Aug. 25, 1931. J. PHELPS 1,820,542

TYPEWRITING MACHINE

Filed March 14, 1929 2 Sheets-Sheet 1

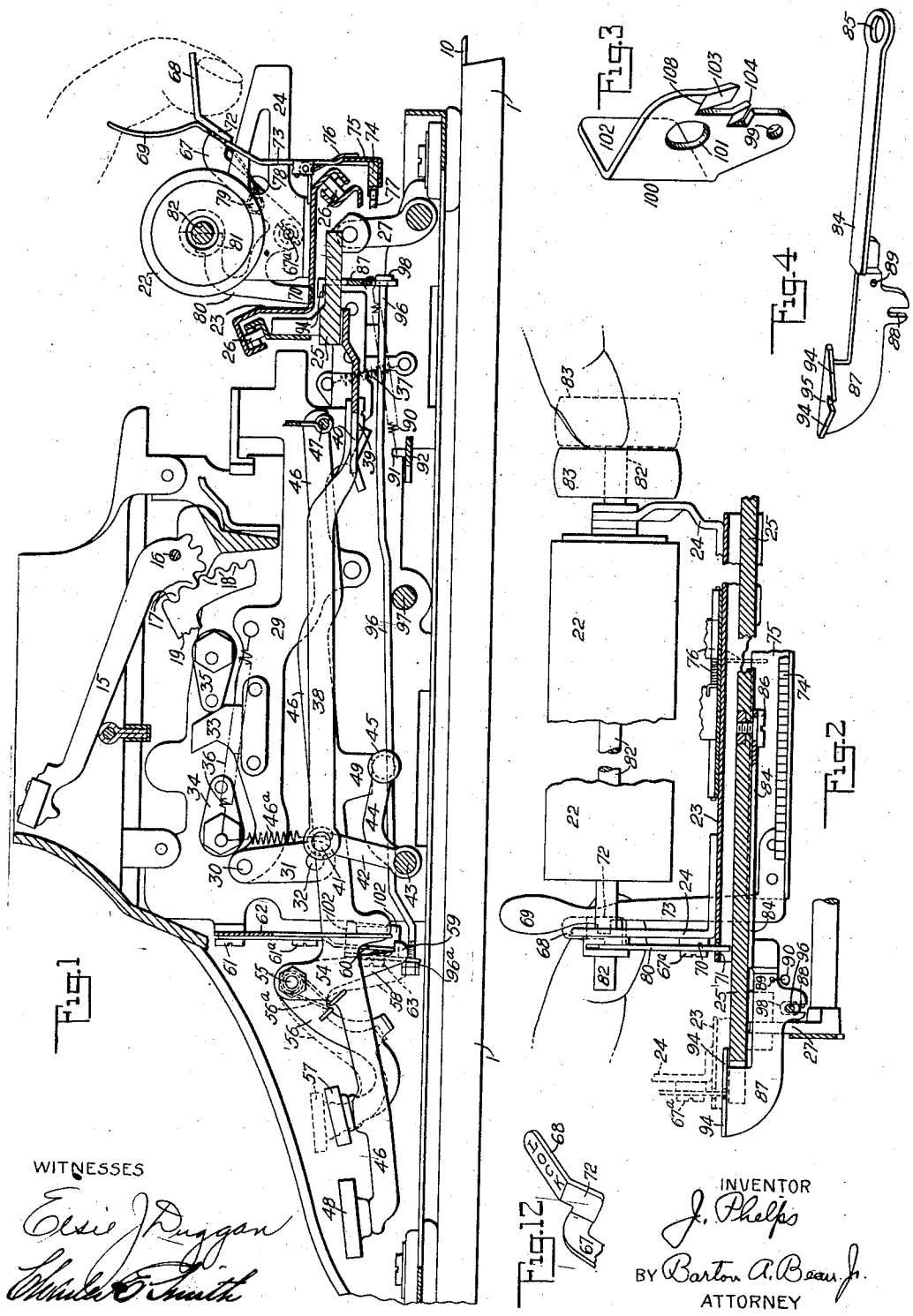


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 12

WITNESSES

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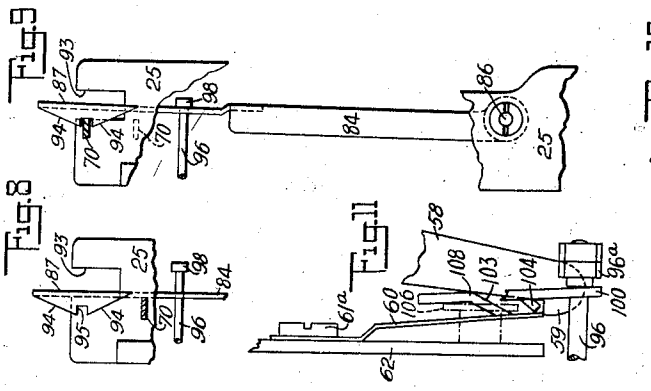
BY Barton A. Beau Jr.

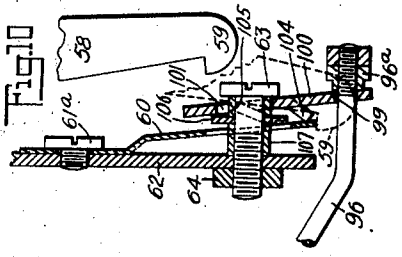
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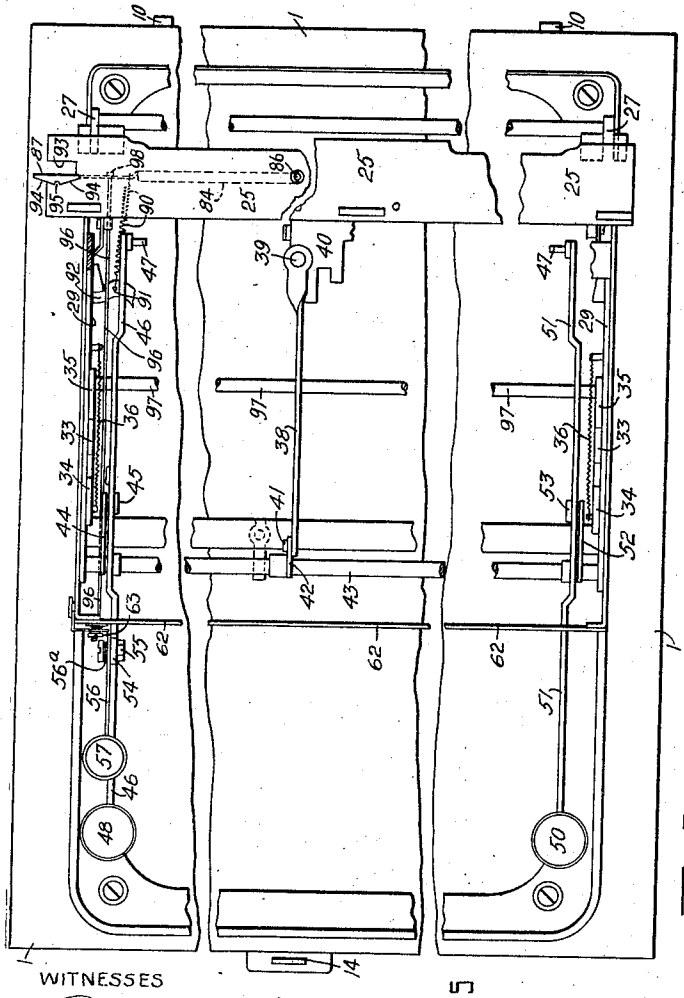
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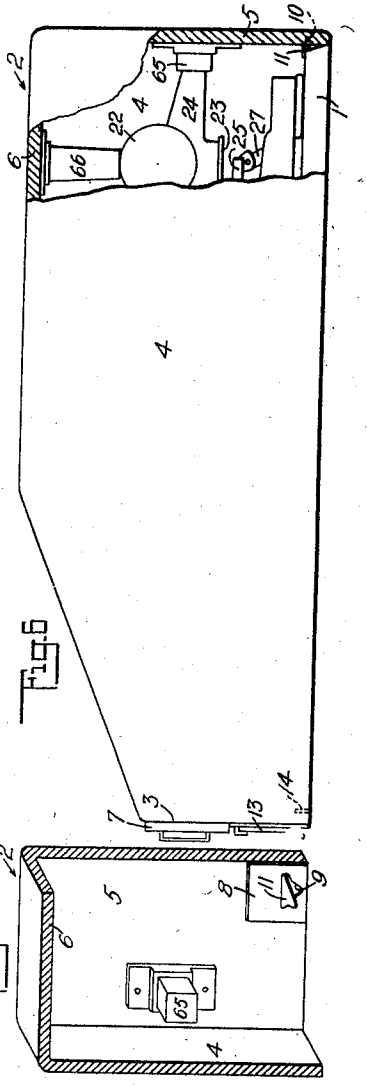
TYPEWRITING MACHINE

Filed March 14, 1929 2 Sheets-Sheet 2









WITNESSES

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UNITED STATES PATENT OFFICE

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TYPEWRITING MACHINE

Application filed March 14, 1929. Serial No. 346,954.

My invention relates to typewriting machines and more particularly to means for automatically releasing case-shift mechanism and permitting the return thereof to normal position.

In portable typewriting machines it is desirable to enclose the machine within a carrying case not materially larger than the machine contained therein, and to have contacts on the cover of the case which coact with parts of the machine to hold them against movement when the machine is enclosed within its case.

It sometimes occurs that an operator will inadvertently leave the machine with the case-shifted part, say the carriage, locked in the case-shifted position, which increases the normal dimensions of the machine. An attempt at this time to close the cover will result in straining the parts and possibly injuring or breaking either the machine, its cover, or both. It is advisable, therefore, in such machines that some means be provided to assure the restoration of the case-shifted part to normal position before enclosing the machine within its carrying case. In the patent to Charles E. Smith, No. 1,469,054, dated September 25, 1923, on which the present invention is an improvement, the case-shift-lock is automatically released from locked position by an actuation of the means by which the type bars are collapsed preparatory to enclosing the machine within its case. Such mechanism however would not be available in the present instance since there is no such collapsing of the type bars.

The main object of my present invention is, therefore, to provide novel means for overcoming the difficulties hereinbefore pointed out and which in their action are not dependent for operation on collapsible type bars of the typewriting machine and are applicable to a machine in which there are no collapsible type bars.

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

In the drawings wherein like reference characters represent corresponding parts in the different views:

Fig. 1 is a fragmentary, fore and aft, central, vertical sectional view of a typewriting machine embodying my invention; the carriage being shown locked in its case-shifted position;

Fig. 2 is a fragmentary, vertical, transverse sectional view of a portion of the same;

Fig. 3 is an enlarged, detail, perspective view of the releasing device for the case-shift-lock to be hereinafter described;

Fig. 4 is a detail, perspective view of one of the members of the center-lock;

Fig. 5 is a fragmentary, plan view of the machine with parts omitted;

Fig. 6 is a side view of the carrying case broken away to disclose the machine contained therein;

Fig. 7 is a detail, perspective view showing a fragmentary portion of the carrying case;

Fig. 8 is a fragmentary, top plan view of one of the members of the center-lock and some of the associated parts; the parts being disposed as they appear when the center-lock is released and the case-shift frame is in its normal position;

Fig. 9 is a like view of the same except that the parts are shown as they are disposed when the case-shift frame has been shifted from normal position and the members of the center-lock are interlocked one with the other.

Fig. 10 is an enlarged, detail, fragmentary, vertical sectional view of the case-shift locking-members and some of the associated parts;

Fig. 11 is a fragmentary, diagrammatic view corresponding to Fig. 10, but showing the parts as they are disposed just prior to the instant when the case-shift-lock is released;

Fig. 12 is a fragmentary, perspective view of the manually controlled center-lock controlling arm.

In the present instance I have shown my invention embodied in the 1929 model Remington portable typewriting machine. While the invention may readily be embodied

in the machine disclosed herein at small expense, it should be understood that the invention is not restricted to the embodiment in such machine, but may be employed in typewriting machines generally, wherever found available.

The carrying case for the machine, in the present instance, comprises a flat typewriting base board 1, which also constitutes the bottom of the carrying case, and a cover designated as a whole by the reference numeral 2. This cover has a front wall 3, side walls 4, a rear wall 5 and a top wall 6, and is provided at its front wall with a handle 7 by which the carrying case and the machine contained therein may be carried.

The cover is detachably hinged to the rear edge of the base board so that the cover may be swung back and detached therefrom, leaving the machine which is secured to the base board ready for use whether the latter is supported on the knees of the operator as a lap board or is supported on a table or other form of support. The means disclosed in the present instance by which the cover may be detachably hinged to the base board are those commonly employed in the Remington portable machine as heretofore marketed, and comprises metal plates 8 (Fig. 7) secured to the rear wall 5 of the cover and which are apertured at 9 to receive the companion lug or finger 10 projecting from the rear edge of the base board. Each plate 8 also has a forwardly projecting finger 11 which, as indicated in Fig. 6, is adapted to overlie the companion projection 10 on the base board and the upper side of the base board itself.

These devices enable the cover to be swung forward and downward around the rear edge of the base board and to be secured thereto at the front end by a suitable catch and lock, members of which are indicated at 13 and 14. When the cover is closed, the machine is then enclosed ready for transportation. When the cover is swung back around its detachable hinge members 10, 11, it may be detached and removed from the base board and the machine, we will assume, is ready for use.

In the present machine, unlike the earlier Remington portable machines, it is unnecessary to move the type bars 15 around their pivots 16 from an inoperative, substantially horizontal position to an upright position in order to condition the machine for use. In the present construction each type bar is normally supported in a slightly inclined position and has a segmental heel with teeth 17 that intermesh with teeth 18 on a sub-lever 19. Each sub-lever has connected to its forward end a depending link which in turn is connected at its lower end to a key lever by which the companion type bar is actuated. It is not deemed necessary to show these key levers and connections to the sub-levers 19.

The case-shift mechanism is like that employed in the earlier Remington portable machine and is substantially the same as that disclosed in the patent to Bridgewater, 1,442,792, dated January 23, 1923, and will now be described.

The platen 22 is carried by a carriage 23 having end plates 24. The carriage is mounted to travel from side to side of the machine over a carriage support or member 25 which constitutes part of the case-shift frame, the carriage bearing on interposed anti-friction rollers 26. Upright links or arms 27 are pivoted to the carriage support 25, to support it for case-shifting movement fore and aft the machine. The member 25 is supported on parallel side arms or members 29 arranged close to the sides of the machine and extending fore and aft thereof. Each side arm 29 is pivoted at its forward end, at 30, to an upright link 31, pivoted at its lower end, as at 32, to a side of the frame of the machine. An upwardly extending stop arm 33 is fixed to each side arm 29 and coacts with adjustable stops 34 and 35 to limit the fore and aft case-shifting movements of the side arms 29 to the parts carried thereby, including the carriage. Springs 36 tend to return the shifted parts to their normal, forward, or lower case position, whereas springs 37 tend to counteract the weight of the carriage.

The means for effecting the rearward case-shifting displacement of the platen to the upper case position include a centrally disposed shift link 38 pivoted at its rear twisted end, at 39, to a bracket plate 40 secured to the carriage support 25. The forward end of the link 38 is pivoted at 41 to an upright crank arm 42 centrally located on a rock shaft 43 mounted at its ends in bearings in the sides of the machine frame. Near the left hand end of the shaft 43 is fixed a rearwardly extending crank arm 44 provided with an anti-friction roller 45 on the free end and at one side thereof. A case-shift key lever 46 pivoted at 47, and provided with a finger key 48, has a depending projection 49, which, on the depression of the key 48, coacts with the roller 45 to rock the arm 44, shaft 43, and crank arm 42. The effect of this is to produce a rearward shift of the link 38 and the carriage support 25, thus shifting the carriage to upper case position. When pressure is released on the shift key 48 it will be returned to normal position by a spring 46^a connected to the lever 46 and the other shifted parts will be returned to normal or lower case position by the springs 36.

Corresponding case-shift devices are mounted at the opposite side of the machine including the case-shift key 50, its key lever 51, crank arm 52 and anti-friction roller 53.

These parts function at the right hand side of the machine the same as the corresponding parts at the left hand side.

The left hand shift key lever 46 has an upwardly projecting extension 54 on which is pivoted, at 55, a case-shift locking-key lever 56, provided with a key 57 and a depending locking arm 58. This arm terminates in a hook-like engaging or locking-member 59 adapted to coact with a cooperative engaging or locking-member or device 60 carried by the frame of the machine. In the present instance the engaging member 60 is in the nature of a fairly stiff flat spring secured at its upper end, at 61, to a guide comb or plate 62 fastened to the machine frame and further secured to said guide comb by a screw 61ª. The stem of a headed screw 63 passes freely through an offset opening in the leaf spring 60 and is threaded into incident tapped openings in the guide comb 62 and in a block or plate 64 secured to the rear side thereof to give the comb plate increased thickness at this point. The headed screw 63 provides means by which the lower end of the spring 60 may be limited in its forward movement and may be held to properly coact with the engaging member 59, as shown in full lines in Fig. 1, to lock the carriage in its shifted position when it is shifted to such position by the depression of the key 57. A spring 56ª tends normally to maintain the case-shift locking lever 56 in, and return it to, the relation it normally has to the case-shift lever 46 by which it is carried. The screw 63 of the present instance is modified and associated with other parts as will hereinafter more clearly appear.

From an inspection of Fig. 6 it will be seen that the rear wall 5 of the carrying case is provided with contacts 65, each of which, when the cover is closed, bears against the rearwardly projecting end of the end plate 24 of the carriage and holds the carriage in its normal position and against case-shifting movement therefrom. There are preferably two of these contacts, one located near each side wall 4 of the cover and they are preferably made of rubber or some such suitable material. There are also provided on the top wall of the cover two contacts 66 that project downward therefrom, and when the cover is closed, bear against the top of the platen.

It will be undertsood that should the operator inadvertently leave the case-shift mechanism locked, as indicated in full lines in Fig. 1, this would result in the carriage being fixedly held in the upper case position further rearward than is shown in Fig. 6. It follows that an attempt to force the cover to its closed position at this time would be apt to result in injury to either the machine, its cover, or both. It is one of the main objects of the present invention to overcome this difficulty, as will presently appear.

The case-shift mechanism and the carrying case as thus far described are virtually the same as those employed in the earlier Remington portable machine.

In accordance with my present invention I have combined with the above described case-shift mechanism very simple means for automatically releasing it before the machine can be enclosed in its carrying case, if the operator should inadvertently leave the case-shift locked, thereby preventing injury to the machine, or its cover, or both. Such means will now be described.

In the Remington portable machines heretofore made a center-lock for the carriage was employed. In accordance with my present invention I have modified this center-lock mechanism and have combined therewith means by which the operation of the center-lock to lock the carriage is effective to automatically release the case-shift mechanism in the event that the operator should, by inadvertence, leave the case-shift locked in its shifted position. Inasmuch as the shifting of the finger wheel of the platen to collapsed condition, and the locking of the carriage in centered position are necessary pre-requisites to conditioning the machine for enclosure within its carrying case, it necessarily follows that the locked case-shift, controlled as it is by the center-lock, must be automatically released before any attempt will be made to enclose the machine within its carrying case.

In accordance with my present invention I have constructed the center-lock as follows:

A manually controlled locking-member or lever 67 is provided with a finger piece 68 that extends rearward beyond the ordinary carriage release key 69 at the left hand end of the carriage. The finger piece 68 preferably bears the word "Lock" (see Fig. 12) on the front face thereof, which acts as an indicator or designation for the operator and avoids confusion. The lever 67 is pivoted at 67ª on the left hand end plate 24 of the carriage and is provided with a depending arm 70 that constitutes one of the two members capable of inter-locking with each other. This arm 70 is adapted to be projected down through an opening 71 in the carriage 23, as shown in Fig. 2, when the key 68 is pressed forward. The portion 72 of the lever 67 is offset from the body portion thereof and underlies an arm 73 connected to a feed rack 74 and which carries a carriage release key 69, hereinbefore referred to. The feed rack is carried by a pivoted support 75 pressed forward by spring 76 and normally engaging one of the usual feed dogs 77. A spring 78 is wound around a pin 79 on the left hand end plate 24 and

is anchored to said plate at one end, whereas the opposite free end of the spring bears against the part 72 of the locking lever 67 and tends to restore it to and hold it in normal, ineffective position, shown in Fig. 1.

The locking lever 67 also is provided with an arm 80 that terminates in an obstructing end 81 which normally stands in the path of and contiguous to the left hand end of the platen spindle splined to the platen 22 and carrying at its right hand end the finger wheel 83. The obstructing end 81 thus normally prevents the shift of the finger wheel 83 from the dotted to the full line position in Fig. 2, and it is necessary to thus shift the finger wheel before the cover of the carrying case can be closed, even if the carriage be centered in its line of travel. When, however, the finger piece 68 is shifted forward from the Fig. 1 position, this results in removing the obstructing end of the lever 67 from the path of the platen spindle. The finger wheel 83 may then be shifted to the full line Fig. 2 position, projecting the left hand end portion of said spindle into the path of the return movement of the lever arm 80; its obstructing end thus preventing the return movement of the lever 67 to normal, ineffective position. The manual actuation of the lever 67 just described, resulted in disengaging the feed rack 74 from the normally engaged feed dog 77 and in projecting the end 70 of said lever down through the opening 71 in the carriage to effective position, and the parts will remain located in this condition with the carriage freed from control of its escapement mechanism.

A second carriage center-locking member, designated as a whole by the reference numeral 84 is shown in detail and detached in Fig. 4. This member is in the nature of a sheet metal arm or lever that extends longitudinally of the carriage support 25 and is apertured at 85 to receive a shoulder pivot screw 86 by which the member is supported for pivotal movement fore and aft of the machine on the underside of the carriage support 25. The left hand portion of the member 84 is bent at right angles to the body portion thereof to present a vertically disposed part 87 that is provided with a slot 88 and with an opening 89 in which latter one end of a contractile spring 90 is secured. The forward end of this spring is anchored on a pin 91 carried by a fixed bracket 92. The vertically disposed part 87 extends up through an opening 93 in the left hand end of the carriage support 25, as shown in Figs. 2 and 8. Projecting forward from the upper edge of the part 87, and overlapping the upper face of the carriage support 25, is a flange formed with oppositely inclined cam edges 94 having an intervening locking notch or recess 95 at the high part of each cam.

From an inspection of Figs. 2, 8 and 9 it will be understood that when the depending arm 70 is locked in its lowered, effective position as described above, the carriage will travel from right to left under the power of its spring drum (not shown) since at this time the carriage is freed from control of its escapement mechanism. In this travel of the carriage, member 70 will coact with the right hand cam 94, shifting or camming the member 84 rearward around its pivot 86 and against the force of the spring 90 until the part 70 reaches the notch 95 when the reaction of the spring will snap the member 84 forward causing the notched portion thereof to interlock with the member 70, thereby locking the carriage centered in its line of travel and preventing further movement thereof either to the left or to the right. If the member 70 is to the left of the cams 94 before the carriage is center-locked, the action will be the same brought about by a shifting of the carriage to the right.

It is the movement of the carriage center-locking member 84 brought about in the manner just described that I utilize to automatically effect the release of the case-shift lock if the latter happens, inadvertently, to be left in locked condition. Such release of the case-shift-lock is effected by the following means.

A rod or link 96 extends fore and aft of the machine and is supported intermediate its ends for fore and aft sliding movement on a fixed tie rod 97 which connects the side plates of the frame. The rear end portion of this link extends freely through a slot 88 in the locking member 84, the link being provided at its rear end with a head 98 adapted to bear against the rear face of the part 87 of said locking member. The forward end portion of the link 96 is threaded and extends freely through an enlarged opening 99 in a case-shift releasing or trip device, designated as a whole by the reference numeral 100 and shown in detail and detached in Fig. 3. The threaded end of the link 96 which extends forward of the releasing device 100 carries a nut or abutment 96a adjustable along the link and held in its adjusted position by a lock nut. The nut 96a coacts with the forward face of the device 100 to actuate it.

This device 100 is preferably made of sheet metal with an enlarged opening 101 therein through which the stem of the screw 63 extends, though the head of the screw overlaps the front face of said releasing device and prevents its displacement from the screw. A rearwardly extending flange 102 on the releasing device extends back beyond the left hand edge of the cam plate 62, as shown in Figs. 1 and 5, and coacts therewith to assure the requisite pivotal movement of the releasing device and preventing undue wob-

bling thereof. The releasing device 100 also is provided with an inclined face 103 down which the locking nose 59 of the locking-member 56 is adapted to ride in its movement into locking engagement with the lower end of the spring 60. A rearwardly extending inclined finger 104 also is formed on the case-shift releasing device 100 to bear on the lower end portion of the spring 60 to one side of the point where the engaging nose 59 of the case-shift locking-lever engages the lower edge of the spring.

The releasing device 100 receives a bearing on a sleeve 105 (Fig. 10) which surrounds the screw 63 and bears against a washer 106 on the screw, said washer being held against a second sleeve 107 that surrounds the screw and bears against the front face of the comb plate 62. The washer 106 is thus held firmly between the sleeves 105 and 107, and with the head of the screw 63 provides means between which the releasing device 100 is confined for limited tilting movement. From an inspection of Fig. 11 it will be seen that the line 108 where the inclined face 103 joins the body portion of the releasing device 100 is adapted to coact with the arm 58 of case-shift locking-lever. At the same time the finger 104 coacts with the lower end of the spring 60. The effect, therefore, of rocking the releasing device 100 by a rearward pull on the link 96, is to tend to wedge the arm 58 forward and to wedge the lower end of the spring 60 rearward, effecting a release of the hook-like locking nose 59 from the spring 60. Fig. 11 shows the parts as they appear just before the pull on the link 96 has completed its movement, and a disengagement between the locking arm 58 and the spring 60 has been effected.

The release of the locking arm 58 in the manner described can, however, take place only under two conditions which will now be pointed out.

From an inspection of Fig. 8, which represents the parts when the carriage support 25 is in the normal or lower case position, it will be seen that there is a lost motion between the abutment 98 and the carriage center-lock member 84, and that the extent of this lost motion is such that a rearward displacement of the member 84 around its pivot 86 will be ineffective on the link 96, or in any event will be ineffective on the releasing device 100. It follows, therefore, that if the case-shift-lock is released when the center-lock is actuated, the link 96 will not be actuated to operate its companion releasing device 100. However, when the carriage support 25 is shifted to and locked in upper case position, as represented in Fig. 9, the effect of such shifting is to take up the lost motion between the device 84 and the abutment 98, so that the swinging of the member 84 at this time around its pivot 86 is effective to actuate the link 96 and the releasing device 100 controlled thereby.

The provision of the adjustable abutment 96*a* on the link 96 is effective to increase or decrease the amount of lost motion referred to above. and thereby time the parts for accurate operation.

It will be understood that as long as the center-lock is effective, any attempt to lock the carriage in case-shifted position will be defeated because the act of thus shifting the carriage will shift the releasing device 100 to releasing position and prevent an engagement of the nose 59 with the lower end of the spring 60.

In the ordinary operation of the machine pressure exerted on the case-shift key 48 is effective to release the locked case-shift lever 56 from engagement with the spring 60, the spring 56[a] at this time exerting its force to restore the case-shift locking-lever to normal position relatively to the case-shift lever 46.

Of course it will be understood that after removing the cover it is merely necessary to withdraw the finger wheel 83 from the full line to the dotted line position, shown in Fig. 2, in order to condition the machine for use. The result of this movement of the finger wheel is to release the locked lever 67, permitting it to return to normal position under the action of its spring 78, thereby enabling the feed rack to re-engage the feed dog 77 and withdrawing locking member 70 from interlocking engagement with the companion center-locking member 84. The center lock being thus released and the feed rack engaging its feed dog 77, the machine is in condition for use.

From what has been pointed out it will be understood that the member 84 constitutes an actuating member for the releasing member 100; that in the normal condition of the parts, or when the carriage is in the lower case position. the actuating member 84 is ineffective on the releasing member 100 due to the lost motion connection (including the pull wire 96) between the members 84 and 100, and that the former will be rendered effective to actuate the latter when, and only when, the carriage receives a case shifting movement to upper case position, such movement resulting in taking up said lost motion connection.

I am aware that various changes may be made in the construction without departing from my invention as it is defined in the accompanying claims. From one aspect of my invention it contemplates broadly the provision of means controlled by a center-lock for automatically releasing the case-shift-lock.

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

1. The combination of a carriage, a center-lock for locking the carriage centered in its

line of travel, a case-shift-lock, and releasing means controlled by said center-lock for automatically releasing said case-shift-lock.

2. The combination of a carriage, a center-lock for locking the carriage centered in its line of travel, a case-shift-lock, and releasing means controlled by said center-lock for automatically releasing said case-shift-lock and for preventing a relocking thereof as long as the center-lock remains effective.

3. The combination of a carriage, case-shifting means therefor including a case-shift-lock for locking the carriage in case-shifted position, a center-lock for locking the carriage centered in its line of travel, releasing means controlled by said center-lock for automatically releasing said case-shift-lock, and means by which a case-shifting of the carriage renders said releasing means effective to be controlled by said center-lock.

4. The combination of a carriage, a center-lock for locking the carriage centered in its line of travel, said center-lock comprising a pivoted arm, a case-shift-lock, and releasing means for automatically releasing said case-shift-lock when the center-lock is rendered effective, said releasing means including a link operatively connected to said pivoted arm of the center-lock, and a case-shift-lock releasing-member actuated by said link.

5. The combination of a carriage, case-shifting means therefor including a key-controlled case-shift locking-member and an engaging device with which it coacts to lock the carriage in case-shifted position, a center-lock for locking the carriage centered in its line of travel, said center-lock comprising an arm mounted to swing fore and aft of the machine and receiving such movement when the center-lock is being rendered effective, and means controlled by the movement of said arm for disengaging said case-shift locking-member from engagement with its coacting engaging device.

6. The combination of a carriage, case-shifting means therefor including a key-controlled case-shift locking-member and an engaging device with which it coacts to lock the carriage in case-shifted position, a center-lock for locking the carriage centered in its line of travel, said center-lock comprising an arm mounted to swing fore and aft of the machine and receiving such movement when the center-lock is being rendered effective, a link that extends fore and aft of the machine and which is actuated by said arm, and a tripping device controlled by said link and which coacts with said case-shift locking-member and engaging device to effect a disengagement between them.

7. The combination of a carriage, case-shifting means therefor including a key-controlled case-shift locking-member and an engaging device with which it coacts to lock the carriage in case-shifted position, a center-lock for locking the carriage centered in its line of travel, said center-lock comprising an arm mounted to swing fore and aft of the machine and receiving such movement when the center-lock is being rendered effective, a link that extends fore and aft of the machine and which is actuated by said arm, and a tripping device controlled by said link and which coacts with said case-shift locking-member and engaging device to effect a disengagement between them and prevents a reengagement of the case-shift locking-member with said engaging device as long as the center-lock remains effective.

8. The combination of a case-shift frame, a carriage carried thereby, a key-controlled case-shift locking-member, an engaging device with which it coacts to lock the case-shift frame in shifted position, a center-lock for locking the carriage centered in its line of travel comprising an arm mounted on said case-shift frame to swing, a link actuated by the swinging movement of said arm, and a pivoted releasing member that effects a disengagement between said case-shift locking-member and engaging device and which is actuated by said link.

9. The combination of a case-shift frame, a carriage carried thereby, a key-controlled case-shift locking-member, an engaging device with which it coacts to lock the case-shift frame in shifted position, a center-lock for locking the carriage centered in its line of travel comprising an arm mounted on said case-shift frame to swing, a link actuated by the swinging movement of said arm, means controlled by said link for releasing said case-shift locking-member from said engaging device, and a lost motion connection between said link and arm which is taken up when the case-shift frame is shifted from normal position.

10. The combination of a case-shift frame; a carriage carried thereby; a key-controlled case-shift locking-member; an engaging device with which it coacts to lock the case-shift frame in shifted position; a center-lock for locking the carriage centered in its line of travel comprising a spring pressed locking arm mounted on said case-shift frame to receive a swinging movement thereon, a cooperative locking-member, interlocking means on said arm and cooperative locking-member including a cam with a locking notch therein, and a key for bringing said cooperative locking-member and arm into cooperative relation so that they will coact during the travel of the carriage to lock the latter in centered position and the arm will receive a swinging movement by the action of the cam; and means controlled by the swinging movement of said arm for effecting a release of the case-shift locking-member from said engaging device.

11. The combination of a carriage; a cen-

ter-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift-lock; and releasing means controlled by the said camming movement of one of said locking members for releasing the case-shift-lock.

12. The combination of a carriage; a center-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift-lock; and releasing means controlled by the said camming movement of one of said locking-members for releasing the case-shift-lock, said releasing means comprising a pivoted releasing device coacting with the case-shift-lock for releasing the latter and preventing a reengagement thereof as long as said releasing device is in the actuated position.

13. The combination of a carriage; a center-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift-lock; and releasing means controlled by the said camming movement of one of said locking members for releasing the case-shift-lock, said releasing means comprising a link having a lost motion connection with the cammed locking-member, the lost motion being taken up by a case-shifting movement of the carriage from normal position.

14. The combination of a carriage; a center-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift-lock; and releasing means controlled by the said camming movement of one of said locking-members for releasing the case-shift-lock, said releasing means comprising a link having a lost motion connection with the cammed locking member, the lost motion being taken up by a case-shifting movement of the carriage from normal position, and adjustable means for varying the extent of lost motion of the lost motion connection.

15. The combination of a carriage; a center-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift lock; and releasing means controlled by the said camming movement of one of said locking-members for releasing the case-shift-lock, said releasing means comprising a link which extends freely through an opening in the cammed locking-member, and a contact on said link coacting with the cammed locking-member to bring about an actuation of the link.

16. The combination of a carriage; a case-shift frame on which the carriage is supported; key actuated locking means for locking the carriage in its case shifted position; a center-lock for locking the carriage centered in its line of travel, said center-lock comprising a key controlled locking element on the carriage, and a spring pressed lever mounted on the case-shift frame to move fore and aft of the machine and carrying a cam with a locking notch therein at the high point of the cam, the key controlled element in its path of movement with the carriage being normally ineffective on said cam but rendered effective thereon during the travel of the carriage when such element is projected to effective position by its key; and means controlled by said spring pressed lever for releasing the case-shift-locking means.

17. The combination of a carriage; a case-shift frame on which the carriage is supported; key actuated locking means for locking the carriage in its case-shifted position; a center-lock for locking the carriage centered in its line of travel, said center-lock comprising a key controlled locking element on the carriage, and a spring pressed lever mounted on the case-shift frame to move fore and aft of the machine and carrying a cam with a locking notch therein at the high point of the cam, the key controlled element in its path of movement with the carriage being normally ineffective on said cam but rendered effective thereon during

the travel of the carriage when such element is projected to effective position by its key; a link passing freely through an opening in said spring pressed lever and having a contact thereon which coacts with the lever; a releasing device for releasing said key actuated case-shift-locking means and a connection between said link and releasing device.

18. The combination of a carriage; a center-lock for locking the carriage centered in its line of travel comprising two locking-members adapted to interlock one with the other but normally out of cooperative relation, manually actuated means operable at will for bringing said members into cooperative relation, a cam for camming one of said members by the other during the travel of the carriage to centered position and preliminary to the interlocking of said members; a case-shift-lock; releasing means controlled by the said camming movement of one of said locking-members for releasing the case-shift-lock; a finger wheel for the platen mounted for movement into and out of compact position; and means controlled by said finger wheel for locking one of said locking-members out of cooperative relation with its coacting locking-member.

19. The combination of a carriage, case-shift mechanism therefor including a case-shift-lock, and automatically operating releasing means for releasing said case-shift-lock including an actuating member, a normally ineffective releasing member for the case-shift-lock, and means controlled by a case shifting movement of the carriage from normal position for rendering said actuating member effective on said releasing member.

20. The combination of a carriage, case-shift mechanism therefor including a case-shift-lock, and automatically operating releasing means for releasing said case-shift-lock including an actuating member, a normally ineffective releasing member for said case-shift-lock, a lost motion connection between said actuating and releasing members, and means controlled by a case shifting movement of the carriage from normal position for taking up said lost motion connection and thereby rendering the actuating member effective to operate the releasing member.

Signed at Stamford, in the county of Fairfield and State of Connecticut, this 12th day of March, A. D. 1929.

JOSEPH PHELPS.