed between said member and the end plate. As best shown in Fig. 4, the support 5 is formed with three radially disposed ways 9 in which pawls or clutch members 10 have a sliding fit to move radially towards and from the axis of the platen. Each pawl is provided with oppositely disposed beveled engaging faces 11 and with a cut-out portion, indicated at 12. When the parts are assembled an endless contractile spring 13 is received in the cut-outs 12 in the pawls and exerts its force to withdraw the pawls to clutch releasing position. A ring-like line spacing wheel 14 is provided at its inner side with an untoothed bearing portion 15 that is loosely seated on the perimeter 16 of the supporting member 5. Inwardly projecting oppositely beveled clutch teeth 17 are formed on the line spacing wheel

and co-act with the engaging ends of the pawls 10 when the latter are projected to engaging position, as shown in Figs. 1 and 2.

In order to retain the pawls 10 in their ways 9 and hold the line spacing wheel on its bearing or perimeter 16, I provide a cover plate 18 which is detachably secured to the support 5 by headed screws 19. This cover plate has a centrally located, hollow, tubular extension 20 secured thereto and projecting outwardly to the left therefrom through an opening in a bracket arm 20ª in which the extension is free to turn. This extension may be secured to the cover plate in any suitable manner, as for instance by riveting the inner reduced end of the extension to the plate, as indicated at 21. From an inspection of Fig. 4 it will be seen that the outer end of this extension has three inwardly extending projections 22 formed thereon. These projections are in the nature of splines that project into and fit longitudinally extending grooves 23 in a spindle 24 received in the extension 20. Said projections 22 cause the spindle 24 and the extension 20 to turn together but permit the spindle to receive an independent axial movement. The grooves 23 are semicylindrical and receive three plungers 25 each having a body portion 26 curved in cross section where it receives a bearing in the associated groove 23. Each plunger also has a reduced portion or stem 27 surrounded by a coiled expansion spring 28. One end of each spring 28 bears against the associated spline projection 22, whereas the opposite end bears against the shoulder 29 of the companion plunger 25. The force of each spring 28 is therefore exerted to move its associated plunger to the right. Each plunger is provided with a cam face 30 which co-acts with the inner beveled end 31 of the associated pawl 10 and under the action of the companion spring 28 tends to move the pawl outwardly to engage it with the clutch teeth 17 on the line spacing wheel.

In addition to the plunger 25 being received and guided for longitudinal movement in the grooves 23 of the spindle 24 they are also received and guided at their inner ends in registering semi-cylindrical grooves 32 in a stud 33. This stud is driven into a central opening in the support 5 and is held firmly therein by a drive fit.

In order to release the clutch I rivet a ring 34 to the inner reduced end of the spindle 24. This ring extends across each of the grooves 23 at the inner end thereof, and extends into slots or cut-outs 35 at the inner sides of the plungers 25. When the spindle 24 is moved to the left the ring 34 co-acting with the outer end wall 36 of the slot or cut-out in each plunger will cause the plungers to be carried along with the spindle against the force of the springs 28 until the outer ends of the reduced portions 27 of the plungers co-act with the spline projections 22, as shown in Fig. 3. This limits the outward movement of the spindle and the parts carried therewith. This act of moving the spindle 24 to the left withdraws the cam faces 30 on the plungers out of contact with the pawls 10 and the spring 13 moves said pawls inwardly towards the axis of the platen and out of engagement with the clutch teeth 17 on the line spacing wheel. At this time the platen may be turned an indefinite extent independently of the line spacing wheel which is held against rotation with the support 5 and the platen by a spring-pressed roller detent 37 (Fig. 2) which co-acts with the teeth of the line spacing wheel.

A suitable finger piece is connected to the outer end of the spindle 24 to manipulate it to release the clutch. In the present instance this finger piece is in the nature of a finger wheel 38 by which the platen can be turned. A hub 39 on this finger wheel is tapped to receive a screw 40 that bears at its inner end against the flat face 41 of a cut-out in the spindle 24, to fixedly though detachably connect the finger wheel to the spindle. A washer 42 of leather or some such suitable material is mounted on the spindle 24 intermediate the hub of the finger wheel and the outer end of the tubular extension 20 to prevent contact between the two.

In the hereinbefore mentioned Josleyn patent it is fully explained how the different clutch pawls may engage the co-operating clutch teeth to different depths and positively connect the platen and line spacing wheel to turn together at any point in the relative rotative adjustment between them.

It will be observed that in the present construction the line spacing wheel 14, its support 5, the clutch mechanism and the means by which it is controlled, as well as the finger wheel 38 by which the platen may be turned, constitute a separate unit located outside of the carriage and to the left of the platen and to the left of the left-hand end plate thereof and are connected to the platen by the pin 7. It will be seen, moreover, that the support 5, the pawls 10, the cover plate 18, the extension 20, the finger wheel 38, the spindle 24 and the plungers 25 are all positively connected to turn with the platen.

By the present construction a release of the platen clutch is effected by pulling the finger wheel 38 to the left against the force of the springs 28 from the Fig. 1 to the Fig. 3 position. The force exerted to release the clutch is therefore applied against the carriage by a pull to the left, or in the direction of its letter feed movement, which is resisted by the carriage escapement mecha-

nism and there is no danger of displacing the carriage in operating the clutch. It is therefore possible to effect a release of the clutch with one hand, since it does not require one hand to hold the carriage while the other hand is shifting the clutch, as is usually the case where the control for the clutch is at the left-hand end of the platen and an endwise thrust is exerted to release it. After the platen has been rotatively adjusted the desired extent independently of the line spacing wheel, the operator releases the finger wheel 38 and the springs 28 automatically close the clutch and positively connect the line spacing wheel and platen to turn together.

If desired any suitable means may be employed to lock the finger wheel 38 and spindle 24 in releasing position shown in Fig. 3. One highly effective means for this purpose, and one which does not detract from the one hand operation of the clutch and lock, is disclosed in the application of Edwin E. Barney, Sr. No. 743,199, filed Oct. 13, 1924.

From the foregoing it will be seen that I have provided a comparatively simple, compact and highly efficient platen clutch mounted entirely outside of the platen and platen frame or carriage, leaving the interior of the platen unobstructed and free for use of other means if desired. The construction is such, moreover, that the line spacing wheel, the platen clutch, and its controlling means may be readily introduced into or removed from the machine as a separate unit without disconnecting or altering the relative arrangement of the parts thereof.

Various changes may be made in the construction without departing from my invention as it is defined in the accompanying claims.

What I claim as new and desire to secure by Letters Patent is:—

1. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism comprising clutch teeth carried by the line spacing wheel, pawls that move into and out of engagement with said teeth, spring-pressed plungers co-acting with said pawls to cam them into engagement with said teeth, a finger piece to the left of the platen, and means controlled thereby for displacing said plungers against the power of their springs by a movement of the finger piece to the left in the direction of the feed of the carriage.

2. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism being located outside of and to the left of the left-hand end plate of the platen frame or carriage and comprising clutch teeth that are carried by the line spacing wheel, pawls that move radially of the axis of the platen into and out of engagement with said clutch teeth, spring-pressed plungers that move longitudinally of the platen and cam said pawls into engagement with the clutch teeth, a finger piece to the left of the platen and mounted for movement longitudinally thereof, and means by which a pull on said finger piece to the left in the direction of the feed of the carriage is effective to move said plungers to the left against the force of their springs and thereby bring about a disengagement of the pawls from said clutch teeth to free the platen for rotative movement independently of the line spacing wheel.

3. In a typewriting or like machine, the combination of a carriage, a platen having a hub at one end thereof that receives a bearing in an end plate of the carriage, a supporting member arranged outside of said end plate and secured to said hub, a line spacing wheel loosely mounted on said support and having clutch teeth thereon, pawls that are mounted in ways in said support to move into and out of engagement with said clutch teeth, spring-pressed plungers mounted to turn with said support but to move independently thereof longitudinally of the platen and co-acting with said pawls to control the movement of the latter into and out of engagement with the clutch teeth, a finger wheel connected to turn with the platen but movable independently thereof axially of the platen, and means whereby said axial movement of the finger wheel is effective to control the movement of said plungers.

4. In a typewriting or like machine, the combination of a carriage, a platen having a hub at one end thereof that receives a bearing in an end plate of the carriage, a supporting member arranged outside of said end plate and, secured to said hub, a line spacing wheel loosely mounted on said support and having clutch teeth thereon, pawls that are mounted in ways in said support to move into and out of engagement with said clutch teeth, a cover plate detachably secured to said support and provided with an outwardly projecting extension fixed thereto, spring-pressed plungers contained within said extension and co-operating with said pawls, a spindle received and adapted to slide axially in said extension but fixed to turn therewith, a finger wheel on said

spindle, and operative connections between said spindle and said plungers to control the axial movement of the latter.

5. In a typewriting or like machine, the combination of a platen, a platen frame or carriage, a line spacing wheel located outside of the platen frame or carriage and having clutch teeth, a support connected to turn with the platen and on which said line spacing wheel is loosely mounted, pawls carried by said support and movable thereon into and out of engagement with said clutch teeth, a cover plate detachably secured to said support and holding the line spacing wheels and pawls in place on the support, a hollow extension fixed on said cover plate, spring-pressed plungers contained within said hollow extension and co-acting with said pawls, a spindle received in said hollow extension and operatively connected to said plungers, said spindle being connected to turn with said extension but free to move axially independently thereof, and a finger wheel on said spindle.

6. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism comprising a hollow extension that is connected to turn with the platen and projects outwardly beyond the line spacing wheel, a spindle received in said extension and having longitudinal grooves therein, inwardly extending projections on the outer end of said hollow extension and which are received in the grooves in said spindle and cause the spindle and extension to turn together but permit the spindle to move axially independently of said extension, spring-pressed plungers received in said grooves in the spindle, a spring of each of said plungers bearing against the associated one of said projections, operative connections between said spindle and plungers, pawls controlled by the plungers, and clutch teeth on the line spacing wheel engaged by said pawls.

7. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism comprising a support for the line spacing wheel on which the wheel is free to turn, a cover plate detachably fixed on said support for retaining the line spacing wheel in place thereon, an outwardly projecting hollow extension fixed to said cover plate and having inwardly directed projections at the outer end thereof, a spindle received in said hollow extension and having longitudinal grooves therein in which said projections on the extension fit to cause the extension and spindle to turn together but permit an independent axial movement of the spindle, clutch controlling means contained within said extension and controlled by the axial movement of said spindle, and a finger wheel on the outer end of said spindle.

8. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism comprising a support for the line spacing wheel on which the wheel is free to turn, a cover plate detachably fixed on said support for retaining the line spacing wheel in place thereon, an outwardly projecting hollow extension fixed to said cover plate and having inwardly directed projections at the outer end thereof, a spindle received in said hollow extension and having longitudinal grooves therein in which said projections on the extension fit to cause the extension and spindle to turn together but permit an independent axial movement of the spindle, spring-pressed plungers contained within said hollow extension and seated in said grooves in the spindle, said plungers having cut-out portions in which a circumferential projection on the inner end of the spindle is received to effect an operative connection between said spindle and plungers, clutch members controlled by said plungers, and a finger wheel on the outer end of said spindle.

9. In a typewriting or like machine, the combination of a carriage, a platen having a hub at one end thereof that receives a bearing in the left-hand end plate of the carriage, a supporting member arranged outside of said end plate and secured to said hub, a line spacing wheel loosely mounted on said supporting member and having clutch teeth thereon, pawls that are mounted in ways in said support to move into and out of engagement with said clutch teeth, spring-pressed plungers mounted to turn with said support but to move independently thereof longitudinally of the platen and co-acting with said pawls to control the movement of the latter into and out of engagement with the clutch teeth, a finger wheel connected to turn with the platen but movable independently thereof axially of the platen, and means whereby an axial movement of the finger wheel to the left is effective to control the movement of said plungers and bring about a release of the pawls from said clutch teeth.

10. In a typewriting or like machine, the combination of a carriage, a platen having a

hub at one end thereof that receives a bearing in the left-hand end plate of the carriage, a supporting member arranged outside of said end plate and secured to said hub, a line spacing wheel loosely mounted on said supporting member and having clutch teeth thereon, pawls that are mounted in ways in said supporting member to move into and out of engagement with said clutch teeth, a cover plate detachably secured to said supporting member and provided with a leftwardly projecting extension fixed thereto, spring-pressed plungers contained within said extension and co-operating with said pawls, a spindle received and adapted to slide axially in said extension but fixed to turn therewith, a finger wheel on the outer left-hand end of said spindle, and operative connections between said spindle and said plungers to control the axial movement of the latter and release the clutch by a pull on the finger wheel to the left in the direction of the feed of the carriage.

11. In a typewriting or like machine, the combination of a platen, a platen frame or carriage, a line spacing wheel located outside of the platen frame or carriage and to the left thereof and having clutch teeth, a support connected to turn with the platen and on which said line spacing wheel is loosely mounted, pawls carried by said support and movable thereon into and out of engagement with said clutch teeth, a cover plate detachably secured to said support and holding the line spacing wheel and pawls in place on the support, a hollow extension fixed on said cover plate and projecting to the left therefrom, spring-pressed plungers contained within said hollow extension and co-acting with said pawls, a spindle received in said hollow extension and operatively connected to said plungers, said spindle being connected to turn with said extension but free to move axially independently thereof, and a finger wheel on said spindle and which by a movement to the left is effective to bring about a release of the clutch.

12. In a typewriting or like machine, the combination of a carriage; a platen carried thereby; a line spacing wheel; and a hand controlled platen clutch mechanism effective to cause the line spacing wheel and platen to turn together or to permit the platen to be turned independently of said wheel, said platen clutch mechanism comprising a hollow extension to the left of the platen connected to turn therewith and that projects outwardly to the left beyond the line spacing wheel, a spindle received in said extension and having longitudinal grooves therein, inwardly extending projections on the outer end of said hollow extension and which are received in the grooves in said spindle and cause the spindle and extension to turn together but permit the spindle to move axially independently of said extension, spring-pressed plungers received in said grooves in the spindle, a spring of each of said plungers bearing against the associated one of said projections, operative connections between said spindle and plungers, pawls controlled by the plungers, and clutch teeth on the line spacing wheel engaged by said pawls, a movement of said spindle to the left bringing about a release of said pawls from said clutch teeth.

Signed at Middletown, in the county of Middlesex and State of Connecticut, this 27th day of March A. D. 1925.

GEORGE GOULD GOING.