E. E. STRONG.

TYPE WRITING MACHINE.

APPLICATION FILED MAY 21, 1912.

1,099,134. Patented June 2, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

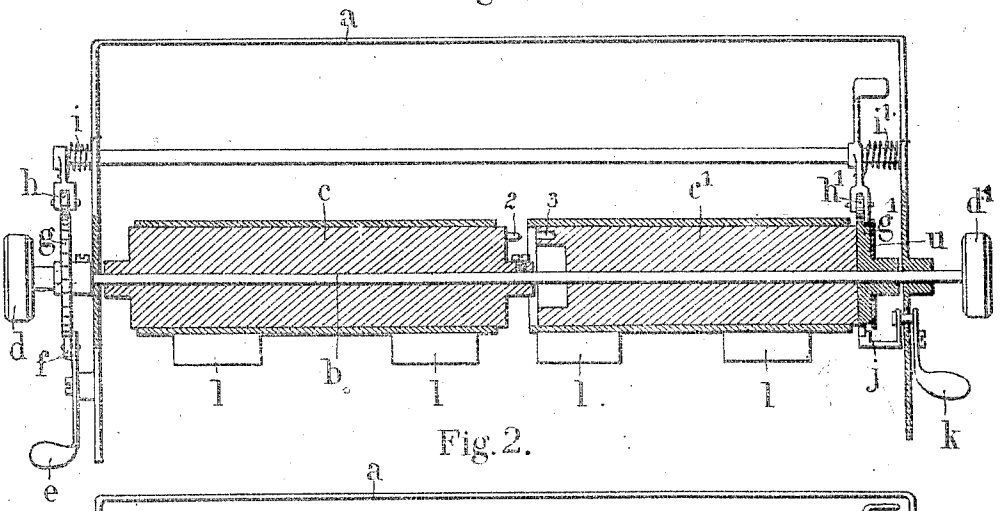


Fig. 2.

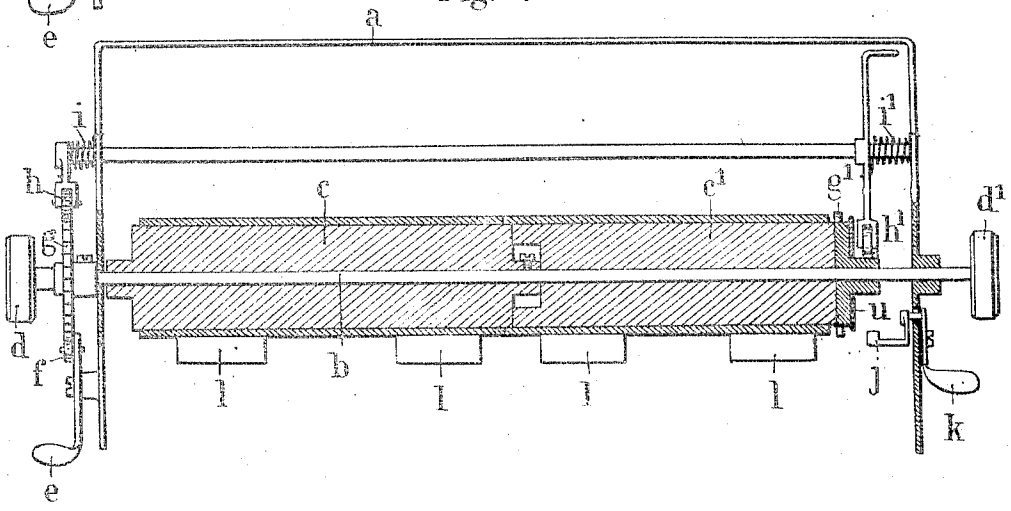
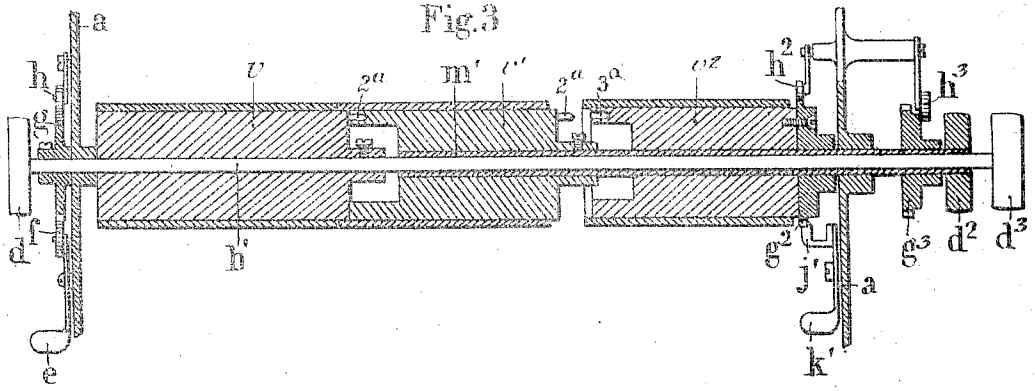


Fig. 3



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2 SHEETS—SHEET 2.

Fig. 4.

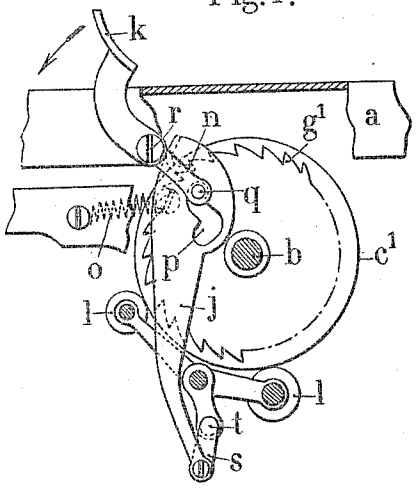
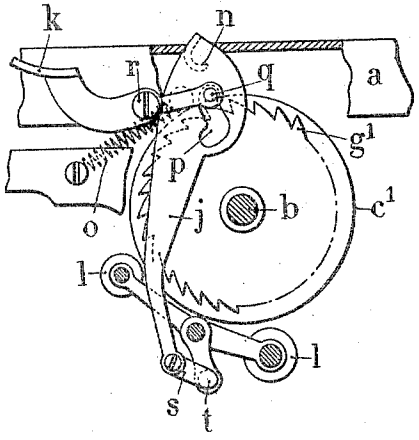


Fig. 5.



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TYPE-WRITING MACHINE.

1,099,134. Specification of Letters Patent. **Patented June 2, 1914.**

Application filed May 21, 1912. Serial No. 698,682.

To all whom it may concern:

Be it known that I, ELISHA EMMANUEL STRONG, a citizen of the United States, residing at 36 Boulevard des Italiens, in the city of Paris, Republic of France, have invented Improvements in Type-Writing Machines, of which the following is a full, clear, and exact description.

The present invention provides an arrangement permitting two or more sheets of paper to be placed side by side on the carriage or platen of a typewriting machine, the sheets being independently movable in such a manner that it is possible to write or type on one or another alternatively, and to insert interlineations. This arrangement is chiefly intended to permit totals or partial results extracted from a series of operations carried out on one sheet to be recorded on a recapitulative or docket sheet. It can, however, be employed in numerous other ways.

The platen is formed of several parts or sections which are placed end to end to form a single cylinder operating as an ordinary one-piece cylinder or platen, the sections being separable to constitute as many platens, each rotatable independently of the others. For this purpose, each section is secured to a separate line-space wheel or ratchet with which a stop device or detent engages to hold the platen section in positions corresponding to successive lines of writing. Moreover, an arrangement such as a milled button or a driving pawl, permits each platen to be actuated individually. When the platen sections are uncoupled and moved separately, the paper is pressed against them by the friction or pressure rollers of the carriage, as in ordinary single cylinder platen machines. Not only can a single sheet or band of paper be put for use on each platen section, but sheets of carbon paper, duplicate sheets and fly sheets can be put thereon as in an ordinary machine with only a single cylinder or platen.

Other objects and advantages will hereinafter appear.

The invention can be carried into practice by various constructional forms.

In the accompanying drawings, Figure 1 is a sectional view of a platen comprising two separately operated parts or sections, and their adjuncts. Fig. 2 is a similar view showing the two parts of the platen coupled together and operating as a single cylindrical platen. Fig. 3 is a view of a modification wherein the platen comprises three sections. Figs. 4 and 5 show a pawl feed device permitting the actuation of the second part of the platen to be effected by a lever employed to raise the friction or pressure rollers from the platen.

In Fig. 1 *a* represents the frame of a typewriting machine carriage, *b* is the spindle or axle of the cylindrical platen *c* which can be actuated in the ordinary manner either directly by hand through milled buttons *d*, *d'*, or indirectly by means of a lever *e* which through the intermediary of any suitable pawl device *f*, acts on a line-space wheel or ratchet *g* keyed on the spindle *b*, and thereby rotates the platen *c* through an angle corresponding to one, two or three teeth of the ratchet. A detent roller *h* pressed by a spring *i* against the ratchet teeth *g* supports it in the ordinary manner, in the position to which it has been moved. The platen *c* only occupies a part of the length of the carriage, and a second platen *c'* of the same diameter is mounted free on the same spindle. This platen *c'* is secured to a line-space ratchet wheel *g'* against the teeth of which a detent roller *h'* is pressed by a spring *i'*. Any suitable construction of pawl feed device *j* operated by a lever *k*, allows the ratchet to be actuated and, in consequence, causes the platen *c'* to turn on the spindle *b*. Friction or pressure rollers *l* mounted resiliently in the usual manner, press the work-sheets against the platen sections *c* and *c'*, and cause the sheets to move with the platen.

Fig. 2 shows the two sections *c* and *c'* brought together end to end so as to form a single cylindrical platen. In this position, the ratchet *g'* is free from the detent roller *h'* and pawl *j*, so that the platen *c'* can rotate with the platen *c*. The friction between the platen *c'* and its spindle *b*,

and also clutch engagement effected by the pins 2 and sockets 3 between the abutting ends of the platens, causes the platens to rotate together. A work-sheet extending over the two platens also frictionally prevents relative rotation of the platens. The arm carrying the roller h' is pressed against the end of the platen c' and holds it in contact with the cylinder c (see Fig. 2). This arm, by abutting against a disk u, when the platens are separated as in Fig. 1, holds the platens apart.

Fig. 3 shows a modification in which the platen is divided into three sections, v, v', and v^2. The first section v is keyed as in the above described construction, directly to the spindle b' and is operated in the same manner. The second section v' is keyed on a sleeve m' which carries near its outer end a line-space ratchet wheel g^3 on which bears a detent roller h^3. A milled button d^2 keyed on the sleve m' allows the platen section v' to be turned by hand. The section v^2 turns freely on the sleeve m' and is provided with a line-space ratchet wheel g^2 on which bears a detent roller h^2. The section v^2 can be actuated by a lever k' and pawl j'. It will be seen that each platen section can be moved individually. When the sections are brought together to the left, the ratchet wheels, g^3, g^2 are disengaged from the rollers h^3, h^2 and the pawl j', so that the sections v', v^2 can freely follow the movements of the section c. When the section v' is moved into abutting engagement with sections v^2, it is operable in unison with said section v^2.

It is to be understood that Figs. 1, 2 and 3 are simplified views intended to permit the principles of the invention to be more clearly understood, and it is obvious that other suitable means can be provided for operating the various platen sections and for holding them in any desired position.

There may also be provided clutch devices or like connecting means for mechanically coupling together the several platens or platen sections to prevent relative rotation when they are required to operate as a single cylindrical platen. These clutch devices may consist of pins 2^a secured to the platen sections v, v', and adapted to enter sockets 3^a in the sections v', v^2.

Fig. 4 shows an arrangement in which the lever k for actuating the pawl j operating the ratchet wheel g' of the second platen section c' also operates to separate the feed or pressure rollers l from the platen. As shown in Fig. 4, the pawl j, the tooth n of which engages the teeth of the ratchet g', is returned rearwardly by a spring o and has a curvilinear slot p in which engages a pin q carried on the end of the lever k, pivotally mounted at r on the frame a of the carriage. The lower end of the pawl j is pivoted to a crank s keyed on a rock shaft t which effects the movement of the feed rollers l in any convenient or known manner, which may vary in different types of typewriting machines. The rock shaft t preferably operates through a well-known form of mechanism, as shown, for example, in the patent to McCormack, 921,619, to release the feed rolls l from the platen. The shaft t can rotate through a certain distance without effecting any movement of the rollers. When the lever k is depressed in the direction indicated by the arrow, it carries with it, by means of the pin q, the pawl j, the tooth n of which causes the ratchet wheel g' to advance by one tooth, and is then disengaged from the ratchet wheel. In this movement, the pawl j slightly raises the crank s and turns the shaft t, but not sufficiently to lift the rollers l from the platen. If at this period the movement of the lever k is stopped and it is permitted to return rearwardly to its initial position, the rollers l will not be moved, but the pawl j returns rearwardly sliding on the teeth of the ratchet wheel g' by reason of the free movement allowed to the pin q in the slot p, and arrives in engagement with another tooth on the ratchet wheel g'. Each time the lever k is only slightly depressed, the ratchet wheel g' will be turned by one tooth space. If now the said lever is pressed right down through its full stroke, the crank s is raised to a greater extent (Fig. 5) and turns the shaft t through an angle sufficient to insure the movement of the rollers l away from the cylinders c and c'. It will therefore be seen that the lever k serves two purposes. In the first part of its travel it serves to rotate the platen c' and during the latter part of its course it effects the separation of the pressure rollers l.

In a general manner, the arrangements hereinabove described are given only by way of example, and the dispositions, forms, detail arrangements and operating means can be varied according to requirements and according to the type of machine to which the invention is applied.

Having thus described my invention, I claim:

1. A typewriting machine carriage comprising a rotary spindle, a platen keyed thereon, means for effecting rotation of the said spindle, means for holding it at rest, a sleeve mounted freely on the said spindle and adapted to slide axially thereon, a second platen keyed on the said sleeve, means for rotating the sleeve, means for holding it at rest, a third platen mounted freely on the sleeve and adapted to slide axially thereon, means for rotating the said third platen, means for holding it at rest, means for holding the three platens separated one from the

other, and means for maintaining them abutting end to end.

2. In a typewriting machine, the combination of a frame, and a platen journaled therein comprising three sections, each rotatable independently of the others, two of said sections being relatively movable in the direction of their axis into and out of abutting position to form a continuous platen surface.

3. In a typewriting machine, the combination of a frame, a platen journaled therein comprising three sections, each rotatable independently of the others, two of said sections being relatively movable in the direction of their axis into and out of abutting position to form a continuous platen surface, and means to lock the sections against relative rotation when in position to rotate as a unit.

4. In a typewriting machine, the combination of a frame, a platen journaled therein comprising two end sections and an intermediate section, all independently rotatable, and separate means for rotating each section independently of the others, said intermediate section being rotatable with either end section, and all said sections also being rotatable together as a unit.

5. In a typewriting machine, the combination of a frame, a platen journaled therein comprising two end sections and an intermediate section, all independently rotatable, and a separate mechanism for rotating each section independently of the others, said intermediate section being rotatable with either end section, and one of said mechanisms being operable also to rotate the three sections as a unit.

6. In a typewriting machine, the combination of a frame, a platen journaled therein comprising three independently rotatable sections, two of said sections being movable in the direction of their axis into and out of abutting position to form a continuous platen surface, and a separate line-space mechanism connected to each section.

7. In a typewriting machine, the combination of a platen frame, a platen axle journaled therein, a platen section fixed to the axle, separate sections rotatable and longitudinally movable on the axle into and out of abutting position to form with said first section a continuous platen surface, line-space mechanisms for separately rotating said longitudinally movable sections when the three sections are separated, said line-space mechanisms being inoperative upon said separate sections when the latter are connected for rotation as a unit.

8. In a typewriting machine, the combination with a frame, of a platen axle journaled therein, a platen section fixed to the axle, a sleeve journaled on said axle, a second platen section fixed to said sleeve, and a third platen section loose on said sleeve, said sections being relatively movable in the direction of their axis.

9. In a typewriting machine, the combination with a frame, of a platen axle journaled therein, a platen section fixed to the axle, a sleeve journaled on said axle, a second platen section fixed to said sleeve, a third platen section loose on said sleeve, a line-space mechanism connected to said axle, a second line-space mechanism connected to said sleeve, and a third line-space mechanism connected directly to said third platen section.

10. In a typewriting machine, the combination with a frame, of a platen axle journaled therein, independently rotatable platen sections on said axle, a line-space wheel connected to one of said sections, a line-space lever, a pawl operated by said lever, feed rollers for the platen, and means operated by said pawl for releasing the feed rollers from the platen.

11. In a typewriting machine, the combination of a platen, a line-space wheel, an operating lever, a pawl operated by said lever and rotating said wheel during the initial movement of the lever, feed rollers, and mechanism connecting said pawl to the rollers for releasing the latter during the portion of the movement of said lever after the pawl is operated.

12. In a typewriting machine, the combination of a frame, a platen journaled therein comprising independently rotatable end sections, and an intermediate section movable into positions to rotate with either end section.

13. In a typewriting machine, the combination of a frame, a platen journaled therein comprising independently rotatable end sections, an intermediate section movable into positions to rotate with either end section, and a separate line-space mechanism for each end section.

14. In a typewriting machine, the combination of a frame, a platen journaled therein comprising independently rotatable end sections, an intermediate section movable into positions to rotate with either end section, and means to rotate the intermediate section independently of the end sections.

15. In a typewriting machine, the combination of a frame, a platen journaled therein comprising independently rotatable end sections, an intermediate section movable into positions to rotate with either end section, and line-space mechanisms for independently rotating each of said sections.

16. In a typewriting machine, the combination with a platen frame, of a platen mounted therein, comprising two end sections and an intermediate section, each ro-

tatable as a platen independently of the other sections, said intermediate section being rotatable with either end section, and all said sections being rotatable together as a unit.

The foregoing specification of my "improvements in typewriting machines" signed by me this tenth day of May, 1912.

ELISHA EMMANUEL STRONG.

Witnesses:

H. C. COXE,

LOUIS S. FAREE.