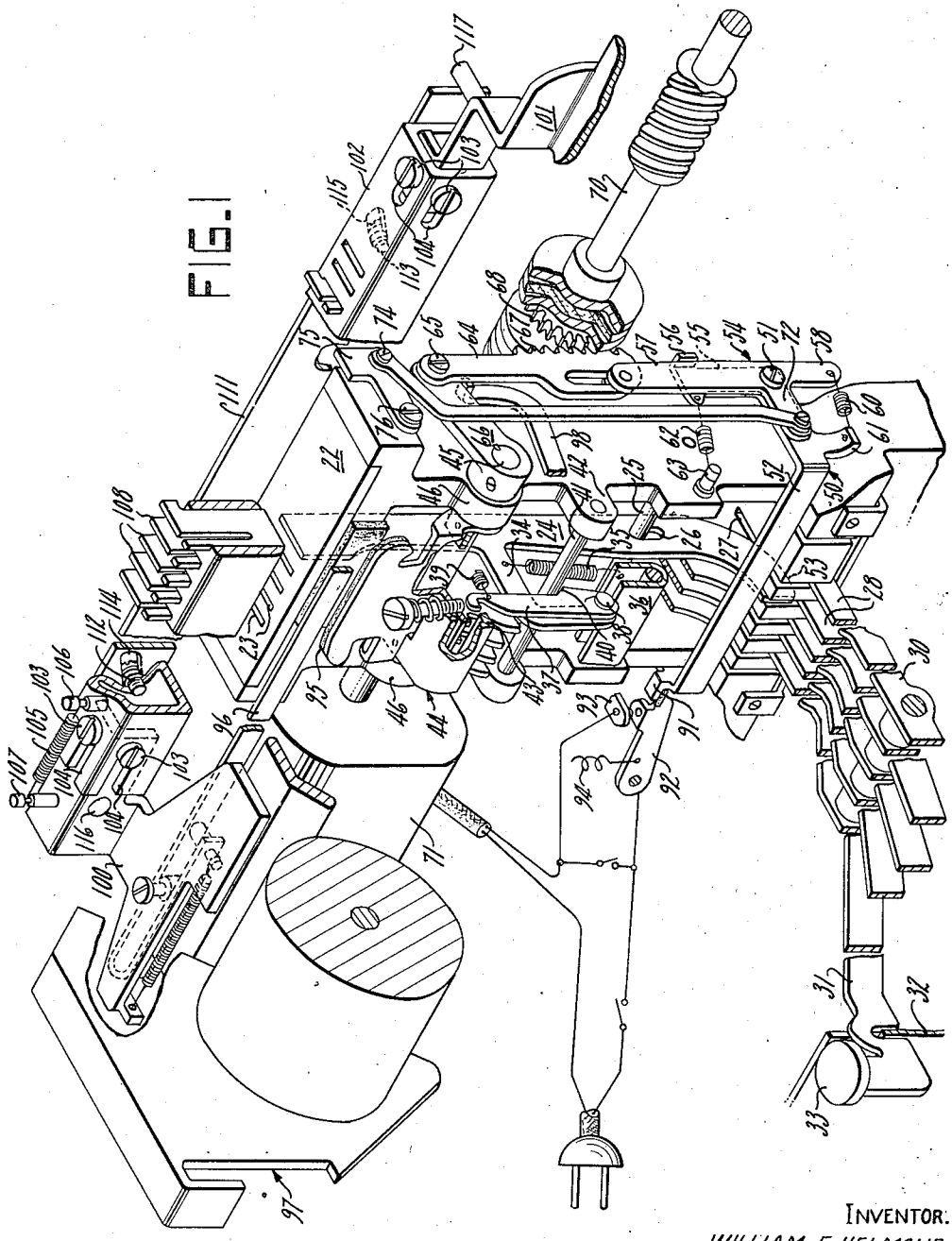
Dec. 1, 1942. W. F. HELMOND 2,303,877

TYPEWRITING MACHINE

Filed Dec. 31, 1938 4 Sheets-Sheet 1

FIG. 1



INVENTOR:
WILLIAM F. HELMOND

BY K. G. Julihn
ATTORNEY.

Dec. 1, 1942. W. F. HELMOND 2,303,877

TYPEWRITING MACHINE

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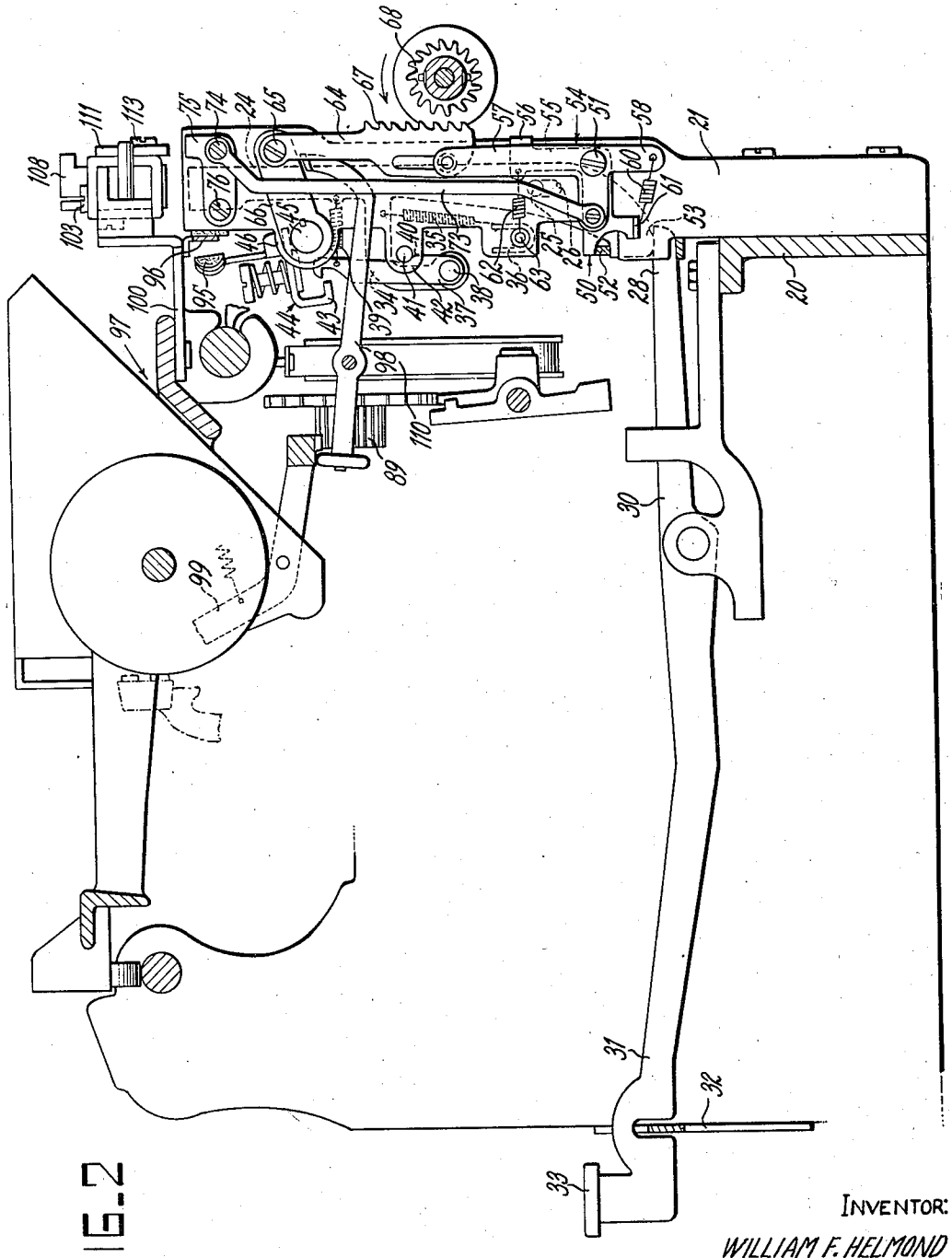


FIG. 2

INVENTOR:
WILLIAM F. HELMOND

BY K. G. Julihn
ATTORNEY.

Dec. 1, 1942. W. F. HELMOND 2,303,877

TYPEWRITING MACHINE

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FIG. 4

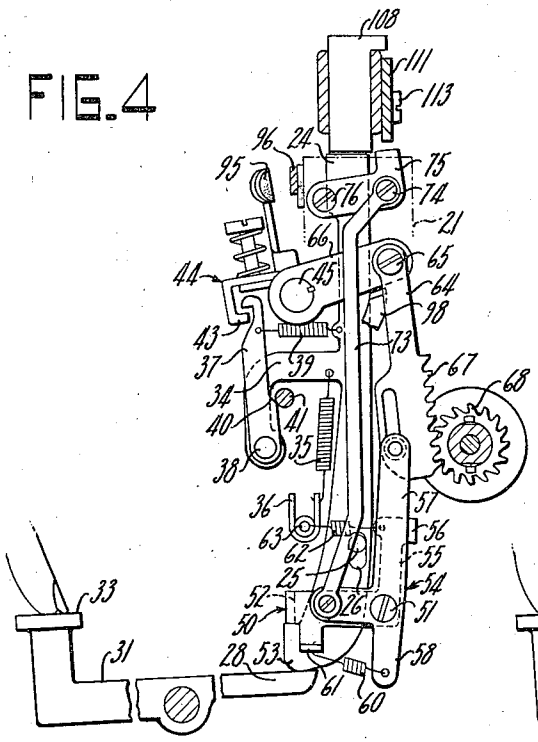


FIG. 3

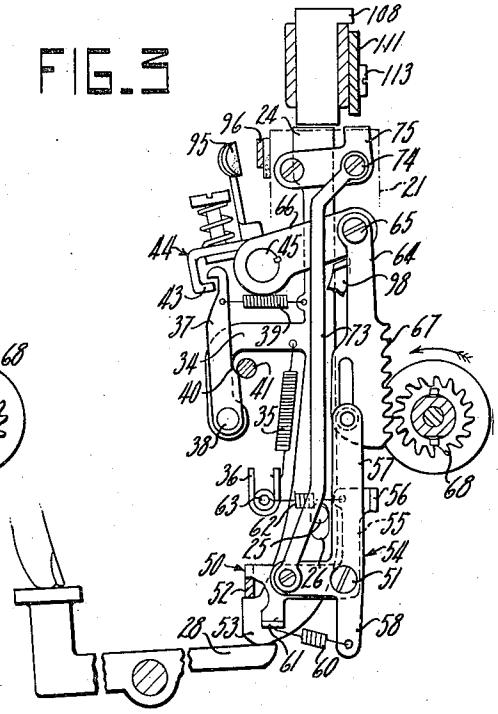


FIG. 6

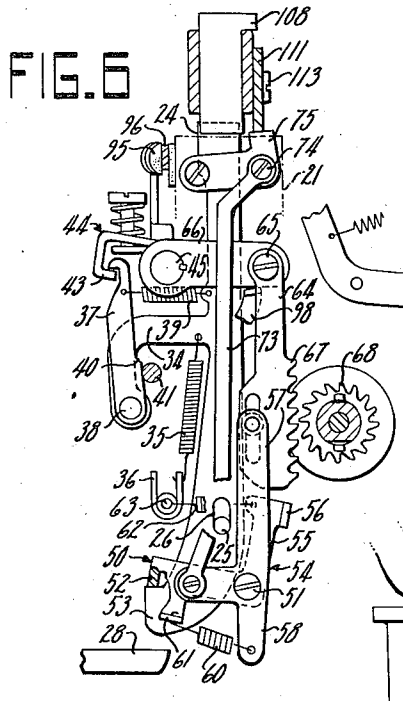
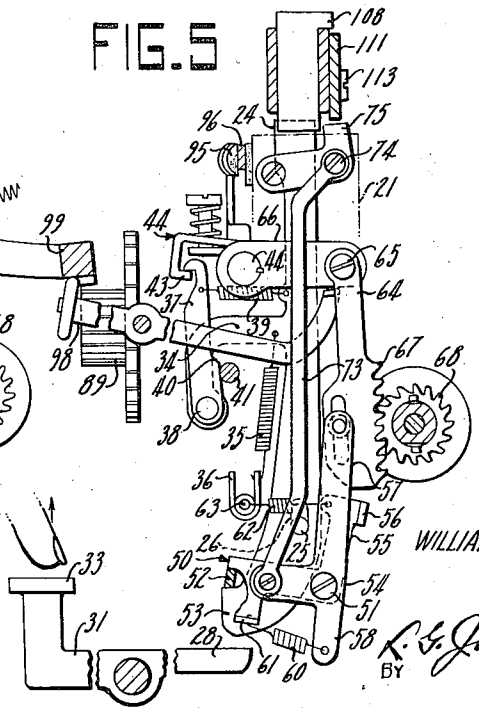


FIG. 5



INVENTOR:
WILLIAM F. HELMOND

BY

ATTORNEY.

Dec. 1, 1942. W. F. HELMOND 2,303,877

TYPEWRITING MACHINE

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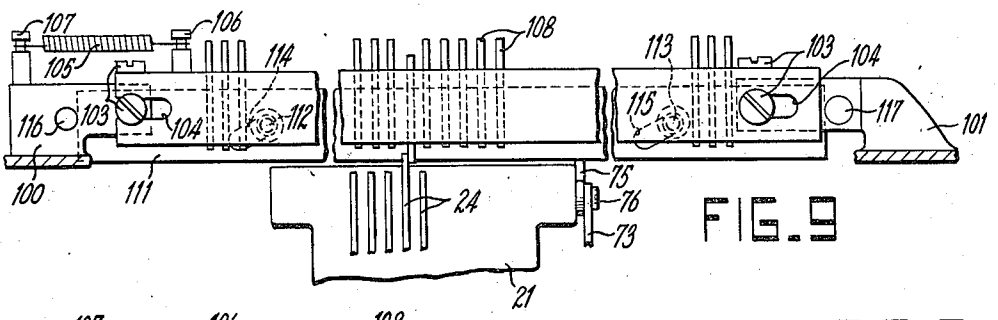


FIG. 9

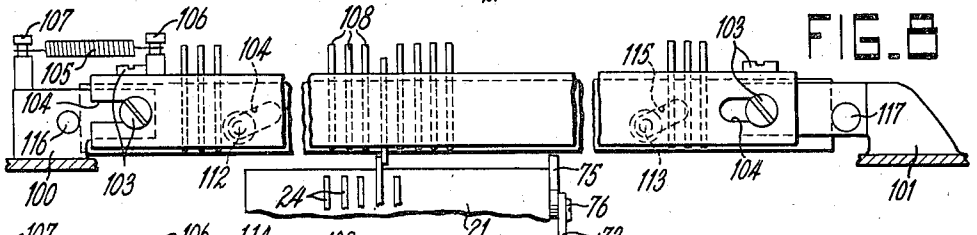
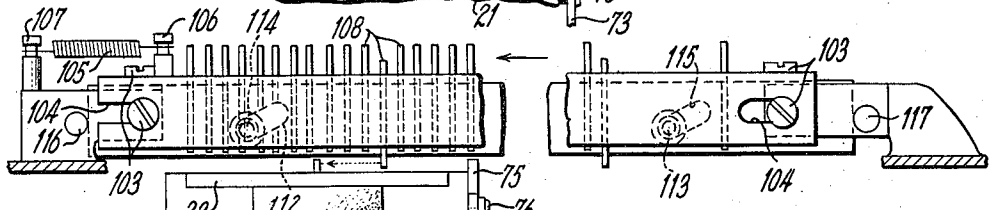


FIG. 8



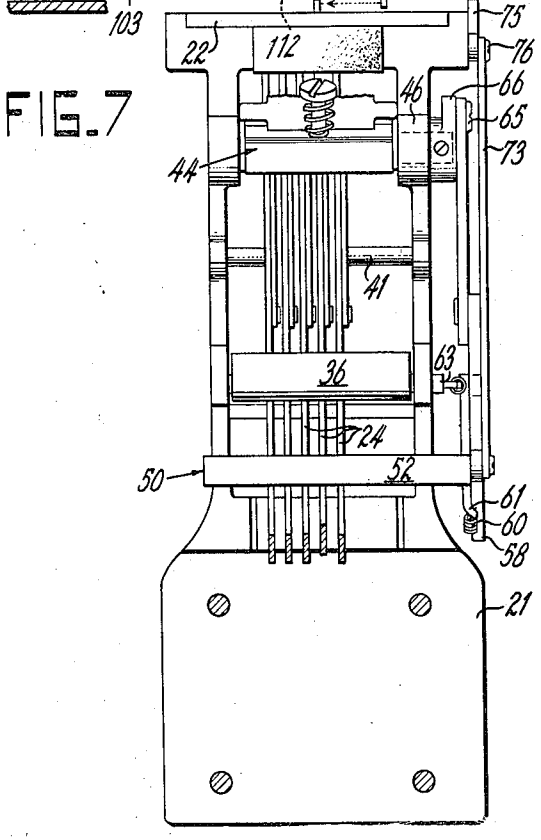
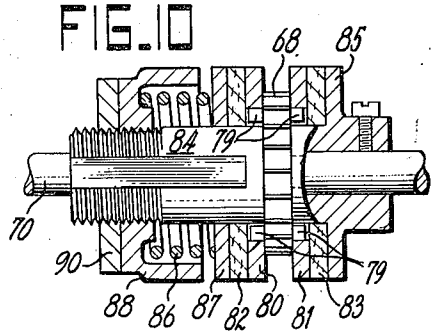


FIG. 7

FIG. 10



INVENTOR:
WILLIAM F. HELMOND

BY K. G. Julihn
ATTORNEY.

Patented Dec. 1, 1942

2,303,877

UNITED STATES PATENT OFFICE

2,303,877

TYPEWRITING MACHINE

William F. Helmond, West Hartford, Conn., assignor to Underwood Elliott Fisher Company, New York, N. Y., a corporation of Delaware

Application December 31, 1938, Serial No. 248,736

14 Claims. (Cl. 197—177)

This invention relates to typewriting machines and in regard to certain more specific features thereof to tabulating mechanism, more particularly, key-selected power-operated denominational tabulator devices.

It is an object of the invention to provide an extremely simple, inexpensive and reliably and quietly operative tabulating mechanism requiring minimum effort on the part of the operator and having advantages of speed and certainty in operation.

In certain respects the invention constitutes an improvement over the inventions shown and described in my copending applications for patent, Serial Nos. 248,502 and 248,503, filed December 30, 1938, now Patents Nos. 2,225,499 and 2,225,450, respectively, issued December 17, 1940.

It is a further object of the invention to provide mechanism of the character described which may be quickly and conveniently applied to typewriters of standard commercial form with very little modification of existing structure.

Another object of the invention is to provide a means for coupling a power drive to effect movements of the parts to tabulating condition which includes means for positively uncoupling the power drive mechanism at the desired point in the operation.

The invention has for another object to obtain repeat tabulation utilizing the power agencies, that is, by a depression of a key, and the holding of it depressed, the carriage may be caused to perform a succession of tabulating operations. In such cases as it may be desired to skip one or more of the set carriage stop positions, holding of the key depressed will cause the carriage to tabulate to one position, bank against the stop, and subsequently pass said stop and proceed to the next banking position. This may be continued until the operator notes that the carriage is nearly approaching the desired tabulator position, whereupon the key is released and the carriage will stop at that position.

In the accompanying drawings:

Fig. 1 is a view in perspective of the improved tabulating mechanism.

Fig. 2 is a view in fore-and-aft cross section of the tabulating mechanism shown in Fig. 1, this view embracing also typewriter frame parts and transversely movable escapement controlled paper carriage.

Fig. 3 is a diagrammatic view showing the positions assumed by the parts upon the initial depression of a denominational tabulator key.

Fig. 4 is a view similar to Fig. 3 showing the parts in the positions which they assume when the key is further depressed to couple the power unit.

Fig. 5 is a view similar to Figs. 3 and 4 in which the parts are shown fully operated by the power unit which has been brought into action by depression of the key and the key is released.

Fig. 6 is a view similar to Figs. 3, 4 and 5 showing the parts in the positions which they assume after the carriage has banked in tabulated position, thus positively uncoupling the power and releasing the parts to the action of their return springs.

Fig. 7 is a view in elevation looking from the front of the typewriter to the magazine at the rear and the carriage mounted parts which cooperate with the denominational tabulator stops in the magazine. In this view the carriage is indicated as in the midst of a tabulating movement and prior to banking.

Fig. 8 is a fragment of Fig. 7 showing the condition of the parts at the instant of banking engagement.

Fig. 9 is a fragment of Fig. 7 showing the position of the parts at the end of the banking action.

Fig. 10 is a view in cross section of the friction clutch employed in the operation of the tabulating mechanism.

Referring now more particularly to the drawings, a typewriter frame part is indicated at 20 having suitably secured at the rear thereof a magazine or tabulator frame 21. This magazine is preferably a casting having at its top a plate 22 with a series of slots 23 which slidably receive the upper ends of stop blades or reeds 24. The blades 24 are guided intermediate their ends by a pin 25 secured in opposite uprights of the magazine 21 and passing through slots 26 in the blades. This pin-and-slot connection serves to limit the upper and lower positions of the blades in the magazine. The lower ends of the blades 24 enter slots 27 in the magazine and are held in position therein over the rear ends 28 of levers 30 which have their forward ends 31 guided in a comb plate 32 which serves also as a limiting stop for downward movement of the forward ends of the key levers by their keys 33.

Each of the blades 24 has a forwardly and downwardly extending arm 34 to the forwardly extending portion of which the upper end of a return spring 35 is attached. The lower end of the spring is attached to a cross bar 36 secured to the side uprights of the magazine 21. Springs 35 serve normally to hold the lower ends of blades

24 in abutting relation with the rear ends of levers 30 and as any lever is moved by depression of its key 33 its abutting blade 24 is lifted.

Each arm 34 of the blades 24 carries a pawl 37 pivoted at 38 and having a cam face 40 normally held by a spring 39 against a pin 41 extending between ears 42 formed on the side uprights of the magazine. As any blade 24 is initially moved upward the action of pin 41 on cam face 40 is to urge the upper end of pawl 37 forwardly to hook over a flange 43 of a rocker member or actuator 44 mounted on a shaft 45 which is journaled in ears 46 formed on the side uprights of magazine 21. This constitutes the selecting operation. It is the mechanism by which a particular denominational stop blade may be selected and conditioned for operation by a power drive which is common to all of the stop blades.

A bail 50 is mounted for pivotal movement on the magazine 21 by pivot screws, one of which is shown at 51. The bail has a cross bar 52 which overlies forwardly protruding lips 53 at the bottom of each of the stop blades 24. Depression of any key to lift a particular stop blade 24 elevates the cross bar 52 rocking the bail on its pivot 51. The pivot is by a stud screw which has loosely mounted on its shoulder outside of the bail a three-armed operating lever 54. The bail 50 has an upstanding arm 55 adjacent this operating lever which arm has a lip 56 bearing against the edge of an upwardly extending arm 57 of the operating lever. A downwardly extending arm 58 of the operating lever serves to anchor one end of a spring 60, the other end of which is connected to a lug 61 on the bail 50. This spring tends to hold the operating lever against the lip 56. The bail 50 is normally held in the position shown in Figs. 1 and 2 of the drawings by a spring 62 connected between the upstanding arm 55 of the bail and a pin 63 projecting from the magazine 21.

When the bail 50 is rocked by depression of a key lip 56 moves rearwardly followed by arm 57 of operating lever 54. Spring 62 is thus distended and spring 60 contracts to cause the arm to follow the lip 56. The upper end of operating lever 54 has a pin-and-slot connection with a rack member or bar 64, the upper end of which is pivoted at 65 to an arm 66 fixed on the end of shaft 45 of rocker 44. As arm 57 of operating lever 54 is moved rearwardly by the spring 60 following the retreating lip 56 is causes, through the pin-and-slot connection mentioned, an engagement of rack teeth 67 with teeth on a rotary member or driving wheel 68 frictionally rotatively connected with a drive shaft 70 driven from an electric motor 71. Particulars of the friction drive will be hereinafter set forth.

Operating lever 54 has a forwardly extending arm 72 pivotally connected to the lower end of a link 73, the upper end of which is pivotally connected at 74 to a rack-disconnecting arm 75 pivotally mounted at 76 on the magazine 21. By reason of this linkage the lifting of cross bar 52 of the bail 50, allowing rocking movement of operating lever 54, lifts the rack-disconnecting arm 75 into operative position.

The toothed driving wheel 68 is associated for rotation with circular steel plates 80 and 81 on opposite sides of the wheel by pins 79 extending through the wheel into holes in the plates. Plates 80 and 81 are flanked by friction plates 82 and 83 respectively and the assembly is loose upon a sleeve 84 fixed on the driving shaft 70. The sleeve 84 has a flange 85 adjacent friction plate 83. A coil spring 86 bearing against a disk 87, also loose on the sleeve, and reacting against the inner end of a cup 88 presses the various plates against the flange 85, creating a friction to rotate driving wheel 68 with shaft 70. Cup 88 is threaded on the end of sleeve 84 for adjustment thereon and a lock nut 90 is provided to hold the parts in adjusted position. Thus the driving wheel 68 is frictionally driven from shaft 70 whenever motor 71 is energized unless sufficient resistance develops to hold the wheel and allow the shaft and sleeve to continue rotating.

Although it is within the scope of the invention to use a continuously running electric motor, means are provided in the preferred form shown and described for intermittently energizing the motor when the bail is rocked. For this purpose a lip 91 is provided on the bail 50 which normally holds a movable contact arm 92 out of engagement with a fixed contact 93, a spring 94 being provided to engage the contacts when the cross bar 52 of the bail is lifted by depression of the key.

Depression of any key 33, which constitutes the movable member of the control mechanism, causes its key lever 31 to bottom against stop 32, which causes sufficient lifting movement of the rear end of the lever to condition the parts as previously described and raise the associated stop blade 24 slightly but not, however, into the path of travel of any set carriage stop. As the rack is engaged with the drive wheel it is pulled downwardly rocking arm 66 and rocker member 44. Lip 43 of the rocker member engages the overlying nose of pawl 37 lifting the pawl and consequently lifting the stop blade 24 into stop position. This movement also set a brake shoe 95 against a brake bar 96 mounted on an escapement-controlled spring-motored carriage indicated at 97, as more particularly described in my copending applications above referred to. The rocker movement also breaks the control of the carriage-escapement through the agency of a lever 98 underlying rocker arm 66 which is adapted to lift a spring-urged carriage rack 99 out of engagement with a pinion 89 of the escapement mechanism, all as more particularly described in said copending applications.

The carriage has end brackets 100 and 101 which support the ends of a carriage tabulator-stop bar 102 for slight relative sliding movement thereon. Screws 103 pass through slots 104 at opposite ends of the stop bar which bar is hollow and rectangular in cross section, and a spring 105 connected from a pin 106 on the bar to a pin 107 on the carriage-end-bracket 100, tends to hold the stop bar in a normal position as shown in Figs. 1, 7 and 8 of the drawings.

The carriage is provided with a series of settable stops 108, any of which may be set by any suitable means to be intercepted by an elevated stop blade 24 as the carriage is caused to travel by its conventional spring drum and tape indicated at 110. It will be noted that in one aspect of the invention the upper end portion of each blade 24 constitutes a counterstop in its cooperative function with the stops 108, and the other portions particularly the lip 53, form part of the control mechanism.

At the rear of the stop bar 102 a rack-release plate 111 is loosely mounted on stud screws 112 and 113 which pass through diagonal slots 114 and 115 respectively in the release plate 111 and tap into the rear wall of the stop bar. The plate 111 is held against longitudinal movement

relative to the carriage by pins 116 and 117 projecting from end brackets 100 and 101 respectively. Holding of the stop bar, as by reason of banking engagement of a depressed stop 108 against an elevated reed 24, allows the carriage to proceed in its direction of travel a slight extent permitted by the slots 104. By the diagonal slot and stud connections 112, 113, 114 and 115 the release plate 111 is forced downwardly during this relative sliding movement and in its downward movement presses release arm 75 downwardly thus forcibly rocking operating lever 54 back to its normal position and disengaging rack 64 from drive wheel 68. At the time of this release the clutch parts may be slipping past the drive wheel 68 owing to the various parts having reached their extremes of movement, but however this may be, as soon as the rack 64 is disengaged stop blade 24 is returned by the action of its spring 35 to one or another of two lower positions depending upon whether the key has or has not been released. If the key has been released the stop blade will return to its lowermost position limited by the pin 25, as shown in Figure 2, and the pawl 37 will have moved downwardly far enough to escape pin 41, allowing its return spring 39 to withdraw the pawl nose from overhanging relation with lip 43 of the rocker member 44. If, however, the key has not been released, stop blade 24 is only returned downwardly by its spring sufficiently to clear the depressed carriage stop which has banked against its upper end and the pawl 37 is not dropped far enough to destroy its overhanging relation with the lip of the rocker member. Thereupon the carriage stop bar 102 will pick up, under the influence of its spring 105, the distance lost in the banking operation, and depressed stop 108 will pass beyond an alignment position with stop blade 24. This also restores rack-release-member 111 to its upper position, as will be readily understood, which allows spring 69 to refunction on operating lever 54 and return rack 64 to its engagement with the drive wheel 68. Thereupon a repeat tabulating operation will take place, the same stop blade 24 being again elevated into the path of the next succeeding depressed carraige stop 108. This makes it possible for an operator to tabulate through several positions by merely holding the key 33 depressed and eventually releasing it as the carriage is approaching the particular tabulating position at which it is desired to stop.

In the preferred form of the invention above described and shown in the accompanying drawings, the invention is shown as applied to a typewriter of the standard or impact form. Obviously, however, the invention in its broader aspects may be applied to a typewriter in which the type actions operate on the pressure principle and in which typewriters it is customary in manual tabulating to release an escapement dog rather than elevate a letter-space rack, and in which friction braking of the carriage tabulating movement does not usually involve the long brake bar used in the standard typewriters.

What is claimed is:

1. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage having motor means for impelling it in a tabulating run and having a series of tabulator stops, means to release the carriage to a tabulating run, a normally ineffective counterstop, means to condition the counterstop for carriage stop interception, normally disabled power means to actuate said carriage releasing means and said counterstop conditioning means, control means, including a movable member, for enabling the power means, upon movement of said member, to release the carriage to a tabulating run and condition the counterstop to intercept a carriage stop, and means, rendered operative when interception occurs, to disable the power means and thereby render the counterstop again ineffective, said control means acting, when said movable member is held in moved position, to reenable the power means to condition the counterstop to intercept the next of the series of carriage stops.

2. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage having motor means for impelling it in a tabulating run and having a series of tabulator stops, means to release the carriage to a tabulating run, a normally ineffective counterstop, means to condition the counterstop for carriage stop interception, normally disabled power means to actuate said carriage releasing means and said counterstop conditioning means, control means, including a movable member, for enabling the power means, upon movement of said member, to release the carriage to a tabulating run and condition the counterstop to intercept a carriage stop, and means, rendered operative when interception occurs, to disable the power means and thereby render the counterstop again ineffective, said control means acting, when said movable member is held in moved position, to reenable the power means to condition the counterstop to intercept the next of the series of carriage stops, and said control means acting, upon restoration of said movable member, to condition said power means for disablement upon the next stop interception until the member is again moved.

3. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage motor-impelled in tabulating direction and having a series of tabulator stops, means to release the carriage to a tabulating run, a shiftable counterstop, normally ineffective power means connectible with said counterstop to shift same to stop-intercepting position and adapted to actuate said carriage-releasing means, control means, including a movable member, adapted upon movement of said member to condition said power means to shift the counterstop to stop-intercepting position and release the carriage to a tabulating run, means effective when the counterstop has been shifted and one of the carriage stops is intercepted, to disable the power means and thereby allow retraction of the shifted counterstop from stop-intercepting position, and means to effect a position-relation of the said intercepted carriage stop and the counterstop in which the carriage stop is in advance of the counterstop, before a subsequent shifting of the latter to stop-intercepting position, said control means, when said movable member is maintained in moved position, being adapted to recondition the power means to again shift the retracted counterstop to stop-intercepting position.

4. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage motor-impelled in tabulating direction and having a series of tabulator stops, means to release the carriage to a tabulating run, a shiftable counterstop normally urged to retracted position, normally ineffective power means connectible with said counterstop to shift same to stop-intercepting position and adapted to actuate said carriage-releasing means, control means, including a mov-

able member, adapted upon movement of said member to condition said power means to shift the counterstop to stop-intercepting position and release the carriage to a tabulating run, means effective when the counterstop has been shifted and one of the carriage stops is intercepted, to momentarily disable said power means and thus free the shifted counterstop for retraction from stop-intercepting position, and means to effect a position-relation of the said intercepted carriage stop and the counterstop in which the carriage stop is in advance of the counterstop, before a subsequent shifting of the latter to stop-intercepting position, said control means, when said movable member is maintained in moved position, being adapted to recondition the power means to again shift the retracted counterstop to stop-intercepting position.

5. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage motor-impelled in tabulating direction and having a series of tabulator stops, means to release the carriage to a tabulating run, a shiftable counterstop normally urged to retracted position, normally ineffective means operatively connectible with said counterstop to shift same to stop-intercepting position, normally ineffective power-operable means for actuating said shifting means and said carriage releasing means, control means, including a key, adapted upon movement of said key to condition said power-operable means and said shifting means to shift the counterstop to stop-intercepting position and release the carriage to a tabulating run, means effective when the counterstop has been shifted and one of the carriage stops is intercepted, to momentarily disable said power-operable means and thus allow retraction of the shifted counterstop from stop-intercepting position, and means for advancing the intercepted stop beyond the counterstop before a subsequent shifting of the latter to intercepting position, said control means, when said key is maintained in said moved position, being adapted to recondition said power-operable means and shifting means to again shift the thus retracted counterstop to stop-intercepting position.

6. A repeat-tabulator device comprising, in combination, an escapement controlled carriage motor-impelled in tabulating direction and having a series of tabulator stops, means to release the carriage to a tabulating run, a shiftable counterstop normally urged to retracted position, normally ineffective means operatively connectible with said counterstop to shift same to stop-intercepting position, normally ineffective power-operable means for actuating said shifting means and said carriage releasing means, including a friction device, control means, including a key, adapted upon movement of said key to operatively condition said power-operable means and said shifting means, whereby the counterstop is shifted to stop-intercepting position and the carriage is released to a tabulating run, means effective when the counterstop has been shifted and one of the carriage stops is intercepted, to momentarily disable said power-operable means and thus allow retraction of the shifted counterstop from stop-intercepting position, said friction device allowing overrunning of the power-operable means while the counterstop is in shifted position, and means for advancing the intercepted stop beyond the counterstop before the next movement of the latter to intercepting position, said control means, when the key is maintained in said moved position, being adapted to recondition said power-operable means and shifting means to again shift the thus retracted counterstop to stop-intercepting position after said retraction.

7. A repeat-tabulator device comprising, in combination, an escapement-controlled carriage motor-impelled in tabulating direction and having a series of tabulator stops, means to release the carriage to a tabulating run, a shiftable counterstop normally urged to retracted position, power-operable shifting means operatively connectible with said counterstop to shift same to stop-intercepting position and adapted to actuate said carriage-releasing means, means tending to condition said shifting means to shift said counterstop, control means, including a key, to restrain said tending means, movement of said key being effective to disable said restraining means to thereby effect projection of said counterstop to stop-intercepting position and release the carriage to a tabulating run, means cooperative with said tending means and effective when the counterstop has been shifted and one of the tabulator stops is intercepted, to momentarily disable said shifting means and thus allow retraction of the shifted counterstop, and means for advancing the intercepted stop beyond the counterstop before a subsequent shifting of the latter to intercepting position; maintenance of said key in moved position rendering said tending means again effective after counterstop retraction, to recondition said shifting means and thereby again shift the retracted counterstop to stop-intercepting position.

8. A repeat-tabulator device comprising a series of motor-impelled traveling stops, a shiftable blade yieldably held in retracted position and carrying an engageable element, an actuator movable in a path to project said blade into stop-intercepting position by engaging said blade element, a key operable to initially displace said blade from normal position to bring its element into the path of said actuator, said element being normally out of said actuator path, power operable means including a toothed rotary member and a rack bar operatively connected with said actuator and normally out of engagement with said toothed member, means tending to engage said rack bar with said toothed member, means cooperative with said blade to restrain said tending means, displacement of said blade being effective to disable said restraining means to thereby effect projection of said blade to stop-intercepting position, means effective when the blade is projected and one of the traveling stops is intercepted, to momentarily disengage said rack bar from said toothed member and thus allow retraction of the projected blade, and means for advancing the intercepted stop beyond the blade before a subsequent projection of the blade to intercepting position; maintenance of said key in operated position rendering said tending means again effective after blade retraction to reconnect said rack bar and toothed member and thus again project the retracted blade to stop-intercepting position.

9. A repeat-tabulator device comprising a series of motor-impelled traveling stops, a shiftable blade yieldably held in retracted position and carrying an engageable element, an actuator movable in a path to project said blade into stop-intercepting position by engaging said blade element, a key operable to initially displace said blade from normal position to bring its element into the path of said actuator, said element being

normally out of said actuator path, power-operable means operatively connected to said actuator, means tending to condition said power-operable means to move said actuator, means cooperative with said blade to restrain said tending means, displacement of said blade being effective to disable said restraining means to thereby effect projection of said blade to stop-intercepting position, means effective when the blade is projected and one of the traveling stops is intercepted, to momentarily disable said power-operable means and thus allow retraction of the projected blade, and means for advancing the intercepted stop beyond the blade before a subsequent projection of the blade to intercepting position; maintenance of said key in operated position rendering said tending means again effective to recondition said power-operable means and thus again project the retracted blade to stop-intercepting position.

10. A repeat-denominational-tabulator device comprising a series of motor-impelled traveling stops, a plurality of shiftable blades yieldably held in retracted position, each blade carrying an engageable element, an actuator movable in a path common to said blade elements to project any one of said blades to stop-intercepting position by engaging its blade element, a plurality of keys, one for each blade, operable to initially displace the corresponding said blade from normal position to bring its element into the path of said actuator, said blade elements being normally out of said actuator path, power operable means operatively connected to said actuator, means tending to condition said power operable means to move said actuator, means common to said blades and cooperative therewith to restrain said tending means, displacement of any one of said blades being effective to disable said restraining means to thereby effect projection of the displaced blade to stop-intercepting position, means effective when one of the traveling stops is intercepted by the projected blade to momentarily disable said power operable means and thus allow retraction of the projected blade, and means for advancing the intercepted stop beyond the blade before a subsequent projection of the blade to intercepting position; maintenance of the operated key in operated position rendering said tending means again effective after blade retraction, to recondition said power operable means and thereby again project the retracted blade to stop-intercepting position.

11. In a repeat-tabulator device for a typewriter having a frame, an escapement-controlled carriage thereon, motor-impelled in tabulating direction, including a series of stops, a normally retracted counterstop on the frame shiftable to stop-intercepting position, power means for shifting the counterstop, control means to release the carriage to a tabulating run and enable operation of said power means to shift the counterstop, and means, rendered operative on stop-interception, to disable said power means, restore the carriage to escapement control and advance the stop ahead of the counterstop, comprising, means mounting said series of stops for limited movement relative to the carriage in carriage travel direction, means yieldably holding said stop series normally toward one extent of said limited movement, and operative connections between said stop series and said disabling means, actuatable incident to stop-interception, by the resultant movement of said stop series in counter-tabulating direction to the other extent of limited movement, to disable said power means, the ensuing retraction of said counterstop freeing said stop series for restoration to advance the stop previously intercepted, ahead of the counterstop.

12. In a repeat-tabulator device for a typewriter having a frame, an escapement-controlled carriage thereon, motor impelled in tabulating direction, a series of stops on said carriage, a tabulator blade on said frame yieldably held in retracted position and shiftable to stop-intercepting position, power means for shifting said blade, control means to release the carriage to a tabulating run and enable operation of said power means to shift the blade, and means, rendered operative on stop interception, to disable said power means, restore the carriage to escapement control and advance the stop ahead of the blade, comprising, means mounting said series of stops for limited movement relative to the carriage in carriage travel direction, means yieldably holding said stop series toward one extent of limited movement in the tabulating direction, a member reciprocable in a direction transverse to carriage travel, means to translate movement of said stops to said member, and devices mounted on said frame and engageable by said member, said devices being actuatable incident to stop interception, by the resultant movement of said stop series to the other extent of limited movement, to disable said power means, the ensuing retraction of said blade freeing said stop series for restoration to advance the stop previously intercepted, ahead of the blade.

13. In a typewriting machine having a carriage; a tabulating mechanism therefor, comprising a series of normally ineffective blades shiftable to carriage-intercepting position, a member pivoted on each of said blades, an actuator power operable in a path and adapted to cooperate with said blade members to shift any one of said blades to carriage-intercepting position, said blade members being normally out of the path of said actuator, means common to all of said members effective by translation of a blade through a portion only of its path of movement to swing its corresponding said member into the path of said actuator, and key operable means to selectively so translate any one of said blades.

14. In a typewriting machine having a carriage; a tabulating mechanism therefor, comprising a series of normally ineffective blades shiftable to carriage-intercepting position, a member pivoted on each of said blades, an actuator power operable in a path and adapted to cooperate with said blade members to shift any one of said blades to carriage-intercepting position, said blade members being normally out of the path of said actuator, means common to all of said members effective by translation of a blade through a portion only of its path of movement to swing its corresponding said member into the path of said actuator, normally ineffective power-operable means for driving said actuator, and key-operable means to selectively so translate any one of said blades to swing the corresponding said blade member into the path of said actuator and condition said power means to move said actuator.

WILLIAM F. HELMOND.