

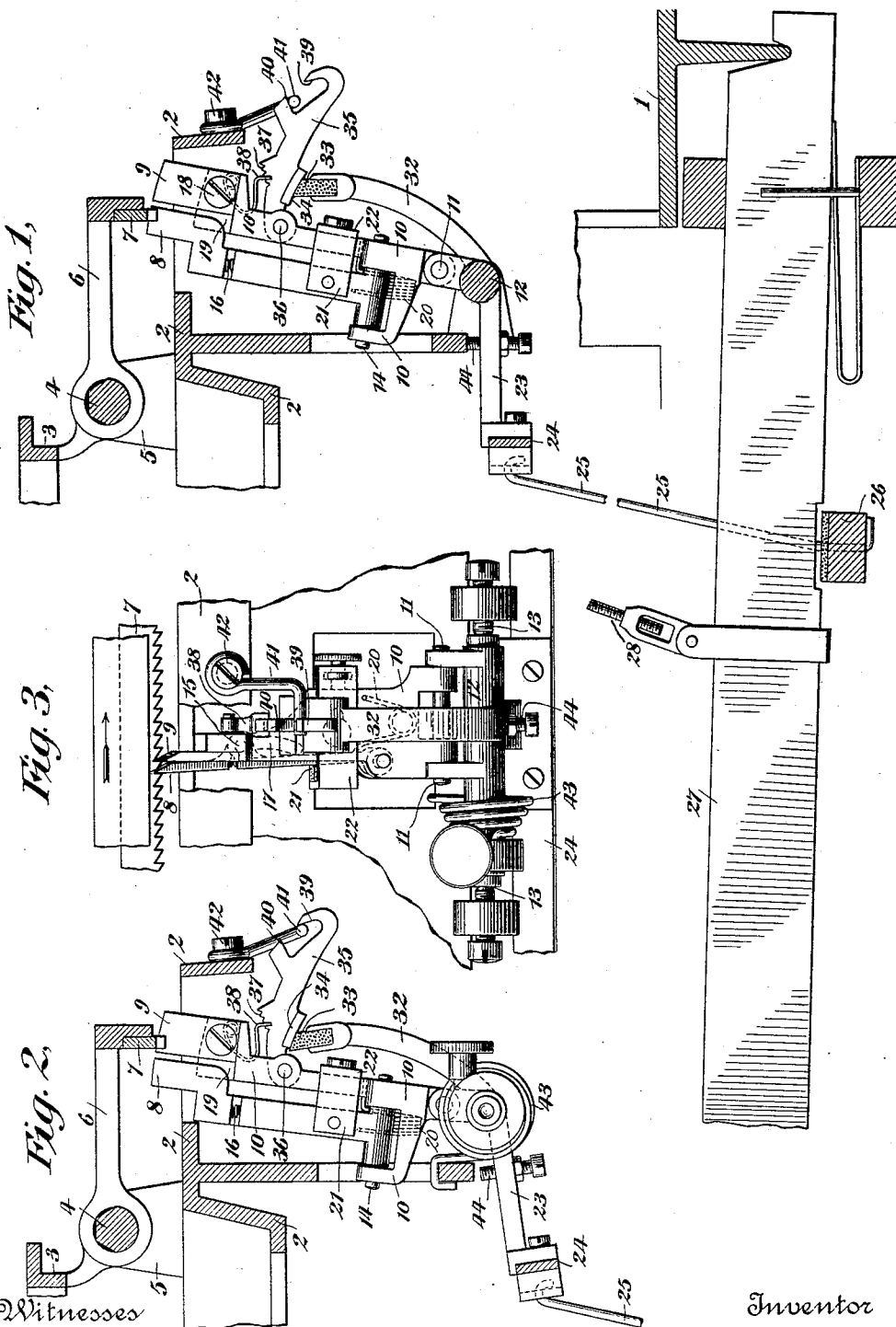
(No Model.)

2 Sheets—Sheet 1.

G. B. WEBB.
TYPE WRITING MACHINE.

No. 480,306.

Patented Aug. 9, 1892.



Witnesses
C. E. Ashley
J. W. Lloyd.

By his Attorney

Inventor
George B. Webb
H. D. Donnelly

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4,

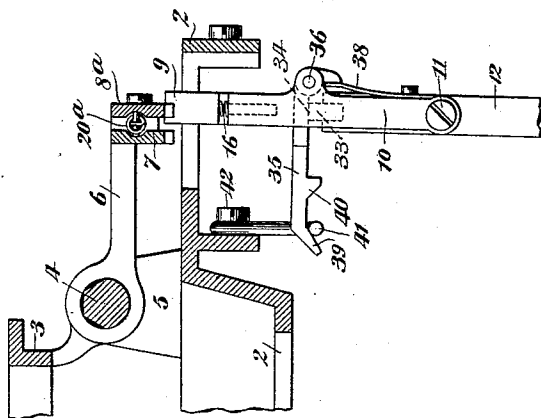


Fig. 6,

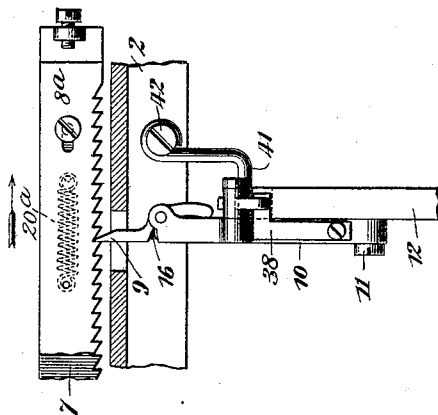


Fig. 5,

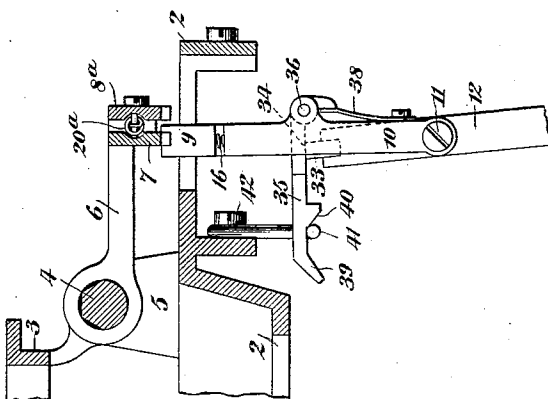


Fig. 9,

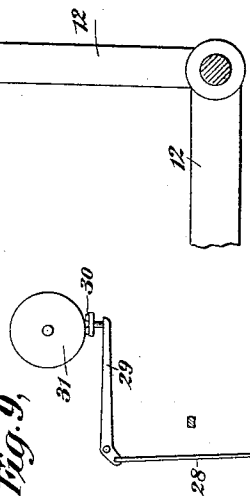


Fig. 8,

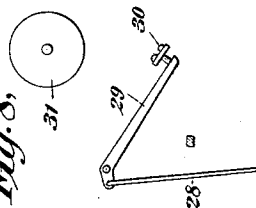
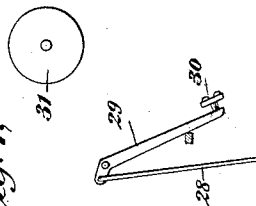


Fig. 7,



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE B. WEBB, OF NEW YORK, N. Y., ASSIGNOR TO THE REMINGTON STANDARD TYPE WRITER MANUFACTURING COMPANY, OF SAME PLACE.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 480,306, dated August 9, 1892.

Application filed March 1, 1892. Serial No. 423,328. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. WEBB, a citizen of the United States, and a resident of New York city, in the county of New York 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 has for its main object to so construct the spacing mechanism that the paper-carriage may be released at the earliest possible moment after the striking or impressing of the type, in order that the said carriage may be afforded ample time to move a letter-space distance and stop before the next type strikes or makes its impression; and to this end it consists, primarily, in connecting one member of the spacing mechanism frictionally with the spacing rocker or frame.

My invention further consists in certain other features of construction and combinations of devices, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a central vertical section of a portion of a Remington machine provided with my improvements. Fig. 2 is a similar view omitting the lower portion of the machine and showing the spacing-dogs at the limit of their forward movement. Fig. 3 is a back view with the parts in the positions represented at Fig. 2. Fig. 4 is a central vertical section of a portion of a type-writing machine involving my improvements, the detail construction being different from that shown in the foregoing figures. Fig. 5 is a view similar to Fig. 4 with the spacing-dog at the limit of its forward movement. Fig. 6 is a back view with the parts in the positions shown at Fig. 1. Fig. 7 is a diagrammatic view of the platen and the type-bar in their normal positions. Fig. 8 is a similar view with the type-bar in a position about midway between its rest and the platen, and Fig. 9 is a similar view with the type-bar raised to its full extent and the type against the platen.

In the several views the same part will be found designated by the same numeral of reference.

Referring to Figs. 1, 2, and 3, 1 designates

the framework of a Remington machine, 2 the top plate or type-ring around which the type bars or levers are pivoted, and 3 the paper-carriage mounted upon a hinge and guide-rail 4, supported at each end by a stand- 55

6 is a hinged frame provided with a feed-rack 7, with which co-operate two dogs 8 and 9, arranged upon a dog holder or carrier 10, 60 which is pivoted at 11 to a spacing rocker or frame 12, having lateral pivots or conical centers 13. The front dog 8 is pivoted at 14 in the dog-holder and is preferably made in two parts or jointed or pivoted again, as at 65 15, to enable the carriage to be easily and noiselessly returned, a spring 16 being provided to maintain the upper portion of the dog in an upright position at all times excepting when the carriage is being returned, the upper 70 portion of the dog being provided with a depending extension 17, which bears against the side of the lower portion or shank of the dog and limits the movement of the upper portion of the dog under the pressure of said 75 spring; but, if desired, the dog 8 may be made of a single piece, as common heretofore. The dog 9 is preferably screwed at 18 upon the upper end of the dog-holder, which is formed with a stop 19 to limit the vibration of the 80 dog 8 in its movement toward the left under the pull of the carriage-driving spring or power. (Not shown.) The vibration of said dog toward the right is effected by a coiled spring 20, and the extent of this vibration is 85 governed by a stop 21 on an adjustable plate 22, connected to the dog-holder in a manner usual in the Remington machine.

The spacing rocker or frame is provided with a horizontal forwardly-extending arm 23, 90 to which, as customary, is attached a cross-bar 24, to each end of which is connected the upper end of a rod 25, which at its lower end is connected to one end of a transverse universal bar 26, which underlies all of the key- 95 levers 27 of the machine. To each of said key-levers is connected the lower end of a connecting rod or wire 28, Figs. 7, 8, and 9, which at its upper end is attached to a type bar or lever 29, bearing one or more type 30, adapted 100 to swing to or against the platen 31 or the paper which may be placed thereupon. The

spacing rocker or frame is provided with a rearwardly and upwardly extending arm 32, that carries at its upper end a friction-block 33, consisting, preferably, of a piece of leather; but any other suitable material may be employed in lieu thereof. The upper end of this friction block or pad is beveled or convexed and is adapted to an inclined or concave seat 34, formed on an arm or lever 35, which is pivoted at 36 to the dog-holder. The said arm or lever 35 is provided with a series of notches 37, any one of which may receive the free bifurcated end of a spring 38, which is preferably secured to a pin projecting from the dog-holder. The said spring operates to force the seat or bearing on said arm or lever against the friction block or pad with the proper or requisite degree of pressure, which may be regulated by means of the series of notches or depressions 37. The rear end of the said arm or lever is formed or provided with two cams or inclined faces 39 and 40, which are adapted to alternately engage with an arm or projection 41, preferably screwed to the top plate, as indicated at 42.

The spacing rocker or frame and its appendages are returned to normal position after vibration by means of a spring 43, and this returning movement is limited by a screw 44 on the arm 23, which is adapted to contact with the lower side of a portion of the framework.

In the normal condition of the parts the pivoted or spacing dog 8 stands in engagement with the feed-rack and the cam or inclined face 40 against the arm or projection 41. If a key-lever be depressed, the spacing-rocker will be vibrated, the dog 8 carried out of the rack, and the cam 40 away from the projection 41. Just before the dog 8 leaves the rack the dog 9 enters the notch therein which the dog 8 is moving out of, and the carriage is thus arrested or prevented from moving. At the same time the type is swung up to make its impression, and upon releasing the key-lever all of the parts will return to their normal positions and the carriage be fed a letter-space distance. This feed of the carriage is permitted, as usual, by the dog 8, which after having been moved forward out of the rack is thrown to the right by the spring 20 a distance of one notch on the rack against the stop 21 and which after having been returned into engagement with the rack is vibrated toward the left by the carriage-driving spring or power against the stop 19.

At the initial vibration of the spacing rocker or frame the dog-holder and dogs are carried forward under the maximum pressure or power of the spring 38, and when the dog 8 has been moved out of the rack 7 the cam or inclined face 39 comes into contact with the arm or projection 41 and operates to detain the dog-holder and to relieve the friction or pressure between the block or pad and its seat without destroying actual contact between these parts. At this time the type-bar

in ascending toward the platen has moved only about half-way, as indicated at Fig. 8. As the descent of the key-lever is continued the forward vibration of the spacing rocker or frame is likewise continued and until the type has completed its movement and made its impression, as indicated at Fig. 9. In this final forward vibration of the spacing rocker or frame the friction block or pad, having been relieved of part of its pressure, slips or slides along under its seat or bearing and the dog-holder and the dogs remain at rest. The instant the type has struck and starts to descend and the spacing-rocker starts to return under the action of its spring 43 the friction-block starts rearwardly under the maximum pressure of the spring and the dog-holder and dogs are carried back at once to their normal positions or until the cam or inclined face 40 comes into contact with the arm or projection 41, which at once relieves the friction or pressure again and permits the spacing-rocker and its connections to all return to their initial positions, the block or pad at this time sliding or slipping rearwardly along its seat or bearing under the minimum friction. The slip or slide of the block or pad at the end of its forward and backward strokes is preferably about one-sixteenth of an inch; but of course this distance may be smaller or greater, according to the exigencies of the case. It will thus be seen that the instant the spacing rocker or frame is vibrated forwardly the dog-holder is carried in the same direction by the frictional connection between the dog-holder and the spacing rocker or frame and that the moment the spacing rocker or frame starts to return the dog-holder is caused to move with it in consequence of said frictional connection and permit the spacing of the carriage practically immediately the type leaves the paper, which occurs simultaneously with the commencement of the return movement of the spacing rocker or frame. It will also be seen that, while the dog-holder starts forward with the spacing rocker or frame and is moved the required extent to free the dog 8 from the rack, it is arrested or detained while the spacing-rocker is completing its forward movement to allow the type to which it is positively connected to strike the platen, and it will also be seen that, while the dog-holder starts to return at once with the spacing-rocker and type in order to obtain the desired rapid feed and continues to travel with said spacing rocker or frame until the spacing-dog has been returned into engagement with the feed-rack again, it is arrested or detained while the spacing-rocker and the type-bar and their intermediate connections are completing their final movements. By this construction and arrangement ample time may be given the carriage to feed a letter-space distance before the succeeding type can strike, no matter how rapidly the machine may be operated. In prior constructions the carriage was arranged to feed when the type had arrived at about

one-half or two-thirds of its way back to normal position, and consequently if the next key were actuated very quickly and before the preceding type-bar had reached the stated positions it would print on top of the preceding letter or overlap the same, because of the inability of the carriage to feed properly in the meantime.

Referring to Figs. 4, 5, and 6, it will be observed I have applied my invention to a machine wherein there are two feed-racks and one dog, this type of machine being a common and well-known one, and therefore not requiring a very extended description. The feed-rack 7 is a rigid one and the feed-rack 8^a a movable one, being actuated in a forward direction by a spiral spring 20^a. The spacing-dog 9 is mounted upon a holder or carrier 10, which is pivoted at 11 to the spacing rocker or frame 12, and said dog is preferably, though not necessarily, pivoted to this holder or carrier. At the upper end of the spacing rocker or frame is provided a friction block or pad 33, for which is provided a seat 34 on an arm or lever 35, pivoted at 36 to the dog-holder and provided with a spring 38. The free end of said arm or lever is provided with two cams 39 and is adapted to contact alternately with an arm or projection 41, fixed on the frame-work at 42.

In the normal positions of the parts the dog 9 stands in engagement with the movable rack 8^a and arrests the carriage and the cam or incline 39 rests against the projection 41. When the spacing-rocker is vibrated forward by the depression of the key-lever, the dog-holder is carried with it instantly by the frictional devices described and the dog 9 is moved from the movable rack into the rigid rack, and at this time the spring of the movable rack propels it forward a distance of one notch. When the dog 9 has been moved over into the rack 7, the incline or cam 40 contacts with the projection 41 and partially relieves the friction on the pad 33, detains the dog-holder, and permits the spacing rocker or frame to move forward slightly farther, the pad slipping or sliding along its seat or bearing. At the completion of this forward movement of the spacing rocker or frame the type makes its impression, and the moment it starts to return the spacing rocker starts to make its return and at once starts to carry the dog-holder and its dog back to their first positions. As soon as the dog is carried back into the rack 8^a the carriage feeds and the incline or cam 39 operates to detain the dog-holder and partially relieve the friction upon the pad 33 and permit the spacing rocker and its connections to complete their return movements, the pad or block 33 at this time slipping or sliding against its seat or bearing under the reduced friction.

From the foregoing it will be observed that my invention may be carried out in a machine provided with a single rack and a du-

plex or compound dog or in a machine provided with a duplex or compound rack and a single dog. It may also be carried out in that form of escapement wherein the rack is connected to the spacing-rocker and the dogs are connected to the carriage, said escapement being in common use on the Remington machine No. 5 and being shown in the British patent on said machine, dated May 16, 1888, No. 7,269. In this form of escapement the rack in accordance with my invention is of course frictionally connected to the spacing rocker or frame in lieu of the dogs. Hence I do not wish to be limited to any particular species of escapement mechanism, the gist of my invention consisting in providing a frictional joint or connection, operating substantially as and for the purpose described, between the spacing rocker or frame and that member or part of the spacing mechanism which it carries and operates, whether said member or part be one or more dogs or racks, the various forms of escapement alluded to being well known in the art.

It will be apparent that numerous changes in detail, construction, and arrangement may be made without departing from the spirit of my invention.

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

1. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination, with a spacing rocker or frame, of a spacing member frictionally connected thereto, substantially as and for the purpose set forth.

2. In a type-writing machine, as an improvement in the carriage-escapement mechanism, a dog-holder frictionally connected to the spacing rocker or frame, substantially as and for the purpose set forth.

3. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination of a spacing rocker or frame provided with a friction pad or block and a dog-holder provided with a seat or bearing for said pad or block.

4. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination of a spacing rocker or frame provided with a friction pad or block and a dog-holder provided with a pressure arm or lever provided with a seat or bearing for said pad or block.

5. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination of a spacing rocker provided with a pad or block and a dog-holder provided with a pivoted spring-pressed arm or lever having a seat or bearing for said pad or block.

6. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination of a spacing rocker or frame having a friction pad or block, a dog-holder provided with a pressure arm or lever having a seat or bearing for said pad or block and hav-

ing two cams or inclined faces, and an arm or projection to co-operate with said cams or inclined faces.

7. In a type-writing machine, as an improvement in the carriage-escapement mechanism, the combination of a spacing rocker or frame having a friction pad or block, a dog-holder pivoted independently of said spacing rocker or frame, a spring-pressed arm or lever pivoted to said pivoted dog-holder and provided with a seat or bearing for the pad or block and with two cams or inclined faces, and an arm or projection to co-operate with said cams or inclined faces.

8. In a type-writing machine, the combination, with a paper-carriage having a feed-rack, type-bars, and key-levers, of a spacing rocker or frame, a feed-dog frictionally connected to the same, means for reducing the force of the frictional contact or connection when the dog is moved the proper distance to escape from the rack, so that the spacing rocker or frame may continue its movement to permit the type to strike, and means for also reducing the force of the frictional contact or connection

when the dog is returned to its initial or normal position, so that the spacing rocker or frame and the type may be allowed to continue to move back to their initial or normal positions, substantially as described.

9. In a type-writing machine, the combination, with a paper-carriage having a feed-rack, type-bars, and key-levers, of a spacing rocker or frame carrying a friction pad or block, a dog-holder pivoted to said spacing rocker or frame, a rigid dog and a yielding dog mounted on said dog-holder, and a spring-pressed arm or lever pivoted to said dog-holder and provided with a seat or bearing for said pad or block and with two cams or inclined faces to co-operate with an arm or projection fixed on the framework.

Signed at New York city, in the county of New York and State of New York, this 19th day of February, A. D. 1892.

GEORGE B. WEBB.

Witnesses:

JACOB FELBEL,
IDA MACDONALD.