E. S. DODGE.

TYPE WRITING MACHINE.

APPLICATION FILED SEPT. 6, 1916.

1,290,723.

Patented Jan. 7, 1919.

2 SHEETS—SHEET 1.

FIG. 1.

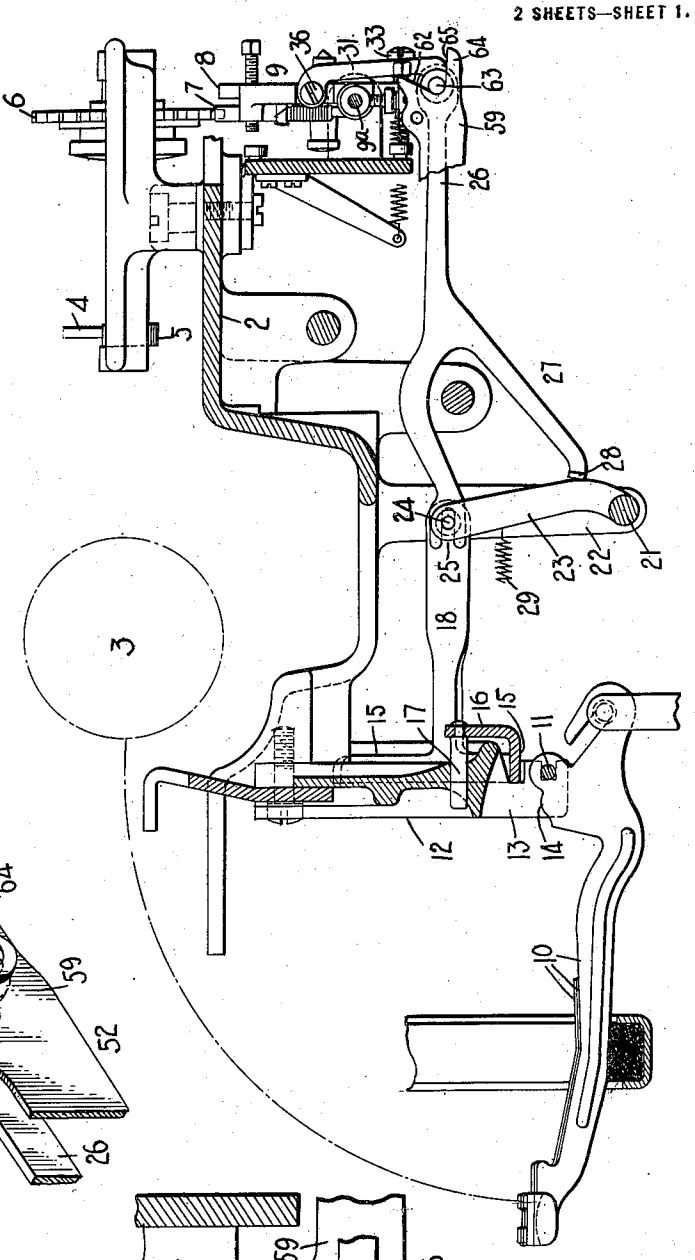


FIG. 2.

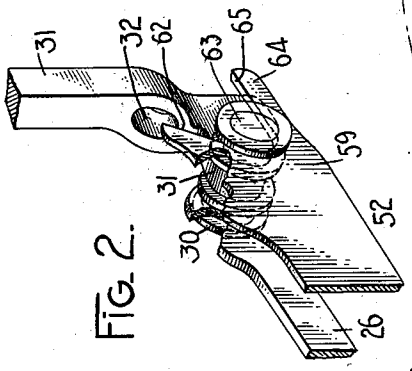
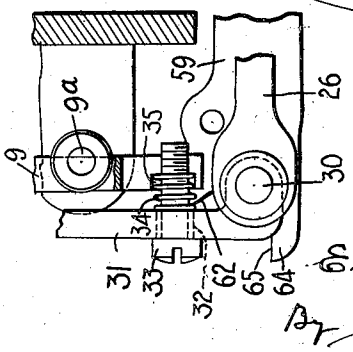


FIG. 3.



WITNESSES

E. M. Wells.

INVENTOR

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2 SHEETS—SHEET 2.

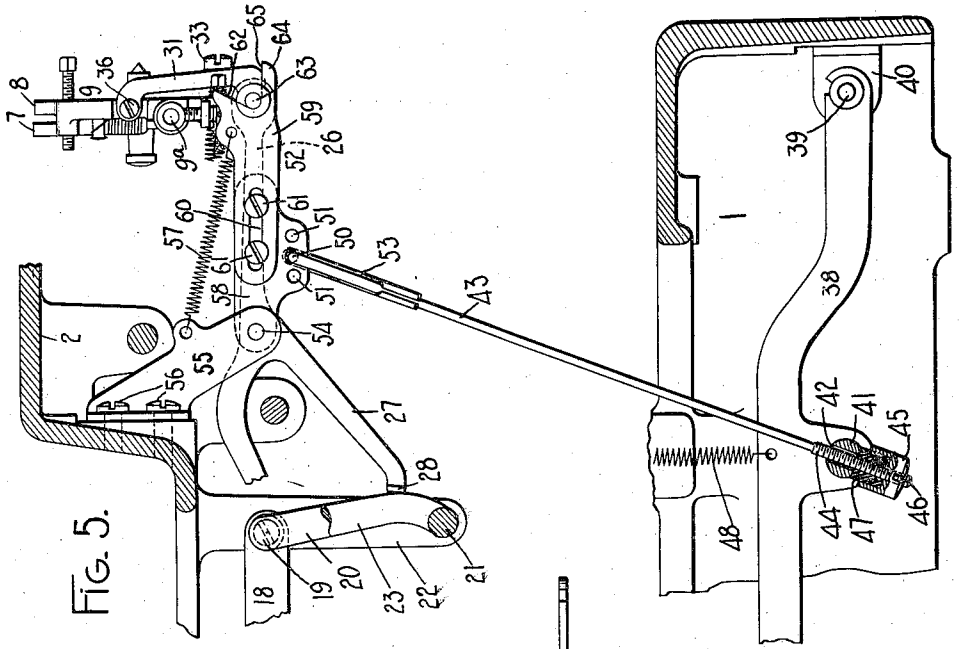


FIG. 5.

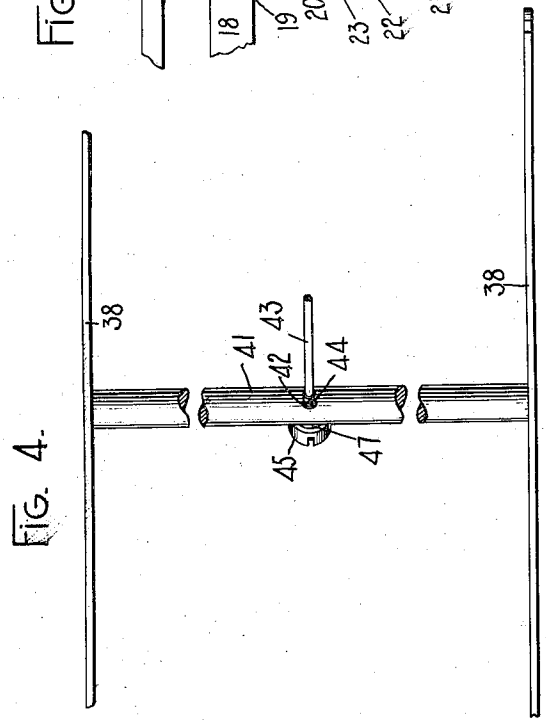
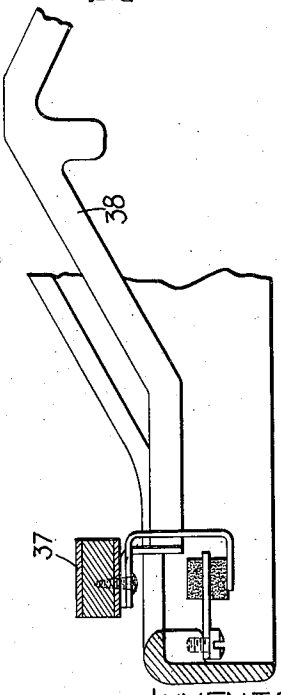


FIG. 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

ELBERT S. DODGE, OF ILION, NEW YORK, ASSIGNOR TO REMINGTON TYPEWRITER COMPANY, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

1,290,723. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed September 6, 1916. Serial No. 118,675.

To all whom it may concern:

Be it known that I, ELBERT S. DODGE, citizen of the United States, and resident of Ilion, in the county of Herkimer 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 to typewriting machines, and more particularly to escapement mechanism and means for controlling the actuation thereof.

Among the main objects of the present invention one is to provide efficient actuating connections intermediate the space key and dog rocker which enable the dog rocker to be actuated independently of said connections and the space key when the dog rocker is actuated by the universal bar; and another is to provide means whereby such connections may be readily adjusted to accord with the adjustment for "pull" of the dog rocker by the universal bar.

To the above and other ends which will hereinafter appear, my invention consists in the construction, arrangements and combinations of parts set forth in the following description and particularly pointed out in the appended claims.

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views,

Figure 1 is a fragmentary, vertical, fore and aft sectional view showing only so much of a typewriting machine as may be necessary to arrive at an understanding of my invention in its embodiment therein.

Fig. 2 is an enlarged fragmentary detail perspective view of the depending arm of the dog rocker and the means for effecting an operative connection therewith of the controlling means from the universal bar and from the space key.

Fig. 3 is an enlarged detail fragmentary side view with parts in section of the dog rocker and showing the means for adjusting the depending arm thereof.

Fig. 4 is a detail fragmentary plan view of the space key levers and some of the connections.

Fig. 5 is a fragmentary fore and aft vertical sectional view showing the space key and the connections between the latter and the dog rocker, together with some of the associated parts.

I have shown my invention embodied in the present instance in a machine involving escapement mechanism devised in part by George A. Seib and forming the subject-matter of an application filed by him of even date herewith and bearing Serial No. 118,607.

My invention is directed more particularly to the connections intermediate the space key and dog rocker and while particularly adapted for use in a construction such as that disclosed in said Seib application, such connections may be used with equal efficiency in combination with different forms of escapement and controlling means therefor.

The frame of the machine comprises a base 1, and top plate 2 supported from the base by corner posts, not shown. A suitable power driven carriage (not shown) is mounted above the top plate for movement from side to side of the machine and carries a platen 3 and a feed rack 4. The feed rack meshes with an escapement pinion 5 operatively connected with an escapement wheel 6. For the purpose of my present invention it is immaterial what character of escapement devices the feed rack 4 co-acts with. The escapement wheel and some of the associated parts shown in the present instance are the invention of Edwin E. Barney. The escapement wheel is controlled by feed dogs 7 and 8 carried by a dog rocker, designated as a whole by the reference numeral 9. This dog rocker is pivoted at 9^a to a suitable bracket plate secured to the top plate of the machine and is constructed in a manner to be hereinafter more clearly pointed out.

Upwardly and rearwardly striking type bars 10 are mounted on a pivot wire 11 carried by a type bar segment 12. The heel of each type bar is received in a guide slot 13 and is provided with a cam or contact edge 14 which coöperates with the forward edge of a universal bar 15. The type bars may be actuated from the printing keys by any suitable actuating devices, and in a movement of a type bar to the printing position the universal bar is engaged by the contact portion 14 and moved rearwardly to actuate the dog rocker through suitable intermediate connections. The segmental universal bar 15, which is arranged for coöpera-

tion with the heel of each type bar, is provided with a centrally disposed upwardly extending lug or finger 16 to which is fixed a forwardly projecting guide pin 17 received in a guide opening in the body portion of the type bar segment 12. Each side portion of the universal bar has a rearwardly projecting arm 18 which is pivoted at its rear end, as at 19, to an upwardly projecting crank arm 20 which extends from a rock shaft 21. This rock shaft extends transversely of the machine and is supported at its ends by pivot screws (not shown) threaded into depending bracket arms 22 which project from the top plate of the machine. The rock shaft is also provided with a centrally disposed upstanding crank arm or actuating member 23 provided at its upper end with a laterally extending headed pin 24. This pin is received in a slot 25 of an actuating member or link designated as a whole by the reference numeral 26. Said link or member 26 is also provided with a depending arm 27 provided at its lower end with a bent end which constitutes an engaging portion or contact 28 which normally bears against the rocker arm 23. A contractile spring 29 is connected at the rear end to one of the crank arms 20—23 and is secured at its forward end to a suitably fixed portion of the machine. The force of this spring is exerted to return the rock shaft and the universal bar connected therewith to normal position. The link 26 is apertured at its rear end to receive a headed pivot pin 30 which projects from one side of a depending arm 31 on the dog rocker, thus pivotally connecting the link 26 to the dog rocker. The depending arm 31 of the dog rocker is provided with an opening 32 through which the stem of a headed adjusting screw 33 passes freely, the threaded end of the screw being received in a tapped opening in the body portion of the dog rocker. A coiled expansion spring 34 (see Fig. 3) surrounds the stem of this screw and is received at its forward end in a depression 35 in the body of the dog rocker, the opposite end of said spring bearing against the arm 31 and pressing it against the head of the screw 33. The upper end of the arm 31 is apertured to receive a headed screw 36 taking at its threaded end in a tapped opening in the body of the dog rocker. The construction is such that when the screw is loosened the arm 31 may receive a pivotal adjustment around the screw 36 as a center. When, however, this screw 36 is tightened it effects a clamping of the arm 31 between the head of the screw and the body of the dog rocker in order to secure the arm in its adjusted position. It will be understood that when the screw 36 is loose a forward adjustment of the screw 33 will cause the head thereof to bear on the arm 31 and force the lower end of the arm forward around the pivot 36, whereas a backing of the screw 33 permits a rearward movement of the lower end of the arm 31 around the pivot screw 36. This adjustment of the arm 31 is to provide for the proper "pull" or operation of the dog rocker and escapement through an actuation of the universal bar. It will be understood that the first portion of each printing stroke of a type bar is effected independently of the universal bar and the parts controlled thereby, and that after the universal bar is taken up by the type bar an actuation of the link 26 and the dog rocker controlled thereby is first effected through the engagement of the contact 28 with the actuating arm 23. It will be observed that the distance from the pivotal center of the rock shaft 21 to the contact 28 in the present instance is less than one-third the distance from said pivotal center to the pin 24. After a slight and relatively slow movement of the dog rocker has been effected through the engagement of the arm 23 with the contact 28, the pin 24 will reach the end of the slot 25, thus engaging the link at this point and continuing the movement of the link and dog rocker through the connection thus effected.

The dog rocker and the specific means for controlling the same from the universal bar herein disclosed are not of my invention but are the invention of George A. Seib and are claimed in the application hereinbefore referred to. This mechanism is shown and described in the present instance in order to arrive at a clearer understanding of the feature of my invention comprising the means whereby the dog rocker may be actuated by the space key and afford an actuation of the dog rocker by the universal bar independently of said means, and likewise enable an adjustment of the connections from the space key to the dog rocker to be effected to accord with the adjustment of the connections intermediate the universal bar and dog rocker.

Referring more particularly to Figs. 4 and 5, it will be seen that a space key or bar 37 is connected with the horizontally disposed parallel space key levers 38 fulcrumed at their rear ends, as at 39, to brackets 40 which are secured to the base of the machine. These space key levers are rigidly connected by a cross bar 41 apertured at 42 about midway in the length thereof for the free passage therethrough of an actuating link 43. The lower end of this link is threaded at 44 and extends beneath the cross rod or bar 41 where it coöperates with a nut 45 nicked at 46 for coöperation with a straddle screw driver. The upper side of this nut is cupped or recessed to receive a pad 47 of leather or like material which is adapted

to contact with the underside of the cross bar 41. This pad is threaded to receive the threaded end of the actuating link 43, so that as the nut is turned a corresponding turning movement of the pad is effected. A returning spring 48 is connected at one end with a space key lever and at its opposite end to a suitable support in order to effect a return of the space key to normal position. The upper end of the actuating link 43 is provided with a hook 50 adapted to be received in any one of the three openings 51 in a substantially disposed two-part actuating member or lever, indicated as a whole by the reference numeral 52. The hook may be retained against accidental displacement from the aperture 51 in which it is received by a spring 53 fixedly connected at its lower end to a link, and bearing at its free end against the bill of the hook. The two-part lever or actuating member 52 is substantially parallel with the space key levers and is pivoted at 54 to a bracket arm 55 secured to the top plate of the machine by screws 56. A contractile returning spring 57 is connected at one end to the bracket and at its opposite end to the two-part actuating member 52. This member comprises a plate-like part 58 which is pivoted to the bracket, and a second part 59 slotted at 60 to receive the stems of headed screws 61 which are received at their threaded ends in tapped openings in the part 58. By this construction the member 59 may receive a fore and aft adjustment on the member 58 and be secured in its adjusted position by tightening the screws 61, thus clamping the member 59 between the heads of said screws and the member 58. A lengthening and shortening of the lever-like actuating member 52 may thus be effected in order to bring about an adjustment of the actuating end of said member for purposes which will hereinafter appear. The part 59 is provided with an inclined edge or cam 62 which coöperates with a headed pin 63 projecting from the opposite side of the depending arm 31 of the dog rocker from that on which the pin 30 is mounted. A rearwardly projecting finger 64 extends from the part 59 and is provided with an upper contact edge or face 65 which terminates at its forward end at the cam 62. It will be understood that after the arm 31 receives the required adjustment fore or aft of the machine relatively to the dog rocker, the member 59 may receive a corresponding adjustment so as to maintain proper coöperative relation between the cam 62 and the pin 63 and always actuate the dog rocker in a uniform manner from the space key, irrespective of the position to which the arm 31 may be adjusted.

During the movement of the dog rocker effected by an actuation of the universal bar, the pin 63 will ride freely along the face 65 of the member 52 without disturbing said member or the link 43, and space key 37, these parts remaining quiescent at this time. It will be understood, therefore, that an operation of the dog rocker by the printing keys is effected through the universal bar and its connections independently of the space key and the separate and distinct intermediate connections between the space key and the dog rocker. On the other hand, an actuation of the space key is effective to pull down the member 52 around its pivot 54, and cause the cam 62 to actuate the dog rocker independently of the universal bar. Thus at this time the link 26 moves with the dog rocker but by reason of the pin and slot connection 24—25 between said link and the arm 23, said arm, the rock shaft 21 and the universal bar will remain at rest so that the dog rocker may be actuated by the space key independently of the universal bar and certain parts of the train of actuating connections by which the dog rocker is operated from the universal bar.

It will be seen from the foregoing that an actuation of the dog rocker from the universal bar may be effected at the last portion of the printing movement of the type bar without the necessity of operating the independent train of connections between the space key and dog rocker, thus relieving the touch of the additional weight and resistance that these parts would present if actuated at this time. On the other hand, the actuation of the dog rocker by the space key is effected independently of the universal bar and the principal connections between said bar and the dog rocker so as to relieve the touch on the space key of this additional weight and resistance.

For the purpose of my present invention any suitable connection between the universal bar and the dog rocker may be employed, but preferably connections of such a character as to enable the dog rocker to be actuated independently of the universal bar and its connections or some of them.

It is apparent that the finger 64 serves as a stop or guide to prevent the spring 57 from pulling the two-part lever 52 up out of coöperative relation with the pin 63, both when the parts are in normal position and also when the pin 63 is moved rearwardly by the universal bar independently of the two-part lever, the finger 64 at all times bearing against the underside of the pin 63.

The term "dog rocker" is employed herein in a generic sense and is intended to cover a dog carrier or holder however constructed or actuated.

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

1. In a typewriting machine, the combination with a dog rocker, of a key controlled

cam operative on the dog rocker to actuate it and controlling the movement of the dog rocker from and back to its normal position and constructed to afford a movement of the dog rocker independently thereof.

2. In a typewriting machine, the combination of a dog rocker, a key, a lever to which said key is connected, a second lever substantially parallel with said first mentioned lever and engaging said dog rocker and operative to actuate it but affording a movement of the dog rocker independently thereof, and a connection intermediate said substantially parallel levers.

3. In a typewriting machine, the combination of a dog rocker, a key, a lever to which said key is connected, a second lever substantially parallel with said first mentioned lever and engaging said dog rocker and operative to actuate it but affording a movement of the dog rocker independently thereof, a connection intermediate said substantially parallel levers, and means for affording a relative adjustment between said second lever and the dog rocker.

4. In a typewriting machine, the combination of a dog rocker, a key, a lever to which said key is connected, a second lever substantially parallel with said first mentioned lever, a cam carried by said second lever and operative on the dog rocker to actuate it, and a link intermediate said levers.

5. In a typewriting machine, the combination of a dog rocker, a key, a lever to which said key is connected, a second lever substantially parallel with said first mentioned lever, a cam intermediate said second lever and the dog rocker, means for affording a relative adjustment between said cam and the dog rocker, and means for operatively connecting said levers.

6. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link connected directly to said rod midway in the length of the latter, and an actuating member pivoted to a fixed part of the machine and directly connected to said link and operative on said dog rocker.

7. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link midway in the length of said rod, a pivoted actuating member connected to said link and operative on said dog rocker, and adjustable means regulating the "pull" on the dog rocker by the space key.

8. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link midway in the length of said rod and adjustably connected thereto, a pivoted actuating member connected to said link and operative on said dog rocker, and means which afford an adjustment of the co-acting engaging portions of the dog rocker and said pivoted actuating member.

9. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link connected directly to said rod midway in the length of the latter, an actuating member pivoted to a fixed part of the machine and directly connected to said link, and a cam on said pivoted actuating member, said cam co-acting with the dog rocker to actuate it and affording an actuation of the dog rocker independently thereof.

10. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link midway in the length of said rod, a pivoted actuating member connected to said link, a cam on said pivoted actuating member, said cam co-acting with the dog rocker to actuate it and affording an actuation of the dog rocker independently thereof, and means for affording an adjustment of said cam on said actuating member.

11. In a typewriting machine, the combination of a dog rocker, a space key, parallel levers which carry said key, a rod which connects said levers, a link midway in the length of said rod, a pivoted actuating member connected to said link, a cam on said pivoted actuating member, said cam co-acting with the dog rocker to actuate it and affording an actuation of the dog rocker independently thereof, means for affording an adjustment of said cam on said actuating member, and means for affording an adjustment relatively to the body of the dog rocker of that portion of the dog rocker with which the cam co-acts.

12. In a typewriting machine, the combination of a dog rocker, a universal bar, connections between the universal bar and dog rocker, means for affording an adjustment of said connections, a space key, separate connections from the space key to the dog rocker, and means for affording an adjustment of said last mentioned connections to accord with the adjustment of the connections between the universal bar and dog rocker.

13. In a typewriting machine, the combination of a dog rocker having an adjustable member, a universal bar, connections intermediate said adjustable member and universal bar, a space key, separate connections from said space key to said adjustable member, and means for affording an adjustment of said last mentioned connection.

14. In a typewriting machine, the combination of a dog rocker having an adjustable

member, a universal bar, connections intermediate said adjustable member and universal bar, a space key, separate connections from said space key to said adjustable member and by which the dog rocker may be actuated and which afford a movement of the dog rocker independently thereof when the rocker is actuated from the universal bar, and means for affording an adjustment in the connections between the space key and said adjustable member.

15. In a typewriting machine, the combination of a dog rocker having an adjustable member, a universal bar, connections intermediate said adjustable member and universal bar, a space key, and separate connections from said space key to said adjustable member, said last mentioned connections including a cam.

16. In a typewriting machine, the combination of a dog rocker having an adjustable member, a universal bar, connections intermediate said adjustable member and universal bar, a space key, separate connections from said space key to said adjustable member, said last mentioned connections including a cam, and means for affording an adjustment of said cam.

17. In a typewriting machine, the combination of a dog rocker, a space key, a universal bar, intermediate actuating connections between the universal bar and dog rocker which enable the dog rocker to be moved independently of the universal bar when the dog rocker is actuated by the space key, and separate and distinct actuating connections intermediate the space key and the dog rocker and which enable the dog rocker to move independently of the space key and its connections when the dog rocker is actuated by the universal bar.

18. In a typewriting machine, the combination of a dog rocker, a space key, a universal bar, intermediate actuating connections between the universal bar and dog rocker which enable the dog rocker to be moved independently of the universal bar when the dog rocker is actuated by the space key, separate and distinct actuating connections intermediate the space key and the dog rocker and which enable the dog rocker to move independently of the space key and its connections when the dog rocker is actuated by the universal bar, adjustable means for regulating the control of the dog rocker from the universal bar, and adjustable means for regulating the control of the dog rocker from the space key.

19. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a lever pivoted to a fixed part of the machine and controlled by the space key and coöperative directly with the dog rocker to actuate it and control the movement thereof back to normal position but affording a movement of the dog rocker independently of said lever.

20. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising an actuating member controlled by the space key, and a cam intermediate said member and the dog rocker and which controls the dog rocker from the space key during the movement of the rocker both from and back to normal position.

21. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising an actuating member controlled by the space key, a cam intermediate said member and the dog rocker, and means for affording a relative adjustment between said cam and the part with which it co-acts.

22. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate, adjustable connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a two-part member controlled by said space key and operative to actuate the dog rocker, and means for affording a relative adjustment between the parts of said two-part member and for holding them rigidly united.

23. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate, adjustable connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a two-part actuating lever controlled by said space key and operative to actuate the dog rocker, and means for affording a lengthening or shortening of said lever by affording a relative adjustment between the parts thereof.

24. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a two-part member controlled by said space key operative to actuate the dog rocker, means

for effecting a relative adjustment between the parts of said two-part member, and a cam intermediate said two-part member and the dog rocker.

25. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and the dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a two-part actuating lever controlled by said space key and operative to actuate the dog rocker, means for affording a lengthening or shortening of said lever by affording a relative adjustment between the parts thereof, and a cam intermediate said lever and dog rocker.

26. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising levers which carry said space key, a separate and distinct lever pivoted to a fixed part of the machine and controlled by said space key, and a cam carried by said lever and operative on the dog rocker and controlling the movement thereof from and back to normal position and affording a movement of the dog rocker independently of said cam and lever.

27. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising parallel levers to which the space key is connected, an intermediate rod which connects said levers and receives a bodily movement, and a link directly connected to said rod midway in the length thereof and which is operatively connected with the dog rocker.

28. In a typewriting machine, the combination of a connecting link having a thread, a nut cupped on one side and coöperative with the thread on the link, and a contact member of leather or like material received in the cupped side of the nut and adjustable with the nut on said link.

29. In a typewriting machine, the combination of a link threaded at one end, an apertured member through which the link passes freely, a nut cupped on one side and coöperative with the thread on said link, and a contact member of leather or like material received in the cupped side of said nut and adjustable with the nut on said link and adapted to bear against said apertured member.

30. In a typewriting machine, the combination of a universal bar; a dog rocker; intermediate connections between the universal bar and dog rocker; a space key; and separate and distinct connections between said space key and dog rocker, said last mentioned connections comprising a lever controlled by the space key and coöperative directly with the dog rocker to actuate it but affording a movement of the dog rocker independently of said lever, and a guide which at all times engages the dog rocker and insures the maintenance of said lever and dog rocker in coöperative relation.

Signed at Ilion, in the county of Herkimer and State of New York, this 2nd day of September, A. D. 1916.

ELBERT S. DODGE.

Witnesses:

MARY C. GLEASON,

CLARENCE M. SLAWSON.