

H. A. FOOTHORAP.
MAIN FRAME FOR TYPE WRITERS.
APPLICATION FILED DEC. 14, 1914.

1,283,489.

Patented Nov. 5, 1918.

4 SHEETS—SHEET 1.

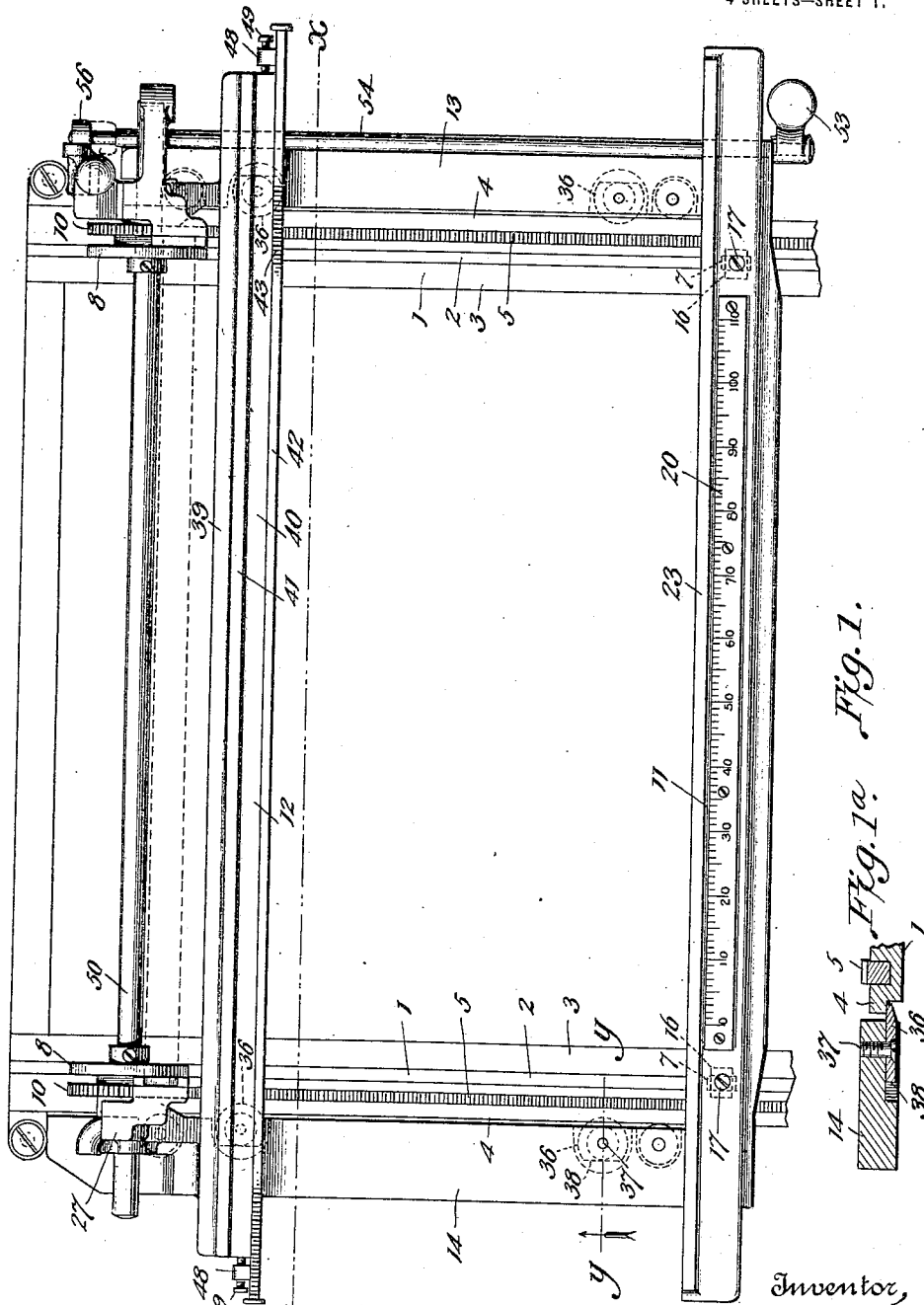


Fig. 1.

Fig. 1a.

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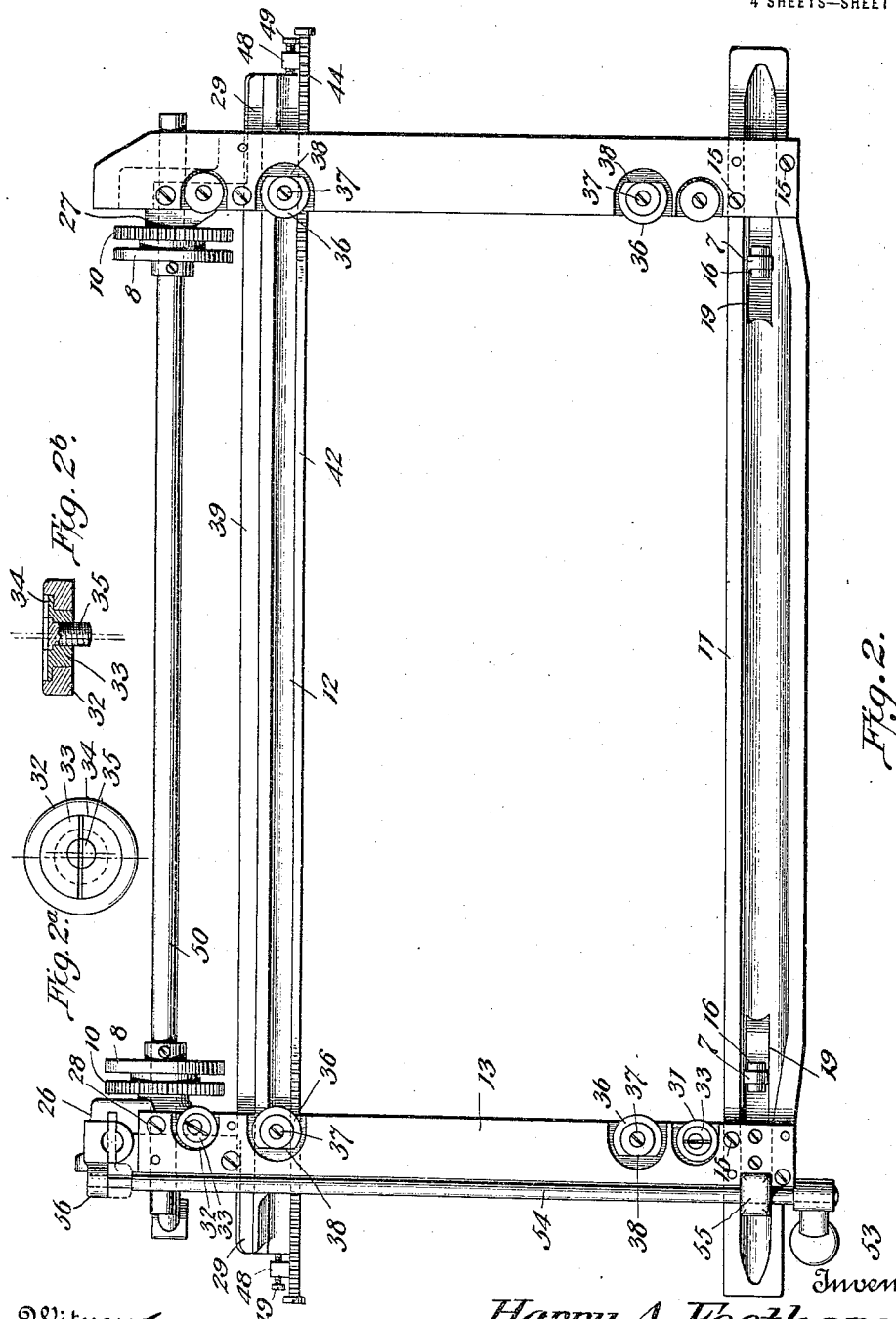
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4 SHEETS—SHEET 2.



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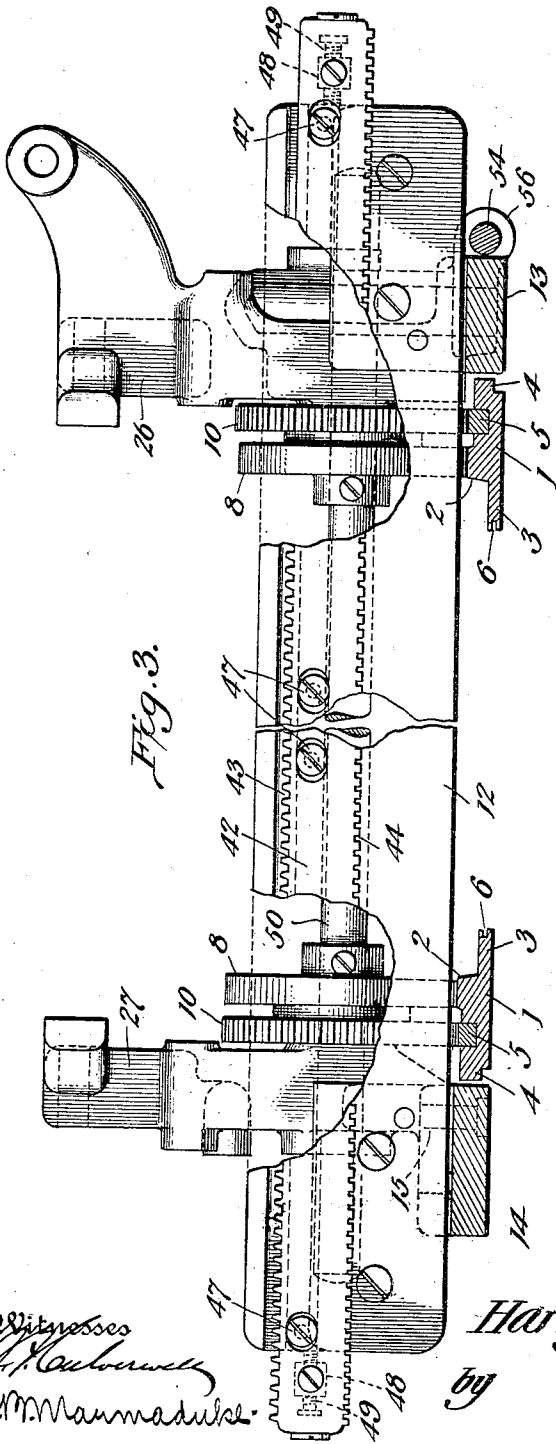


Fig. 3.

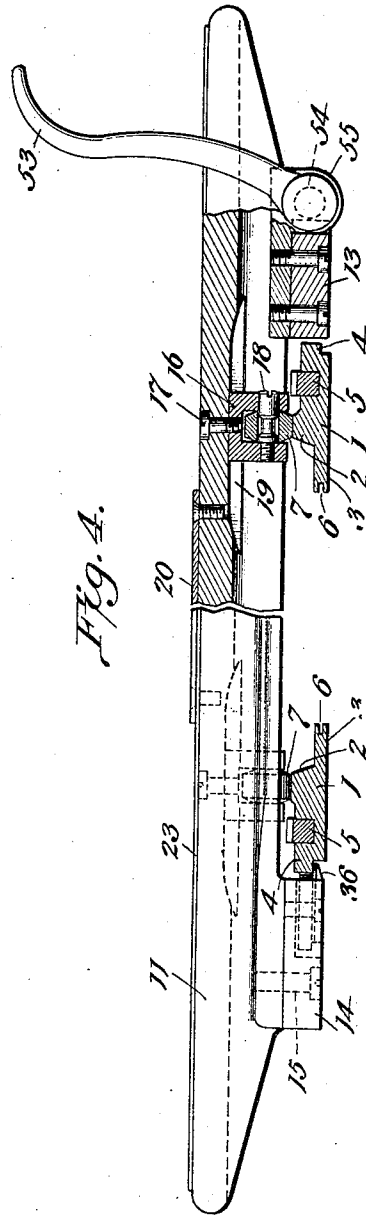


Fig. 4.

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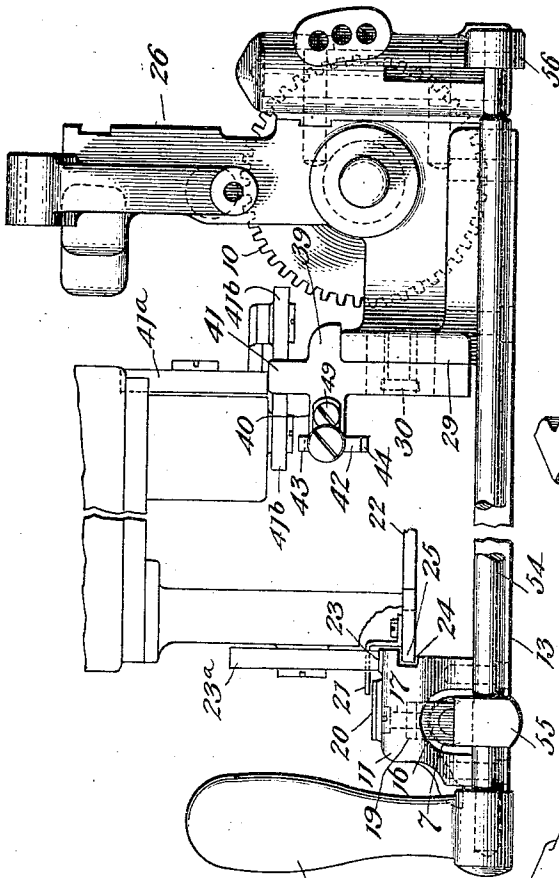


Fig. 5.

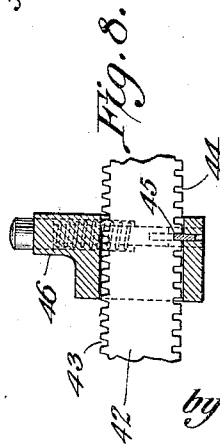


Fig. 8.

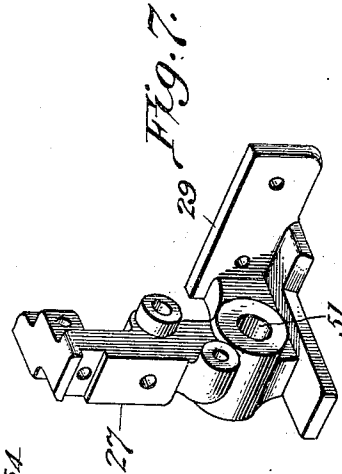


Fig. 7.

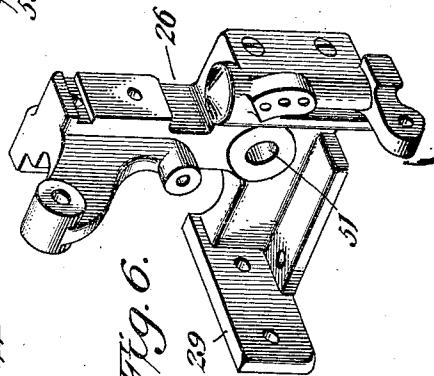


Fig. 6.

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UNITED STATES PATENT OFFICE.

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MAIN FRAME FOR TYPE-WRITERS.

1,283,489.

Specification of Letters Patent.

Patented Nov. 5, 1918.

Application filed December 14, 1914. Serial No. 877,213.

To all whom it may concern:

Be it known that I, HARRY ARTHUR FOOTHORAP, a citizen of the United States of America, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Main Frames for Type-Writers, of which the following is a specification.

This invention relates to typewriting machines of the flat platen type and more particularly to the construction of the main frame thereof and to the equipment of said frame with means affording an antifrictional mounting of the frame on its supporting structure and with means facilitating the aggroupment of various elements of the machine structure on said frame.

In the accompanying drawings:—

Figure 1 is a plan view of the line space frame, associated parts and supporting structure.

Fig. 1^a is a detail section on the line $y-y$ of Fig. 1.

Fig. 2 is a bottom plan view of the frame illustrated in Fig. 1.

Fig. 2^a is a bottom plan view of one of the guide rollers.

Fig. 2^b is a sectional view of the same.

Fig. 3 is a section on the line $x-x$ of Fig. 1.

Fig. 4 is a front elevation of the line space frame partly broken away to better disclose the construction, and showing the track or guide members in section.

Fig. 5 is a side elevation of the frame with certain associated parts of the line spacing mechanism, the carriage of the machine being conventionally indicated.

Figs. 6 and 7 are detail perspective views of the combination brackets located at and forming the rear corners of the frame, and

Fig. 8 is a detail view of a carriage stop.

Machines of the character under consideration are generally known as flat platen typewriters and embody a stationary flat platen equipped with tracks or guides over which a machine frame moves longitudinally of the platen for line spacing. On the line spacing frame is mounted the carriage which travels transversely of the platen for line spacing and carries the downwardly acting printing mechanism.

The present invention is not concerned with the machine generally but has to do

with the construction and mounting of the main machine frame and its general relation to its support and to the carriage supported by it.

In the drawings I have shown so much of the track frame as is necessary to a proper understanding of the invention. This frame includes two track members 1 suitably connected and disposed in parallel relation adjacent to opposite sides of the platen, not shown. Each track member 1 is formed with a raised rail or track 2, a work-holding flange 3 and a ledge or overhang 4. Between the track 2 and the overhang 4, a toothed rack 5 is set into each track member and the longitudinal edge of each flange 3 is formed with a groove 6 to receive the opposite ends of sliding work-holding webs, not shown. Upon the tracks 2 are designed to travel the front and rear supporting rollers 7 and 8 of the line space frame, the overhangs 4 cooperating with the gibs 35 and the racks 5 engaging the line space pinions 10.

The machine frame includes in its organization four primary elements, to wit, front and rear frame bars 11 and 12 and side or end bars 13 and 14. The front bar 11 extends over and is secured to the front end of the side bars 13 and 14 in any suitable manner, as for instance, by screws 15 and is hollowed out longitudinally to reduce its weight and also to accommodate the bearing brackets 16 of the front frame rollers 7. These brackets 16 are secured in place preferably by a single screw 17 and each of the rollers rotates upon an anti-friction journal screw 18 screwed into the bearing bracket 16 and cut away to materially reduce the frictional contact between the roller and its journal. (See Fig. 4.) The bearing brackets 16 have no tendency to turn upon their retaining screws 17 for the reason that said frames are parallel sided and are seated in similarly formed cavities 19 in the under side of the bar 11.

In addition to the roller equipment described, the front frame bar 11 also carries the scale 20 which coacts with an indicator 21 on the carriage 22 and along the upper rear edge of said bar 11 is formed the front carriage track or guide 23 for the front carriage rollers 23^a and having an undercut or channel 24 for the reception of the carriage gibs 25. At or adjacent to their rear ends the side or end bars 13 and 14 of the main

frame support respectively the combination frame brackets 26 and 27 secured as by screws 28 and each formed with an apertured plate 29 to the front faces of which plates the rear frame bar 12 of the frame is secured as by screws 30 and it will thus be seen that the brackets 26 and 27 serve to connect the rear and side frame members and are conveniently located at the rear corners of the frame to provide rigid supports for various adjunctive mechanisms of the typewriter. (See more particularly Figs. 1 and 5.)

The main or line space frame is not only borne on the track frame by the front and rear rollers 7 and 8 but is intended to have roller bearings in a more complete sense. That is to say, it is intended not only to be supported by but also to be guided between roller bearings. Therefore, each side member 13 and 14 of the frame is recessed in its under side adjacent to the front and rear ends of its inner edge to receive front and rear guide rollers 31 and 32 which bear against the outer edges of the rails 1 and thus take the side or endwise thrust of the main frame upon its support. To facilitate the adjustment of the rollers 31 and 32 either in fitting the frame to its support or for taking up wear, each of said rollers rotates upon an eccentrically mounted journal 33 having a supporting flange 34 for the roller and secured to the frame bar by a screw 35 passing through the journal 33 somewhat off center. The journal 33 and screw 35 are both slotted for the reception of a screw driver by means of which they may be slightly rotated to adjust the roller toward or from the adjacent rail.

It will be understood that this main frame is intended to move back and forth not only with the least possible resistance but also with the least possible lost motion in any direction. Accordingly in addition to its supporting rollers and the rollers just described for preventing sidewise or endwise play, there are also provided, practically at the four corners of the frame, gibs 36 which extend under the ledges 4 of the rail member 1 to prevent rising or rocking of the frame on its tracks. Each of these gibs 36 is in the form of a disk accommodated within a recess in the under side of a frame bar 13 or 14 and secured by a screw 37. A portion of the disk 36 is cut away as indicated at 38, so that while the edge of the disk ordinarily extends under the edge of the rail and constitutes a gib, the simple turning of the disk to bring the cut away portion thereof to the inner side of the frame bar will serve to withdraw the gib to inoperative position and thus permit the removal of the frame.

The rear frame bar 12 is in the form of a plate opposed against the two securing brackets and at its upper edge is formed

with a rear flange 39 extended over the plates 29 of said brackets. This bar 12 also has a front flange 40 and a rear carriage track or guide 41 upon which travels the rear supporting rollers 41^a of the carriage 22. The carriage like the line space frame is not only anti-frictionally supported but is anti-frictionally held to its true line of travel by guide rollers 41^b suitably mounted in the carriage and engaging the front and rear sides of the rear carriage guide 41 upon which the rear carriage rollers travel as stated. To the front flange 40 of the rear frame member 12 is secured the main rack bar 42 of the machine. The upper edge of the rack bar 42 is provided with a rack 43 which coöperates with the pinions of the carriage feeding and ribbon mechanisms, to be described in other applications for U. S. Letters Patent, and the under edge of the bar 42 is provided with a rack 44 with which coacts the retainer 45 of the machine stop 46 adjustable on the bar 42.

It is desirable to provide for slight longitudinal adjustment of the bar 42. This is necessitated more particularly with reference to the proper action of the carriage feeding and ribbon mechanisms. The bar 42 is therefore secured to the flange 40 of the rear frame bar 12 by screws 47 which are threaded into the frame bar but are accommodated by elongated slots in the bar 42. As a further security and also to enable the adjustment of the rack bar to be readily effected, said bar is provided at its ends with rearwardly extending lugs 48 through which adjusting screws 49 are passed with their inner ends bearing against opposite ends of the frame bar 12. Obviously, by rotating the screws 49 in the proper direction, the rack bar 42 may be slightly shifted endwise and securely held.

The line space shaft 50 is disposed in rear of and parallel with the rear frame bar 12 and is journaled in bearings 51 formed in the brackets 26 and 27. Secured to the shaft 50 are the line space pinions 10 which engage the toothed racks 5, and the rear frame rollers 8 which travel on the tracks 2. The shaft 50 is rotated to line space the frame on the tracks by the manipulation of the line space lever 53, located at the front right hand corner of the frame and carried by the front end of the line-space rock-shaft 54 journaled in brackets 55 and 56, the former being secured to the side bar 13 and the latter to the bracket 56. The operating connection whereby the rocking of the shaft 54 imparts line spacing movement to the shaft 50 is not material to the purposes of the present application, which is intended more particularly to disclose the construction and mounting of the main frame and the elements immediately associated therewith, as heretofore stated.

It is believed that from the foregoing the subject matter of the present invention will be fully comprehended but I reserve the right to effect such modifications of the illustrated structure as may come fairly within the scope of the appended claims.

What I claim is:—

1. The combination with track members, of a line space frame, supporting rollers interposed between the frame and the track members and other rollers arranged to sustain the side thrust of the frame against said track members.

2. The combination with a pair of track members, of a line space frame, front and rear rollers mounted on the line space frame and supporting the same on the track members and other rollers carried by the frame and engaging the outer edges of the track members.

3. The combination with a track frame, of a line space frame having brackets at its rear corners, a shaft journaled in said brackets, rollers fixed to said shaft and disposed to travel on the track frame and other rollers mounted at the front of the line space frame and traveling on the track frame.

4. The combination with tracks or guides, of a line space frame, front and rear supporting rollers for said frame, front and rear thrust rollers for said frame and gibs disposed to prevent tilting of said frame, the supporting rollers, thrust rollers and gibs all being carried by the line space frame and coacting with the tracks or guides.

5. The combination with tracks or guides, of a line space frame comprising front and rear members constituting carriage guides and end members connecting the front and rear members of the frame and disposed outside of but opposite to the tracks or guides whereby said end members will serve to limit lateral movement of the frame relative to the tracks or guides.

6. The combination with tracks or guides, of a line space frame comprising front and rear members extended over the tracks or guides but transverse thereto, end members below the front and rear members of the frame and opposite the outer faces of the tracks or guides, front and rear supporting rollers for the frame, other rollers carried by the end members of the frame and engaging the outer sides of the tracks or guides to take the side thrust of said frame and gibs carried by the side members of the frame and extended under the tracks or guides to prevent raising or tilting of the frame in its movement along the guides.

7. A typewriter frame of the character described, having front and rear supporting rollers, a member of said frame being hollowed out to receive certain of said rollers.

8. A typewriter frame of the character described, including connected front, rear and side members, the front members being hollowed out, and supporting rollers for said frame, certain of said rollers being housed within the front frame member.

9. The combination with a typewriter frame of the character described, said frame being formed with cavities, of supporting rollers for the frame, and roller brackets on which certain of said rollers are mounted, said brackets being seated in the cavities, and a single securing screw for each bracket.

10. The combination with a line spacing frame of a typewriter, of an eccentric gib carried by said frame, means for holding the gib in different positions of adjustment, and a ledge with which the gib coacts to prevent rising of the frame.

11. The combination with a line space frame of a typewriter, said frame having front and rear carriage guides, of a carriage, front and rear supporting rollers for said carriage, said rollers being disposed to travel on said carriage guides, and guide rollers mounted on the carriage and engaging opposite sides of the rear carriage guide.

12. In a typewriting machine, the combination with a track frame, of a line space frame movable thereon, front and rear supporting rollers for the line space frame, guide rollers for said frame, a carriage movable on the line space frame, front and rear rollers supporting the carriage, and guide rollers for the carriage, said rollers coacting with the line space frame.

13. The combination with a track frame, of a line space frame movable thereon, supporting rollers and guiding rollers carried by the line space frame and engaging the track frame, gibs carried by the line space frame and also engaging the track frame, front and rear carriage guides carried by the line space frame, a carriage, front and rear carriage supporting rollers mounted to travel on the front and rear carriage guides, guide rollers engaging opposite sides of the rear carriage guides, and a gib mounted on the carriage and engaging the line space frame.

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

HARRY ARTHUR FOOTHORAP.

Witnesses:

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EDWIN FLOYD.