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TYPEWRITING MACHINE

Filed Aug. 2, 1928

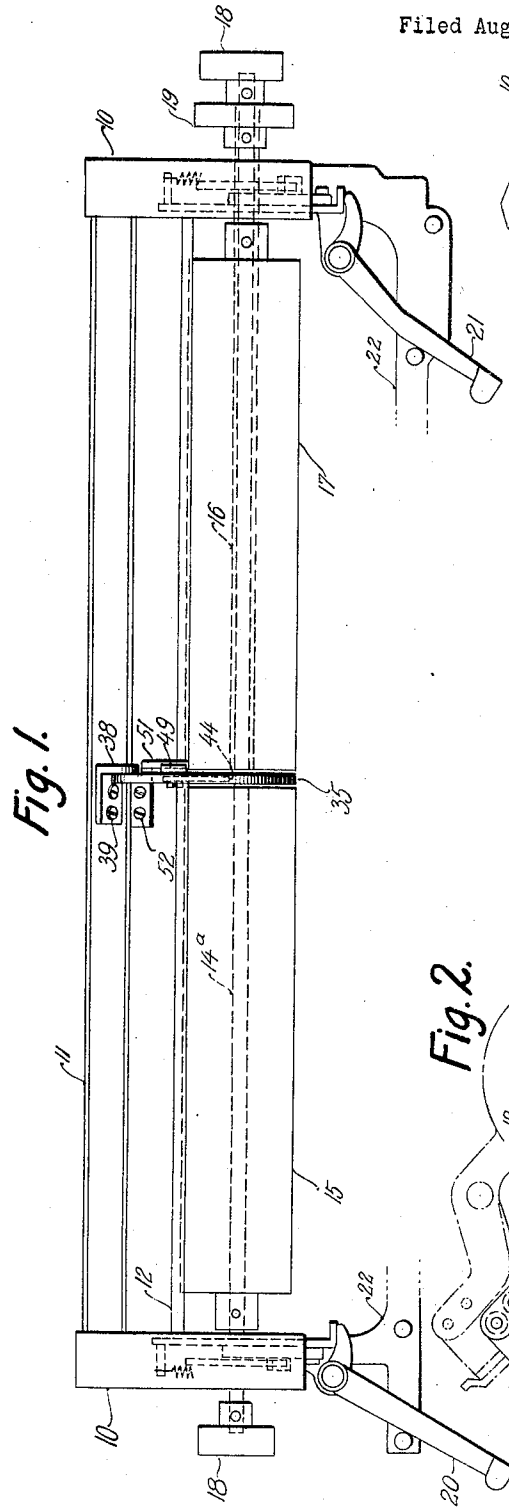


Fig. 1.

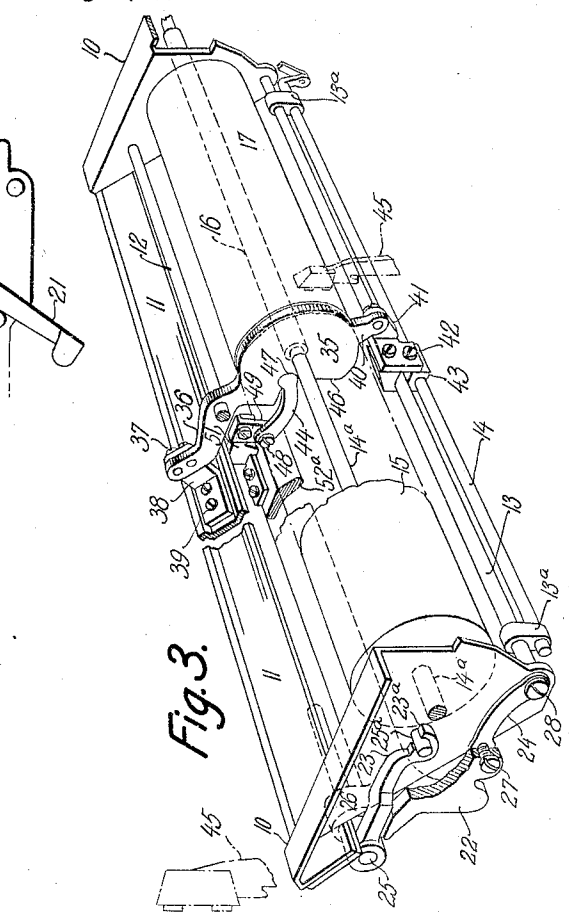


Fig. 3.

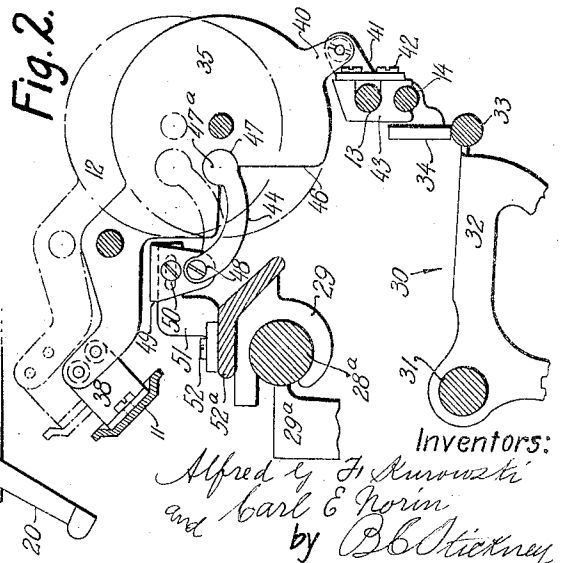


Fig. 2.

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UNITED STATES PATENT OFFICE

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TYPEWRITING MACHINE

Application filed August 2, 1928. Serial No. 296,960.

This invention relates to typewriting machines having divided platens, and more particularly to means for supporting the platen-sections at their inner ends.

One section of the platen is fast to a comparatively thin power-driven axle extending through the entire divided platen and journaled in the end plates of the usual platen-shift frame. The other platen-section is fast to a power-driven longitudinal sleeve which is loosely mounted on the shaft, which extends outside the platen-section at one end thereof.

Since the long platen-axle is journaled at the ends only, there is weakness at its central portion, due partly to the fact that the platen is divided at the center.

It is a feature of the present invention to provide effective, durable and satisfactory means for supporting the central portions of the shaft and platen-sections.

Advantage is taken of the fact that the platen-shift frame of an Underwood machine is guided at either end within a usual carriage-frame for up and down case-shift movement, and this invention provides a brace at the platen-dividing line, through which the weak center portion is movably connected with the carriage-frame so that the platen may be backed up directly upon the solid carriage-frame in either case-shift position.

More in detail, there is provided a center supporting plate for the platen-shaft, which is rigidly fastened at top and bottom upon the case-shift frame to form part thereof, as similarly shown in the co-pending application of Alfred G. F. Kurowski, No. 126,132, filed July 31, 1926, which matured Dec. 25, 1928 into Patent No. 1,696,243. This plate in turn is braced against the solid base of the carriage-frame through a novel link which swings about a horizontal center line as the platen is shifted up and down. The rear end of said link is pivoted upon the rear of the carriage-frame, while the front end takes pivotal bearing upon said supporting plate, preferably to the rear of the platen-shaft, so as to effectively back up type-blows.

From the above it appears that through the novel method of bracing the platen-shaft any transverse strain upon the center portion of the platen is directly transmitted through said link upon the solid carriage-frame instead of being directed first through the shift-frame structure, as in said co-pending application, thus obviating transverse vibration of the platen and shift-frame, as well as disalignment of the platen-sections.

Other features relate to constructive details in the arrangement of said novel link: The rear end of the link is mounted upon the carriage-frame through the intermediary of an adjustable bracket, so as to adapt the operation of the link to the fixed case-shift movement of the platen. The link and the center plate are virtually operating in the same plane by reason of the front end of the link taking open bearing in said plate, as shown on the drawings, which adds to the cheapness and compactness of the structure. It will also be readily seen that with these features the provision of the novel platen-supporting means will not require any changes of a standard carriage and platen structure.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a plan-view upon an extraordinarily long platen-carriage having independently operated platen-sections.

Figure 2 is a cross-section substantially taken upon Figure 1 to disclose the action of the novel center support or link, upper case-shift position of the platen being indicated in dot and dash.

Figure 3 is a perspective of the carriage as shown in Figure 1, with parts of the framework and of the platen broken away to more distinctly disclose the invention with relation to the usual parallel link-system which guides the shift-frame in its case-shift movement.

The case-shift frame of the Underwood typewriter includes side plates 10, a bar 11 and a rod 12 to connect said side plates at the top, and also a rigid connecting rod 13 at the bottom. In connection with rod 13 and fastened thereto by rigid arms 13a, is shown a rod 14 which is usually operated to

actuate well-known feed-rolls (not shown). A platen-shaft 14ª is journaled in said side plates 10 and carries fixed thereon the left-hand platen-section 15, a sleeve 16 being provided upon said shaft to carry the independently operated right-hand platen-section 17. Platen-knobs 18 allow one section to be manipulated, while a knob 19 rotates the other section. Provision is also made for independently line-spacing each platen-section by means of usual line-space levers 20 and 21 and their associated line-space mechanisms, such as are usually found in the Underwood machine.

The case-shift frame is borne upon a carriage-frame 22, and guided thereon in its case-shift movement by the usual parallel links 23 and 24 provided at either end of the platen-carriage. The upper links 23 are rigidly mounted upon a shaft 25 which is journaled in bearings 26, forming part of the carriage-frame 22 at the rear. The front ends 23ª of the links 23 form open bearings to receive studs 25ª upon the shift-frame. The lower links 24 are pivoted at 27 and 28 upon the carriage-frame and the shift-frame, respectively.

The carriage operates upon a rear and a front rail, both forming part of the stationary machine-frame, a rear rail 28ª only being shown (see Figure 2). Hook-shaped parts or lugs 29 of the carriage-frame are to embrace said rear rail for the carriage to operate thereon. Part of the stationary frame is indicated at 29ª (Figure 2) to support said rear rail 28ª.

A well-known lifter-frame 30 (see Figure 2) is pivoted at 31 upon the machine-frame and includes sides 32 and a lifter-bar 33, which latter forms the track for a supporting roller 34 mounted at the bottom end of the shift-frame. The lifter-frame may shift the platen from lower to upper case-shift position, as shown in dot and dash, while the carriage is traveling laterally in a usual manner.

Up to this point the description pertains to well-known parts of an Underwood machine. A novel center support for the platen-shaft includes a supporting plate 35, which forms part of the platen-carrying shift-frame inasmuch as an upper extension 36 thereof is securely fastened at 37 upon a bracket or clip 38 which is screwed at 39 upon the bar 11 of the shift-frame, while a lower extension 40 of the supporting plate is mounted upon a bracket 41 screwed at 42 to a block 43 rigidly mounted upon the rods 13 and 14.

A novel link 44 forms an additional support which serves to brace said supporting plate 35 against the carriage-frame in order to more rigidly back up transverse stresses at the center of the platen, as for instance, the blows from a type-bar 45. There is a cutout 46 provided in said bearing plate which forms an open bearing 47 to accommodate the disk-like front or swinging end 47ª of said novel link. The bearing preferably embraces more than half of said disk-like end so as to positively brace the platen.

The rear end of the link is pivoted by means of a shoulder screw 48 upon a bracket 49, which in turn is mounted by a screw-and-slot connection 50 upon a standard 51 rigidly screwed at 52 upon the rear part 52ª of the carriage-frame. The adjustability of the rear end of the link allows the same to be adapted to the case-shift movement of the platen as predetermined by the above mentioned parallel-link connections. The link should swing evenly about a substantially horizontal center line when shifted from lower to upper case-position. In either case-position this will cause the shaft and the platen-sections to be in correct alignment, disregarding slight or negligible deviations during the shift movement proper.

Such slight disalignment between extreme shift positions of the platen will be due to the fact that the line of travel of the front end 47ª of link 44 may not be exactly congruent with the line of platen travel. With proper construction, however, this deviation from normal will be small enough so as to be taken care of by very slight momentary deflection, for instance of the shaft 14ª.

With an extraordinarily long platen it will be readily seen that the novel link will effectively prevent the type-bars from setting up transverse vibrations in the platen and shift-frame structure, or platen disalignment when typing.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described our invention, we claim:

1. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame supporting the platen in its up and down case-shift movement upon said carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of bracing means for supporting said shaft upon the carriage-frame at the dividing line of said platen-sections in either case-shift position.

2. In a typewriting machine, the combination with a carriage-frame, a revoluble platen and a shift-frame to support the platen in its up and down case-shift movement upon said carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of means for bracing the platen-shaft against the carriage-frame at the dividing line of said platen-sections, said means including a bearing member to support the shaft, and a piv-

oted brace connecting said bearing member with the carriage-frame and effective to back up the platen-shaft in lower as well as upper case-shift position.

3. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame to support said platen in its up and down case-shift movement upon said carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of means for bracing the platen-shaft at the dividing line of said platen-sections, said means including a plate to support the platen-shaft, while rigidly mounted upon the shift-frame, and a pivoted member to brace said bearing plate against the carriage-frame so as to strengthen the support in either case-shift position against transverse stresses.

4. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame to support said platen in its up and down case-shift movement upon said carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of means for bracing the platen-shaft at the dividing line of said platen-sections, said means including a plate to support the platen-shaft, while rigidly mounted upon said shift-frame, and a pivoted member to brace said bearing plate against the carriage-frame so as to strengthen the support in either case-shift position against transverse stresses, said bearing plate having a notch or cutout to form a bearing face for the swinging front end of said pivoted member, the rear end of said member to be mounted upon the carriage-frame, said bearing plate and the associated pivoted member to operate both in the same working plane between two platen-sections.

5. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame to support said platen in its up and down case-shift movement upon the surrounding carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of means for bracing the platen-shaft at the dividing line of said platen-sections, said means including a plate to support the platen-shaft while rigidly mounted upon the shift-frame, and a pivoted member to brace said bearing plate against the carriage-frame so as to strengthen the support in either case-shift position against transverse stresses, said pivoted member to be formed with a disk-like front end to fit into a corresponding notch in said bearing plate, to be embraced thereby.

6. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame supporting the platen in its up and down case-shift movement upon said carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of bracing means for supporting said shaft upon the carriage-frame at the dividing line of said platen-sections in either case-shift position, said means including a bracing member movably connecting the platen-shaft with the carriage-frame, and means for adjusting said member and effective to co-ordinate its operation to the controlling case-shift movement of the platen.

7. In a typewriting machine, the combination with a carriage-frame, a revoluble platen, and a shift-frame to support said platen in its up and down case-shift movement upon the surrounding carriage-frame, said platen formed with independently operable platen-sections rotatable about a common platen-shaft, of means for bracing the platen-shaft at the dividing line of said platen-sections, said means including a pivoted member movably connecting the platen-shaft with the carriage-frame so as to form a support for the latter in either case-shift position, and including means for adjusting the articulation of said pivoted member to co-ordinate its operation to the controlling case-shift movement of the platen.

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