Dec. 18, 1934. F. A. HART 1,984,410

TYPEWRITING MACHINE

Filed Dec. 14, 1931 3 Sheets-Sheet 1

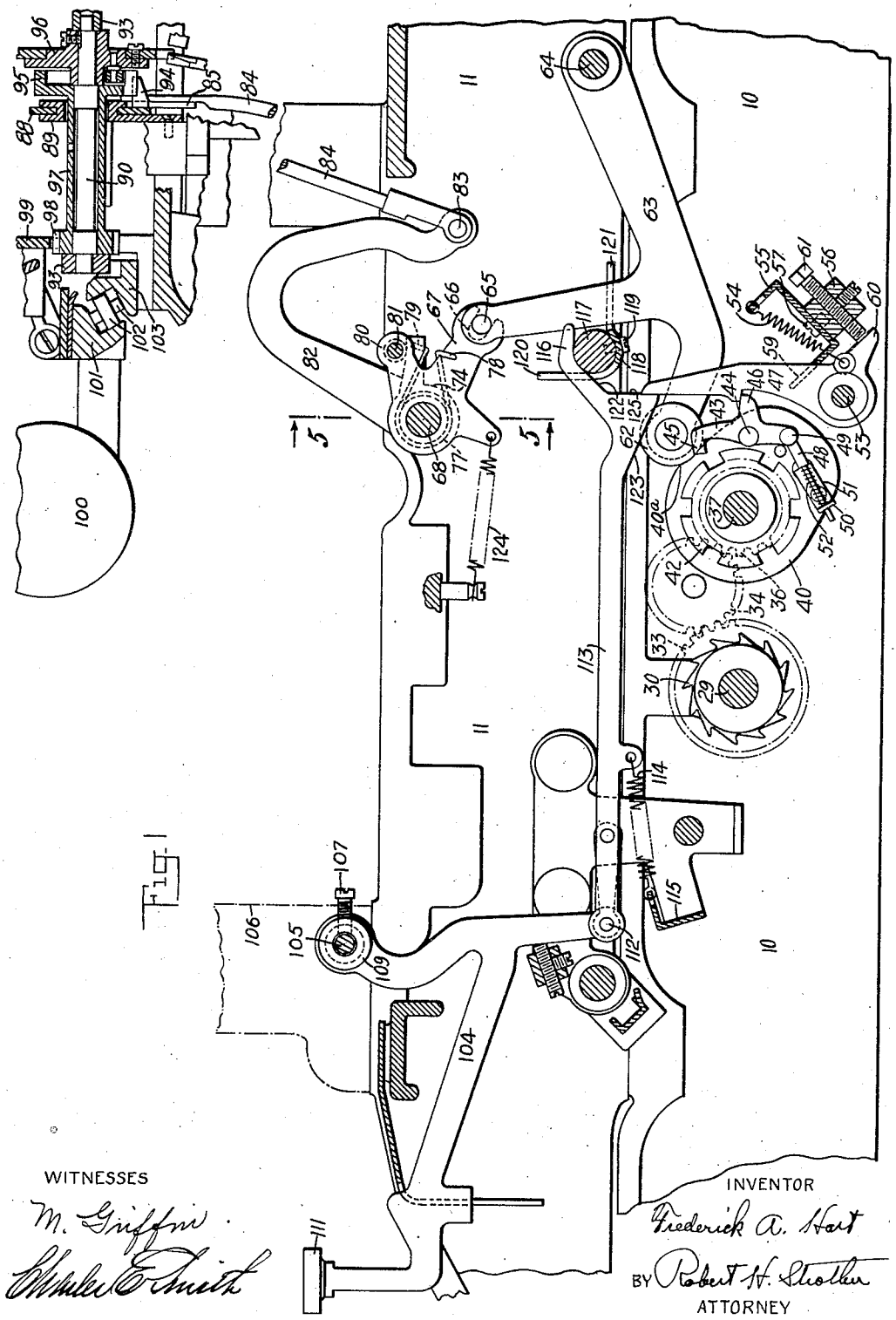

Fig. 1

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TYPEWRITING MACHINE

Filed Dec. 14, 1931 3 Sheets-Sheet 2

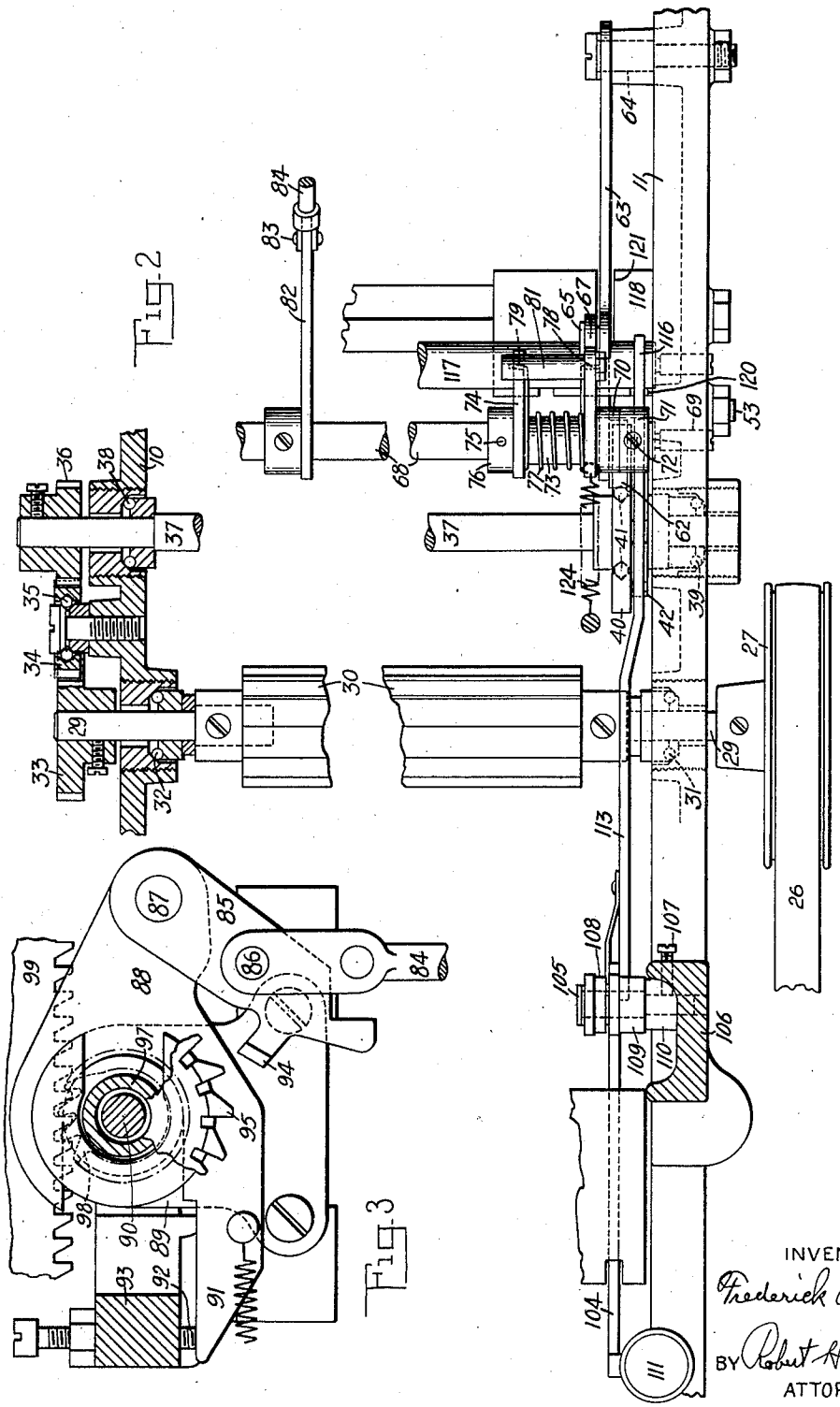

Fig. 2

Fig. 3

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TYPEWRITING MACHINE

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Fig. 6

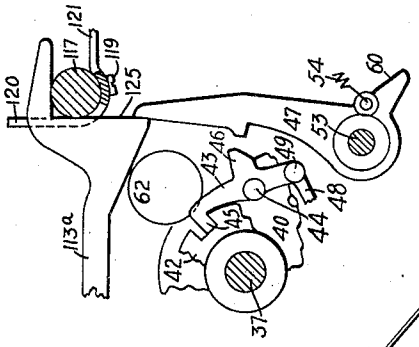


Fig. 4

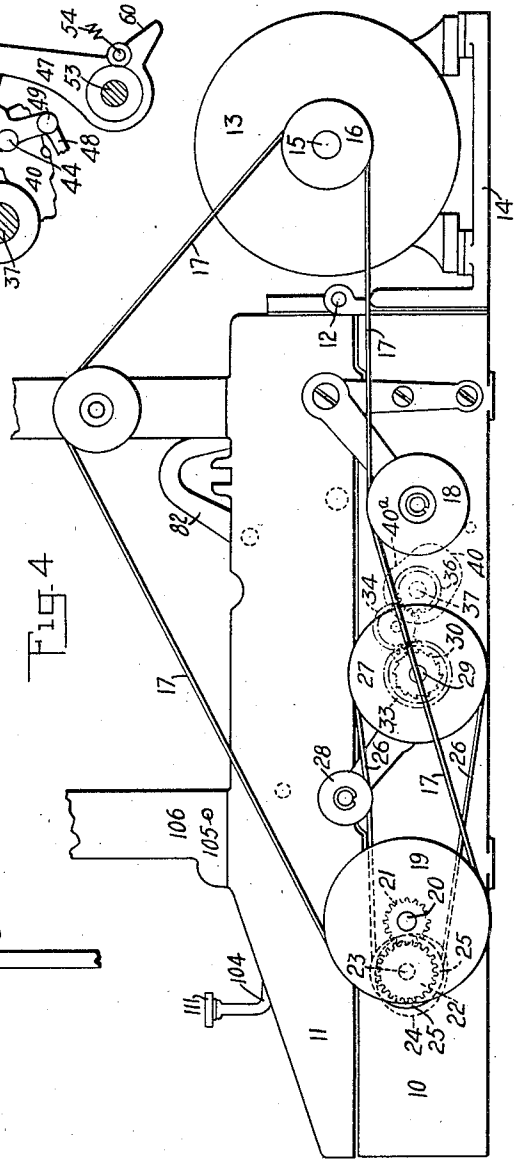
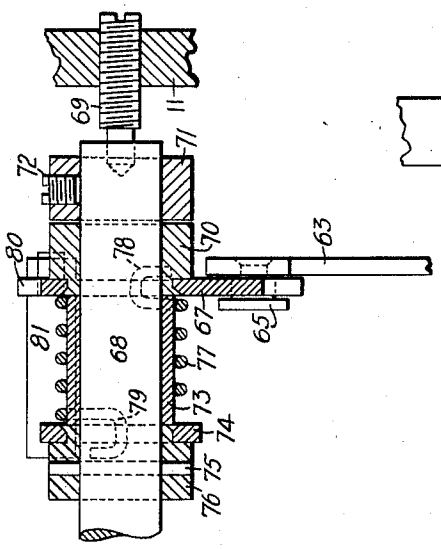


Fig. 5



WITNESSES

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UNITED STATES PATENT OFFICE

1,984,410

TYPEWRITING MACHINE

Frederick A. Hart, Stamford, Conn., assignor to Remington Typewriter Company, Ilion, N. Y., a corporation of New York

Application December 14, 1931, Serial No. 580,838

20 Claims. (Cl. 197—91)

My invention relates to typewriting and like machines and more particularly to back spacing mechanism therefor.

The main object of my invention, generally stated, is to provide simple and highly effective power actuated back spacing mechanism.

A further object of the invention is to provide mechanism of the character specified which may be readily embodied in existing power actuated typewriting machines or combined typewriting and computing machines without materially modifying the existing structural features of such machines.

A still further object of the invention is to provide back spacing mechanism of the character referred to in which cooperative parts thereof are carried by two relatively movable sections of the frame of the machine and in which such parts are brought into cooperative relation ready to function when the two frame sections are brought together.

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 indicate corresponding parts in the different views—

Fig. 1 is a fragmentary, vertical, fore and aft sectional view of a part of a typewriting machine equipped with the back spacing mechanism of my present invention.

Fig. 2 is a detail, fragmentary, top plan view with parts in section of portions of the mechanism illustrated in Fig. 1.

Fig. 3 is an enlarged, detail, fragmentary, rear elevation with parts in section of a portion of the back spacing mechanism.

Fig. 4 is a side view on a reduced scale of the lower portion of the machine as seen from the right-hand side thereof.

Fig. 5 is an enlarged, detail, fragmentary, sectional view of some of the parts of the back spacing mechanism, the section being taken on the line 5—5 of Fig. 1 and looking in the direction of the arrows at said line.

Fig. 6 is a detail, fragmentary, side view with parts in section of a modified form of construction embodying my invention.

I have shown my invention embodied in the present instance in a "Remington electrified bookkeeping machine" such as is disclosed in my application Ser. No. 510,941, filed Jan. 24, 1931, and in which the devices of my present invention may be readily incorporated without materially modifying the existing structural features of said machine. It should be understood, however, that the invention is not restricted to use in this machine, but may be employed in typewriting and like machines generally wherever found available.

I have shown only so much of a "Remington electrified bookkeeping machine" as is necessary to illustrate my invention in its embodiment therein. No reference is made to the computing mechanism of said machine since this is unnecessary for a consideration of the present invention.

As shown in Fig. 1, the frame of the machine in question is made of two sections, a lower or base section 10 and an upper section 11. These sections are hinged together at 12 so that the upper section 11 may be swung back to give access to the parts contained within the frame. In the present instance I construct the power actuated back spacing mechanism so that cooperative parts thereof carried by the two frame sections are brought into cooperative relation ready to function when the two frame sections are brought together as shown in Fig. 2, and as will hereinafter more clearly appear.

Power is transmitted to the back spacing mechanism from a continuously running electric motor 13 supported on a supporting member or bracket 14 secured to the base section 10 of the machine. Thus, as shown in the present instance a motor shaft 15 has a driving pulley 16 secured thereto, and a driving belt 17 extends from the pulley 16 over the pulley 18 of a belt tightener to a pulley 19 fixed on a stub shaft 20. This stub shaft carries a pinion 21 which meshes with a gear 22 fixed on a shaft 23 on which are loosely mounted cams 24 by which the computing mechanism and numeral printing type bars (not shown) are actuated, as disclosed in my hereinbefore mentioned application. The shaft 23 likewise carries a pulley 25 which cooperates with a belt 26 that is received on a pulley 27. A belt tightener 28 coacts with this belt and the shaft 29 on which the pulley 27 is mounted constitutes the shaft on which a snatch roll 30 is mounted. Said snatch roll is employed to actuate the alphabet printing type bars, not shown. The shaft 29 of the snatch roll is preferably mounted on ball bearings, as indicated at 31 and 32 in Fig. 2, and projects beyond the base section 10 at the left-hand side of the machine. A pinion 33 is fixed to the left-hand end of this shaft 29

and cooperates with an idler 34 preferably mounted on ball bearings as indicated at 35, and this idler in turn meshes with a gear 36 fixed on a shaft 37 that extends across the machine and is preferably supported by ball bearings 38 and 39. A cam 40 turns on a fixed center, namely that of the shaft 37 on which shaft the cam is mounted near the right-hand end thereof. The cam 40 is preferably mounted on ball bearings 41 by which it is loosely supported on the shaft.

I have provided key controlled coupling means by which the cam or power driven member 40 may, at will, be connected to turn with the shaft 37 and which will now be described.

Adjacent to the cam 40 is a locking wheel 42 fixed on the shaft 37 and notched at regular intervals as indicated in Fig. 1 for cooperation with a locking pawl, coupling member or latch 43 pivoted at 44 on one side of the cam 40. The engaging nose 45 of the coupling member or pawl 43 is adapted to enter one or another of the interdental spaces or notches in the locking wheel 42 to lock the cam to rotate with the power driven shaft 37. The locking pawl 43 is provided with a laterally extending projection 46 adapted to be engaged by a contact on a trip or controlling member 47, as shown in Fig. 1. A rod 48 is pivotally connected at 49 to the locking pawl and is guided at one end in an opening in a laterally projecting lug 50 of a bracket 51 secured on one side of the cam 40. An expansion spring 52 surrounds the rod 48 and bears at one end against the lug 50 and at the other end against a shoulder on the rod 48 so as to exert a spring force on the locking pawl which tends to move the nose 45 thereof into engagement with the locking wheel or into one of the notches thereof.

In the normal position of the parts shown in Fig. 1 the trip 47 engages the locking pawl and retains it in the disengaged position against the effective force of the spring 52 so that the continuously running, power actuated, shaft 37 is free to turn independently of the cam. The trip member 47 is pivoted at 53 to the lower base section 10 of the frame. A contractile spring 54 is connected at one end to the trip 47 and at its opposite end to a sheet metal bracket 55 which is secured to a fixed bar 56 by screws 57. The bracket 55 is provided with forwardly projecting arms 59 that embrace trip 47 on opposite sides thereof and constitute a guide therefor to prevent lateral motion of the trip. The trip 47 is provided with an extension 60 that coacts with an adjustable set screw or stop 61 threaded through the bar 56. The coacting stops 60 and 61 limit the forward motion of the trip 47 into cooperative relation with the latch 43.

Cooperative with the cam 40 is a roller 62 that bears on the periphery of the cam and is mounted on one side of an actuating member or lever 63 pivoted at 64 to the upper frame section 11. The member 63 is in the nature of an angular lever provided with an up-standing arm that carries a laterally projecting pin 65 received in an open ended slot 66 of one arm 67 of a motion transmitting lever or member loosely supported on a rock shaft 68. From an inspection of Fig. 5 it will be seen that this rock shaft is supported at its ends by pivot screws 69 threaded into the upper frame section 11. The lever comprising the arm 67 has a hub 70, and a collar 71 fixed to the shaft 68 by a set screw 72 limits the motion of the lever and its hub 70 along the shaft in one direction. A spacing sleeve 73 is mounted on the shaft 68 intermediate the lever 67 and a crank arm 74 fixedly secured to the rock shaft 68 by a pin 75 that extends through the hub 76 of said crank arm 74. A coiled spring 77 surrounds the spacing sleeve 73 and is connected to the lever 67 at 78 to bear downward thereon, whereas the other end of said spring is connected at 79 to bear upward against the crank arm 74. The lever 67 is provided with an upwardly extending arm 80 which carries a laterally projecting pin 81 that overlies the crank arm 74 and constitutes a stop which coacts therewith.

The force of the spring 77 is effective to normally maintain the pin 81 in contact with the crank arm 74 so that the shaft 68, arms 67 and 74 and spring 77 ordinarily turn as one part. The effective force of this spring tends to maintain this fixed relation between the parts in transmitting movement to the back spacing devices to be hereinafter described. Should, however, an undue resistance be offered to an actuation of the back spacing devices sufficient to overcome the power of the spring 77, then the lever 67 will operate against the force of said spring without transmitting motion to the rock shaft 68. The effect of this construction is to provide a cushioning means intermediate the power actuated cam and the back spacing devices to prevent injury to the parts in the event that undue resistance is offered to the actuation of the back spacing devices at any time.

A second gooseneck crank arm 82 is fixed on the rock shaft 68 and the rearwardly and downwardly extending end of this crank arm is pivoted at 83 to an upwardly extending link 84 by which motion is transmitted to the back spacing devices. Such back spacing devices may be of any suitable construction but in the present instance are of the usual character employed in Remington machines and includes a back spacing pawl 85 to which the upper end of the link 84 is pivoted at 86. The back spacing pawl itself is pivoted at 87 to a so-called spring returned back spacing pawl carrier 88. This carrier is mounted for pivotal movement on a grooved support 89 to turn concentrically with the axis of the escapement wheel shaft 90. A laterally extending arm 91 on the pawl carrier coacts with an adjustable screw stop 92 on the frame 93 of the escapement mechanism when the parts are in normal position. The engaging nose 94 of the back spacing pawl 85 cooperates with the teeth of a back spacing wheel 95 that is operatively connected through the usual pawl and ratchet with the escapement wheel 96. The back spacing wheel 95 is fixedly connected to a sleeve 97 that receives its support on the escapement wheel shaft 90. The forward end of the sleeve 97 carries a feed pinion 98 with which the carriage feed rack 99 meshes. The feed rack is carried in the usual manner by the carriage on which the platen 100 is supported. Only a fragmentary portion of the carriage is shown in Fig. 1, including the back cross bar or rail 101 thereof which is grooved to coact with anti-friction supporting rollers 102 that are likewise received in a grooved fixed rail 103 on the top plate of the machine. The carriage is thus mounted to travel from side to side of the machine over the top plate under the control of its escapement mechanism, and at each back spacing operation, or at each revolution of the cam 40, the link 84 will be moved upward first turning the pawl 85 on its pivot 87 to bring about an engagement between the pawl and its back spacing wheel.

A further upward movement of the link 84 is effective to turn the pawl carrier 88 about the escapement wheel shaft 90 as a center and to effect a backward movement of the back spacing wheel and feed pinion 98 to back space the carriage one space at each operation.

In order to control the trip device 47 and thereby bring about a rotation of the cam 40 to actuate the line spacing devices, I provide the following construction. An angular key lever 104 is pivoted at 105 on the upper frame section 11 and to the front right-hand corner post 106 thereof. This pivotal support is made up of a headed pin or stub shaft 105 on which the lever 104 is pivoted, said stub shaft being held seated in its bearing by a set screw 107. A spacing sleeve 108 is provided between the head of the stub shaft 105 and the lever 104, whereas the hub 109 on the lever bears against the end of a bearing portion 110 on the corner post 106. The lever 104 is provided with a key 111, and a downwardly extending arm on said lever is detachably pivoted at 112 to a rearwardly extending actuating link or releasing member 113. A contractile spring 114 is connected to said link at one end and at its opposite end it is connected to a bracket arm 115. This spring is disposed at an inclination so as to exert its force both forward and downward on the link 113. The rear end of the link is provided with an upwardly and rearwardly extending arm 116 that overlies and bears against a member 117. In the present instance this member 117 constitutes a part of the usual equipment of the machine and is in the nature of a rock shaft that has a slight rocking motion. I avail myself of this shaft to provide a support for the rear free end of the actuating link 113. In order to guide the link against lateral displacement I provide a guide comb 118 that is fixed on the shaft 117 by screws 119. An upwardly extending portion 120 of the guide comb receives the free end portion of the actuating link 113 and guides it against lateral displacement but enables the link, nevertheless, to receive a fore and aft movement in the guide comb and also an up and down movement therein. A rearwardly disposed part 121 of the guide comb receives the upright arm of the actuating lever 63 to maintain it against lateral displacement. In the form of construction illustrated in Fig. 1 I provide an inclined face 122 on the actuating link 113 which coacts with the rock shaft 117 to cause the free end of the link 113 to be elevated during the rearward displacement of the link on the depression of the back spacing key 111. The purpose of this camming action of the link 113 is to first bring about a rearward movement of the trip 47 on the depression of the back spacing key, so as to release the latch 43 and enable it to engage the locking wheel 42 and thus bring about a rotation of the cam 40. However, as soon as the trip device 47 has been released from the latch 43 a continued rearward and upward movement of the link 113 is effective to release the trip from control thereof and enable the trip to be immediately returned by its spring 54 in the path of the projection 46 on the locking latch. It follows, therefore, that when the cam has completed a single revolution, the trip 47 will be in the path of the projection 46 and will automatically release the latch from the locking wheel, also arresting the cam and enabling the power driven shaft 37 to turn independently thereof. The effect of this single revolution of the cam 40 is to bring about a single back spacing movement of the carriage, and only a single back spacing movement of the carriage even though the operator should maintain the back spacing key depressed. When the operator releases the depressed back spacing key the member 113 will be drawn forward and downward at the free end thereof by the spring 114 and will automatically re-establish a connection with the trip 47 so that the parts will be again disposed in the position shown in Fig. 1. In this return movement of the member 113, the bottom cam edge 123 thereon will ride over the upper end of the trip 47 until the rear end of the cam clears the trip when the spring 114 is effective to pull the link down and bring the abrupt face 125 of the link forward of and in cooperative relation with the trip, as shown in Fig. 1.

It will be seen that the lever 104, the link 113, the rock shaft 117, the lever 63 and the various parts controlled thereby are mounted on and carried by the upper frame section 11. On the other hand the power driven shaft 37, the cam 40, locking wheel 42 and trip 47 are carried by the lower or base frame section 10. The construction and relation of the parts are such that the upper frame section may be swung back on its hinge 12 without being interfered with by the coacting parts of the back spacing mechanism on the two frame sections, and yet when the two frame sections are brought together as represented in Figs. 1 and 4, such coacting parts will be brought into cooperative relation ready to function. Thus, the lever 63 and member 113 will swing back with the upper frame section 11 free from interference with such swinging motion by the cam 40 and trip 47 with which said parts respectively coact. When the upper section is lowered, the link 113 will be brought into cooperative relation with the trip 47 and the roller 62 on the lever 63 will be brought to bear against the cam 40 and the parts will be ready to function.

It will be understood that when the parts are in normal position, shown in Fig. 1, there is a reactive force of the spring 52 exerted against the cam 40 which tends to turn the cam in a clockwise direction. In order to overcome such displacement of the cam at this time I have provided a high spot 40^a on the cam with which the roller 62 coacts to overcome the force of the spring 52 to displace the cam. The force exerted on the roller 62 to prevent a displacement of the cam as indicated above, is effected by a returning spring 124 connected to the lever 67. The power of this spring is effective not only to return the lever 67, shaft 68 and crank arm 82, together with the parts controlled thereby, to normal position, but is also effective on the arm 63 to maintain the roller 62 against the cam with sufficient force to overcome the tendency of the spring 52 to displace the cam when the parts are in normal position.

It will be understood that normally the lever 67, shaft 68 and crank arm 82 move together as one part, such members and the parts controlled thereby all being returned to normal position by the spring 124. It is only when undue resistance to the operation of the back spacing devices is encountered that the lever 67 will be turned independently of the shaft 68 against the force of the spring 77. One instance where an undue resistance to the actuation of the back spacing mechanism will occur is when the carriage is arrested by the margin stop in its return movement, and in the event that at this time the op-

erator should depress the back spacing key; the carriage at this time being blocked against return movement. Injury to the parts would ordinarily result from a depression of the back spacing key at this time. However, in such an event, and due to the cushioning spring 77, no harm can result to the structure since the operation of the cam would merely result in actuating the levers 63 and 67 without transmitting motion to the shaft 68 and the parts controlled thereby to operate the back spacing devices.

It is sometimes considered desirable to provide for continuously, though intermittently, operating the back spacing mechanism as long as the operator maintains the back spacing key depressed. In Fig. 6 I have shown a modified form of construction that enables this result to be accomplished. In said modified construction the member 113ª is devoid of the cam face such as is represented at 122 in the preceding figures, otherwise the construction is the same as that previously described. In the modified form of construction the absence of the cam referred to above enables the link 113ª to receive a direct rearward movement without releasing the link from the trip 47. It follows, therefore, that a depression of the back spacing key in this modified form of construction results in moving the trip rearwardly, as indicated in Fig. 6 to disengage it from the latch 43 and to hold the trip thus disengaged as long as the operator maintains the back space key depressed. The result is that the cam 40 will continue to rotate with the driving shaft 37 and intermittently back space the carriage at each complete revolution of the cam. This intermittent back spacing of the carriage will continue until the operator releases the depressed back space key 111 which enables the trip 47 to be interposed in the path of the projection 46 on the latch 43, thereby automatically disengaging the latch from the locking wheel as soon as such projection is engaged by the trip. In Fig. 6 the contact face 125 coacts with the rock shaft 117 to limit the rearward motion of the member 113ª on the depression of the back spacing key. The corresponding upright face 125 on the link 113 in the previously described construction likewise coacts with the rock shaft 117 to limit the rearward movement of the member 113 on the depression of the case shift key. In the modified form of construction the operator, in order to back space the carriage but a single space, merely taps the back space key 111, thereby effecting a disengagement of the trip 47 from the latch 43 and allowing the trip immediately to return to normal position where it will again coact with the latch to release it after the cam has made a single revolution. Should the operator desire to back space the carriage, say two letter space distances, two such tapping motions on the key may be effected, and so on. If, however, the operator desires to back space the carriage a considerable number of letter space distances, it is merely necessary to depress the back space key and hold it depressed until the carriage has arrived at the desired point and then release the key.

From the foregoing description it will be seen that I have provided simple and inexpensive power actuated back spacing means which are effective in operation and can be readily incorporated in existing machines without materially modifying the existing structural features thereof.

Various changes may be made in the construction, and features thereof may be employed without others, 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 power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a back spacing key, a spring engaged locking latch carried by said cam for locking the cam to turn with said shaft, a trip device that normally engages said latch and holds it disengaged, and means controlled by said key and cooperative with said trip device to release it on the depression of the key and to afford an independent return of the trip device into the path of the latch to disengage the latter when the cam has completed a revolution even though the key be held depressed.

2. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a back spacing key, a spring engaged locking latch carried by said cam for locking the cam to turn with said shaft, a trip device that normally engages said latch and holds it disengaged, a spring that tends to move said trip device to and hold it in the path of said latch, and a releasing member controlled by said key and cooperative with said trip device to move it against the force of its spring to releasing position.

3. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a back spacing key, a spring engaged locking latch carried by said cam for locking the cam to turn with said shaft, a trip device that normally engages said latch and holds it disengaged, a spring that tends to move said trip device to and hold it in the path of said latch, a releasing member controlled by said key and cooperative with said trip device to move it against the force of its spring to releasing position, and means coacting with said releasing member to disengage it from said trip device after the latter has been disengaged and thus afford an independent return movement of the trip device into the path of the latch to disengage the latter after the cam has completed a single revolution even though the key be held depressed.

4. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam, back spacing means controlled by said cam, a back spacing key, and means controlled by said key for coupling said cam to turn with the shaft during a single revolution only even though the back spacing key be held depressed, said last mentioned means comprising a controlling member that controls the engagement and disengagement of the coupling means, releasing means controlled by said key and operative on said controlling member, and automatically operating means for effecting a disconnection between said releasing means and controlling member after the latter has been actuated, whereby the controlling member is independently and automatically returned to normal effective posi-

tion immediately after having been shifted to ineffective position.

5. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam, back spacing means controlled by said cam, a back spacing key, and means controlled by said key for coupling said cam to turn with the shaft, said last mentioned means comprising a lever controlled by said back spacing key, a releasing member pivoted at one end to said lever, a support on which the other free end of said member is adapted to slide, and a controlling device controlled by said releasing member.

6. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam, back spacing means controlled by said cam, a back spacing key, and means controlled by said key for coupling said cam to turn with the shaft during a single revolution only even though the back spacing key be held depressed, said last mentioned means comprising a lever controlled by said back spacing key, a releasing member pivoted at one end to said lever, a support on which the other free end of said member is adapted to slide, a cam intermediate said member and support to effect a lateral movement of said member during its longitudinal sliding movement, and a controlling device controlled by said releasing member and from which the latter is automatically released before the key reaches the bottom of its stroke to afford an independent return movement of said controlling device to normal position even though the key be held depressed.

7. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam, back spacing means controlled by said cam, and including a spring pressed member actuated by said cam to effect a back spacing and in the normal position of the parts bearing against a high spot on the cam to resist a tendency of the cam to be displaced from its normal position, a back spacing key, and means controlled by said key for causing said cam to be turned by said shaft.

8. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power actuated shaft, a cam loosely mounted thereon, a spring engaged latch on said cam that connects it to turn with said shaft, a key controlled trip that normally holds the latch against the force of its spring, back spacing devices, and means controlled by said cam for actuating said back spacing devices, said last mentioned means including a spring-pressed lever, a roller carried by said lever and in the normal position of the parts bearing against a high spot on the cam and overcoming the reactive force of the latch spring to turn the cam from its normal position.

9. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power actuated driving shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a locking latch carried by the cam for locking it to turn with said shaft, a trip which normally coacts with said latch to hold it released, and key controlled means for releasing said trip and enabling it to return immediately to effective position to release the latch even though the key be held depressed, whereby the cam is effective to make but a single revolution at each actuation of said key.

10. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power actuated driving shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a locking latch carried by the cam for locking it to turn with said shaft, a trip which normally coacts with said latch to hold it released, and key controlled means for releasing said trip, said releasing means comprising an angular key lever, a link connected to said lever and coacting with said trip, and a support on which said link rests.

11. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power actuated driving shaft, a cam loosely mounted thereon, back spacing means controlled by said cam, a locking latch carried by the cam for locking it to turn with said shaft, a trip which normally coacts with said latch to hold it released, and key controlled means for releasing said trip and enabling it to return immediately to effective position to release the latch even though the key be held depressed, whereby the cam is effective to make but a single revolution at each actuation of said key, said releasing means comprising an angular key lever, a link connected to said lever and coacting with said trip, a cam on said link, and a support on which said link rests and with which the cam on the link coacts to effect a lateral movement of the link to disengage it from the trip when the link is moved longitudinally to actuate the trip.

12. The combination with a frame including two relatively movable sections, of key controlled power actuated back spacing mechanism parts of which are carried by one frame section and cooperative parts of which are carried by the other frame section, cooperative parts on the two frame sections being brought into cooperative relation when the frame sections are brought together.

13. The combination with a frame including two relatively movable sections, of key controlled power actuated back spacing mechanism including a power actuated cam on one of said frame sections, and a back spacing actuating member controlled by said cam and carried by the other of said frame sections, said cam and actuating member being brought into cooperative relation when said frame sections are brought together.

14. The combination with a frame including two relatively movable sections, of key controlled power actuated back spacing mechanism including a continuously running power driven shaft carried by one of said frame sections, a cam loosely mounted on said shaft, means for coupling said cam to said shaft, a trip coacting with a part of said coupling means and carried by the same frame section which carries the power driven shaft, an actuating member carried by the other frame section and cooperative with said cam when the two frame sections are brought together, back spacing devices actuated by said actuating member, and key controlled means cooperative with said trip.

15. The combination with a frame including two relatively movable sections, of key controlled power actuated back spacing mechanism including a continuously running power driven shaft carried by one of said frame sections, a cam loosely mounted on said shaft, means for coupling said cam to said shaft, a trip coacting with a

part of said coupling means and carried by the same frame section which carries the power driven shaft, an actuating member carried by the other frame section and cooperative with said cam when the two frame sections are brought together, back spacing devices actuated by said actuating member, and key controlled means cooperative with said trip, said key controlled means being carried by the same frame section that carries said actuating member and brought into cooperative relation with said trip when the two frame sections are brought together

16. The combination of a lower frame section, a relatively movable upper frame section, and key controlled power actuated back spacing mechanism carried in part by the lower frame section and in part by the upper frame section, cooperative parts of said back spacing mechanism being brought into cooperative relation ready to function when said sections are brought together.

17. The combination of a lower frame section, a relatively movable upper frame section, and key controlled power actuated back spacing mechanism comprising an actuating member and back spacing devices controlled thereby carried by said upper frame section, and a power driven member carried by the lower frame section and into cooperative relation with which said actuating member is brought when the upper and lower frame sections are brought together.

18. The combination of a lower frame section, a relatively movable upper frame section, and key controlled power actuated back spacing mechanism, comprising an actuating member and back spacing devices controlled thereby carried by said upper frame section, a power driven member carried by the lower frame section and into cooperative relation with which said actuating member is brought when the upper and lower frame sections are brought together, and key controlled means for controlling said power driven member, said key controlled means being carried in part by the upper frame section and in part by the lower frame section and having parts on the two frame sections that are brought into cooperative relation when said sections are brought together.

19. In a back spacing mechanism, the combination of back spacing devices, a power driven shaft, a cam carried thereby and loosely mounted thereon, key controlled means for connecting said cam and shaft to turn together, and intermediate actuating connections between said cam and back spacing devices including two crank arms mounted to turn on the same pivotal center, and a spring which tends to hold said crank arms to turn together as one part and through which motion is transmitted from one to the other of said arms, whereby in the event that undue resistance is offered to the actuation of the back spacing devices the spring will be flexed and no injury to the mechanism can result.

20. In a power actuated back spacing mechanism for typewriting and like machines, the combination of a continuously running power driven shaft, a cam loosely mounted thereon, a back spacing key, means controlled by said key for coupling said cam to turn with said shaft, back spacing means controlled by said cam and comprising a lever coacting with and controlled by said cam, a back spacing pawl controlled by said lever, a back spacing wheel with which said pawl coacts, and a carriage feed pinion driven by said back spacing pawl and coacting with the feed rack of the carriage, a machine frame comprising two relatively movable sections, said cam being carried by one of said frame sections and said back spacing means being carried by the other frame section, the construction and relative arrangement of the parts being such that said lever of the back spacing means is brought into cooperative relation with the cam when the frame sections are brought together.

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