

No. 878,161.

PATENTED FEB. 4, 1908.

H. H. STEELE.  
TYPE WRITING MACHINE.

APPLICATION FILED MAR. 10, 1906.

3 SHEETS—SHEET 1.

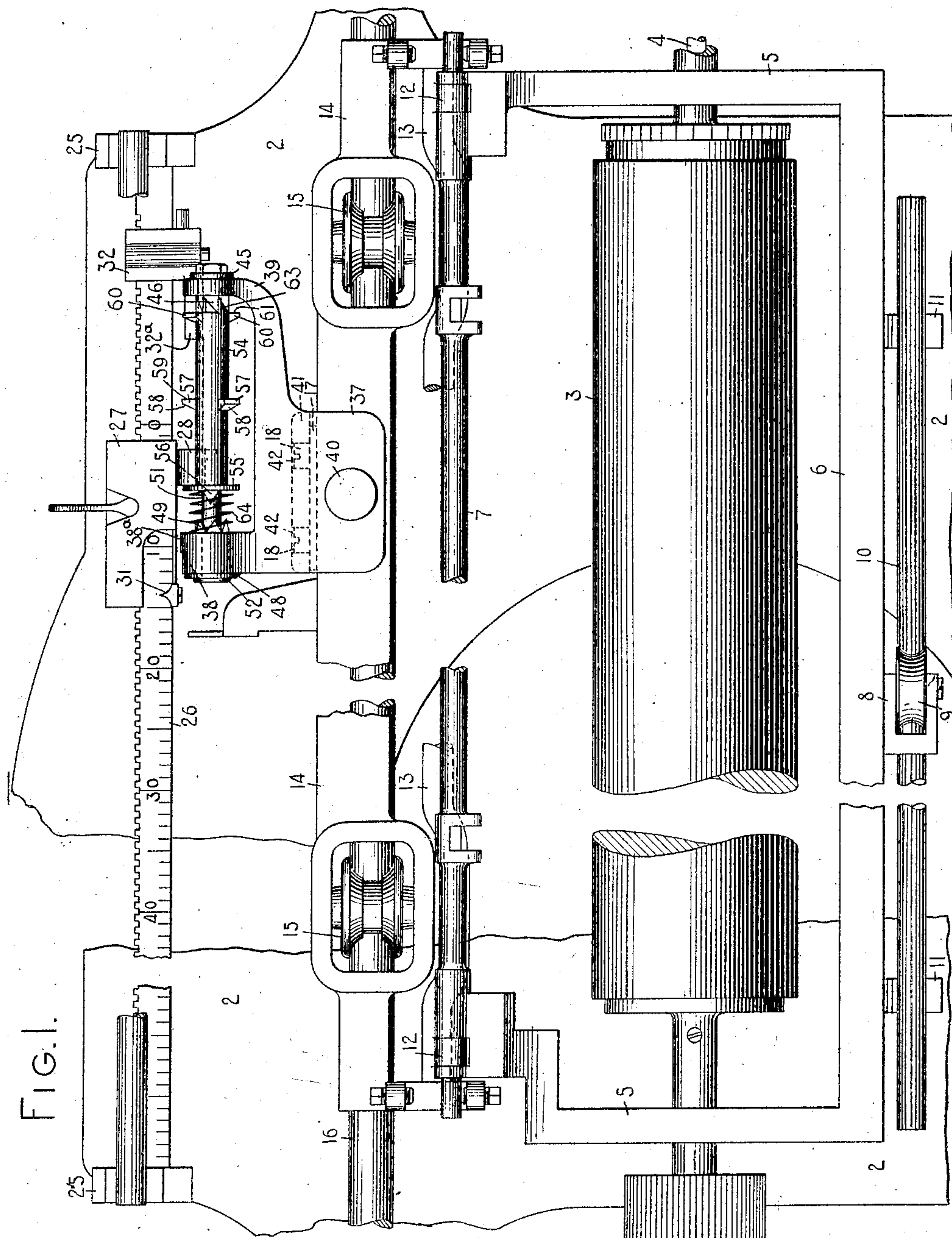


FIG. 1.

WITNESSES:

*J. B. Reeves*  
*Wm. Pool*

INVENTOR

*Herbert H. Steele*  
By *James F. Fabel*  
HIS ATTORNEY

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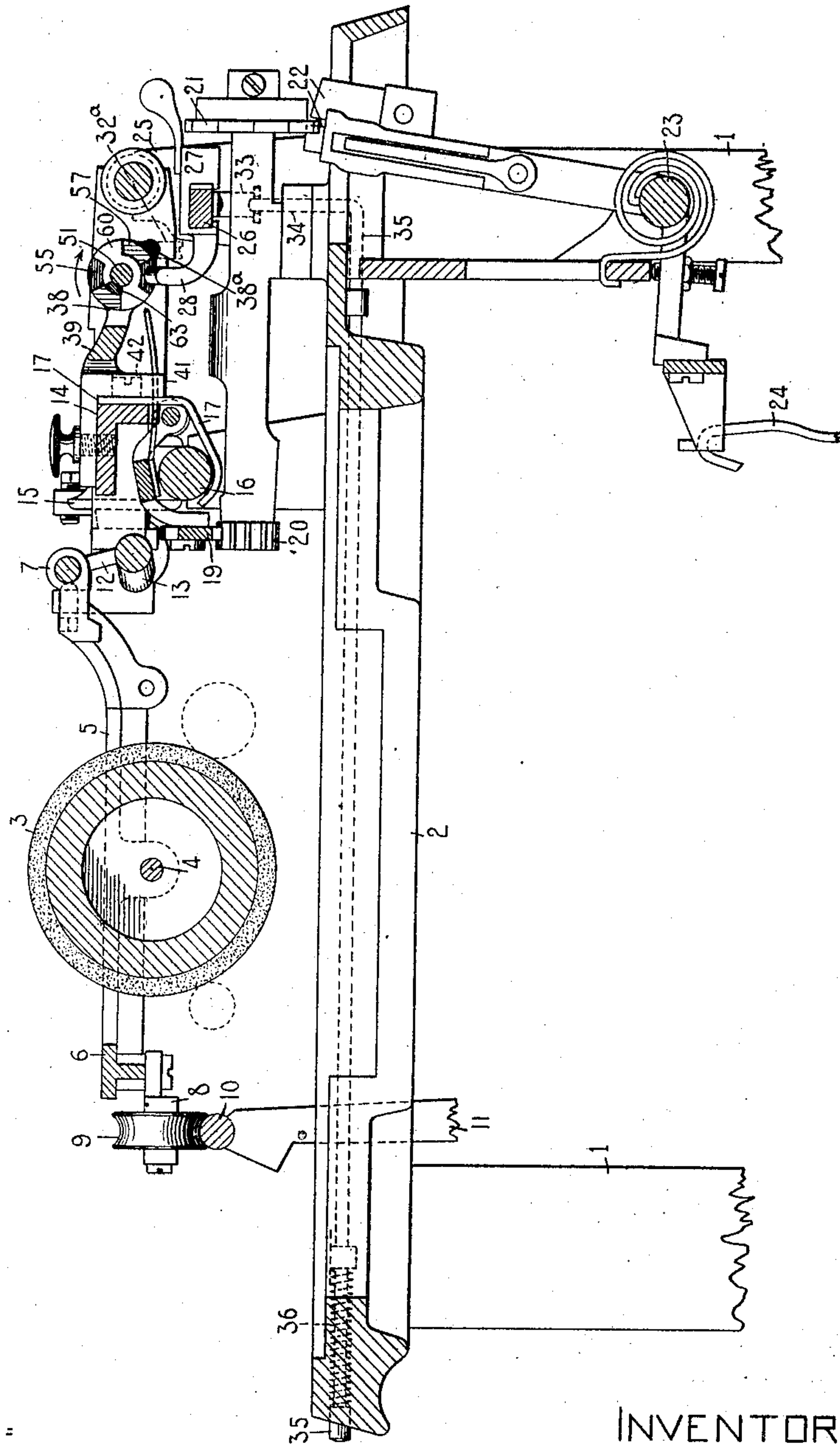
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3 SHEETS—SHEET 2.

FIG. 2.



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3 SHEETS—SHEET 3.

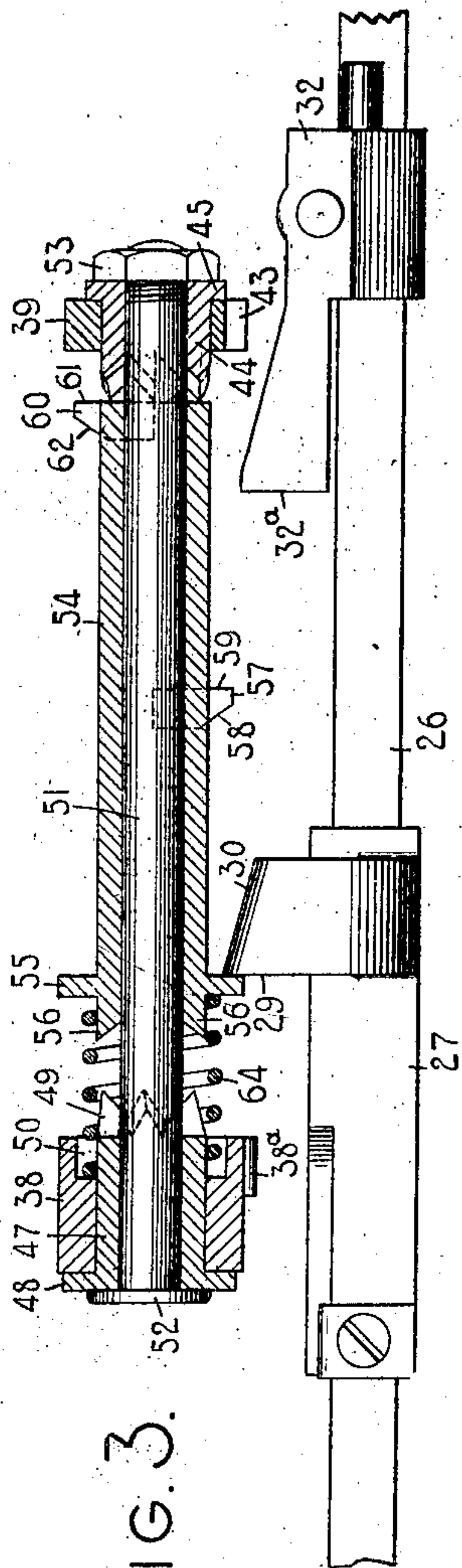


FIG. 3.

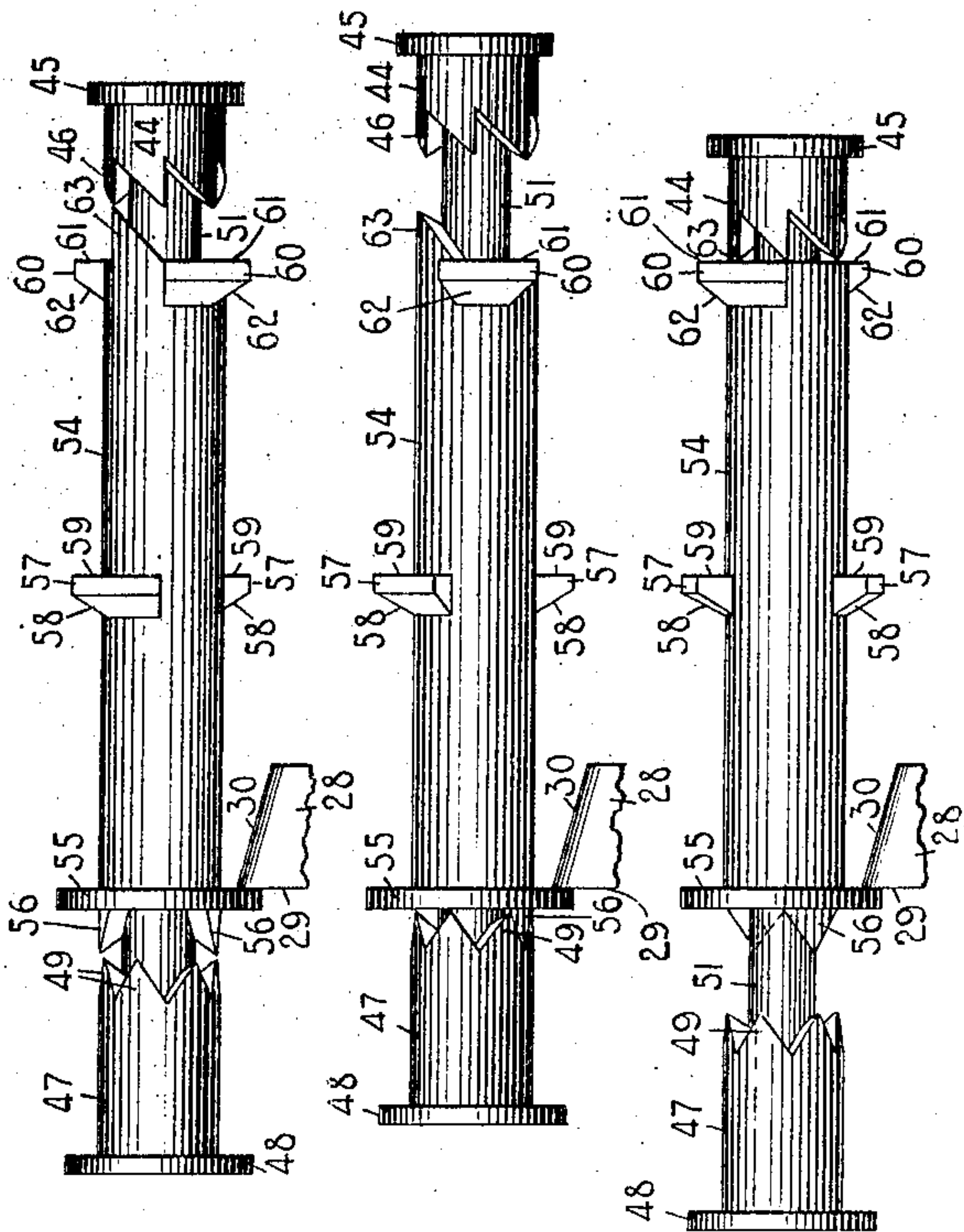


FIG. 4.

FIG. 5.

FIG. 6.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

HERBERT H. STEELE, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPE-WRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

## TYPE-WRITING MACHINE.

No. 878,161.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed March 10, 1906. Serial No. 305,274.

*To all whom it may concern:*

Be it known that I, HERBERT H. STEELE, citizen of the United States, and resident of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates more especially to stop devices for typewriting machines and has for one object the provision of automatically controlled means on the traveling element or carriage for arresting said traveling element at different points during its travel back and forth so that lines may be begun at different points on the work sheet.

To the above and other ends the invention resides in the features of construction, combinations of devices and arrangements of parts hereinafter fully described and particularly pointed out in the claims.

In my pending application Serial No. 304,947, filed March 8th, 1906, I have shown one form of my invention as embodied in a margin regulating attachment applied to the Monarch typewriting machine, the novel margin regulating device in said pending application being adjustably secured on a part which remains stationary during the printing operations of the machine. In the present application I have shown my invention as embodied in a novel margin regulating device which is secured on the traveling element or carriage of the machine and is coöperative with a stop which remains stationary during printing operations, said device being especially convenient for addressing envelopes. The machine shown in the present application is that commercially known as the Remington typewriter, but it is, of course, to be understood that the present form of the invention may be applied to other styles of writing machines and it is also to be understood that it may be used for other kinds of work than addressing envelopes. The principles made use of in my present invention are similar to those made use of in my pending application referred to above, and for a fuller explanation reference may be had to said pending application.

In the accompanying drawings, Figure 1 is a fragmentary top plan view of a typewriting machine embodying my invention, parts of said machine being omitted. Fig. 2 is a fragmentary, vertical, longitudinal, sectional

view of the upper part of the machine, parts being omitted. Fig. 3 is an enlarged detail vertical sectional view taken through the longitudinal axis of the movable portion or sleeve of the stop device and showing the fixed stop which coöperates with said device. Figs. 4, 5 and 6 are enlarged detail front elevations of the stop device showing the movable portion or sleeve thereof in different positions, the support for said device being omitted in said figure.

In the drawings, 1 indicates corner posts rising from the base frame (not shown) of the machine, said corner posts sustaining a top plate 2. Above the top plate and coöperative with type bars (not shown) mounted on said top plate, is a rotary cylindrical platen 3, said platen having an axle 4 journaled in the side bars 5 of a platen frame, said platen frame comprising in addition to the side bars a front bar 6 and a rear bar 7. A bearing block 8 is secured to the front bar 6 and journaled in said bearing block is a wheel or roller 9 coöperating with a shiftable guide rail 10 which is supported on upright arms 11, the latter being pivoted to the frame of the machine and operative by suitable shift mechanism in the usual manner. Arms 12 are pivoted at their upper ends to the rear bar 7 of the platen frame, the lower ends of said arms being connected by a cross rod 13 which is pivoted in the sides of a bar-like carriage truck 14. The carriage truck carries rollers or wheels 15 which coöperate with a fixed guide rail 16, and said carriage truck comprises with the platen frame a platen carriage. Sheet metal retainers 17 are secured at the rear of the carriage truck by headed screws 18, the lower portions of said retainers curving forwardly under the guide rail 16 and preventing vertical displacement of the carriage truck. A feed rack 19 is carried by the truck 14 and normally meshes with a feed pinion 20, said pinion being operatively connected with an escapement wheel 21 which coöperates with feed dogs 22 carried by a dog rocker 23, said dog rocker being connected by arms 24 with a universal bar (not shown), the latter being actuated by the type bar actuating mechanism in the usual manner. Standards 25 at the rear end of the top plate have journaled in them a toothed stop bar 26. Adjustable lengthwise of said stop bar is a margin stop 27 of the usual construction, said stop bar



being provided at its front with a curved lug 28, the latter having a vertical stopping face 29 (Fig. 3) and a beveled top face 30. The margin stop is provided with a pointer 5 31 (Fig. 1) adapted to cooperate with the usual scale formed on the top face of the stop bar 26. A final margin stop 32 of suitable construction is mounted on the stop bar 26 at the right of the margin stop 27. An 10 arm 33 (Fig. 2), depends from the left-hand side of the stop bar 26, said arm being loosely connected with an arm 34 fixed to and extending upward from the rear end of a horizontally disposed push rod 35, said rod 15 being slidable in bearings formed in the top plate and being provided with a restoring spring 36. As is well understood the push rod 36 operates when pressed rearwardly to communicate rotary movement to the stop 20 bar 26 and to swing the stop lug 28 downwardly. The parts hereinbefore shown and described are common to the Remington machine, and it is not deemed necessary to explain their construction or mode of operation in greater detail.

Referring to my novel stopping device, this comprises two parts, a yoke-like support and a sleeve-like stop member mounted thereon. The yoke-like bracket or support 30 comprises a body portion 37 extending longitudinally of the stop bar 26 and having at its left end a rearwardly extending lug or arm 38, and at its right end a laterally and rearwardly extending bent arm or lug 39. The 35 body portion 37 is provided with an opening which receives a thumb screw 40, the stem of the latter passing loosely through the opening in the body portion and engaging a threaded opening in the carriage truck 14, thereby clamping and detachably securing the stop device in place on the carriage. A 40 flange or lip 41 depends from the body portion 37 and when the stop device is in place said flange or lip lies against the rear face of the right-hand retaining plate 17, said flange 45 being formed with perforations as indicated at 42 to receive the heads of the screws 18. The construction is such that the stop device is firmly secured in place by the screw 40 and 50 is prevented from being disarranged by the latter and by the heads of the screws 18. As shown in Fig. 3, the under side of the right-hand lug 39 is cut away as indicated at 43 to permit of free passage of the margin stop lug 28 which lies below it. Said right-hand 55 lug 39 is formed with an opening into which is driven a cam member or sleeve 44 provided with a flange 45 which abuts the outer face of the lug. The inner end of the 60 sleeve 44 is formed with a series of saw teeth 46 which project inwardly beyond the inner face of the lug 39 and are each beveled on one side and straight on the other side, six of such teeth being shown. The left-hand lug 65 38 is formed with an opening into which is

driven a cam member or sleeve 47, said sleeve being provided with a flange 48 which abuts the outer face of said ear. The inner end of the sleeve 47 is formed with a series of teeth 49 projecting inwardly beyond the inner face 70 of the ear and each tooth being beveled on both sides, six of such teeth being shown. The inner face of the left-hand ear 38 is counterbored as indicated at 50 (Fig. 3). The sleeves 44 and 47 are formed with open- 75 ings which receive a bearing or pivot rod 51, one end of said rod having a head 52 and the other end being arranged to receive a binding nut 53 which is screwed up tight to bind the 80 flanges of the sleeve 44 and 47 against the faces of the ears which receive them. The pivot rod 51, the sleeves 44 and 47 and the supporting bracket which comprises the ears 38 and 39, are all maintained in fixed relation by the head 52 and the binding nut 53. 85

Before the rod 51 is mounted in its supports it receives a stop member which is preferably in the form of an elongated slide or sleeve 54, said sleeve being movable both 90 longitudinally and rotatably upon the bearing rod 51. Near its left-hand end the sleeve 54 is provided with an annular head or flange 55; and outside the flange the body of the sleeve is formed with one or more beveled teeth 56 which are adapted to 95 cooperate with the teeth 49 of the fixed sleeve 47. About midway of its length the sleeve 54 is provided with two oppositely disposed and outwardly extending stops or lugs 57. The left-hand faces 58 of said lugs 100 are beveled, but the right-hand faces 59 are plain and serve as stopping or contact faces. In end view each lug 57 appears, as shown in Fig. 2, as comprising a part of a sector of a circle, the circumference of which is equal to 105 and is concentric with the outer circumference of the annular flange 55, the center of said circumference being the axis of the pivot rod 51. As will be understood from a consideration of Fig. 2 and the other figures the 110 stops 57 are bounded at their roots by the circumference of the cylindrical sleeve 54. Near its right-hand end the sleeve 54 is provided with two oppositely disposed stops or 115 lugs 60, said stops being similar in shape and dimensions to the stops 57 and having plain contact faces 61 and beveled faces 62. As plainly appears from an inspection of Fig. 2, the stops 60 are disposed at angles of 60° to the corresponding parts of the stops 57. 120 Each of the stops 60 and 75 when considered endwise cover one-sixth of the annular face of the flange 55. The shape of these stops 57 and 60 is such and they are so disposed circumferentially of the sleeve 54, that when 125 the stop member is viewed from the right as in Fig. 2 the only portions of the inner face of the annular flange 55 which are exposed correspond both in shape and in dimensions to each of the stops 57 and 60 and the ex- 130



posed portions of said flange 55 are oppositely disposed to each other. At the right of the plain faces 61 of the stops 60 a tooth 63 projects lengthwise from the end of the sleeve 54, said tooth being adapted to cooperate with the teeth 46 of the fixed sleeve 44. A wire expansion spring 64 is coiled around the rod 51 between the flange 55 and the left-hand lug 38, the outer end of said spring being received in the counterbore 50 in said lug. The spring 64 serves normally to press the sleeve 54 longitudinally rightward along the rod 51 so as to maintain the tooth 63 normally in engagement with the teeth 46 of the right-hand fixed sleeve 44.

Referring now to the operation of the parts above described and assuming that it is desired to address a number of envelopes, the first envelop is entered in the machine and fed around with the platen in the usual manner. The usual paper feed devices properly guide and control said envelop as it is fed through the machine. The point at which the first letter of the first line of the address is to be written is noted on the usual platen scale (not shown) and the margin stop 27 is then adjusted so that its pointer 31 is at a corresponding point on the scale on the stop bar 26. At the beginning of an operation the sleeve 54 should be in such a position circumferentially considered that the stops 57 and 60 are out of the path of the stop lug 28 of the margin stop 27. Let us assume that the various parts are in the relation shown in Figs. 1, 2 and 3 with the spring 64 pressing the tooth 63 into engagement with two of the teeth 46 and with the margin stop just engaging with the flange 55 of the sleeve 54. It will be understood that up to this point the movement of the carriage from an indefinite point at the left towards the right has been free and unobstructed, the stop lug or arm 28 having passed through the cut-away 43 in the lug 39. If now the rightward movement of the carriage be continued from the position illustrated in Fig. 1, the contact face of the stop lug 28 engaging the flange 55 will overcome the force of the spring 64 and the position of the sleeve 54 relative to its supporting bracket will be changed, the bracket moving on with the carriage and the sleeve being held by the margin stop. The effect is the same as though the bracket remained stationary and the sleeve were moved along the rod 51 away from the right-hand fixed sleeve 44 and towards the left-hand fixed sleeve 47. Two of the stages of this relative movement between the bracket and the sleeve are illustrated in Figs. 4 and 5. In Fig. 4, the bracket is shown as being moved far enough to the right to completely disengage the tooth 63 from the two cooperating teeth 46. From an inspection of this figure it will be noted that the parts are so proportioned and arranged that the disengagement

of these teeth takes place just before the engagement with the teeth 56 at the left of the sleeve with the cooperating fixed teeth 49. The latter teeth are slightly out of line with the fixed teeth 46 and as the relative movement between the sleeve 54 and its supporting bracket causes the teeth 56 to cooperate with the teeth 49, and this engagement of the teeth is effective to produce a slight rearward turning or rotary movement of the sleeve so that when the cooperating teeth 56 and 49 are fully engaged, said sleeve will have been turned sufficiently in the direction of the arrow in Fig. 2 to carry the point of the tooth 63 rearwardly past the point of the tooth 46 with the straight side whereof it had previously cooperated. This change in the relation of the two teeth is illustrated in Fig. 5. When the teeth 56 and 49 are fully engaged, as shown in Fig. 5, further relative movement between the sleeve and its support is prevented, and the flange 55 will cooperate with the margin stop 27 to prevent further rightward movement of the carriage. The spring 64 serves to cushion the sleeve and soften its impact with its support and with the margin stop. This stoppage of the carriage will occur at the proper point for beginning the first line of the address on the envelop. Suppose now that the first line of said address be written in the usual manner. As the letters are printed the carriage will be fed step-by-step from right to left, the supporting bracket of the stop device moving to the left as the carriage moves. During the first few spaces of this movement, the sleeve 54, however, will remain fixed, the flange 55 being maintained in contact with the stop lug 28 by the coiled spring 64. A relative movement is thereby effected between the sleeve 54 and its support, during which the teeth 56 will separate from the teeth 49 and the tooth 63 will enter the space between two of the teeth 46, rearward (or towards the back of the machine) of that space with which said tooth 63 had last engaged. As the relative movement thereafter continues, the beveled edges of the teeth 63 and 46 cooperate to cause a rearward rotary movement of the sleeve 54 so that when the tooth 63 is completely engaged with the sides of the teeth 46 with which it now cooperates, said sleeve will have been turned rearwardly to the position shown in Fig. 6. Since there are six teeth 46, the turning movement communicated to the sleeve when the tooth 63 disengages from one opening and passes to engage the next opening between said teeth 46, amounts to one-sixth of the circumference or  $60^\circ$ . This rearward turning movement of the sleeve has therefore been sufficient to rotate the stop 57 shown as extending downwardly and rearwardly in Fig. 2 from the position shown in said Fig. 2 to the position occupied in said figure by the lowermost ex-



posed portion of the flange 55; that is to say, the stop 57 has been turned down into the path of the margin stop lug 28. The longitudinal displacement of the sleeve 54 relative to its support and the simultaneous rearward turning movement of said sleeve will be stopped when the tooth 63 is fully engaged with the teeth 46, so that further letter space movement of the carriage will move the stop device as a whole leftward and will cause the downwardly extending stop 57, after some five or six additional letter space movements, to engage with the beveled face 30 of the margin stop lug, depressing said stop lug and communicating a rotary movement to the stop bar 26. The rotary movement of the stop bar operates to lift the usual bell hammer (not shown) so that when the carriage has been fed far enough leftward to permit the stop 57 to clear the beveled face 30 of the margin stop, the margin stop bar will return to normal position and in doing so will operate the bell alarm mechanism, thus indicating that the stops are positioned to cooperate properly. During the printing of the letters of the first line of the address the letter space movements of the carriage are free and unobstructed, the cut-away 43 preventing engagement of the stop device with the margin stop 27. The first line of the writing having been completed the platen is line spaced in the usual and known manner and then the carriage is returned from left to right to begin the second line of writing. As the carriage is moved rightward the downwardly projecting stop 57 will contact with the face 29 on the margin stop arresting the sleeve 54, so that as rightward movement of said carriage is continued the supporting bracket moves with it, again compressing the spring 64 and separating the tooth 63 from the teeth 46 with which it was engaged. The carriage will be finally arrested when a full and complete engagement between the teeth 56 and the teeth 49 takes place. This time the carriage has been arrested by the cooperation of the margin stop with one of the stops 57 instead of by the cooperation of the margin stop with the flange 55. Consequently the carriage will be in a position to begin the second line some half dozen spaces more or less to the right of the first one, the number of spaces between the beginnings of the two lines depending on the longitudinal distance between the flange 55 and the stop 57. This distance, of course, is optional, but in the present case I have shown these two stops seven letter space distances apart. Before the supporting bracket has reached the limit of its rightward movement, the sleeve 54 will have been turned slightly rearward by the cooperation between its teeth 56 with the fixed teeth 49 in a manner already explained. Consequently as the second line of the address is written and the

carriage is moved step-by-step to the left the restoring spring 69 will again serve to maintain the sleeve 54 against the contact face 29 of the margin stop until the tooth 63 at the right of said sleeve has again become engaged with the tooth 46, thereby causing an additional rearward rotary movement of 60° to be communicated to said sleeve. This movement serves to bring one of the stops 50 into the path of the margin stop so that as the writing of the second line is continued, said stop 60 will cooperate with the margin stop to sound the bell alarm. The second line having been completed the platen is again line spaced and the carriage is restored to the right. This time the stop 60 will cooperate with the margin stop to arrest the carriage in position to begin the third line seven letter space distances to the right of the beginning of the second line. As the third line is written a third rotary movement of the sleeve 54 is completed in the same manner as the two preceding movements. Said sleeve will now have been turned in all through 180°. Consequently when the carriage is next restored to the right the margin stop will cooperate with the flange 55 at the part of the latter opposite to that with which it first cooperated. This opposite part of the flange 55 is that shown above the rod 51 in Fig. 2.

Ordinarily the address on an envelop consists of three lines and I have designed the present attachment for such an address. The address on the first envelop being completed, said envelop may be removed from the machine and a second envelop may be entered and addressed in the same manner as the first. The operation will be the same as that above explained except that the stops 57 and 60 that before were inoperative will be automatically moved to operative position in turn. When the second envelop is being addressed the sleeve 54 will have made one complete rotation and will be ready for the third envelop. Obviously this operation may be repeated indefinitely, the sleeve 54 turning always in the same direction and assuming a recurrent series of positions.

If it is desired to write a fourth line on an envelop, as for example the county in which the addressee resides, this additional direction may be written in the lower left-hand corner by operating the margin release rod 35 to swing the margin stop lug 28 down out of the path of the stop device on the carriage so that the latter may be moved rightward until the stop device has completely cleared the margin stop lug 28. As soon as this clearance occurs the rod 35 may be released to permit the stop bar 26 to return to normal position and bring the final margin stop 32 into the path of a lug 38<sup>a</sup> projecting downwardly and rearwardly from the left-hand



lug 38 of the supporting part of the novel stop device. The stop 32 should, of course, be adjusted to bring the beginning of the additional or fourth line to the proper place at the lower left-hand corner of the envelop. The stopping portion 32<sup>a</sup> of said stop 32 should be made to lie closer to the stop bar 26 than in the ordinary construction, but otherwise said stop 32 is like the usual stop on the machine.

It will be seen that I provide two stops automatically cooperating to arrest the carriage in a series of varying positions in its path of travel, this series in the present instance comprising three lines and being a recurrent one; that further I provide a stop having a plurality of contact surfaces arranged to cooperate with another stop to arrest the carriage at different points in its travel in such a way that the contact surfaces intermediate the cooperating stop and the particular contact surface with which it is to cooperate may be skipped or passed. The means for automatically turning the stop sleeve, said means consisting of the cam members or toothed sleeves 44 and 47, is preferably mounted on the two-part stop device itself, but it is of course obvious that said means need not be so mounted.

While my invention is especially adapted for addressing envelopes and has been explained in connection with such work it is to be understood that said invention may be used for tabulating work of various kinds and that the construction shown may be adapted to different forms of such tabulating work.

Certain of the features shown and described herein are broadly claimed in my application hereinbefore referred to which is pending concurrently herewith.

Various changes may be effected without departing from the scope of my invention.

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

1. In a typewriting machine, the combination of a traveling carriage; a stop thereon; and a stop on the frame of the machine, said carriage stop being movable by the stop on the frame into and out of engaging position.

2. In a typewriting machine, the combination of a traveling carriage; a stop member thereon; a stop on the frame of the machine, said carriage stop member being provided with a plurality of contacting surfaces; and means operating to control said carriage stop member to bring different contacting surfaces to operative position.

3. In a typewriting machine, the combination of a traveling carriage; a stop thereon; a cooperative stop on the frame; and means co-acting with said carriage stop to move it into and out of line with the cooperative stop, said co-action being caused by the stop on the machine frame.

4. In a typewriting machine, the combination of a traveling carriage, a group of stop devices comprising a two-part stop device on the carriage and a stop device on the frame of the machine, one part of the stop device on the carriage being movable on the other part in one direction by the stop device on the frame, and means cooperating with the movable part of the stop device on the carriage to move it in another direction.

5. In a typewriting machine, the combination of a traveling carriage; a group or set of stop devices comprising a two-part stop device on the carriage and a stop device on the frame of the machine cooperative with the carriage stop device to effect a relative movement of translation between the parts of the latter; and means cooperating with one of said parts to give it rotary movement.

6. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising two parts; a stop on the frame of the machine cooperative with the carriage stop device to effect a relative movement of translation between the parts of the latter; and means cooperating with one of said parts to give it simultaneous rotary movement, said rotary part being provided with a plurality of contacting surfaces, different ones of which are brought by the movements communicated to the parts of the carriage stop device into position to cooperate with the stop on the frame of the machine.

7. In a typewriting machine, the combination of a traveling carriage; a stop device thereon; a stop device on the frame of the machine, the carriage stop device being provided with a plurality of contacting or engaging surfaces; and means controlled by the carriage movements and automatically operating on the carriage stop device to bring the contacting surfaces thereof into position to cooperate with the stop device on the frame in recurrent order.

8. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising two parts, one of which is provided with a plurality of contacting surfaces; a stop on the frame of the machine cooperative with said carriage stop device to effect a relative movement of translation between its two parts; and automatic means for causing rotary movement of one of the parts of said carriage stop device whereby different ones of said contacting surfaces are brought to operative position.

9. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising two parts, one of which is provided with a plurality of contacting surfaces; a stop on the frame of the machine cooperative with said carriage stop device to effect a relative movement of translation between its two parts; and means for



causing rotary movement of one of the parts of said carriage stop device whereby different ones of said contacting surfaces are brought to operative position, said means being brought into play automatically during the relative movement of translation between the parts of the carriage stop device.

10. In a typewriting machine, the combination of a traveling carriage; a reciprocatory stop thereon provided with a plurality of contacting surfaces; a stop on the frame of the machine; and means for automatically rotating said carriage stop as it is reciprocated in order to bring the contacting surfaces to operative position in turn.

11. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising two parts, one of which has a plurality of contacting surfaces; a stop on the frame of the machine operative to move one part of said carriage stop bodily in one direction relatively to the other part; means for effecting a relative bodily movement in the opposite direction between said parts; and means for causing a rotary movement of one part of said carriage stop device as one of the relative bodily movements is taking place, said rotary movement bringing different contacting surfaces of said stop into position to cooperate with the stop on the frame.

12. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising a plurality of contacting or engaging surfaces arranged at different points lengthwise of the carriage; a stop device on the frame of the machine; and means acting automatically on the first named stop device to bring a predetermined contacting surface thereof into cooperation with the stop device on the frame during the travel of the carriage, any intermediate contacting surfaces being skipped or passed.

13. In a typewriting machine, the combination of a traveling carriage; a stop device thereon comprising a stop support and a rotary stop sleeve mounted on said support, the two parts of said stop device being capable of relative reciprocatory movement, said stop sleeve being provided with a plurality of contacting surfaces arranged at different points longitudinally and circumferentially of said sleeve; a stop on the frame of the machine cooperative with the carriage stop device to effect a relative movement between its parts in one direction during the movement of the carriage; a spring constantly tending to effect a relative movement in the opposite direction; and cams cooperating with said sleeve to give it rotary movement during said reciprocatory movement.

14. In a typewriting machine, the combination of a traveling carriage; a stop sleeve mounted thereon and provided with a plu-

rality of contacting surfaces; a spring maintaining said sleeve in normal position; a stop on the machine frame cooperative with said sleeve to overcome said spring; a cam cooperating with said sleeve to give it rotary movement as the stop on the frame operates against said spring; and a second cam cooperative with said sleeve to give it further rotary movement as said spring operates to restore the normal relation of the parts.

15. In a typewriting machine, the combination of a carriage; a stop on the frame of the machine; means for feeding said carriage step-by-step in one direction; a stop device on said carriage comprising a support and a reciprocatory sleeve provided with a plurality of contacting surfaces circumferentially and longitudinally spaced apart, the normal relations of the parts of said stop device being altered by the stop on the frame as said carriage is returned in the direction opposite to the step-by-step feed movement for beginning a new line of writing; a spring adapted to restore the parts to normal relation; and connections cooperating with said sleeve to give it progressive rotary movements during the changes of relation between it and its support.

16. In a typewriting machine, the combination of a carriage; a stop on the frame of the machine; means for feeding said carriage step-by-step in one direction; a stop device on said carriage comprising a support and a reciprocatory sleeve provided with a plurality of contacting surfaces arranged circumferentially and longitudinally of said sleeve; a spring constantly tending to press said sleeve in a direction opposite to that of the step-by-step movement of said carriage, the stop on the frame being cooperative with said sleeve to effect relative movement between it and its support; a cam on said stop device cooperative with said sleeve to give it rotary movement as said relative movement is effected by said stop on the frame; and a second cam cooperative with said sleeve to give it rotary movement as normal relations between the parts of the carriage stop device are restored by said spring.

17. In a typewriting machine, the combination of a stop bar on the frame of the machine; a stop adjustable on said bar; a carriage; means for feeding said carriage step-by-step in one direction; a margin stop attachment removably secured on said carriage and cooperative with the stop on the frame, said attachment comprising a yoke or bracket, a pivot rod secured in said bracket, circularly arranged sets of teeth fixed at opposite ends of said rod, a sleeve rotatable on said rod, said sleeve being provided with radially disposed contact lugs arranged progressively circumferentially of said sleeve and said sleeve being further provided at its



ends with teeth adapted to cooperate with the teeth fixed on the bracket, and a spring coiled on said rod and operating to press said sleeve constantly in a direction opposite to  
5 that of the step-by-step feeding movement of said carriage.

Signed at Syracuse, in the county of Onon-

daga and State of New York this 8th day of March A. D. 1906.

HERBERT H. STEELE.

Witnesses:

JOHN S. MITCHELL,  
N. J. LOGAN.