

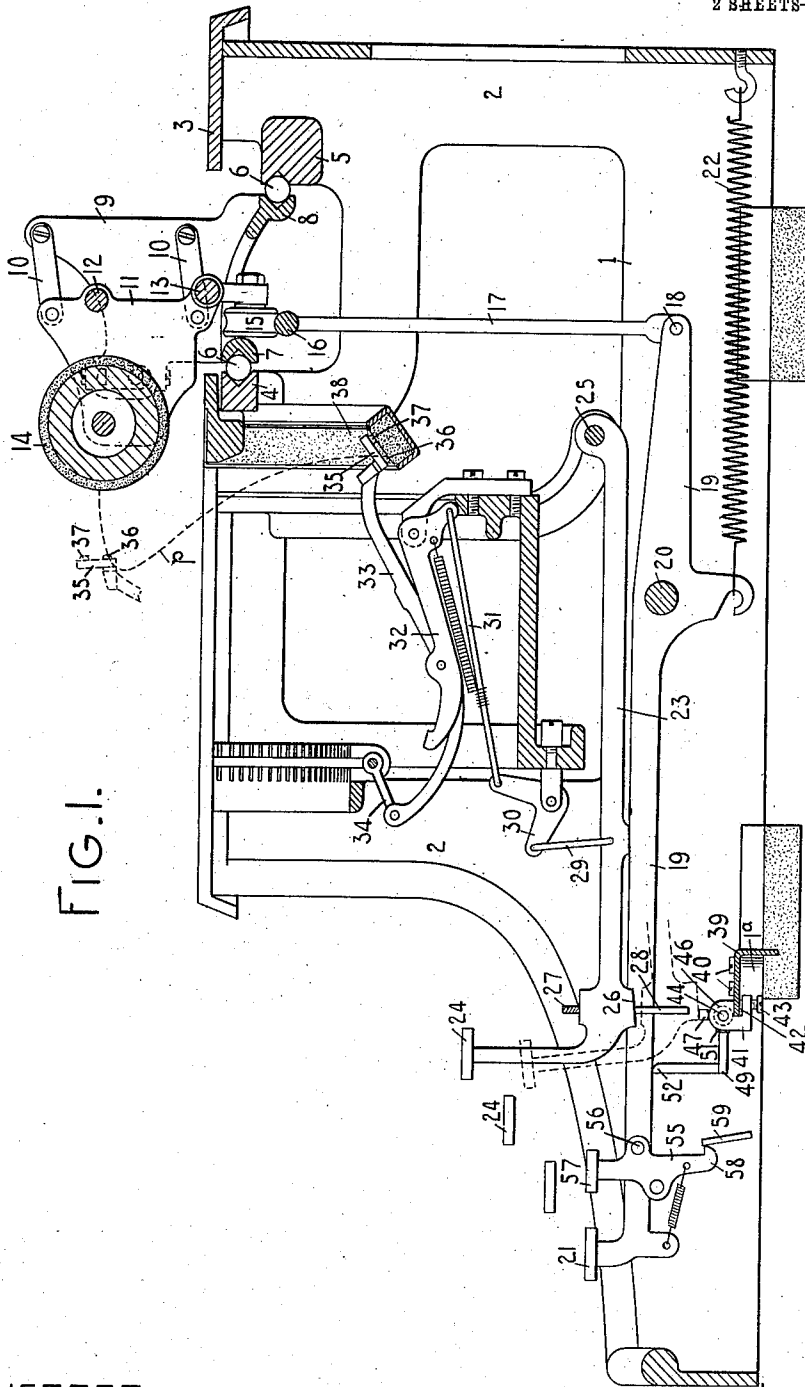
V. STERN.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 23, 1911.

1,059,782.

Patented Apr. 22, 1913.

2 SHEETS—SHEET 1.

FIG. 1.



WITNESSES:

J. M. Wells.
M. W. Pool

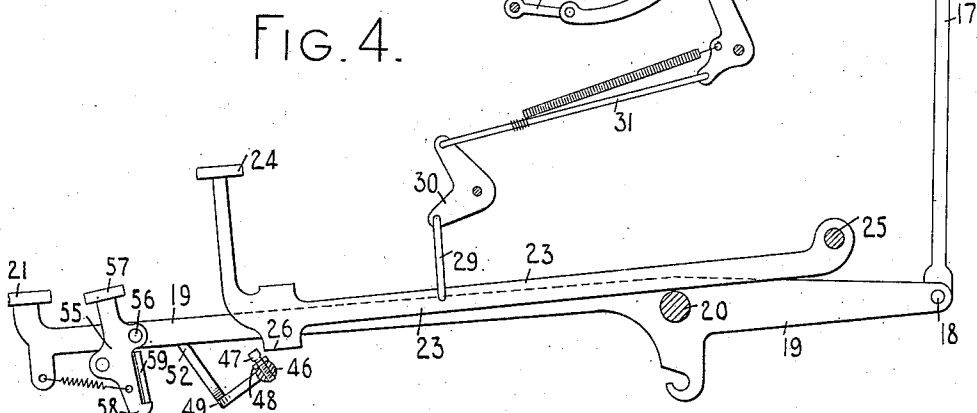
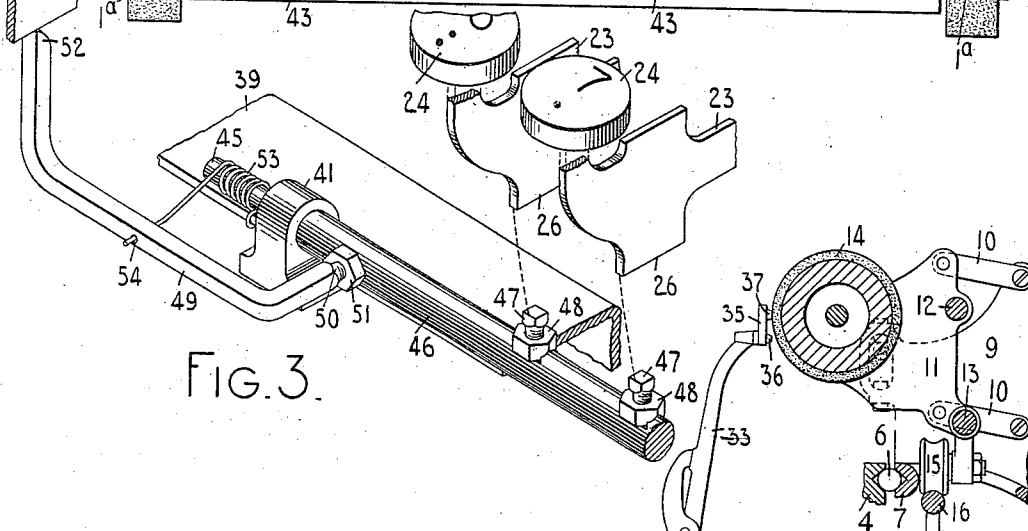
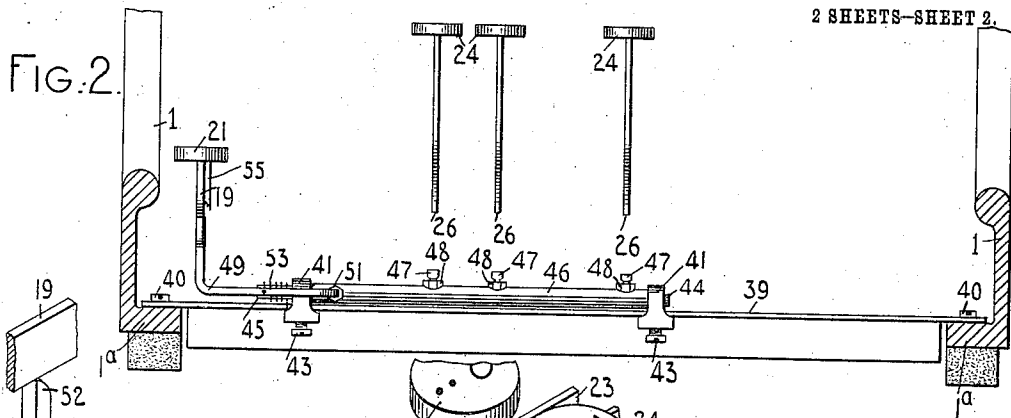
INVENTOR.

Vasili Stern
By Jacob Felbel

HIS ATTORNEY

1,059,782.

2 SHEETS--SHEET 2.



WITNESSES:

E. M. Wells.
m.w. Pool

INVENTOR:

Vasili Stern
By Jacob Felbil

HIS ATTORNEY

UNITED STATES PATENT OFFICE.

VASILY STERN, OF MOSCOW, RUSSIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO
REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION
OF NEW YORK.

TYPE-WRITING MACHINE.

1,059,782.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed December 23, 1911. Serial No. 667,505.

To all whom it may concern:

Be it known that I, VASILY STERN, a subject of the Emperor of Russia, and resident of Great Ardynka 7, Moscow, in the Government of Moscow and Empire of Russia, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to type arresting mechanism for typewriting machines and its general object is to provide new and improved mechanism of the character specified.

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

My invention is particularly adapted for use in connection with typewriting machines wherein the type bars each are provided with a plurality of types, in which case it frequently happens that one of the type characters is a punctuation mark such as a period while the other character or other characters on the same type bar are figures or letters having much greater printing area or surface. In the case of a period it is desirable to stop the type bar, or a part of its actuating mechanism, by some sort of arresting device, prior to the engagement of the period with the paper, so as to prevent the period from deeply indenting or puncturing the paper as it otherwise would be apt to do. Such arresting or stop device would, however, be undesirable in connection with the other type character or characters on the same type bar with the period as it would be likely to prevent a proper depth of impression being obtained from such other character or characters. Accordingly my present invention provides an arresting or stop device which is in use when the period or punctuation character is being employed but is thrown out of use or rendered inoperative when the other character or characters on the same type bar are brought into operation.

While the principles of my invention may be adapted to various styles of writing machines; the preferred form as shown herein is embodied in a Yost visible typewriting machine, which is a front strike ink pad typewriter of the shifting platen style.

In the accompanying drawings, Figure 1

is a vertical, front to rear sectional view of so much of a Yost visible typewriting machine as is necessary to completely show my invention. Fig. 2 is a fragmentary vertical transverse sectional view of said machine taken forward of the first row of printing keys. Fig. 3 is a fragmentary perspective view of the arresting or stop mechanism and associate parts. Fig. 4 is a skeletonized view, corresponding with Fig. 1, but showing various parts in different relationships from those in which they appear in said Fig. 1.

As appears from Fig. 1, the main frame of the machine comprises a base 1, posts 2 and a top plate 3. Supported on the upper part of the main frame are fixed track-ways 4 and 5 which are grooved to receive anti-friction rollers 6, said rollers providing bearings for the front and rear bars 7 and 8 of a carriage truck which further includes upright end bars 9 connected by links 10 with the end bars 11 of a platen frame or carrier which further comprises connecting rods 12 and 13. Said platen frame provides bearings for a cylindrical platen 14 which, with the platen frame, is shiftable up and down on the truck to change case by devices which include a roller 15 adapted to run on a shift rail 16 supported near its ends on a pair of vertical arms 17, said arms being pivotally connected at their lower ends at 18 to shift levers 19. There are two levers 19 one rigidly secured near each end of a rock shaft 20 journaled in the sides of the base, the levers 19 terminating at their forward ends in vertical extensions which are provided with finger pieces or shift keys 21. The shift frame comprising the levers 19 and rock shaft 20 is provided with a restoring spring 22 which normally maintains the parts in the Fig. 1 position, but when one of the keys 21 is depressed the shift frame, comprising the rail 16 and the arms 17, is elevated, acting through the roller 15 to lift the platen frame and platen, shifting the same to position to coöperate with the upper case types. This shifting movement takes place without disturbing the carriage truck; but during printing movements the truck and the platen frame, which together constitute the platen carriage, move endwise toward the left as one member, the platen being thus adapted to travel on and with the carriage comprising said truck and said frame for the purpose of spacing between

letters or characters. The printing devices comprise printing key levers 23 each provided with a printing key 24 and fulcrumed on a fixed fulcrum rod 25. Each key lever 5 has an enlargement near its forward end, the under face or edge 26 whereof is primarily adapted to cooperate with a line locking bar, not shown herein. As will be observed from Fig. 1, the usual front guide comb 27 is so 10 located that its tines or teeth 28 cooperate with the sides of the enlargements on the key levers. Each key lever 23 is connected by devices comprising a link 29, a bell crank 30, a second link 31 and a second bell crank 15 32 with a type bar 33 which is furthermore pivotally supported and guided by a third link 34. Each type bar is provided at its free end with a type block 35 having two types, a lower case type 36 and an upper case type 37, said types normally resting 20 against the face of a curved inking pad 38. When one of the printing keys 24 is suitably actuated, it operates through the associate key lever 23, link 29, bell crank 30, link 25 31 and bell crank 32 to actuate the connected type bar 33 and cause the lower case type 36 thereon to cooperate with the front face of the platen 14, said type following the path indicated by the dotted line *p* in Fig. 1. 30 When, however, one of the shift keys 21 is operated to raise the platen to upper case position the upper case type 37 will cooperate with the platen and the paper thereon.

It has not been deemed necessary to describe the parts hereinbefore referred to at 35 great length since they are common to the Yost visible machine and do not in themselves constitute my present invention. The parts with which said invention is more particularly concerned are detachably supported 40 on an angular bar 39 which extends from side to side of the base below the key levers and is secured by screws 40 to lugs 1^a integral with the base 1 (Figs. 1 and 2). The bar 39 is or may be part of the tabulator guide 45 frame found in the Yost visible machine. The horizontally disposed portion or lip of the angular bar 39 receives a pair of bearing blocks 41 which, as shown in Fig. 1, are 50 formed with slots 42 that fit over the horizontal lip and are clamped or secured thereto by set screws 43. The blocks 41 provide bearings for the reduced end portions 44 and 45 of a rock shaft 46, said rock shaft in turn supporting the arresting stops for the type 55 actuating mechanism. These arresting devices or stops proper in the present instance are screws 47 each provided with a squared head and a threaded shank which screws 60 vertically downward in a tapped opening in the rock shaft 46. A check or locking nut 48 cooperates with each screw stop 47 and provides means for permitting the stop to be adjustably secured at the proper height for 65 cooperation with the particular key lever

which said stop underlies. As shown clearly in Fig. 3, the nuts 48 engage slight depressions or seats in the top of the rock shaft 46. While only one stop device 47 may be employed, I have shown three such in the 70 present instance, and of course the number may be varied as desired. These three stops considered from left to right along the stop bar or rock shaft 36 are designed for use in connection with the colon, period and 75 comma keys, respectively, these keys being in turn connected with the type bars which respectively print the colon, period and comma in lower case. The square heads of the stops 47 normally underlie the associate 80 key levers 23 and are in the path of the edges 26 on said key levers, the comb teeth 28 insuring that these edges shall not be deflected sidewise but shall strike squarely on the screw heads. 85

Connections are provided between the rock shaft 46 and the case shifting mechanism of the machine, said connections comprising an angular arm or device 49 which at its right-hand end is threaded, as indicated at 50, 90 to engage in a horizontal tapped opening in the left-hand end portion of the rock shaft 46. A check nut 51 cooperates with the threaded end 50 to secure the arm 49 fixedly to the rock shaft 46. The construction provides for adjusting the arm 49 with respect 95 to the rock shaft, thus variably adjusting the connections between the arresting stops and the platen shifting means. The arm 49 projects forward from the rock shaft and is then bent or off-set laterally outward or toward the left and from the end of the off-set portion is bent vertically upward, the free end of this upwardly bent portion being rounded to provide a nose 52 which underlies the left-hand shift key lever 19 and is adapted to slidably cooperate therewith 100 when said lever is depressed. Normally the nose 52 is maintained in contact with the under edge or face of said shift lever by a spring 53 which is coiled around the extension 45 at the left of the rock shaft and projects forward at one end to engage in a hole 54 in the off-set portion of the arm 49. The other end of the spring is hooked over 105 the horizontal lip of the bar 39. The spring 53 serves as a restoring spring for the rock shaft and stop devices thereon; and also as a positioning device for said stop devices, since the spring normally maintains the nose 52 engaged with the shift lever 19 and thus determines the normal position of the stops 47. 110

The arresting devices or stops 47 are so adjusted that when one of the associate 115 key levers 23 is operated in lower case position the stop device or edge 26 on said actuated key lever will cooperate with the stop 47, as shown by the dotted lines in Fig. 1, at which instant the connected type bar and type 120 125

block will be in the position shown by dotted lines in Fig. 1. The looseness in the connections and resiliency of the parts enables the lower case type 36 to move forward under the momentum it has acquired to the platen and print, however, after the connected key lever has been positively arrested as shown. The arresting position illustrated by the dotted lines has been found by me to be most satisfactory in practice but of course if variation be desired this may be readily effected by adjusting the stop 47. By lowering the normal position of the stop, the lower case type, assuming the same to be the period type, will give a deeper impression than would be given by the adjustment shown in Fig. 1, and of course a lighter impression will be obtained by raising the normal position of the stop 47.

As will be observed from Fig. 3, the period type in the machine shown herein is associated on the type block with the numeral 7, the "7" of course being the upper case type and the period the lower case type. To obtain the best impression from the "7" or upper case type it is desirable that the type should strike the platen without its actuating mechanism being arrested by the stop device 47, and accordingly by reason of the connections including the arm 49 the stop 47 will be automatically rendered inoperative when the upper case or "7" type is brought into use. This will be clearly apparent from a consideration of Fig. 4 which shows the platen in shifted or upper case position, and the type bar in printing position. From a comparison of Figs. 1 and 4 it will be understood that when the platen is shifted by depressing one of the keys 21 the left-hand key lever 19 will depress the nose 52 and the arm 49 and will swing the rock shaft 46 forward until the heads of the stops 47 thereon clear or are swung forward out of the path of the associate stop devices 26 on the key levers 23. Accordingly if now any one of the key levers 23, including those associated with stops 47, be depressed, it will swing downward freely and will not be arrested until the connected type bar strikes with its upper case type against the front face of the platen or the paper thereon. This free and unobstructed movement of the type bars will continue at printing operation so long as the platen shifting mechanism maintains the platen in upper case position. The left-hand shift lever 19 is preferably associated with the usual or other suitable shift locking devices comprising a spring-pressed lever 55 pivoted at 56 to the left-hand lever 19 and provided at its upper end with a locking key 57, the lower end of said lever terminating in a hook 58 which is adapted to cooperate with a fixed abutment 59 as shown in Fig. 4 to lock the platen in upper

case position. It will be apparent that the locking devices 55 and 59 also provide means for locking the stops 47 out of operation, as shown in said Fig. 4. On releasing the shift-lock key 57, the platen shifting mechanism will be restored to the Fig. 1 position; and the stop mechanism including the stops 47, stop carrier or rock shaft 46 and connecting arm 49 will concurrently be automatically restored to normal position by the spring 53. Consequently the stops 47 will again be operative whenever their associate key levers are actuated for printing from the lower case types. The stops 47 are yieldingly mounted through the spring 53 so that the movement to operative or locking position of the line locking bar (not shown) which underlies the key levers will not be interfered with; but if necessary said stops will yield slightly to said line locking bar.

It will be observed that by my present invention I provide in combination a platen, type actuating mechanism, a stop therefor, type varying mechanism (in the present case, platen shifting mechanism) and connecting means between said varying mechanism and said stop; that a key operated type bar provided with two types is combined with a stop for one only of said types; that means are provided for moving said stop out of use when the other type is brought into use; that said means is operative automatically by the case shifting mechanism; that a stop is provided co-operative with type actuating mechanism in combination with means for moving said stop into and out of operative position; that said means operates automatically; that the automatic operation is effected in the present instance through connections with the case shifting mechanism; that said connections may be adjusted to vary the action of the case-shifting mechanism on the stop or stops; that a stop cooperates with certain of the type bar actuating devices (in the present instance, the type bar key lever) to limit the movement of the type bar toward the platen, said stop being normally in the path of the key lever; that means are provided for moving the stop out of the path of the key lever; that the stop mechanism embodies means that acts to subdue, soften or regulate the impression of one type on a bar, leaving the other type or types unaffected when they are moved to print, the stop thus providing a print subduing or print moderating or regulating means which may be rendered operative or inoperative at each and all letter space positions of the traveling platen; that locking means are provided which lock the type arresting stop out of operation; that the stop is adjustable on a support or carrier to vary its normal position; and that a plurality of stops (in

the present instance three) are mounted on the carrier, all of the stops being moved simultaneously into and out of operation by the movement of the stop support or carrier, which in the present instance is a rock shaft controlled from the platen shifting mechanism of the machine.

Various changes may be made without departing from the spirit and 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 platen, a set of independently operative type actuating mechanisms, a print-regulating stop effective on one only of said mechanisms, and means operative at all positions of the traveling platen for moving said stop into and out of operative position.

2. In a typewriting machine, the combination of a traveling platen, a set of independently operative type actuating mechanisms, a print-regulating stop effective on one only of said mechanisms, and means operative automatically at all positions of the traveling platen to move said stop into and out of operative position.

3. In a typewriting machine, the combination of a platen, a set of independent type actuating mechanisms, stops coöperative with certain selected ones only of said mechanisms, there being a single stop for each of said selected mechanisms, case shifting devices, and means connected to said devices for controlling all of said stops.

4. In a typewriting machine, the combination of a platen, type actuating mechanism, a stop for said mechanism normally in operative position, case shifting mechanism, and means controlled by said case shifting mechanism for moving said stop automatically out of operative position.

5. In a typewriting machine, the combination of a traveling platen, a set of type bars, trains of actuating devices, one for each of said type bars, a print-regulating stop coöperative with a selected train of devices to limit the movement of the associate type bar toward the platen without affecting the other type bars, and means operative at all positions of the traveling platen for moving said stop into and out of operative position.

6. In a typewriting machine, the combination of a platen, a type bar, actuating devices therefor, a stop coöperative with certain of said actuating devices to limit the movement of said type bar toward the platen, case shifting mechanism, and means automatically operated by said case shifting mechanism for moving said stop out of operative position.

7. In a typewriting machine, the combination of a platen, a type bar, actuating devices therefor, a stop coöperative with cer-

tain of said actuating devices to limit the movement of said type bar toward the platen, platen shifting mechanism, and means controlled by said platen shifting mechanism for moving said stop out of operative position.

8. In a typewriting machine, the combination of a platen, a type bar, a key lever, connections between said type bar and said key lever, a stop normally in the path of said key lever, and means for moving said stop out of the path of said key lever.

9. In a typewriting machine, the combination of a platen, a type bar, a key lever, connections between said type bar and said key lever, a stop normally in the path of said key lever, case shifting mechanism, and means connected to said case shifting mechanism for moving said stop out of the path of said key lever.

10. In a typewriting machine, the combination of a platen, a type bar, a key lever, connections between said type bar and said key lever, a stop normally in the path of said key lever, key controlled platen shifting mechanism, and means operative by the shift key for moving said stop out of the path of said key lever.

11. In a typewriting machine, the combination of a platen, a type bar, a key lever, connections between said type bar and said key lever, a stop normally in the path of said key lever, said stop being pivotally supported on the frame of the machine, key controlled case shifting mechanism, and devices connected to the shift key for turning said stop out of the path of said key lever.

12. In a typewriting machine, the combination of a plurality of type blocks, sets of actuating devices therefor, a plurality of stops normally limiting the movement of said type blocks toward the platen, and key operated means for moving said stops out of operative position.

13. In a typewriting machine, the combination of a platen, a plurality of type bars, key levers connected to said type bars, a plurality of stops, one normally in the path of each of said key levers, and means for moving said stops out of operative position.

14. In a typewriting machine, the combination of a traveling platen, type actuating mechanism, a rock shaft, a print-regulating stop for said type actuating mechanism mounted on said rock shaft normally effective, and means operative at all positions of the traveling platen for turning said shaft to move said stop out of operative position.

15. In a typewriting machine, the combination of a platen, a plurality of type actuating mechanisms, a rock shaft, separate stops one for each of said type actuating mechanisms, said stops being mounted on said rock shaft, and key controlled means for

turning said shaft to set said stops in and out of operative position.

nections between said key and said rock shaft, and adjusting means for affording variation in said connections.

23. In a typewriting machine, the combination of a platen, type actuating mechanism; a stop normally in position to operate with said mechanism, means for moving said stop out of operative position, and means for locking said stop in inoperative position.

24. In a typewriting machine, the combination of a platen, a type bar, actuating devices therefor, a stop cooperative with certain of said actuating devices to limit the movement of said type bar toward the platen, means for moving said stop out of operative position, and releasable locking means for thereafter locking said stop against return movement.

25. In a typewriting machine, the combination of a platen, type actuating mechanism, a stop normally adapted to cooperate with said mechanism, case shifting mechanism, means connected to said case shifting mechanism for moving said stop out of operation, and means for locking said stop after it has been so moved out of operative position.

26. In a typewriting machine, the combination of a platen, separate type actuating mechanisms, stops, one for each of said mechanisms, type varying mechanism, and connecting means between said varying mechanism and said stops.

27. In a typewriting machine, the combination of a platen, types, key controlled actuating mechanism for said types, means for affording stoppage of certain only of said types in their movement toward the platen, type varying mechanism, and connections between said varying mechanism and said means.

28. In a typewriting machine, the combination of a platen, a key operated type bar provided with two types, and a stop for one only of said types.

29. In a typewriting machine, the combination of a platen, a key operated type bar provided with two types, case shifting mechanism, a stop for one of said types, and means for moving said stop out of use when the other type is brought into use.

Signed at Moscow, Russia, this sixth day of December, A. D. 1911.

VASIL STERN.

Witnesses:

RIPLEY WILSON,
WOLF AKERMAN.