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PATENTED APR. 21, 1908.

J. H. JACKSON.

TYPE WRITING MACHINE.

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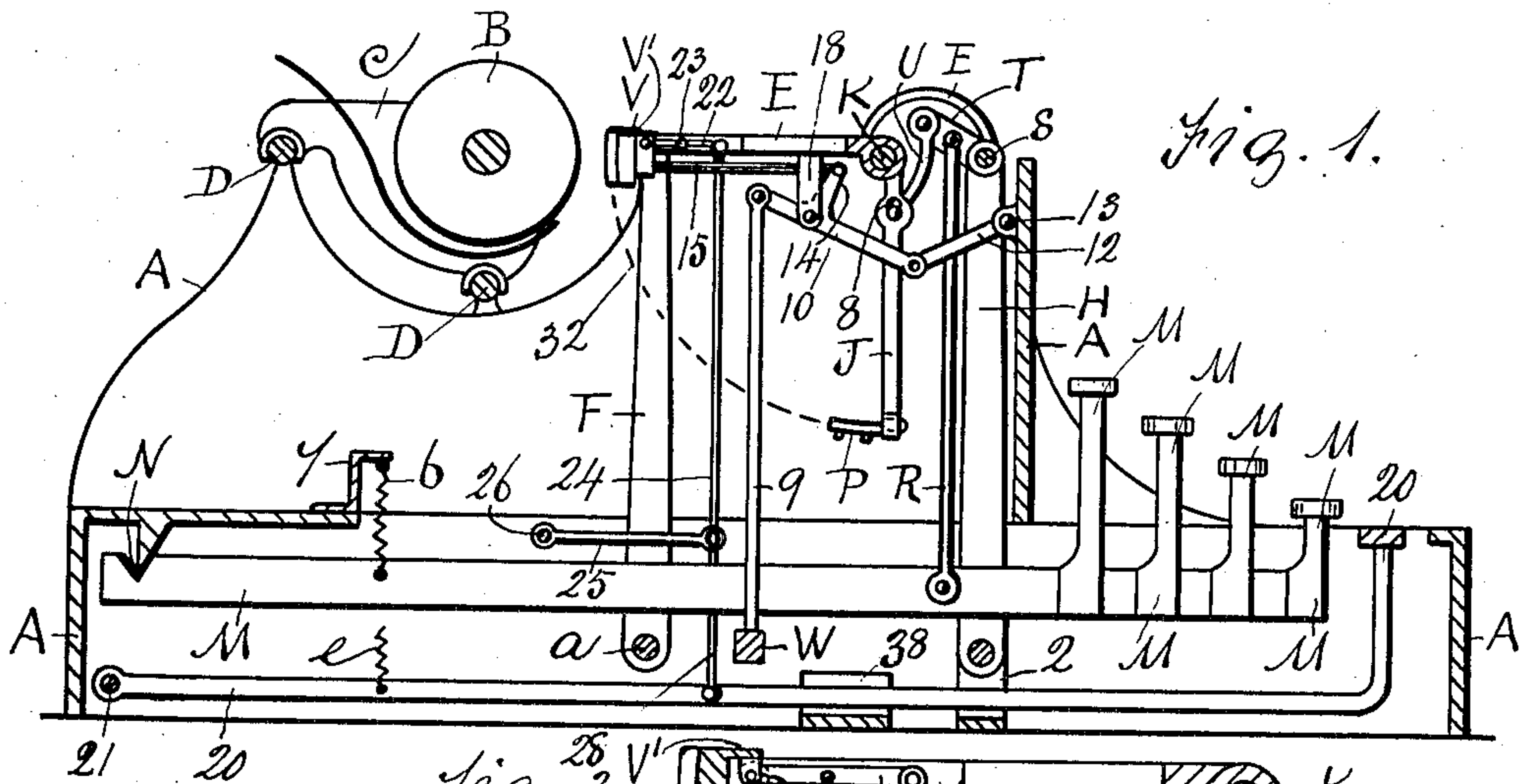
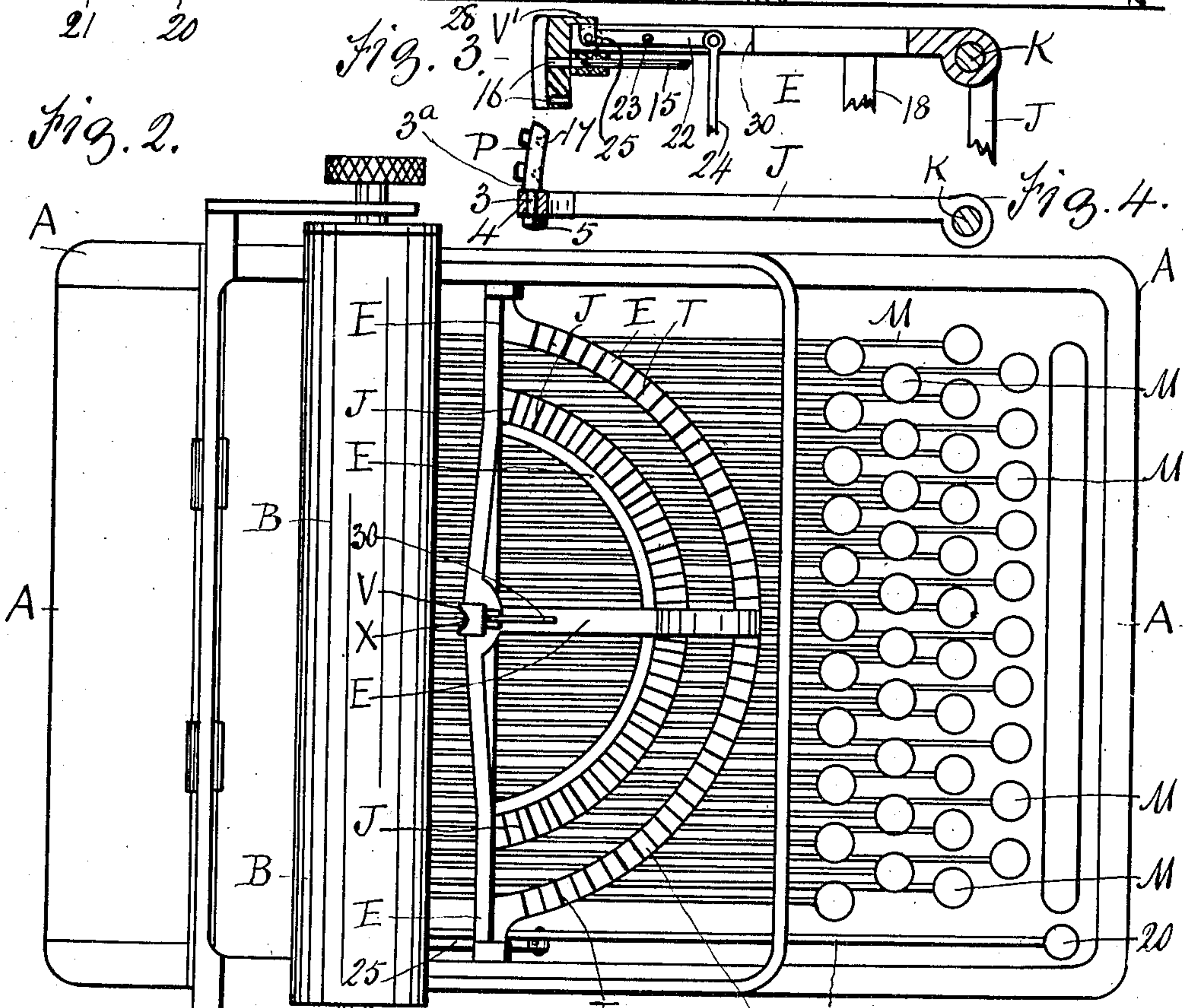
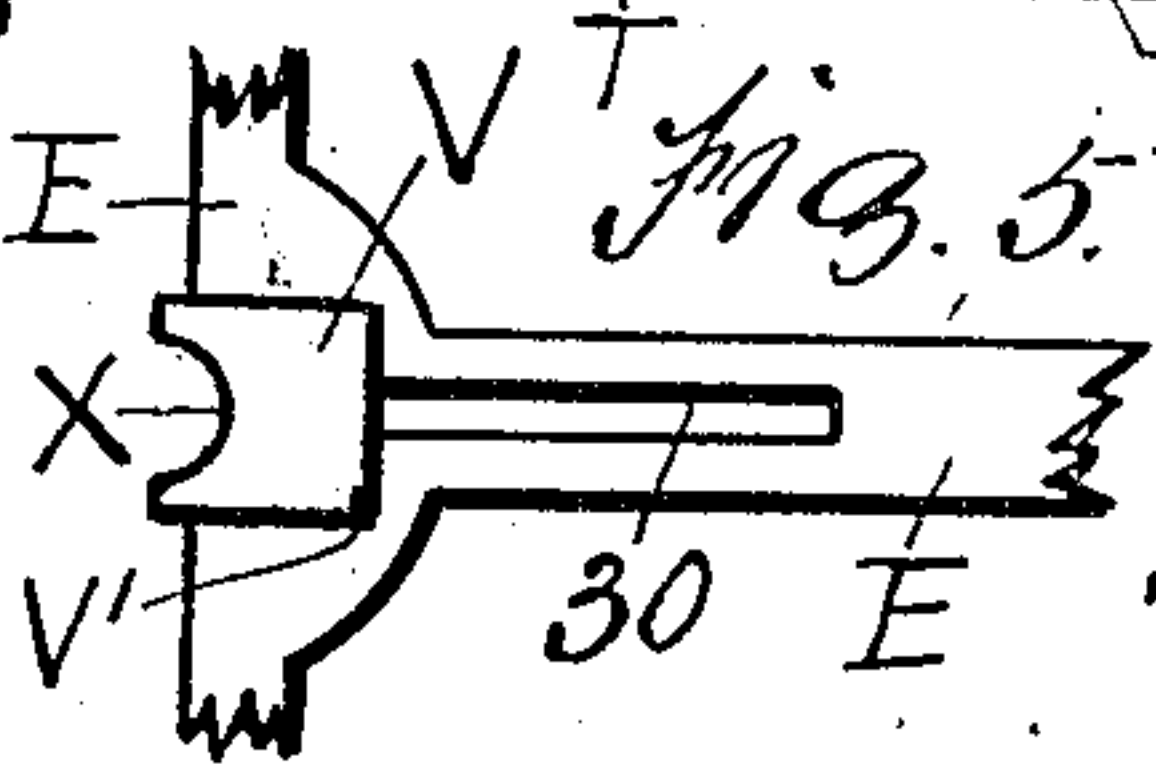


Fig. 2.



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UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

No. 885,346.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed March 30, 1906, Serial No. 309,015. Renewed September 17, 1907. Serial No. 393,326.

To all whom it may concern:

Be it known that I, JOSEPH H. JACKSON, a citizen of the United States, and resident of Hamilton, in the county of Wentworth and Province of Ontario, Canada, have invented new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to improvements in typewriting machines, in which a segmental carrier carrying a series of type arms fulcrumed thereto is suitably mounted in the machine, and is adapted to carry said type in consecutive order to writing position to and at right angles to the impression roller, or platen, by the operation, or the depression of a key.

The objects of my invention are, first, to provide a machine, in which the type is carried to one common center in the segmental carrier and therein positioned; second, to provide means for engaging the type with the impression surface by pressure, third, to provide a silent and noiseless typewriter while the same is in operation, fourth, to provide means for allowing the upper or lower case of type to be operated by pressure against the impression surface, fifth, to afford facilities for bringing type to position and forwarding the same at right angle to the impression surface at one noiseless operation, and sixth, to provide means for attaining equalized pressure of the type. I attain these objects by the mechanism illustrated in the accompanying drawing in which:

Figure 1, is a sectional side of the machine, and in normal position. Fig. 2, is a plan of the same. Fig. 3, is an enlarged detail sectional elevation of the movable segmental type carrier showing mechanism for adjusting the type shifting block. Fig. 4, is an enlarged side elevation of a type arm, with the type. Fig. 5, is an enlarged plan of the central part of the type carrier.

Similar letters refer to similar parts throughout the several views.

In the drawing the frame work of the machine is indicated by A, and is stationary.

B, is the impression surface or roller mounted on the movable carrier C, which is adapted to slide on the horizontal rails D of the frame A.

E, is the segmental carrier to which the type arms are fulcrumed, and is mounted on

side arms F, and the similar central arm H, in front of the arms F. The upper ends of the arms F, and H, are loosely connected to the carrier E, the lower ends of the arms F, being hinged to the transverse bar "a" of the frame A, and the lower end of the arm H, is hinged to a centrally located lug 2, of the frame. The arms F, and H, support the segmental carrier E, and move in parallel order to bring the carrier E on a level plane toward the impression surface B, and at right angle thereto. The segmental series of type arms J, are fulcrumed to the segmental wire K, which is secured in the carrier E, which moves at right angle to the impression surface. The opposite ends of the type arms J, are provided with the type P, which are adjustably secured to the type arms, by means of a tapered shank 3, on the end of the type, said shanks fitting in the sockets 4, of the arms, and secured thereto by nuts or screws 5.

The face of the type are convexed and of a circle whose center is the segmental fulcrum wire K, to which the type arms are fulcrumed. The shanks 3 of the type, are a continuation of the type, and have shoulders 3^a, to fit on the sockets 4. A central type arm is shown hanging downward in Fig. 1. of the drawing, and at rest.

The series of keys M, are fulcrumed at N, to the machine, and are held to the fulcrum by the suspension springs 6, which connect said keys, and the bracket 7, of the frame together, the opposite end parts of the keys M being held in rest position by means of the rods R, connected thereto, and to upper cranks T.

The carrier E, has an outer segmental fulcrum wire S, similar to the fulcrum wire K, and a series of cranks T are hung on the wire S, and the aforesaid rods R, and pivotally connect the cranks T, and the keys M, together. Links U, are pivotally connected to the opposite ends of the cranks T, and to the type arms J, as shown. A slot 8 is necessary in the type arm, at the connection of the link U, with the arms for operative purposes and to allow the carrier E to arrive at its predetermined place.

The central part of the segmental carriage E, has a shift block V, with a central guide opening, or recess X, to receive the type P, in said recess. The recess X is shaped in a man-

ner to conform to the sides and to the rear part of the type, and is positive. The block V, has an upper flange, or projection V¹ to retain the block in lower position in the carrier, as shown.

When a key M, is depressed, the type P, enters the recess X in the shift block V. Between the hinges "a" and 2, of the arms F, and H, is a transverse bar W, to which the vertical rod 9 is connected, and a lever 10, is pivotally connected to the upper end of the rod 9. The opposite end of the lever is pivotally connected to the link 12 which is hinged at 13, to the wall A, of the frame. The lever 10, has an upper arm 14, to which is pivotally connected a needle 15, and the opposite end of the needle enters into a hole 16 in the shift block V, and the point of the needle enters one of the needle point holes 17 shown in broken lines in Fig. 4 of the drawing, in the rear of the type P, when the type is in position in the recess X of the block V, for writing. The lever 10 is fulcrumed to the lug 18, of the carrier E.

When the rod 9 is brought downward by the depression of a key M, on the transverse bar W, the lever 10, and the link 12, come in line with each other, consequently the carrier E, on the arms F, and H, is carried toward the platen B, and at the same time the type arm J, is brought to position and the type P, enters the recess X of the block V, and the needle on the arm 14 enters a hole 16 in the block V, and locks it and also enters the needle point hole 17, in the type, to lock the type, and at the same time to print against the impression surface.

20, is a shift block key, at one side of the key board, and is fulcrumed at 21, to the side of the frame A, and is held at tension by the spring "e" which is hung from the bracket 7. A small lever 22 is fulcrumed at 23 to the carrier E, and one end of the lever 22 is pivotally connected to a connecting rod 24, and the opposite end of the lever 22 is pivotally connected to a lug 25 depending from the portion V' of the shift block V as shown in Fig. 3. The lever 22 operates in a slot 30 in the carrier E, shown in Fig. 5, of the drawing.

The lower end of the rod 24, is pivotally connected to an arm 25, which is centrally located, and a similar arm 25 is provided, the arms being disposed at a distance apart from each other and both arms 25 secured to a loosely mounted transverse rod 26. To the central arm 25, the rod 24 is connected, and to a similar arm 25, the rod 28 is connected, and the lower end of the rod 28 connects with a key 20.

When the key 20 is depressed, the block V, in the center of the carrier E, is shifted upward until the lower hole 16 in the block V is opposite to the needle 15.

A cushion 38 is disposed beneath the arms

M and 20 in the frame A, to receive the impact of the arms and thus insure an equal depression for all.

The operation of the machine is as follows: Upon the depression of a key M, a rod R is brought downward, consequently the crank T, and the link U raises the type arms J, together with the type P on the broken arc line 32, as shown in Fig. 1 of the drawing. Immediately after the type P has entered the one common and central recess point X in the block V, the rod 9 is brought downward by means of the key which presses on the transverse bar W, thereby causing the lever 10 and the link 12 to be brought into alignment with each other, consequently the arm 14 of said lever 10 propels the needle 15 through the hole 16 in the block V, and the point of the needle into the opening 17 which conforms to this needle point. At the same depression of the key, the segmental carrier E on the three hinged arms F, F, and H, is brought toward the platen B by means of the alinement of the lever 10 and the link 12 forwarding the lug 18, hence also forwards the carrier E, of which said lug forms a part, to a predetermined place.

It will be noticed that all the type J enter the block V, in writing order as one common center, which is the center of the fulcrum wire K of the type arms J, and that each type P is adjusted in the socket 4 of the arms, in order that the type shall all be in the same direction, that is, opposite to the platen or impression surface B. The lower end of the opening, or recess X, in the shift block V, is of sufficient size to allow the type of all the arms J, to freely enter the recess X. Each type is minutely adjusted and set in its socket 4 and held by the screw, or nut 5 on the end of the shank of the type.

It will be obvious that the type arms J, the carrier E, together with the type locking needle 15, are all moved together to perform their separate functions by one depression of any one of the series of typewriting keys, and that the carrier E moves at right angle to the impression surface.

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

1. In a typewriting machine, an impression surface, type bars swinging at one end and likewise movable longitudinally thereof, means for actuating said type bars to dispose their printing characters adjacent to said impression surface, and means for moving said type bars longitudinally to complete the printing action.

2. In a typewriting machine, an impression surface, type bars swinging at one end and likewise movable longitudinally thereof and with lateral projections at the other end carrying spaced printing characters, means for actuating said type bars to dispose their printing characters adjacent to said impres-

sion surface, means for moving said bars longitudinally to complete the printing action, and means for bringing said spaced characters alternately into printing position relative to said impression surface.

3. In a typewriter a supporting frame, an impression surface carried by said frame, a movable carrier frame, a plurality of type bars swinging from said carrier frame and provided with laterally extending type arms, a plurality of keys carried by said frame, means whereby the depression of said keys will elevate said type bars to bring said type arms into position adjacent to said impression surface, and means operative by said keys for moving said type bars longitudinally to bring the printing characters into engagement with said impression surface.

4. In a typewriter a supporting frame, an impression surface carried by said frame, a plurality of type bars swinging from one end and movable longitudinally thereof, a plurality of keys, means whereby the type bars are actuated by the depression of the keys, means whereby said type bars are moved longitudinally to bring their characters into printing engagement with said impression surface, and means whereby said type bars are locked during the printing action.

5. In a typewriter, an impression surface, a frame movable toward and away from said impression surface, a plurality of type bars swinging upon said movable frame and adapted to be brought to one common center, and means for moving said movable frame to bring the type of said bars into printing engagement with said impression surface.

6. In a typewriter a stationary supporting frame, an impression surface carried by said frame, a movable frame carried by said stationary frame, a plurality of type bars swinging from said movable frame, a plurality of keys operatively connected respectively to said type bars and adapted to move the same successively to one common center, means operative by said keys for moving said movable frame to bring the type of said bars into printing engagement with said impression surface.

7. In a typewriter, a stationary frame, an impression surface carried by said frame, a movable carrier adapted to move toward and away from said impression surface, type bars swinging from said carrier, keys movably connected to said frame, means whereby the depression of said keys will actuate said type bars, a shifter block movable with said carrier and with which the type bars are engaged, means for operating said shifter block, and means for moving said carrier frame and the shifter block carried thereby to cause the type bars to be brought into printing engagement with the impression surface by the depression of the keys.

8. In a typewriter, a stationary frame, an

impression surface carried by said frame, a carrier frame movably associated with said stationary frame, type bars swinging from said carrier and provided with laterally extending type arms, each arm having spaced type arms with a socket associated with each of said type elements, a shifter block movable with said carrier and with which said type bars are engaged when in elevated position, and movable elements carried by said carrier and adapted to bear against said type arms and said shifter block and to alternately engage the sockets therein, a plurality of keys carried by said frame and connected respectively with said type bars, a shifter key carried by said frame and operatively connected to said shifter block.

9. In a typewriter, an impression surface, a plurality of type bars swinging at one end and likewise movable longitudinally thereof, a plurality of keys, means whereby the operation of said keys causes said type bars to be moved into position adjacent to said impression surface and then moved longitudinally into printing engagement with said impression surface.

10. In a typewriter, an impression surface, a plurality of type bars mounted for movement longitudinally toward and away from said impression surface, a plurality of keys, and connecting means between said type bars and keys whereby the first portion of the movement of said keys will dispose said type bars with their type elements adjacent to said impression surface and the final movement of said keys will cause said type bars to be moved longitudinally toward said impression surface and dispose the type into printing engagement with the impression surface.

11. In a typewriter, a supporting frame, an impression surface carried by said frame, a movable carrier, spaced radius bars between said carrier and frame, a plurality of type bars swinging from said carrier and adapted to be disposed successively with their type elements at one common center adjacent to said impression surface, a plurality of keys movably connected to said carrier, connecting means between said keys and said type bars, a stop element associated with said keys, means for moving said carrier with its radius bars, a connecting means between said carrier moving means and said stop element, whereby the initial movement of said keys will dispose said type bars with their type elements adjacent to said impression surface, and the final movement of said keys will move said carrier and the associated type bars bodily to cause the operated type bar to be moved into printing engagement with the impression surface.

12. In a typewriter, a supporting frame, an impression surface carried by said frame, a plurality of type bars swinging at one end and likewise movable longitudinally thereof,

a plurality of movable keys, means whereby the initial movements of said keys dispose the type bars with their type adjacent to said impression surface, and means whereby
5 the final movement of said keys moves the type bars longitudinally to bring the printing characters into printing engagement with said impressions surface.

13. In a typewriter, a supporting frame,
10 an impression surface carried by said frame, a plurality of type bars swinging at one end and likewise movable longitudinally thereof, a plurality of movable keys, a bar movably disposed in the paths of said keys, connecting
15 means between said type bars and keys and connecting means between said movable bar and the type bars and the type bar moving devices, whereby the initial movements of said keys will dispose said type bars with
20 their printing characters in position adjacent to said impression surface and the final movement of said keys will move said type bars longitudinally into printing engagement with said impression surface.

25 14. In a typewriter, a supporting frame, an impression surface carried by said frame, a centrally disposed shifter block, a plurality of movable type bars carried by said frame

and adapted to be brought to a common center in advance of said shifter block, a plu- 30
rality of movable keys, a bar movably disposed in the paths of said keys, means for moving said type longitudinally to bring the printing characters thereof into printing en-
35 gagement with said impression surface, connecting means between said type bars and keys, and connecting means between said movable bar and the type bar moving de-
vices.

15. In a typewriter, a supporting frame, 40
an impression surface carried by said frame, a plurality of type bars swinging at one end and likewise movable longitudinally thereof, a plurality of keys, connecting means be-
45 tween said keys and type bars, means whereby the type bars are moved into position with their printing characters adjacent to said impression surface by the partial action of said keys, and means whereby the type
50 bars are moved longitudinally to complete the printing action by the remaining action of the keys.

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Witnesses:

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