

(No Model.)

5 Sheets—Sheet 1.

B. C. STICKNEY.
TYPE WRITING MACHINE.

No. 576,284.

Patented Feb. 2, 1897.

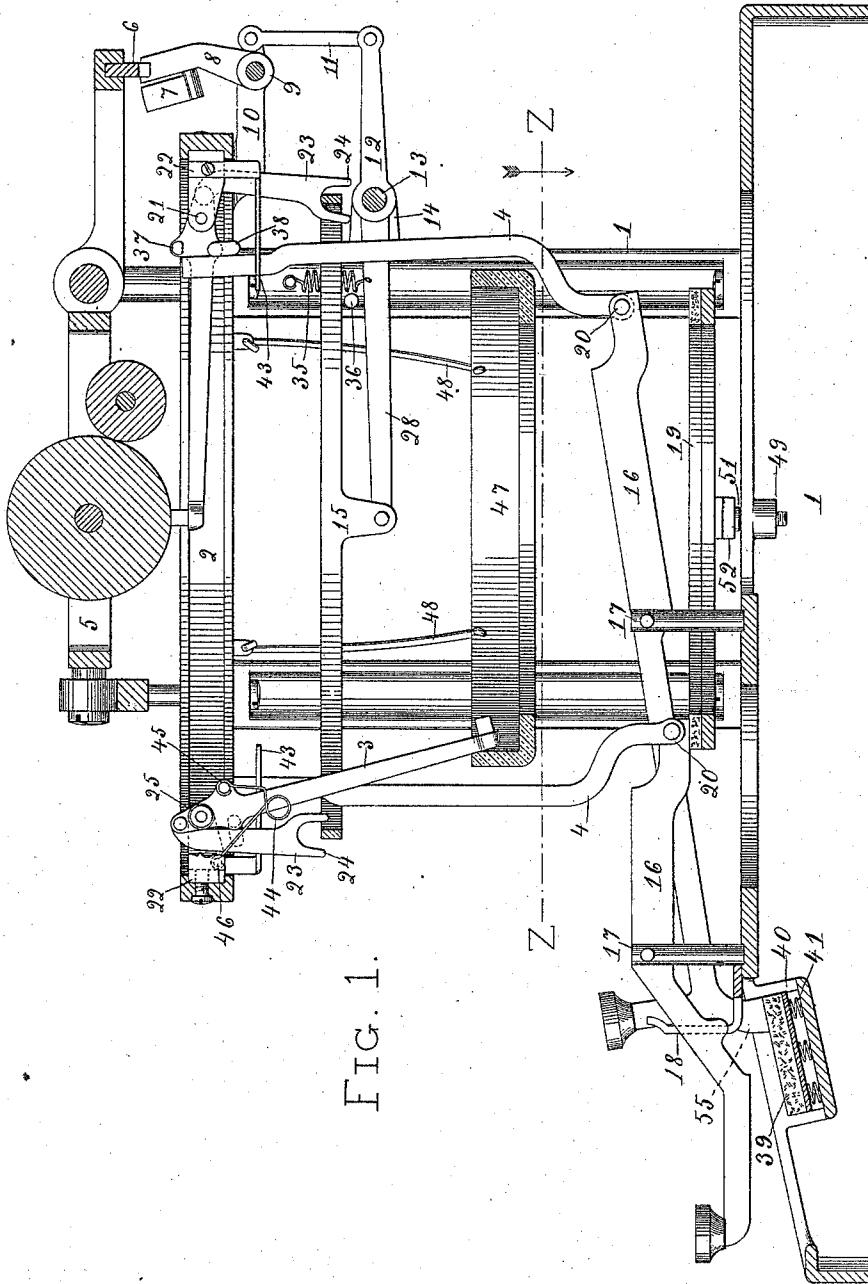


FIG. 1.

Witnesses
H. V. Donovan
J. Walsh

Inventor
Burnham C. Stickney
By his Attorney Jacob Felbel

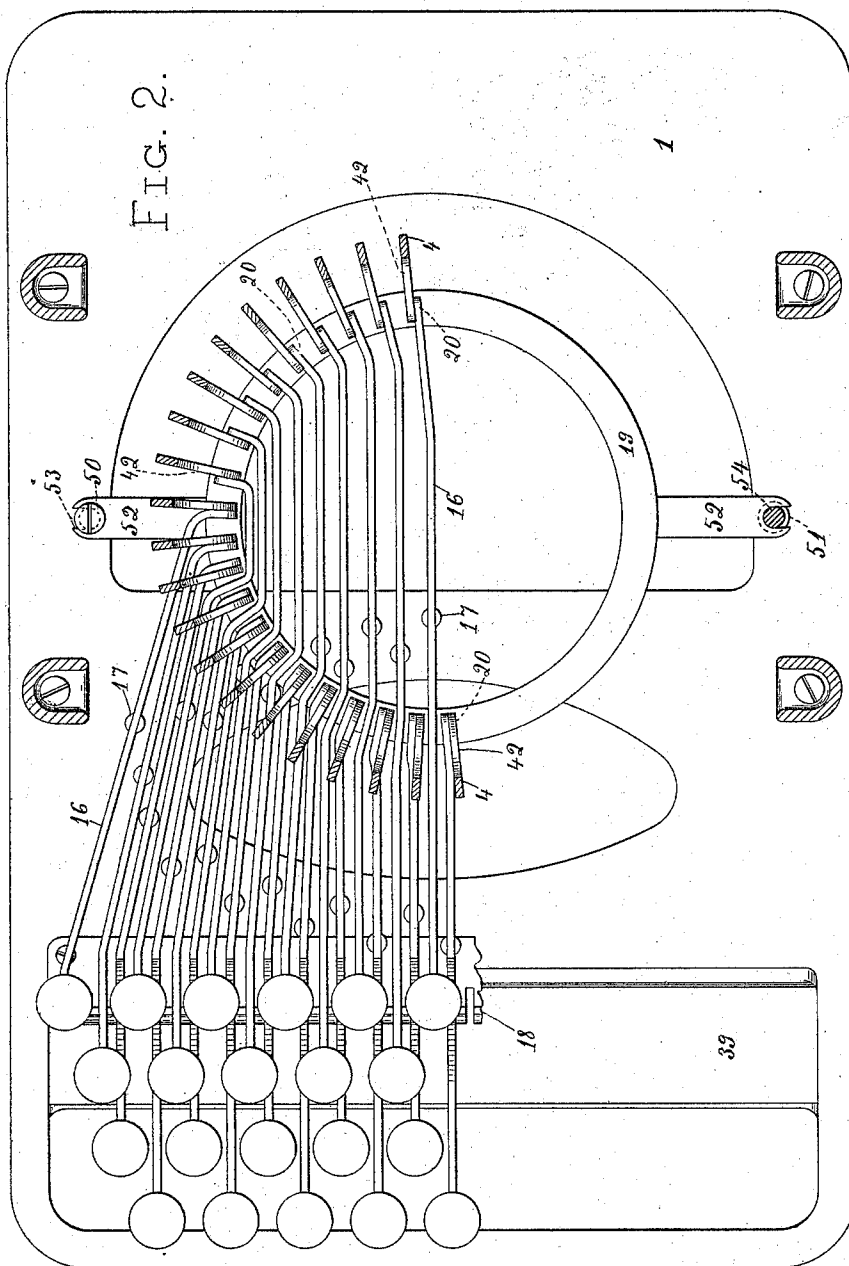
(No Model.)

5 Sheets—Sheet 2.

B. C. STICKNEY.
TYPE WRITING MACHINE.

No. 576,284.

Patented Feb. 2. 1897.



Witnesses
K. V. Donovan.
J. Walsh

Inventor
Burnham C. Stickney.
By his Attorney
Jacob F. Felt

(No Model.)

5 Sheets—Sheet 3.

B. C. STICKNEY.
TYPE WRITING MACHINE.

No. 576,284.

Patented Feb. 2, 1897.

FIG. 3

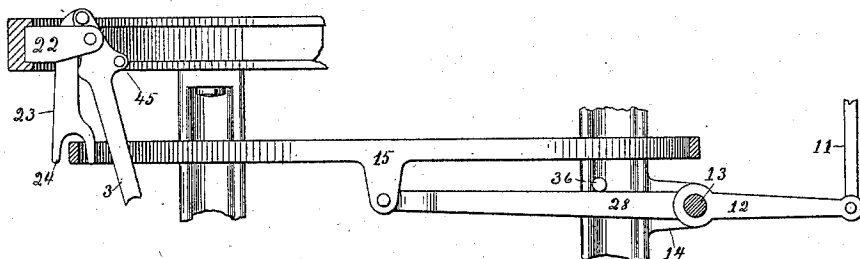
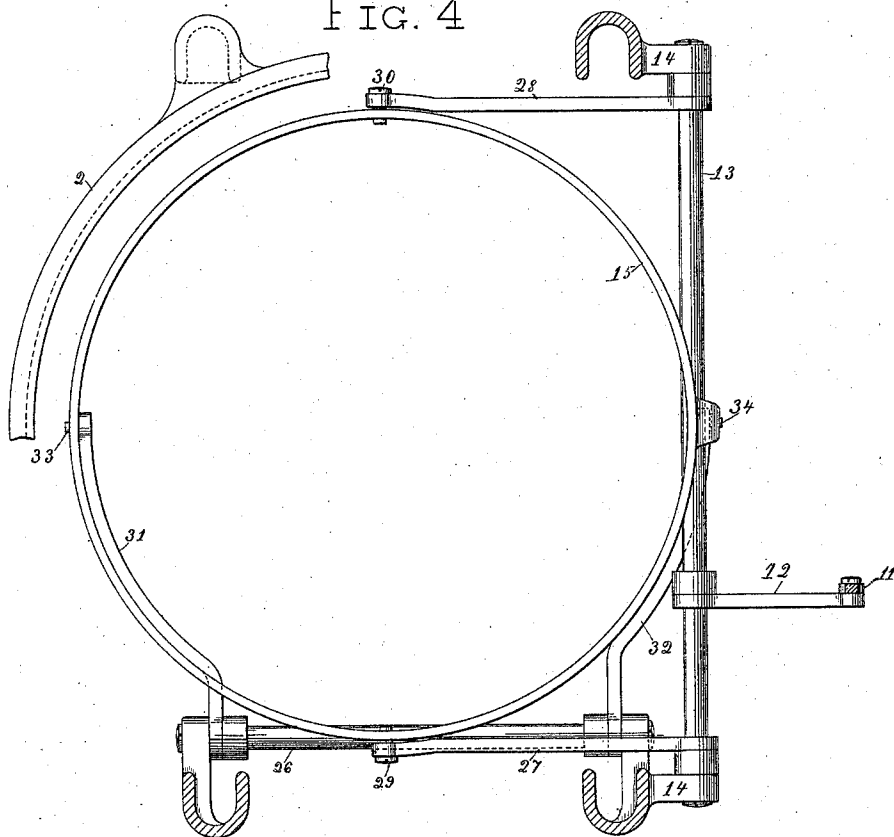


FIG. 4



Witnesses
K. V. Donovan
J. Walsh

Inventor
Burrham C. Stickney
By his Attorney
Jacob F. Felt

(No Model.)

5 Sheets—Sheet 4.

B. C. STICKNEY.
TYPE WRITING MACHINE.

No. 576,284.

Patented Feb. 2, 1897.

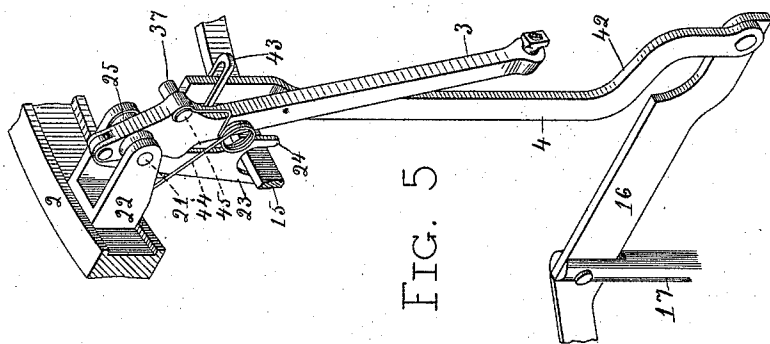


FIG. 5

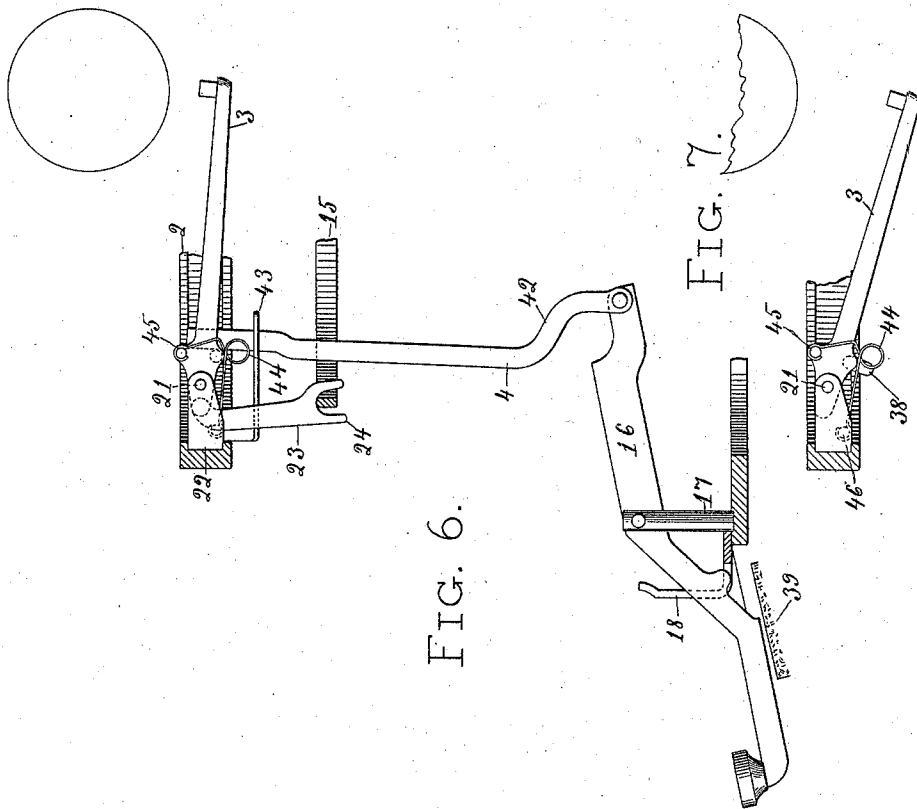


FIG. 6.

FIG. 7.

Witnesses
K. V. Donovan.
J. Walsh

Inventor
Barnham C. Stickney
By his Attorney
Jacob Felsch

(No Model.)

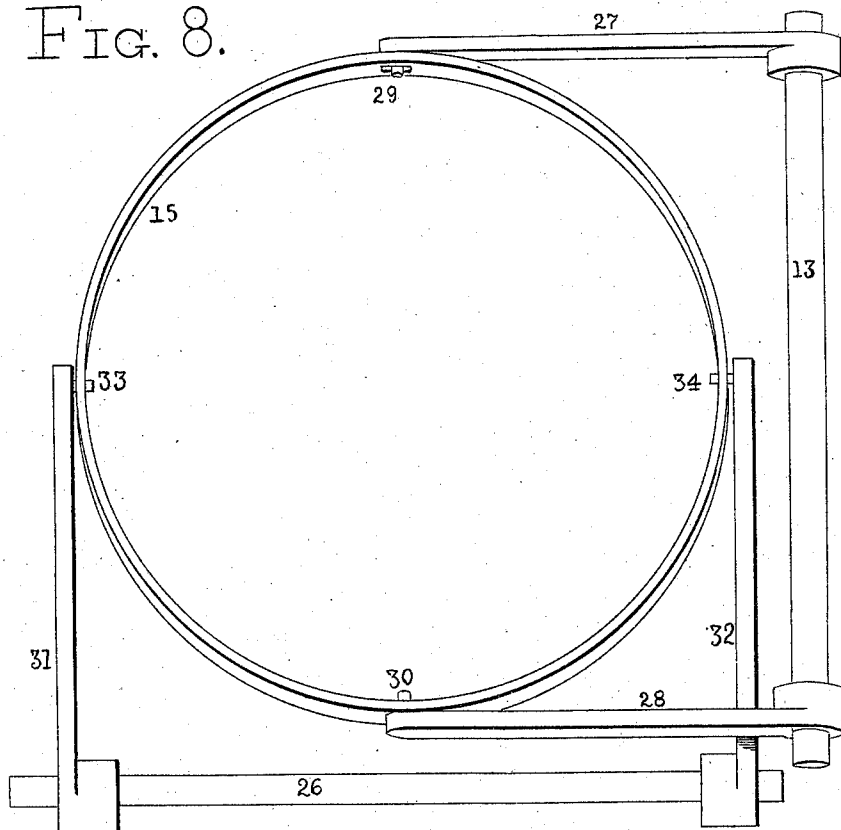
5 Sheets—Sheet 5.

B. C. STICKNEY.
TYPE WRITING MACHINE.

No. 576,284.

Patented Feb. 2, 1897.

FIG. 8.



Witnesses

Paul Armitage

K. V. Donovan.

Inventor

B. C. Stickney,

By his Attorney

Jacob Felbel

UNITED STATES PATENT OFFICE.

BURNHAM C. STICKNEY, OF ELIZABETH, NEW JERSEY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 576,284, dated February 2, 1897.

Application filed June 12, 1895. Serial No. 552,548. (No model.)

To all whom it may concern:

Be it known that I, BURNHAM C. STICKNEY, a citizen of the United States, and a resident of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to that class of type-writing machines made the subject of an application filed by me February 17, 1893, Serial No. 462,689; and it consists in the features of construction and combinations of devices hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a type-writing machine embodying my present improvements. Fig. 2 is a horizontal section taken at the line Z Z of Fig. 1 and looking in the direction of the arrow. Fig. 3 is a sectional elevation of the annular universal bar and its actuating mechanism in its normal position. Fig. 4 is a plan view of the mechanism shown in Fig. 3, omitting the type-bar and hanger. Fig. 5 is an enlarged perspective detail view of one of the type-bars and its associated devices, the key-lever being broken away at the forward end. Fig. 6 is a detail view of the type-bar action, showing the position of the type at the tripping moment. Fig. 7 is a detail view to show the relation of the spring to the type-bar at a certain point in the movement of the latter and whereat the influence of the spring ceases; and Fig. 8 is a plan perspective view illustrating the universal-bar mechanism, more particularly to show the loose connections of two of the side arms to the ring. A pin 29 on the arm 27 enters a horizontal slot in the ring 15, and a pin 30 on the side arm 28 enters a similar slot on the opposite side of said ring, this slot being hidden, however, in the view.

In the several views the same parts will be found designated by the same numerals of reference.

1 designates the framework of the machine; 2, the top plate or type-ring; 3, the type-bars; 4, the trips, and 5 the usual power-driven paper-carriage. The paper-carriage is provided with a feed-rack 6, with which coöperates a

spacing-dog 7 and a detaining-dog 8, mounted upon a trunnion or rocker 9, held by a bracket 10 and actuated by a link 11, connected at its lower end to an arm 12, secured to a transverse rock-shaft 13, mounted in arms 14 at the rear corners of the machine, and oscillated by the annular universal bar or ring 15, as will be hereinafter explained. The escapement or spacing dogs may be of the usual or any suitable construction.

The key-levers 16 are of the first order, each being mounted upon a fulcrum post or stud 17, secured to the base-plate of the machine. The front ends of the key-levers work in a slotted guide or comb 18, extending across the machine in front of the fulcrum-posts. The slots are open at the top to facilitate assembling the levers in the machine. The rear ends of the key-levers are bent to radiate from the center of a cushioned ring 19, which is concentric with the type-bar ring or top plate. The key-levers normally rest upon the cushioned ring 19. To the rear end of each lever is pivoted at 20 a vertical trip 4, connecting the lever to the type-bar 3. The trips 4 stand normally perpendicularly to the base.

The type-bars are pivoted at 21 to hangers or brackets 22, secured in a groove formed in the type-bar ring 2. A short vertical link 23 extends downwardly from each type-bar in position to depress the annular universal bar 15 when the type-bar is carried to the platen, the lower end of each link 23 being preferably forked, as shown at 24, to embrace the universal bar and to insure its coöperation therewith at each printing movement of the type-bar, the legs of the forks preferably extending below the upper edge of the universal-bar ring, so as at all times to prevent the link from moving or being forced into a position wholly outside of or inside of the universal-bar ring, where it would fail to actuate the same. Each link is so hung or arranged that no portion thereof contacts with the universal bar when the type-bar is in normal position. The object of thus maintaining the links out of contact with the universal bar is to avoid the friction which would otherwise result and which would be perceptibly felt at the finger-keys. This separation of the links from the universal ring is effected

by so mounting or pivoting each link as that its inner edge will bear normally against the hub 25 or some other part of each type-bar.

The annular universal bar 15 is mounted in the following manner: A second rock-shaft 26, Fig. 4, is mounted at a right angle to rock-shaft 13. The shaft 13 is provided with forwardly-extending horizontal arms 27 28, to the free ends of which the ring 15 is pivoted or hung at opposite points 29 30. As arms 27 28 move together, it is manifest that the points 29 30 of the ring 15 will always be in the same horizontal plane and that the only motion that the ring is capable of independently of the arms 27 28 is a vibratory motion about the points 29 30 as centers. To prevent such vibratory motion and maintain the ring at all times in a true horizontal plane, the rock-shaft 26 is provided, from which extend horizontal arms 31 32, to the free ends of which the ring is loosely pinned or connected at points 33 34. In operation when the ring is depressed the arms 27 and 28 and 31 and 32 will freely move with it, but will always maintain the ring in a horizontal position, so that at any point where the ring may be depressed by a link 23 the motion of the shaft 13 and arm 12 will be the same and the feed-dogs will be vibrated uniformly for all the key-levers. Rock-shaft 13 and arms 27 28 constitute a bail embracing one side of the universal ring, and rock-shaft 26 and arms 31 32 constitute another bail embracing another portion of the universal ring. The universal ring and its supports are compactly arranged just beneath the type-bar hangers and outside of the type-bar circle, permitting the use of short light links on the type-bars, avoiding sidewise strains on the universal ring and its supports, and not occupying room needed for the proper disposition of the type-bars, connections or trips, and type-bar basket.

A spring 35, Fig. 1, is provided to return the annular universal bar 15 and its connections to their normal positions. The universal-bar arm 28 normally rests against a stop-pin 36, Figs. 1 and 3, so that none of the links 23 is ever in contact with the universal bar except when it is carried down by the action of the type-bar to which it is attached.

In operation when a key is depressed the rear end of its lever is raised and the trip is thrust up, lifting the type-bar to the platen to make the impression, and during the vibration of the type-bar the link 23 on the short arm of the type-bar or lever is forced down, carrying down the annular universal bar 15, rocking the shaft 13, and vibrating the arm 12. Through the feed mechanism described or any other suitable feed mechanism the carriage is fed the necessary letter-spaces as the impressions are made. At a predetermined time the type-bar and the universal bar and its connections are released from the control of the key-lever and returned to their normal positions independently and

in advance of said key-lever, all as will now be more specifically described.

The upper free end of each trip 4 normally stands in line with and under a horizontal pin 37 on the type-bar, and during the upward thrust of the trip it engages and travels with the pin until a lateral projection 38 on the type-bar comes in contact with the rod and forces it out of engagement or contact with the pin 37, the separation being timed to take place when the type has very nearly reached the platen, as shown at Fig. 6. The type-bar continues by inertia to the platen and makes the imprint and then returns to its normal position, together with the universal bar and feed mechanism, independently and in advance of the key, the impression of the type and the necessary letter-feeding of the carriage being thus accomplished by a single downward stroke of the key, the manipulation of other keys being permitted without relieving the first key from pressure.

When the separation between the key and the type-bar occurs, the motion of the key is stopped by a suitable pad 39, supported by a plate of yielding sheet metal 40, which in turn is supported by springs 41 or any other yielding support. The pad 39, the plate 40, and the springs 41 each have a separate and independent yield, so that a soft yielding stop for the finger-key is assured notwithstanding the pad 39 may become hard from constant use. The single pad 39 is arranged to receive the blows of all the finger-keys.

At Fig. 1 the rear key-lever is shown in its depressed position, with its foot resting against the pad, and the trip attached to said lever is shown as having been tripped or forced out of contact or engagement with the pin 37 on the type-bar, which is in its elevated position, while the universal bar is shown in its depressed position and as having actuated the feed-dogs in one direction. The trip having taken place, the type-bar, the universal bar, and the connections to the feed-dogs will all now instantly return to their normal positions, independently of any release of the finger-key, under the influence of spring 35 and also under the influence of the gravity of the type-bar. When the key-lever is released, it and the trip will return to their normal positions by reason of the superiority of the weight being on the trip side of the key-lever. At the same time the weight of the trip is so arranged as to cause it to simultaneously resume its normal position or fall back under the pin 37 again. The rear end of the key-lever, it will be observed, is made heavier than the fore end, and to this weight is added that of the tripping-bar, which combined weight will be amply sufficient to overbalance the key end of the lever and enable these parts to be restored to their normal positions with promptness. The trip is so constructed or arranged as that the weight thereof will lie on one side of the pivot and tend to cause

said trip to fall outwardly or toward the periphery of the type-ring. To effect this action, the trip is preferably bent outwardly, as at 42, by which construction it will be seen that the gravity of the trip will act to force or throw the upper end of the trip away from the center of the system of trips and type-bars, and this action or tendency is designed for the purpose of causing the upper end of the trip to automatically resume its proper position relatively to the lifting-pin 37 of the type-bar. As the rear end of the key-lever descends and carries with it the trip the latter will vibrate outwardly independently, and its outer edge will ride along the inner side of the pin 37 until the extremity of the trip passes by said pin, when the trip will instantly fall outward, so that its extremity will come again in line and beneath said lifting-pin. The upper end of the trip passes through and is guided by a slot in an arm or bracket 43, supported from some fixed part of the machine, in this case projecting horizontally inward from a depending arm attached to the type-bar bracket or hanger.

As shown in Fig. 2, the trips are all arranged radially, and the rear ends of the key-levers are bent to match, the trips being loosely pivoted to the key-levers, especially on the side levers, to avoid binding. The trips are all made alike, as also are the type-bars and their hangers.

Each type-bar is provided with a spring 44, which may be of any form or construction and which has the several functions to be presently described. The spring shown is attached at one end to a pin 45 on the type-bar below its pivot and at the other end to a pin 46 on the type-bar bracket, the spring being formed of wire and having one or more turns intermediate its ends, whereby the ends of the spring have a contractile force or tendency to approach each other. This spring acts to keep the lower end of the type-bar at rest in the basket or support 47 during the operation of other type-bars. It also tends to prevent the type-bar from excessively rebounding when it strikes the rest or basket, and it likewise assists in the elevation of the type-bar immediately before the printing moment. As the type-bar rises the pin 45 moves upwardly in an arc of a circle about the pivot 21, and the ends of the spring are drawn a little farther apart until the said pin arrives at the dead-point, (a line passing through the pivot and the pin 46, illustrated at Fig. 7,) when the expansion of the spring ceases, and during the continuance of the upward movement of the type-bar the pin 45 passes beyond the dead-center line and the contractile force of the spring tends to assist the rise of the type-bar and act in opposition to the gravity thereof. The expansion of the spring during the travel of the pin 45 from its normal position to the dead-center line does not in the least increase the touch or resistance to the finger-key, but, on the contrary, during such

expansion the resistance of the spring to the finger-touch is lighter, because the leverage of the spring gradually diminishes toward the dead-point, where the spring ceases altogether to have any influence on the type-bar or its connected mechanism. While the spring acts upon the type-bar with a slight accelerating force when the type is near the paper on the platen, yet the spring does not materially retard the type-bar in rebounding from the platen, there being always more than enough rebound to cause the type-bar to instantly spring away from the platen and drop by gravity to the rest or basket. As the resistance offered by the spring to the action of the finger-key constantly diminishes, the action of the keys is less fatiguing than in machines where the resistance of the type-bar spring (usually placed under the key-levers) is constantly increasing.

The type-bar basket 47 is formed of leather or other light-weight material possessing some degree of flexibility, and is loosely supported by wires 48 from the top plate 2, or it may be loosely supported in any other suitable manner. It is kept in normal position by the equal outward pressure of the lower ends of the type-bars. When the type-bar, in falling from the platen, strikes the flexible side of the type-bar basket, the latter yields a little and the basket itself is distorted a trifle out of its true shape and moved a trifle out of its true position, the other type-bars, or some of them, being jarred a little. All of these things absorb the force of the said type-bar and it is gradually brought to a stop, so that it does not rebound into the path of a succeeding type-bar and impede the manipulation of the machine.

The cushioned ring 19 constitutes a better stop for the key-levers than the transverse bar that is usually placed over the key-levers at the front of the machine, inasmuch as it facilitates assembling the machine or removal of parts and permits a more accurate and easier adjustment of the trips in relation to the lifting-pins 37 on the type-bars, as the trips, when in normal position, must not stand so high as to fail to fall under the lifting-pins or so low as to cause excessive lost motion before contacting with the lifting-pins. This cushioned ring is preferably made vertically adjustable for the purpose of arresting the return movements of the key-levers at the desired or best locality for the purpose of insuring the proper position of the upper end of the trip relatively to the lifting-pin 37 on the type-bar. This adjustment may be variously effected. I have shown one means consisting of a tubular boss 49 at each side of the machine, which is threaded interiorly to receive the threaded shank of a screw having a head and a shoulder 51, between which the lateral arm 52 of the cushioned ring 19 is introduced, said arm having a longitudinal slot 53, by which it may be connected to the plain

cylindrical portion 54 of the screw device, so that the said plain portion may turn freely in the slot of the arm. By turning the screws up or down the arms, and hence the ring, are either raised or lowered.

The key-levers of the top two rows are each provided with a downwardly-extending portion or foot 55 for the purpose of contacting with the pad-stop 39 below. The lower edge of this foot or projection in the normal position of the key-lever stands at an angle to the pad, which is so arranged that when the key-lever is depressed to its lowermost position the said lower edge of the foot-piece is adapted to contact with the pad for its whole length simultaneously instead of striking the pad cornerwise and indenting and thereby injuring the same.

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

1. In a type-writing machine, the combination of a key-lever, a trip pivoted thereto, and a type-bar, the trip being arranged to first contact with and actuate the type-bar, and then to release the same just previous to the impact of the type against the platen, substantially as set forth.

2. In a type-writing machine, the combination of a circular series of type-bars, a series of key-levers the terminations of which occupy or fall within a circle beneath the type-bars, and trips directly connecting the key-levers and type-bars, substantially as set forth.

3. In a type-writing machine, the combination of a key, a trip and a type-bar, the trip first actuating and then releasing the type-bar, and a spring connected at one end to some fixed portion of the machine and fastened at the other end to the type-bar, for holding the same in normal position, substantially as set forth.

4. In a type-writing machine, the combination of a finger-key, and a trip actuated by the key and adapted to actuate a type-bar, the type-bar being provided with a projection wherewith the trip engages when actuating the type-bar, and with another projection adapted to contact with the trip to disconnect it from the type-bar, substantially as set forth.

5. In a type-writing machine, the combination of a key, a type-bar, an intermediate trip adapted to actuate said type-bar and release it, and a moving projection normally out of contact with said trip but adapted to come into contact therewith during the depression of the key and force said trip out of active engagement with the type-bar during its ascent to the platen, substantially as set forth.

6. In a type-writing machine, the combination of a key-lever, a trip pivoted thereto and adapted to actuate a type-bar, and a moving striker arranged to contact with the trip and vibrate it to release the type-bar, substantially as set forth.

7. In a type-writing machine, the combination of a finger-key, a type-bar, and a vertical

trip arranged alongside of said type-bar and in advance of its pivot, the said type-bar being provided with a lateral pin or projection to be engaged by the trip for the purpose of elevating the type-bar, and also being provided with another lateral pin or projection for forcing the trip out of engagement with the first-mentioned pin or projection, substantially as set forth.

8. In a type-writing machine, the combination of a key-lever, a type-bar, and a vertically-arranged trip having the weight on one side of its pivot and directly connecting the type-bar and key-lever, the said trip being adapted to actuate and release said type-bar and then to return at once by gravity to its initial position or place of rest when the key-lever is relieved from pressure, substantially as set forth.

9. In a type-writing machine, a key-lever of the first order, bearing a key at one end and a trip at the other, the trip being adapted to actuate and release a type-bar and return by gravity to normal position, the weight of the trip giving the trip a vibrating movement and giving the key-lever a downward movement, substantially as set forth.

10. In a type-writing machine, the combination of a type-bar, a swinging trip arranged in a plane parallel to that of the type-bar and pivoted to a lever at its lower end, and at its upper end adapted to engage the type-bar by means of a lateral projection, and means for disengaging the trip from the type-bar, substantially as set forth.

11. In a type-writing machine, the combination of a type-bar provided with a lateral projection, a swinging trip arranged in a plane parallel to that of the type-bar and whose upper end is adapted to engage said lateral projection and elevate the type-bar, and means for disengaging the upper end of the trip from the lateral projection, substantially as set forth.

12. In a type-writing machine, the combination of a type-bar provided with a lateral projection, a swinging trip arranged in a plane parallel to that of the type-bar and whose upper end is adapted to engage said lateral projection and elevate the type-bar, and a second lateral projection as a means for disengaging said trip from the type-bar, substantially as set forth.

13. In a type-writing machine, the combination of a circular series of type-bars, a series of radially-arranged trips, and a series of key-levers bent to radiate at their rear ends and pivotally connected to the trips at the radial bends, substantially as set forth.

14. In a type-writing machine, a series of key-levers, a series of vertically-arranged trips loosely pivoted to the rear ends thereof and adapted to actuate a circular series of type-bars, the type-bars being provided with means to disengage the trips, a universal bar arranged to be actuated by any of said type-bars and connected to the carriage-feeding

mechanism, and means for restoring the trips to normal position upon release of the finger-keys from pressure, substantially as set forth.

15. In a type-writing machine, the combination of a series of type-bars arranged in a circle, a series of key-levers arranged thereunder, a series of trips radially arranged from the center of the type-bar system, the said trips being loosely pivoted at their lower ends to said key-levers and extending directly to the type-bars to swing and then part company with them, the pivotal connections of said trips to the key-levers for all key-levers excepting those at the center being made so that said trips have each an angular arrangement with respect to the plane of vibration of its associated key-lever, whereby the side trips may vibrate in vertical planes at varying angles to the planes of vibration of their associated key-levers without causing the latter to bind in their guides or imposing a strain upon them; and means for vibrating said trips on their key-levers and restoring engagement with the type-bars after the key-levers have been relieved from pressure, the said vibrating and restoring means being disconnected from and independent of said key-levers, substantially as set forth.

16. In a type-writing machine, the combination of a universal bar, a series of type-bars, a series of links pivoted thereto, and means for holding the inactive links free from the universal bar during its depression, whereby the universal bar is enabled to descend without frictional contact with said links, substantially as set forth.

17. In a type-writing machine, the combination of a universal bar, a type-bar, and a link attached to the type-bar and adapted to actuate the universal bar, but normally supported out of contact therewith, substantially as set forth.

18. In a type-writing machine, the combination of a type-bar, a universal bar, and a link attached to the type-bar and forked at its lower end to bestride the universal bar, substantially as set forth.

19. In a type-writing machine, the combination of a key-lever bearing a pivoted thrust-trip and a type-bar provided with means between its pivot and the type to engage said thrust-trip, and with a short arm on the other side of its pivot from which depends a link in position to actuate the universal bar, substantially as set forth.

20. In a type-writing machine, a parallel-motion annular universal bar, in combination with four supports extending to or arranged at the four quarters of said universal bar, and connected thereto at the said quarters, so as to permit the necessary bodily movement of said universal bar, substantially as set forth.

21. In a type-writing machine, a universal bar loosely hung in two bails which are connected to the universal bar at the four quarters thereof, substantially as set forth.

22. In a type-writing machine, a universal

bar loosely hung in two bails set at a right angle to each other which are connected to the universal bar at the four quarters thereof, substantially as set forth.

23. In a type-writing machine, the combination of a circular series of depending type-bars with an annular universal bar provided with vibrating supports by which it is permitted to move in parallel planes, the universal bar with its supports being arranged outside the system of type-bars and in proximity to the type-bar ring or hangers, and a series of links pivoted to the type-bars and depending therefrom in position to actuate the universal bar substantially as set forth.

24. In a type-writing machine, the combination of a depending type-bar, a platen arranged above it, and a spring attached to the type-bar and arranged to normally hold the type-bar in its depending position, but to diminish its resistance to the finger-touch during the printing motion of the type-bar, substantially as set forth.

25. In a type-writing machine, the combination of a depending type-bar, a platen arranged above it, and a spring adapted to first resist and afterward assist the type-bar during its printing motion, substantially as set forth.

26. In a type-writing machine, the combination of a depending type-bar, a platen arranged above it, the type-bar being pivotally supported and adapted to swing to the platen to make the impression and provided with a spring arranged to bear first on one side of its pivot and then on the other side, whereby the spring first resists and afterward assists the printing action of the type-bar, substantially as set forth.

27. In a type-writing machine, the combination of a key, a type-bar, and a releasing means arranged between the key and the type-bar, and a spring arranged to retain the type-bar in its normal position and to diminish its resistance to the finger-touch during the printing motion of the type-bar, substantially as set forth.

28. In a type-writing machine, the combination of a circular series of depending type-bars and a bodily-flexible loosely-supported type-bar basket retained in place by the pressure of the type-bars, substantially as set forth.

29. In a type-writing machine, the combination of a series of key-levers of the first order, a series of individual fulcra for said levers, the key portions of said levers all being arranged at the front of the machine and their rear portions terminating in a circle under the type-bar system, and an annular support for the rear portions of the said key-levers, substantially as set forth.

30. In a type-writing machine, the combination of a series of levers whose ends terminate in a circle, a series of vertical trips directly connecting them to a series of type-bars, and an annular support for the ends of the levers, substantially as set forth.

31. In a type-writing machine, a loosely-supported type-bar rest or basket, the type-bar-bearing portion of which consists of a continuous, bodily-flexible, distortable material.

5 32. In a type-writing machine, the combination with a series of finger-keys, a series of type-bars, and means for disconnecting the keys from the type-bars, of a yieldingly-supported plate bearing a pad, for arresting the
10 keys on the downstroke when the type-bars have been released, substantially as set forth.

33. In a type-writing machine, the combination, with a series of key-levers, a series of type-bars, and a series of trips pivoted to the
15 key-levers and extending directly to the type-bars, of a stationary device mounted in the framework, to arrest the key-levers and trips on their return movements, the said device being constructed for vertical movement to
20 adjust the trips with reference to the type-bars, substantially as set forth.

34. In a type-writing machine, the combination with a series of key-levers of the first order, and a series of vertical trips pivoted to the key-levers and extending directly to the
25 type-bars and a series of radially-arranged type-bars, substantially as described, of a vertically-adjustable cushion or pad stop made in ring form and underlying the rear ends of
30 said key-levers for adjusting the trips with reference to the type-bars, substantially as described.

35. In a type-writing machine, in combination with a fixed arresting-pad, a key-lever having a depending projection or foot-piece
35 arranged to stand normally at an angle to the pad and when the key-lever is depressed to strike or contact with the same simultaneously for its whole length, substantially as described. 40

36. In a type-writing machine, in combination with a fixed arresting-pad, a key-lever having a depending projection or foot-piece arranged when depressed to strike or contact
45 with the pad, substantially as described.

37. In a type-writing machine, in combination with a type-bar having an integral lateral projection, a vertically-arranged pivoted
50 trip extending to said projection and a key-lever of the first order, the key-lever and the trip being adapted to descend together independently of the type-bar, and the trip having also simultaneously a vibratory movement outwardly to automatically reengage
55 said lateral projection at the cessation of the movement, substantially as described.

Signed at New York city, in the county of New York and State of New York, this 8th day of June, A. D. 1895.

BURNHAM C. STICKNEY.

Witnesses:

JACOB FELBEL,
WM. BELL WATT, Jr.