J. B. PICKETT.

TYPE WRITER.

APPLICATION FILED OCT. 12, 1911.

1,037,981.

Patented Sept. 10, 1912.

5 SHEETS—SHEET 1.

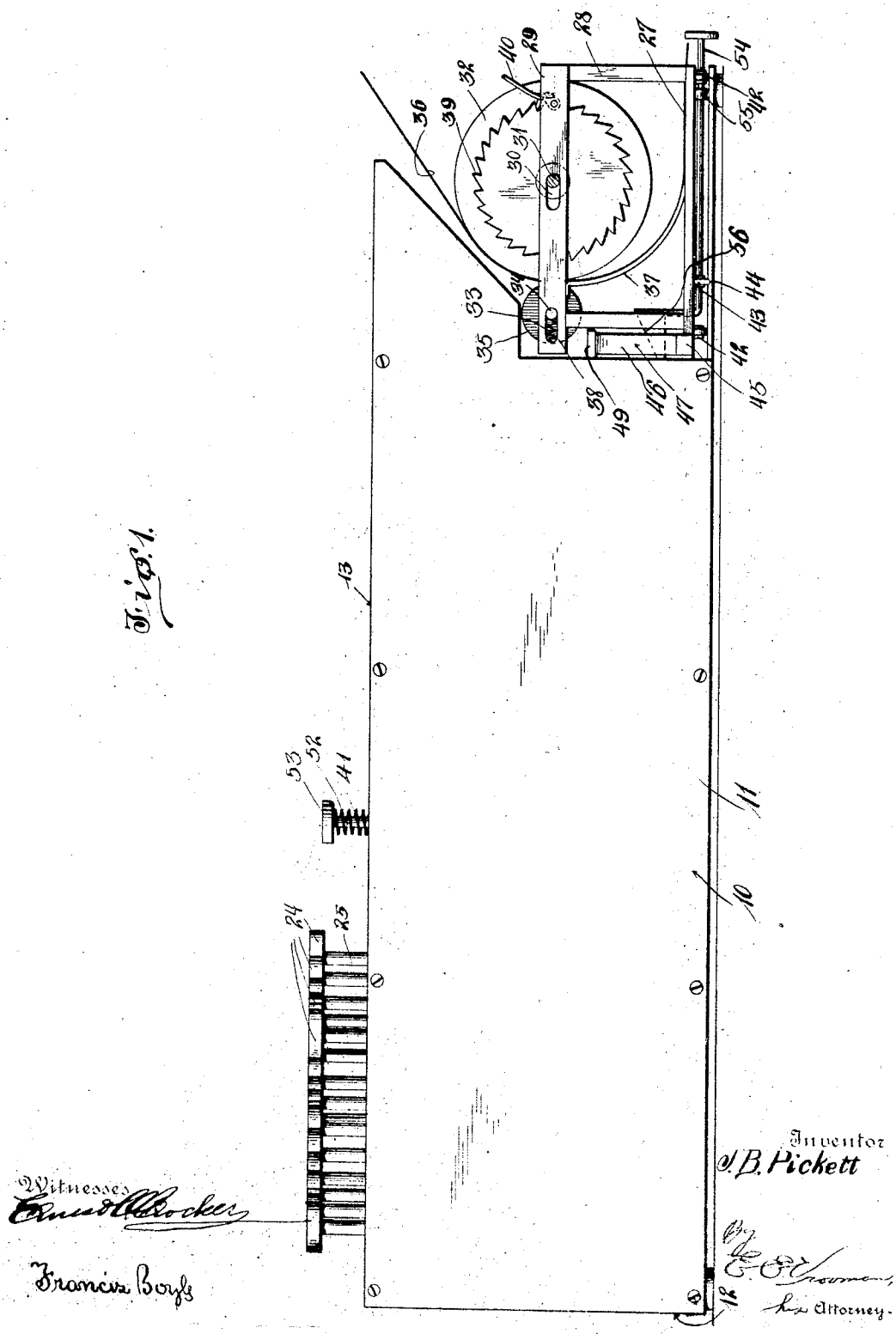



Fig. 1.

Witnesses

Francis Boyle

Inventor

J. B. Pickett

By E. G. Siggers

his Attorney.

J. B. PICKETT.

TYPE WRITER.

APPLICATION FILED OCT. 12, 1911.

1,037,981.

Patented Sept. 10, 1912.

5 SHEETS—SHEET 2.

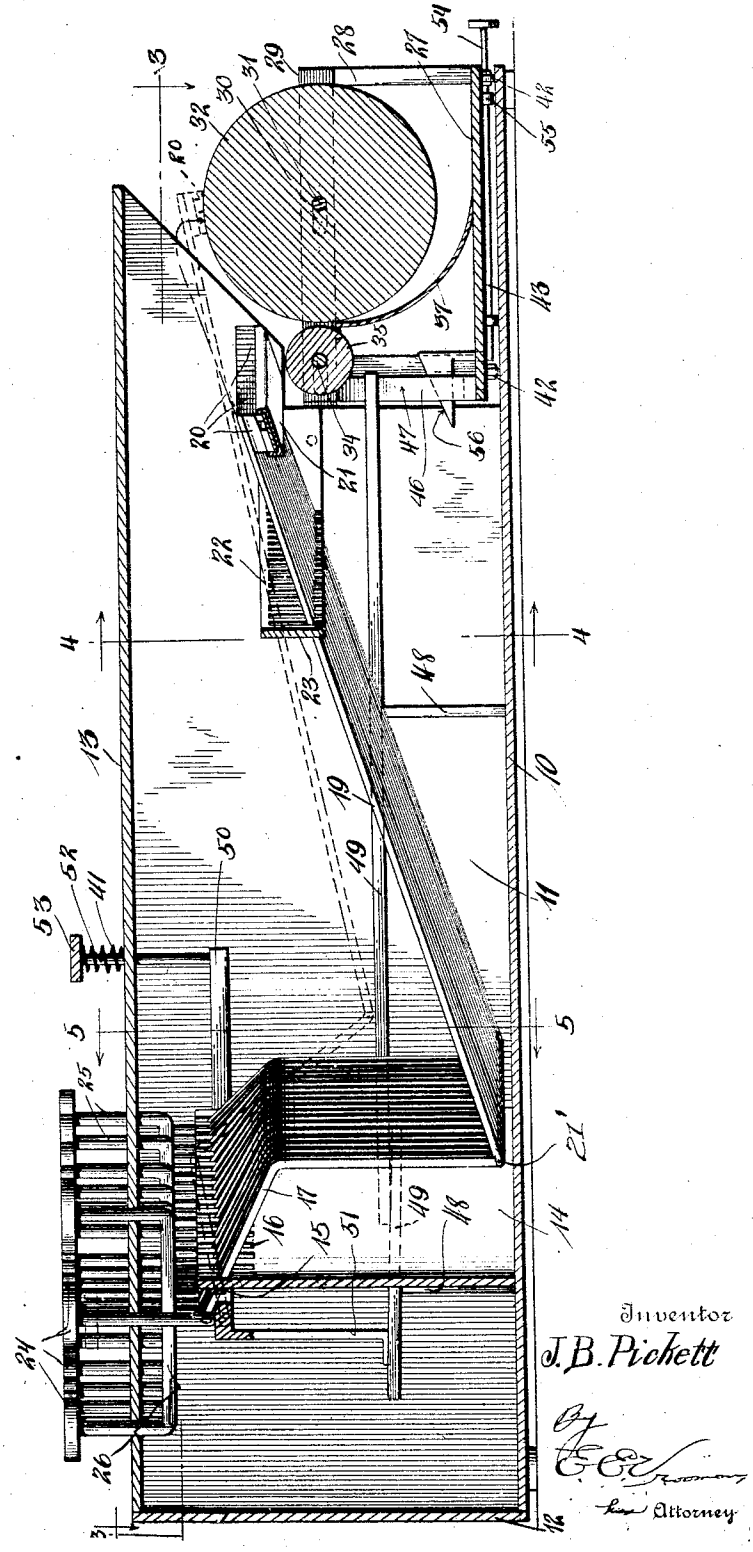


Fig. 2.

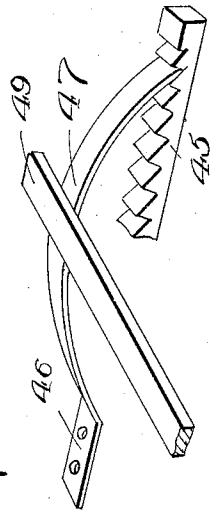


Fig. 6.

Witnesses

Ernest L. Crocker

Francis Boyle

Inventor

J. B. Pickett

By

E. E. Thomas

Attorney

J. B. PICKETT.

TYPE WRITER.

APPLICATION FILED OCT. 12, 1911.

1,037,981.

Patented Sept. 10, 1912.

5 SHEETS—SHEET 3.

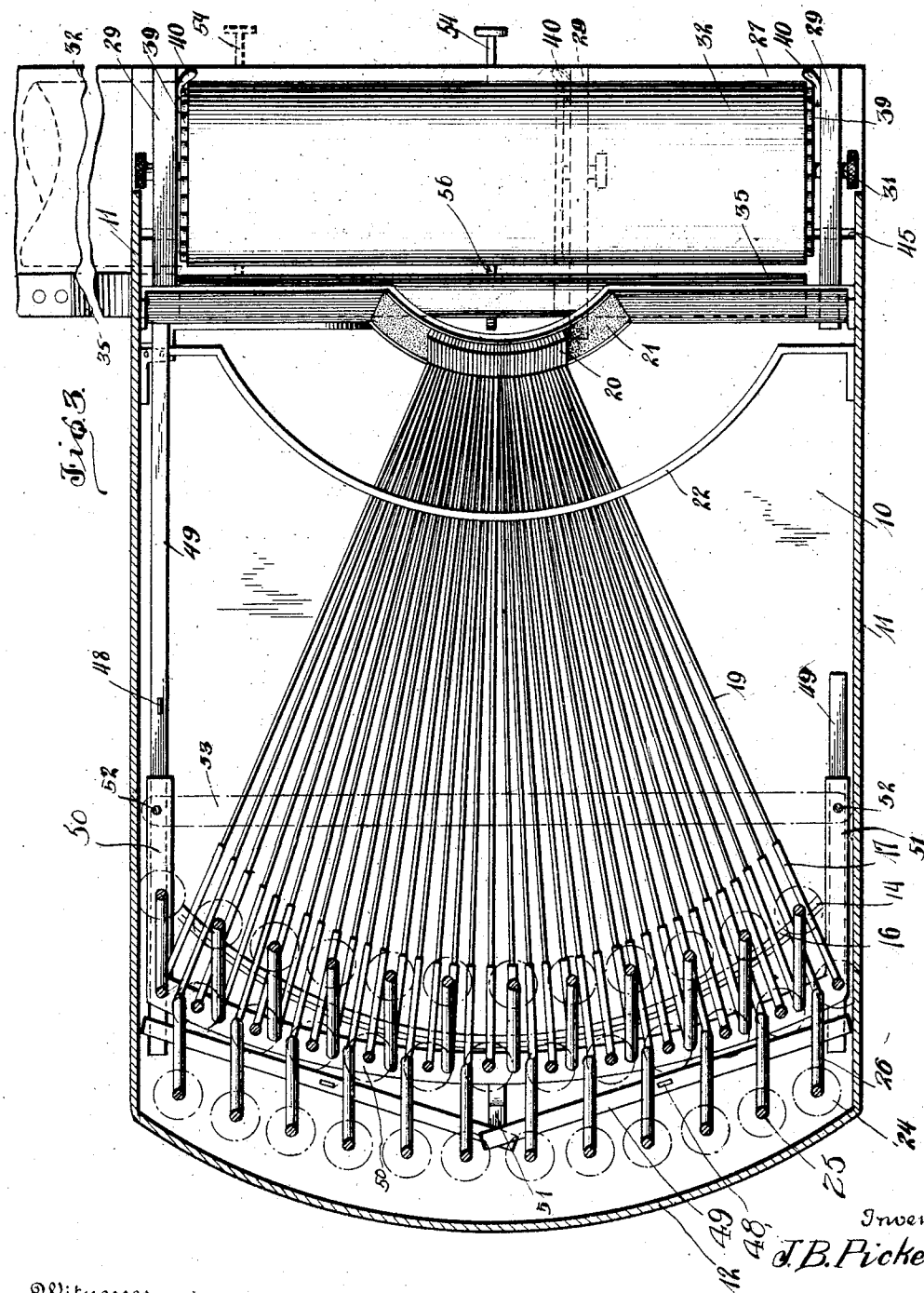


Fig 3.

Witnesses

Ernest Crakes

Francis Boyle

Inventor

J. B. Pickett

By E. G. Crosman,

his Attorney.

J. B. PICKETT.

TYPE WRITER.

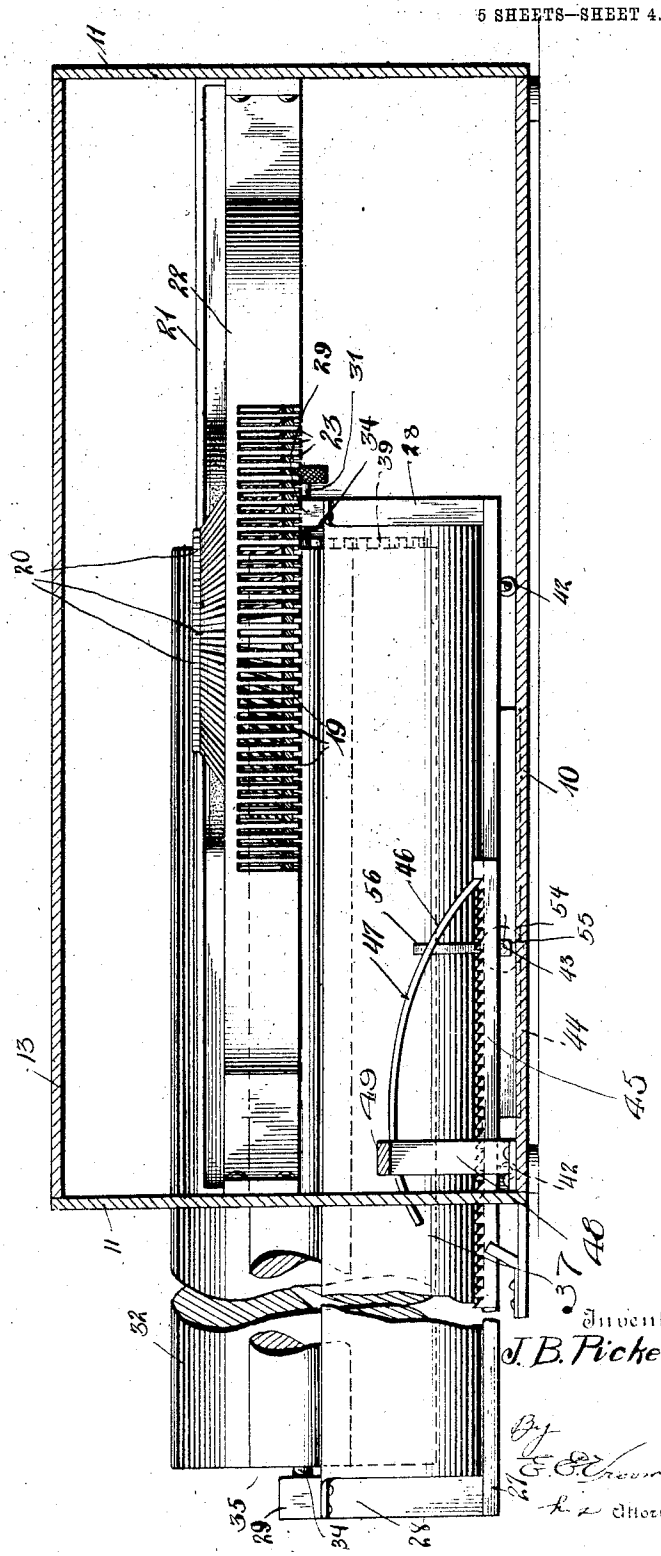
APPLICATION FILED OCT. 12, 1911.

1,037,981.

Patented Sept. 10, 1912.

5 SHEETS—SHEET 4.

Fig. 4.




Witnesses

Ernest C. Crocker

Francis Boyle

Inventor

J. B. Pickett

By E. G. Crosman,

Attorney.

J. B. PICKETT.

TYPE WRITER.

APPLICATION FILED OCT. 12, 1911.

1,037,981.

Patented Sept. 10, 1912.

5 SHEETS—SHEET 5.

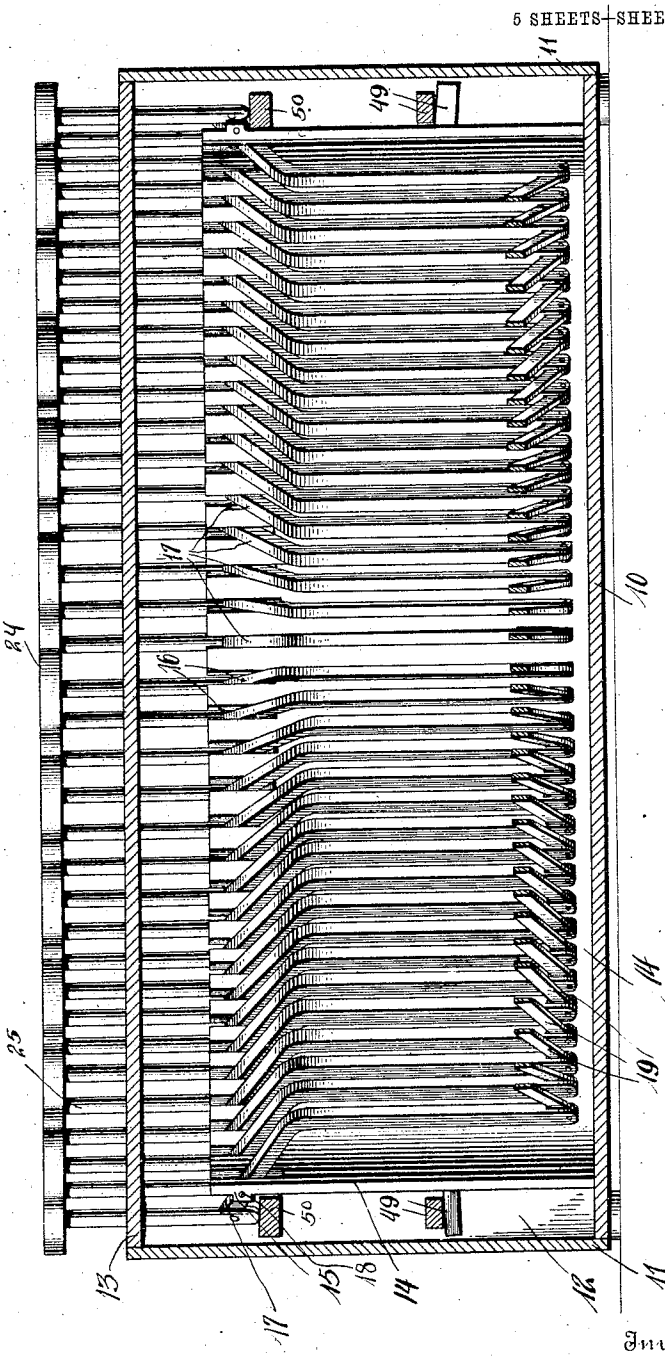



Fig. 5.

Witnesses

Ernest L. Crocker

Francis Boyle

Inventor

J. B. Pickett

By E. G. Crooman,

his Attorney.

# UNITED STATES PATENT OFFICE.

JOHN B. PICKETT, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR OF ONE-FOURTH TO ERNEST M. VROMAN, ONE-EIGHTH TO JOHN W. PFEIFLER, AND ONE-EIGHTH TO SERENUS D. KETCHUM, ALL OF EDMORE, MICHIGAN.

## TYPE-WRITER.

1,037,981. Specification of Letters Patent. Patented Sept. 10, 1912.

Application filed October 12, 1911. Serial No. 654,270.

*To all whom it may concern:*

Be it known that I, JOHN B. PICKETT, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Type-Writers, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to typewriting machines and has for an object to generally simplify and reduce the cost of manufacture of devices of this character, the present invention being formed of approximately 130 parts in contrast to the 3,000 or more parts forming the ordinary typewriting machines now in general use.

A second object of the invention is to provide a device of this character having novel type carrying arms which preferably in normal position bear forcibly upon an ink pad, and in operative position bear directly upon the paper without an intervening ribbon as usual in devices of this character.

With the above objects in view the invention consists in certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawings forming part of this specification:—Figure 1 is a side elevation of the typewriting machine. Fig. 2 is a vertical longitudinal sectional view through the machine. Fig. 3 is a horizontal longitudinal sectional view taken on the line 3—3 of Fig. 2. Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 2. Fig. 5 is a cross sectional view taken on the line 5—5 of Fig. 2. Fig. 6 is a detail perspective view showing the arrangement of the escapement lever in connection with the escapement spring and rack, said rack and lever being partly broken away.

Referring now to the drawings in which like characters of reference designate similar parts, the typewriting machine is shown to comprise a hollow open front base or frame formed of a bottom wall 10, from the side edges of which rise side walls 11, and from the rear edge of which rises an arcuate rear wall 12, these walls being connected at their top edges by a top wall 13.

Arranged within the casing is an arc frame 14, the same conforming to the curvature of the rear wall and terminating short of the top wall in an outstanding flange 15 which is provided with spaced slots 16. Pivotally secured in the slots are a plurality of substantially angle levers 17, these levers being all of approximately the same length. One leg of each lever extends downwardly along the inner periphery of the arc frame, and the opposite leg extends through and projects slightly beyond the related slot 16. Any preferred means of pivotally mounting the levers may be employed the connection being in the present instance made by a wire 18 passed through suitable registering openings formed in the lever legs and arc frame.

Pivotally connected to the lower end of each depending lever leg is a type carrying arm 19, the same being equipped at its extremity with spaced type 20. An arcuate ink pad 21 is fixed at its opposite ends to the sides of the frame, and the type are made to bear forcibly upon this pad through the instrumentality of elbow joints 21′ at the meetings of the levers 17 and type carrying arms 19. A guide bar 22 is terminally secured to the side frame, this guide bar being formed from an arcuate bar having its lower edge slit as shown at 23 to receive the type carrying arms, the latter bearing against the inner walls of the slits and being guided thereby in their movement when rocked through the instrumentality of the levers 17 as will be presently described. It will be noted, and this feature is of importance, that the path of the type from rest to printing position is a peculiar curve as shown in dotted lines in Fig. 2. This path enables the type after printing to rise vertically from the paper, thereby avoiding smearing. The angle levers and the type carrying arms are shaped and proportioned to attain this end.

The operating keys are arranged in three concentric rows, and each comprises a head 24, and a stem 25, the stems of the middle row of keys are straight and bear with their lower ends against the projecting ends of their related levers 17. The stems of the

inner and outermost row of keys are formed at an angle as shown at 26, and bear with their extremity against the projecting ends of the related levers 17. Upon depression of any particular key, the related lever 17 is rocked on its pivot, and the related type carrying arm moved forwardly through an arc. The type carried by the arm is impinged against the paper on the platen during depression of the key. Upon release of the key, by virtue of the major portion of the related lever 17 being disposed below the pivot of the lever, the lever will be returned by gravity to its initial position, thereby returning the key and the type carrying arm to their initial position.

The carriage comprises a bottom plate 27 from the opposite corners of which rise posts 28, the posts on each side of the plate being connected by cross bars 29. Alining slots 30 are formed in the cross bars and receive the gudgeons 31 of a platen 32. A second pair of alining slots 33 are formed in the cross bars and receive the gudgeons 34 of a compression roller 35 between which and the platen the sheet of paper 36 is engaged, an upwardly curving guide 37 being secured to the bottom plate and terminating adjacent to the meetings of the platen and compression roller to guide the paper in its position between the platen and compression roller. This guide furthermore forms a stop for limiting sliding movement of the platen in its slots 31, the purpose of which movement will presently appear. Terminally secured to the cross bars 29 and to the ends of the compression roller gudgeons are helical springs 38, these springs serving to hold the compression roller in snug engagement with the platen, and to hold both the compression roller and platen gudgeons at the forward ends of their slots. By manually forcing the platen rearwardly until the gudgeons of the platen engage the rear walls of their slots, the platen will be moved into such a position that the rearmost or capital letter types on the type carrying arms will be brought into engagement with the paper on the plates upon depression of the operating keys. It will thus be noted that the shift key of an ordinary typewriter is dispensed with.

Keyed to the platen gudgeons are ratchet wheels 39 which are operatively engaged by pawls 40 pivotally secured to the cross bars and which form line spacing keys. Helical springs 41 are secured to the spacing keys and cross bars and serve to return the spacing keys to their initial positions after each actuation.

For advancing the carriage step by step at each depression of the operating keys, the following mechanism is employed: Arranged adjacent to the corners of the base plate 27 are rollers 42, these rollers bearing upon the bottom wall of the frame and supporting the carriage for sliding movement on the frame. A rod 43 is fixed to the base plate of the carriage and works in a groove 44 formed in the base of the machine, this rod directing the sliding movement of the carriage. The escapement for actuating the carriage, consists of a straight rack bar 45 which is fixed to the base plate of the carriage and arranged to one side of the rack bar is a leaf spring 46, this leaf spring being secured at one end to the bottom wall of the frame, and being formed adjacent to its free end with an upwardly bowed portion 47 the tip end of which engages with the teeth of the rack. Centrally and pivotally mounted upon a series of preferably four posts 48 are a series of four tilting levers 49. The levers are arranged in the form of a semicircle in the rear of the arc frame 14. An arc rod 50 is arranged to underlie the projecting ends of the angle levers 17, and is provided with radial outwardly extending fingers 51, preferably three in number as shown in Fig. 3. Two of the fingers are arranged at the ends of the rod and the third centrally disposed upon the rod. The terminal fingers of the rod are provided with upstanding stems 52 which extend outwardly through openings in the frame top wall and are connected by a cross strip 53 which forms a letter and word spacing key. One of the levers 49 bears terminally against the bowed portion of the leaf spring 46 and it is now clear that on depression of the spacing key, that the rod 50 will be depressed, thereby depressing the said lever 48, and flattening out the bowed portion of the leaf spring thereby advancing the rack and carriage one step. Upon release of the spacing key, the balanced levers 49 will all return to their normal positions, after having been depressed by the rod 50 upon its depression, and will elevate the rod 50, thereby permitting the bowed portion of the spring to return to its normal position and operatively engage the rack for advancing the latter one step upon the next depression of the spacing key.

For releasing the escapement so that the carriage may be returned to its initial position after having traveled to its limit of movement in one direction, a substantially Z-shaped key 54 is slidingly fitted in an upstanding eye 55 arranged upon the frame bottom wall, and bears with its extremity against the underneath face of the spring bowed portion, the top edge of said extremity being inclined upwardly as shown at 56 and forming a cam surface upon which, when the key is manually pushed in, the bowed portion will ride upwardly and the spring be released from the rack. In this position of the parts, the carriage may be manually shoved back to its initial position.

What is claimed is:—

1. In a typewriting machine, the combination with a frame, of a plurality of keys, angle levers, a supporting frame for said levers, each angle lever comprising a substantially horizontal arm and a vertical leg, said substantially horizontal arm pivotally connected to said supporting frame intermediate its ends, type-carrying bars pivotally connected to the lower ends of the vertical legs of said angle levers, and a guiding bar, said type-carrying bars passing through said guiding bar.

2. In a typewriting machine, the combination of a frame, angle levers, a supporting frame for said levers, said angle levers each being pivotally connected to said supporting frame to one side of the angle of the respective levers, type-carrying bars pivotally connected directly to one end of said levers, operating keys pivotally connected directly to the opposite end of said levers, and guiding means for said type bars.

3. In a typewriting machine, the combination with a stationary support, of a lever projecting on opposite sides of and being pivotally connected to said support, said lever provided with a downwardly extending leg, a vertically slidable operating key pivotally connected at its lower end to the upper outer projecting end of said lever, and a type-carrying bar pivotally connected at its inner end directly to the lower end of the leg of said lever.

4. In a typewriting machine, the combination with a support, of a lever provided with an arm and a leg positioned at an angle to each other, the lever being pivotally mounted upon said support off-center of its arm, a key directly connected to the arm at one side of the support, and type-carrying means movably connected to the leg of said lever.

5. In a typewriting machine, the combination of a main frame, a plurality of keys, a supporting frame having a plurality of notches formed upon the top edge thereof, angle levers pivotally mounted in said notches of the supporting frame and having depending portions, a guide member carried by said main frame, operating keys pivoted directly to the outer ends of the levers, and type-carrying means movable upon said guiding element and directly connected near their inner ends to the lower ends of the levers.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JNO. B. PICKETT.

Witnesses:
H. H. D. LANGEREIS,
M. SHOER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."