

**Aug. 27, 1935.**

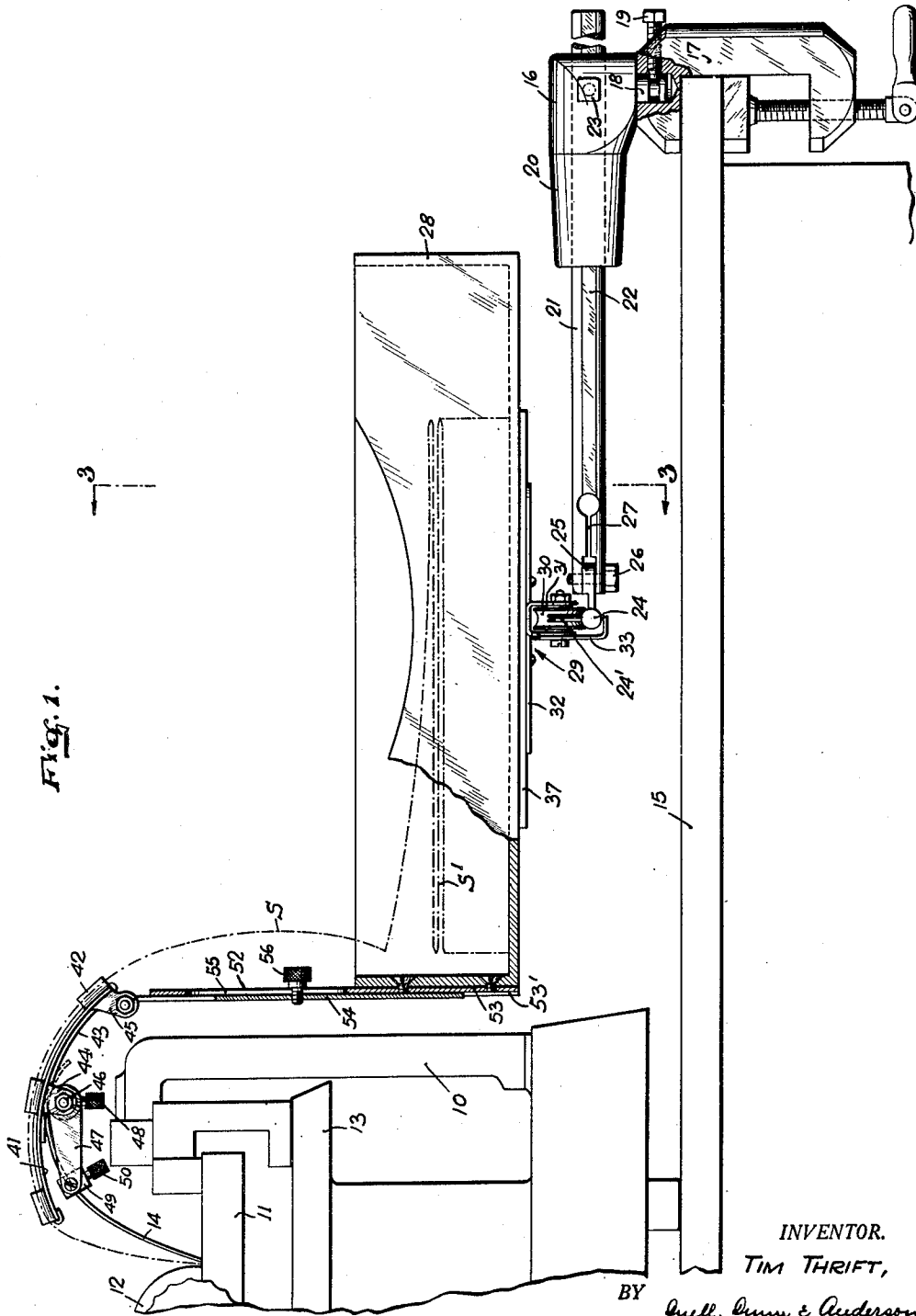
T. THRIFT

**2,012,524**

WEB SUPPLY CARRIER FOR TYPEWRITING MACHINES

Original Filed July 28, 1931

3 Sheets-Sheet 1



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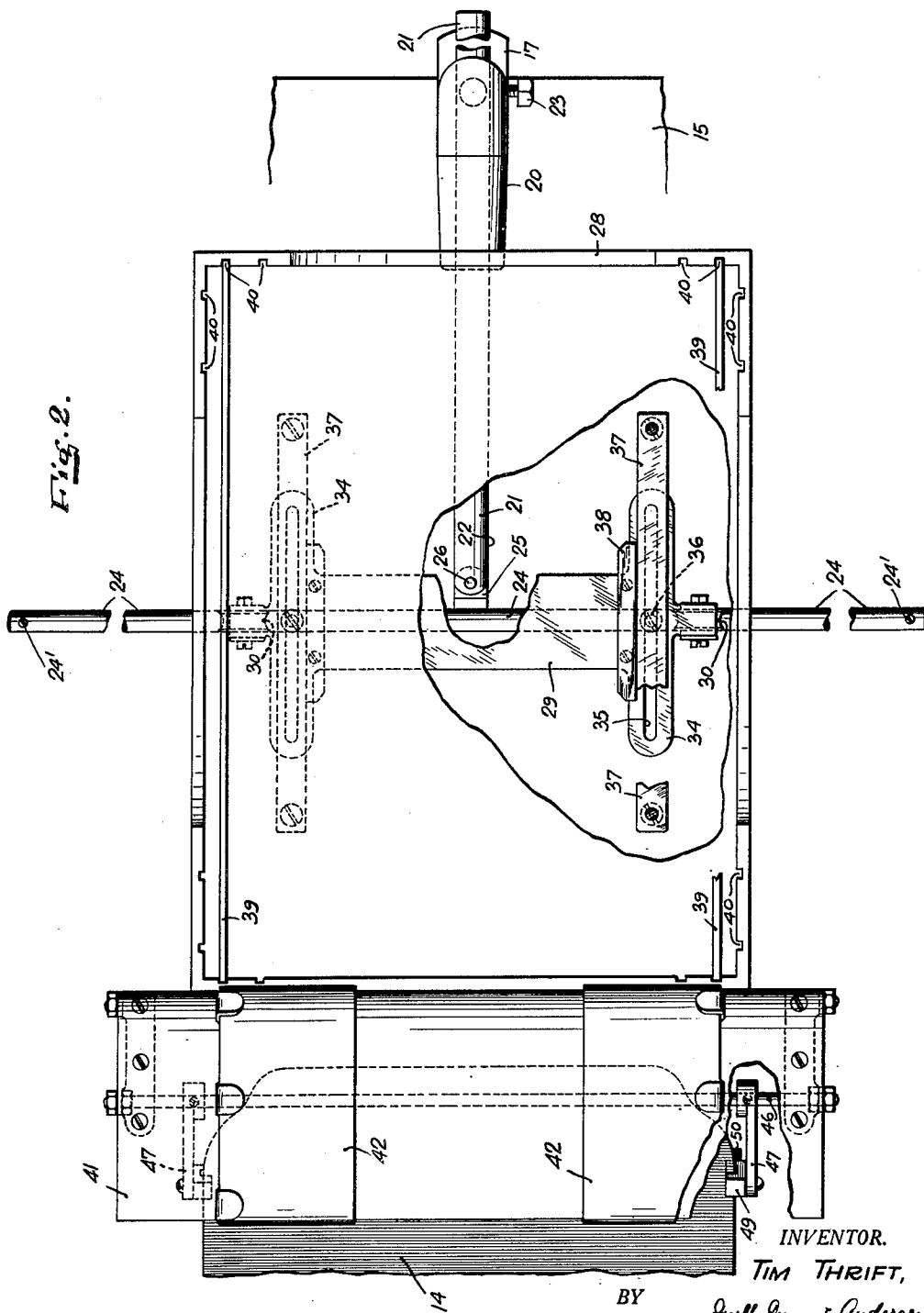
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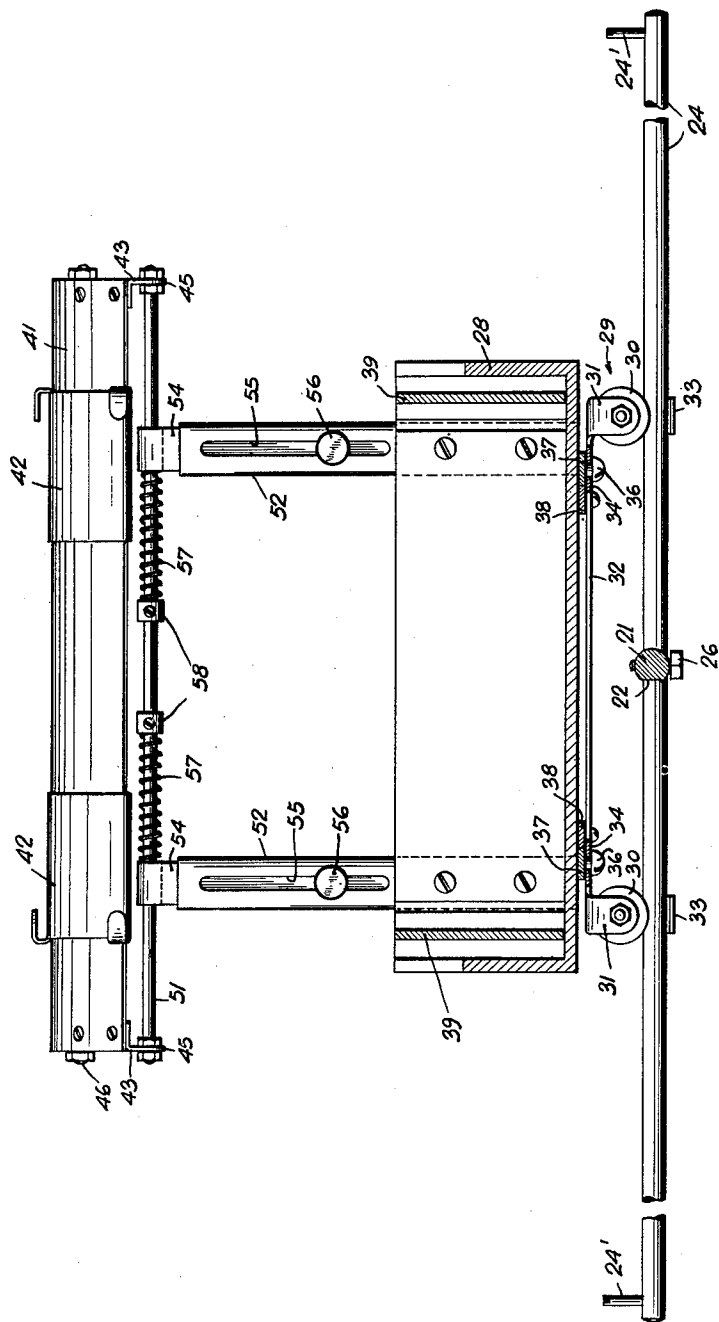
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Fig. 3.



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## UNITED STATES PATENT OFFICE

2,012,524

## WEB SUPPLY CARRIER FOR TYPEWRITING MACHINES

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22 Claims. (Cl. 197—133)

This invention relates to improvements in record controlling devices for recording machines and with reference to some of its more particular features, it relates to improvements in record supporting and guiding means for use in connection with the typewriting and similar writing machines of the type employing a movable record or platen carriage.

It is a general object of the invention to provide for machines of the class mentioned an improved record guiding and controlling mechanism whereby records of the long, continuous traveler type may be conveniently used. By means of the improvements, record supplies of the long, continuous traveler type, either with or without continuous traveler carbon sheets, may be conveniently supported and guided into writing position upon the writing carriage, and are continuously maintained in correct alignment with the platen and with each other during the operative movements of the platen carriage.

According to another feature of the invention, an improved supporting and feeding arrangement for continuous traveler records is provided, being conveniently arranged for movements with the platen carriage so as to maintain the records always in correct alignment, and being adapted for attachment to machines of different size and varying construction, and being adaptable also to various types of desks or cabinets upon which the writing machines are mounted.

Another object of the invention is to provide for machines of the class mentioned an improved supply carrier and record controlling means readily attachable for operation by the platen carriage and connected to the latter so as to avoid objectionable shocks during movements thereof.

Another object of the invention is to provide for machines of the class mentioned an improved record carrying and controlling mechanism having a simple and advantageous supporting arrangement providing for quick and easy adjustments so as to adjust it for various sizes of typewriting machines and for different mounting arrangements therefor. By means of this special mounting arrangement, the record supporting and controlling mechanism is readily adaptable for use with typewriters mounted upon desks of the drophead type or upon other types of desks. By virtue of this improved flexibility of the record supporting and controlling means, the records can be continuously maintained in correctly aligned position upon a wide variety of different typewriter structures and of different mounts therefor, thus assuring satisfactory copies and satisfactory operation generally.

Still another object of the invention is to provide for machines of the class mentioned an improved mounting for a record carrier whereby frictional resistance is minimized, thus adapting

the carrier for satisfactory operating movement by the typewriter carriage. In the embodiment of the invention herein shown, this desirable result is accomplished by means of a mono-rail support for the record carrier. With this improved supporting arrangement, the balance of the record carrier may be readily maintained by providing a supporting truck which is adjustable with reference to the carrier and the weight properly distributed upon the mono-rail support, even though the loading of the carriage may vary.

Other objects of the invention will be in part pointed out in the following detailed description of an illustrative but preferred embodiment of the invention, and will be in part obvious in connection therewith.

The invention accordingly comprises the features of construction, combinations of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth and the scope of the application of which will be indicated in the claims.

For a more complete understanding of the nature and objects of the invention, reference is had to the subjoined description and to the accompanying drawings, of which:

Fig. 1 is a fragmentary side elevation showing the invention applied for use to a typewriting machine, parts being broken away and in section for more complete disclosure of the structure;

Fig. 2 is a plan view thereof, and

Fig. 3 is a section substantially on the line 3—3 of Fig. 1, looking in the direction of the arrows.

Referring to the drawings for a detailed description of the illustrative embodiment of the invention, the improved record supply carrier and controller is shown as applied to a typewriting machine shown diagrammatically at 10. The record carrier and controller is adaptable to writing machines of different size and make, that shown being of a well known type having a movable record or platen carriage 11 carrying a rotary cylindrical platen 12 and mounted for transverse movement upon the frame 13 for effecting letter spacing in a manner well known in the art. The platen or record carriage 11 may also be provided with a record guiding plate or apron 14 positioned for guiding the records or workwebs into writing position upon the platen 12.

While the improved record supply carrier and controller is adaptable for various forms of typewriter supports it is herein disclosed for purpose of illustration, as being attached to a desk or table 15 and is especially well adapted for application to desks or tables of the drop-head type wherein the typewriter is supported upon a cover or platform movably mounted so as to carry the typewriter in operative position, or to be ad-

justed to move the typewriter into concealed or non-obstructing position with reference to the desk.

For supporting the record supply carrier upon the typewriter desk or other support, a supporting bracket 16 of improved construction has been devised. This bracket includes a supporting clamp 17 adapted to be secured in position upon the edge of the table 15 and having a swivel support 18 rotatably mounted in the upper end thereof and held in adjusted position by means of a set screw 19. The bracket 16 includes a supporting arm 20 attached to the swivel support or extension 18 and having a lower flat bearing surface in bearing contact with the upper bearing contact surface of the clamp 17. This supporting arm 20 has a longitudinal bore in which is seated for longitudinal adjustment therein the carrier supporting arm 21 which is preferably flattened or splined as at 22 to form a bearing seat for a set screw 23 whereby the arm 21 is locked against rotation upon its longitudinal axis. This construction also provides an effective adjusting arrangement whereby the active supporting length of the carrier arm can be adjusted at will.

This adjustable carrier arm 21 has attached to the free or swinging end thereof a mono-rail mount or supporting device for the record supply carrier proper and embodying a mono-rail 24 pivotally attached for horizontal swinging movement to the end of the supporting arm 21. As shown, the supporting connection for the mono-rail includes a supporting lug 25 welded or otherwise firmly attached to the rail and having a supporting bearing aperture for the reception of the supporting pivot pin or screw 26. The end of the supporting arm 21 may be split or slotted as at 27 for the more convenient adaptation of the supporting lug 25.

The supply support proper as herein shown comprises a box-like supporting structure 28 constructed of light, strong material, such as wood or metal, and supported upon the mono-rail 24 for translational reciprocating movements therealong. A convenient and satisfactory type of support is shown embodying the truck support 29 attached to the underside of the carrier box 28 and having preferably two supporting wheels or rollers 30 grooved for the reception of the convex supporting surface of the mono-rail. These wheels 30 are preferably provided with anti-friction bearings and are appropriately attached to the truck support by means of the inverted U-shaped truck pedestals 31. These pedestals as shown are conveniently formed by slitting the metallic supporting plate 32 and turning the supporting parts downwardly as clearly shown in Fig. 1. A guiding and retaining plate 33 is preferably attached to the truck support adjacent each wheel lying adjacent to the monorail 24 and having an angularly disposed part underlying the same so as to prevent accidental displacement of the truck 29.

At its opposite ends the truck supporting plate or bolster 32 is provided with longitudinal supporting members 34 having elongated slots 35 receiving attaching screws or bolts 36 whereby the bolster plate 32 is attached to the underside of the carrier box 28 for longitudinal adjustment thereof. The longitudinal bolster supports 34 preferably rest upon bearing plates 37 attached to the under surface of the box 28 and extending longitudinally thereof. Guiding and retaining plates 38 are also attached to the underside of

the box 28 extending parallel and adjacent to the bearing plates 37 as clearly shown in Fig. 3 and retained in position by screws extending there-through and through the bolster plate 32. Of course it will be understood that the retaining screws need not pass through the bolster plates 32, but if desired, may pass through the retaining plates only and extend therefrom directly into the box bottom. The longitudinal bolster supports 34 preferably extend at inner edges thereof slightly beyond the inner edges of the bearing plates 37 thus providing guiding channels for the reception of the guiding and retaining plates 38. By means of this arrangement, the supporting truck 29 can readily be adjusted longitudinally of the supporting box, thus to maintain its balance and to adapt it for different character of record supplies.

While various forms of record supplies may be used with the improved record carrier and controller, it is herein shown as being used with the long continuous composite traveler type of record indicated diagrammatically at S and transversely folded at intervals into a zigzag supply pack S' which is housed and supported within the supporting container 28. This composite traveler record may be composed of as many superposed traveler record strips as desired and it is convenient also to use long continuous interleaved carbon or transfer strips for transferring the inscriptions to the lower record strips, thus avoiding the use of separate carbon sheet supporting means.

While the structure of the supporting container 28 may be varied for different types of record supplies, a convenient form for the accommodation of the zigzag supply pack S' is herein disclosed. This structure is made of the desired proportions for the accommodations of the supplies preferably having a bottom and side end walls and an open top as shown. Adjustable supporting guides or partitions 39 may be utilized if necessary for the accommodation of supply packs of different widths or lengths. For this purpose the inner surfaces of the container walls are formed with grooves 40 providing supporting sets for supporting the partitions 39 in different positions.

It will also be noted that the record supporting container 28 may be shifted 90 degrees in a horizontal plane merely by changing the position of the supporting truck 29 so that the length of the container as shown in Fig. 2 becomes the breadth thereof. This feature also affords a further opportunity for ready adaptation for different size or character of record supplies. Furthermore, this type of construction is well adapted for the accommodation of a plurality of supporting containers such as the box 28 positioned one above the other whereby each container may support an independent record supply. This is of considerable advantage when it is desired to use different record supplies or forms interchangeably upon the typewriting machine and for other purposes.

For guiding the record S from the supply into writing position upon the platen 12, an improved guiding plate 41 of metal or similar strong, light material is provided, being preferably longitudinally curved or cylindrical as shown and having adjustable edge guides 42 for receiving the longitudinal edges of the record. Either one or both of the edge guides 42 may be slid upon the guide plate 41 for adjustment for records of different width.

End supporting plates 43 are provided for the record guide 41 being appropriately secured thereto and having supporting lugs 44 and 45. A supporting rod 46 is carried by the lugs 44 being attached thereto by securing nuts and carrying attaching arms 47. The attaching arms 47 may be swung into different angular positions upon the supporting rod 46 and locked in adjusted position by set screws 48. Each attaching arm carries at its free end a rotatably adjustable attaching block 49 slotted for the reception of the adjacent edge of the record guiding apron 14 of the typewriter carriage. As seen in Fig. 1 the attaching arms may be angularly adjusted to align the attaching blocks 49 so that the adjacent edges of the apron 14 may be received in the block slots whereupon the attachment to the apron is completed by tightening the set screws 50. A screw secures each block 49 to the respective attaching arm 47 whereby the block may be rotated to bring it into correct attaching position. The outer end of the guiding apron 14 may be received between the supporting rod 46 and the guide plate. Attached to the lugs 45 of the guide supporting plates 43 is an attaching rod 51 appropriately secured in position to the lugs and extending along the rearward edge of the guide plate as best seen in Fig. 3. Extending between this attaching rod 51 and the adjacent edge of the record carrier or container 28 are attaching links 52 which are preferably in the form of fairly stiff bars or struts capable of transmitting movements between the typewriter carriage and the supply carrier. They are also of sufficient stiffness to maintain the supply carrier in its correct upright position upon the mono-rail support so that tilting of the latter is avoided which may possibly be due to slight irregularities in loading or to other causes. Said struts are also sufficiently strong and rigid laterally to transmit energy impulses incident to operation of the typewriter carriage to the movable supply carrier to cause the latter to move in unison with the typewriter carriage.

As best shown in Figs. 1 and 3, the struts 52 are formed of two cooperating plates, one as the plate 53 being screwed to the carrier container 28 and the other plate 54 being attached for pivotal movement to the rear edge of the record guide plate 41. One of the strut plates, as 53, is formed with an elongated slot 55 and a securing set screw 56 extends through this slot and is threaded into the other plate 54. Opposed marginal guides 53' on plate 53 hold the strut plates in alignment. By means of this arrangement the connecting struts 52 may readily be longitudinally adjusted for the accommodation of typewriting machines of different height, relative to the supporting container 28.

For effecting the pivotal attachment of the struts the upper ends of the strut plates 54 are shown as being looped about the attaching rod 51 so as to slide freely longitudinally thereon. Buffer springs 57 are interposed between the loops of the plates 54 and lugs 58 adjustably attached to the rod 51 being shown as spiral springs coiled about said attaching rod. It will, therefore, be seen that impulses from the typewriter carriage will be transmitted through the buffer springs 57 to the supply carrier. In this manner all shocks due to movements between the typewriter carriage and the supply carrier will be effectively absorbed by these springs. Also, by virtue of this yielding power transmitting connection the movement of the record supply car-

rier may be substantially continuous whereas the movement of the typewriter carriage ordinarily is intermittent for effecting letter spacing in a manner well known in the art. The relatively quick intermittent movements of the typewriter carriage will be partially absorbed and stored by compression of one of the springs 57. The energy thus absorbed will then be delivered by the spring to the record carrier through the connecting struts 52. By this means it is unnecessary that the supply carrier be stopped and started with each letter spacing movement of the typewriter carriage. Shocks are thus avoided and a smoother and more satisfactory operation is achieved.

It will now be seen in view of the above disclosure that the improved record carrier and controller not only is simple and practical in construction but it may readily be applied in operative position to typewriters of different construction and size and to different forms of mounting arrangements therefor. The effective length of the supporting arm 21 may be readily varied by the adjustable connection described for the accommodation of different distances between the attaching position of the supporting clamp 17 and the typewriter carriage. Furthermore, the angular position of the supporting arm 21 can be easily varied by swinging it upon its supporting connection 18 with the supporting clamp.

Also, it will be noticed that the supply carrier proper or container 28 is supported at the free end of the supporting arm 21 for rotations and translational movements. This is accomplished by means of the mono-rail 24 pivotally connected to the arm 21. Due to this rotational adjustment the mono-rail 24 may also be positioned substantially parallel to the movement of the typewriter carriage irrespective of the angular position of the arm 21, the result being that the record supply can at all times be translated along the mono-rail substantially parallel to the typewriter carriage. Removable stops 24' are preferably provided for limiting the movements of the supply carrier in either direction upon the mono-rail 24.

In use it will be seen that the improved record carrier and controller is very flexible in its adaptability to different operating conditions. An important result is that the supply record is at all times maintained in correctly aligned position with the typewriter carriage, practically no displacement from this condition being permitted. This desirable result can also be accomplished without detriment to the free feeding movements of the typewriter carriage because of the improved form of support for movably supporting the supply and due also to the improved connection between the supply carrier and the typewriter carriage.

Since certain changes may be made in the above construction and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

Having described my invention, what I claim as new and desire to secure by said Letters Patent is:

1. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means for supporting said supply carrier, means including a pivotally supported mono-rail support mounting said carrier on its support for movement with the record

carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, operative connections between said carriage and said supply carrier for controlling movements of the latter by the former and including a strut for stabilizing the supply carrier upon the mono-rail support, and a resilient buffer included in said operating connections for the absorption of shocks between said carriage and said supply carrier.

2. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means including a supporting arm for supporting said supply carrier, means for mounting said carrier on its support for movement with the record carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, operative connections between said carriage and said supply carrier for controlling movements of the latter by the former, and an arm support connected to the arm at the opposite side of said carrier mounting means from said record carriage and supporting said arm for longitudinal sliding movement and for angular adjustment, whereby the position of said supply carrier may be adjusted with reference to said record carriage both laterally and longitudinally of the latter.

3. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means including a supporting arm for supporting said supply carrier, means for mounting said carrier on its support including a supporting rail carried by said supporting arm upon and along which the carrier is mounted for movement with the record carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, operative connections between said carriage and said supply carrier for controlling movements of the latter by the former, adjustable connections embodied in said carrier supporting means for adjusting the position of said carrier with reference to said record carriage both laterally and longitudinally of the latter, said adjustable connection including means for varying the effective length of said supporting arm and an adjustable connection between said supply carrier and said carriage embodied in said operating connections for the accommodation of record carriages of different heights.

4. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means for supporting said supply carrier, means for mounting said carrier on its support for movement with the record carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, operative connections between said carriage and said supply carrier for controlling movements of the latter by the former, and adjustable connections embodied in said carrier supporting means including a supporting arm mounted for rotative and longitudinal adjustments whereby the position of said carrier with reference to said carriage may be adjusted both laterally and longitudinally of the latter, said operating connection between the carriage and carrier including a longitudinally adjustable strut, and a buffer between said carriage and carrier for the absorption of shocks therebetween.

5. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means for supporting

said supply carrier, means for mounting said carrier on its support for movement with the record carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, and operative connections between said carriage and said supply carrier for controlling movements of the latter by the former, said mounting means including a rail upon which said supply carrier is mounted for movement therealong, and a pivotal support for said rail positioned near the center of length of the latter and forming the sole support therefor.

6. The combination with a record machine having a movable record carriage, of a record supply carrier, carrier supporting means for supporting said supply carrier, means for mounting said carrier on its support for movement with the record carriage so as to maintain the supply carrier substantially abreast of the record carriage during movements of the latter, and operative connections between said carriage and said supply carrier for controlling movements of the latter by the former, said carrier mounting means including an angularly movable, supporting arm and a mono-rail pivotally supported in the vicinity of its longitudinal center upon the free end of said supporting arm.

7. The combination with a record machine having a movable record carriage, of a record supply carrier, a swingable, supporting arm for said supply carrier, and an arm support to which said supporting arm is connected for angular and longitudinal adjusting movements with reference to the record machine, said supply carrier being supported upon the free end of said arm for rotational movements and for translational movements substantially parallel to letter-spacing feed movements of the record carriage, and operating connections between said supply carrier and said record carriage.

8. The combination with a record machine having a movable record carriage, of a record supply carrier, a swingable, supporting arm for said supply carrier, a supporting clamp to which said supporting arm is connected for angular and longitudinal adjusting movements, and a supporting rail pivotally connected to the free end of said supporting arm, said supply carrier being supported upon said rail for movement therealong and operatively connected to said record carriage.

9. The combination with a record machine having a movable record carriage, of a record supply carrier, a swingable, supporting arm for said supply carrier, a supporting clamp to which said supporting arm is connected for angular and longitudinal adjusting movements, a supporting rail pivotally connected to the free end of said supporting arm, said supply carrier being supported upon said rail for movement therealong and operatively connected to said record carriage, and a buffer between said record carriage and said supply carrier for the absorption of shocks therebetween.

10. The combination with a record machine having a movable record carriage, of a record supply carrier, a swingable, supporting arm for said supply carrier, a supporting clamp to which said supporting arm is connected for angular and longitudinal adjusting movements, said supply carrier being supported upon the free end of said arm for rotational and translational movements with reference to the record machine and operatively connected to said record carriage, a record guide connected to said supply carrier and having a detachable connection with said record carriage

and positioned for guiding the records from said supply carrier into writing position upon said carriage, and a buffer embodied in the connection between said record guide and said supply carrier.

11. The combination with a record machine having a movable record carriage, of a record supply carrier, a supporting rail upon which said carrier is supported for movement therealong parallel to carriage movement, mounting means including a swingably mounted supporting arm for mounting said supporting rail for swinging movement, means for adjusting the effective length of said supporting arm, and an adjustable supporting connection between said carriage and said carrier and movable therewith for maintaining said carrier in operative position upon its supporting rail.

12. The combination with a record machine having a movable record carriage, of a record supply carrier, a mono-rail support upon which said carrier is supported for movement therealong parallel to carriage movement, an adjustable supporting connection between said carriage and said carrier and movable therewith for maintaining said carrier in operative position upon its mono-rail support, and a supporting truck adjustably connected to said supply carrier whereby the latter is supported upon said mono-rail support and the balance of the carrier maintained under varying loads.

13. The combination with a record machine having a movable record carriage, of a record supply carrier, means for supporting said supply carrier for movement with said carriage, a record guide having a detaching device whereby it may be detachably attached to the record apron of said record carriage, an adjustable strut connection connecting said record guide and said carrier, and a two-way buffing device between said strut connection and said record guide.

14. The combination with a record machine having a movable record carriage, of a record supply carrier, means for supporting said supply carrier for movement with said carriage, a record guide having an adjustable attaching arm for detachable attachment to the record apron upon said carriage, a strut connected to said carrier and pivoted to said guide, and a yielding buffer independent of said attaching arm between said carriage and said carrier.

15. A record supply device for writing machines, including, in combination, a record supply carrier, a swinging supporting arm for said carrier, an arm support for said arm, a carrier supporting rail pivotally connected to said supporting arm, and a longitudinally adjustable supporting connection interposed between said arm support and said rail for varying the effective length of said supporting arm.

16. A record supply device for writing machines, including, in combination, a record supply carrier, a swinging supporting arm for said carrier, an arm support for said arm, a carrier supporting rail pivotally connected to said supporting arm, a longitudinally adjustable supporting connection interposed between said arm support and said rail for varying the effective length of said supporting arm, and an adjustable bolster on said supply carrier having a truck bearing upon said rail.

17. A record supply device for writing machines including, in combination, a record supply carrier, a swinging supporting arm for said carrier, an arm support for said arm, a carrier

supporting mono-rail pivotally connected to said supporting arm, a longitudinally adjustable supporting connection interposed between said arm support and said mono-rail for varying the effective length of said supporting arm and an adjustable bolster on said supply carrier having a truck bearing on said rail.

18. The combination with a record machine having a movable record carriage, of a record supply carrier, a mono-rail support upon which said carrier is supported for movement therealong parallel to carriage movement, an adjustable supporting connection between said carriage and said carrier and movable therewith for maintaining said carrier in operative position upon its mono-rail support, and a bolster on said supply carrier adjustably connected thereto for adjustment longitudinally thereof so as to vary its supporting position with reference to the forward and rearward ends of the carrier; said bolster having a truck bearing on said mono-rail support.

19. A record supply device for writing machines including, in combination, a record supply carrier, a swinging supporting arm for said carrier, an adjustable connection associated with said supporting arm for varying the effective supporting length of the latter independently of swinging movements thereof, and operative connections between said supply carrier and the record carriage of the writing machine for controlling movements of the former by the latter.

20. A record supply device for writing machines including, in combination, a record supply carrier, a swinging supporting arm for said carrier, a mono-rail support connected to said supporting arm upon which said supply carrier is mounted for movement therealong, a supporting bolster between said supply carrier and said mono-rail support, said bolster being connected to said carrier for longitudinal adjustment thereof to vary its supporting position with reference to the forward and rearward ends of the carrier and operative connections between said supply carrier and the record carriage of the writing machine for controlling movements of the former by the latter.

21. A record supply device for writing machines including, in combination, a record supply carrier, a swinging supporting arm for said carrier, a mono-rail support connected to said supporting arm upon which said supply carrier is mounted for movement therealong, a supporting bolster connected to said carrier for adjustment longitudinally thereof and positioned between said supply carrier and said mono-rail support, and a balancing strut connected to said supply carrier and to the record carriage of the writing machine for balancing the carrier upon its mono-rail support.

22. The combination with a record machine having a movable record carriage, of a record supply carrier, a swingably mounted supporting arm, a supporting rail upon which said supply carrier is mounted for movement back and forth with the record carriage, a single pivotal supporting connection between said swingable arm and said supporting rail positioned substantially at the center of length of said rail and constituting the sole support for the rail, and operative connections between said carriage and said supply carrier for controlling movements of the latter by the former.

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