No. 887,143. PATENTED MAY 12, 1908.

J. O. STEVENSON.

TYPE WRITER ATTACHMENT.

APPLICATION FILED JULY 9, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

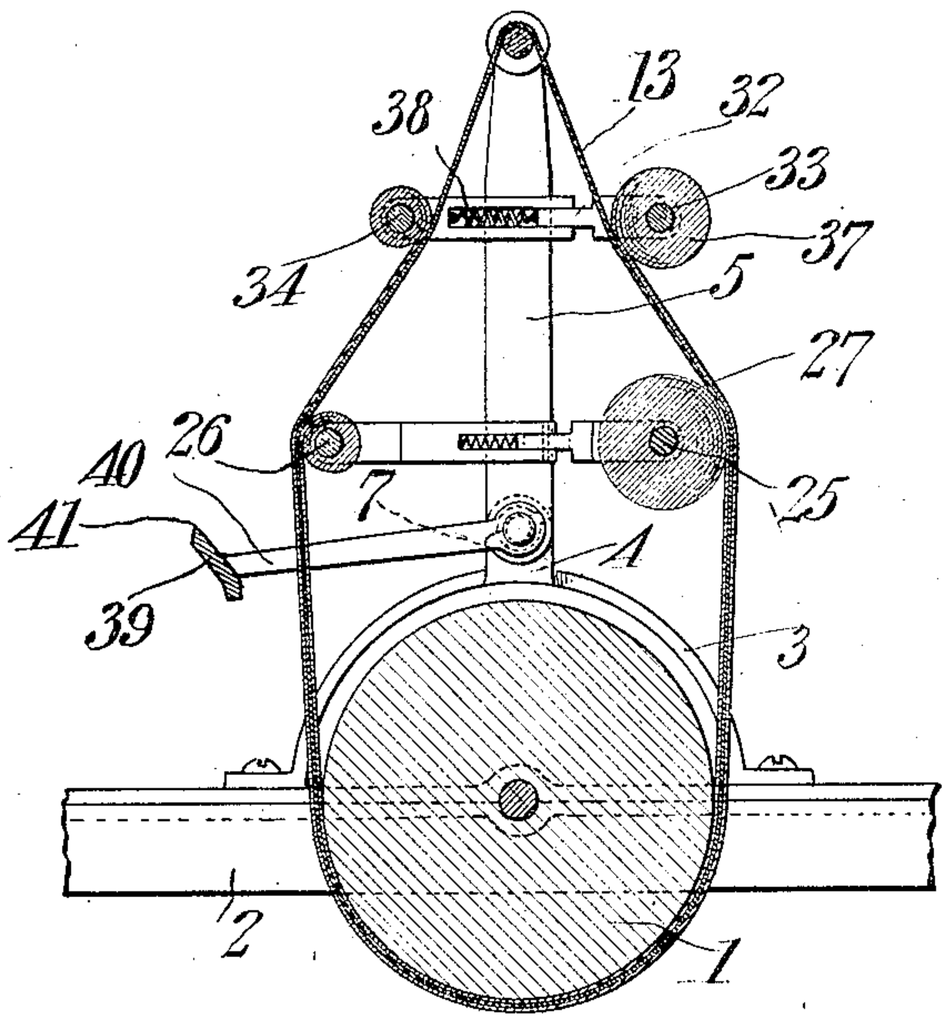
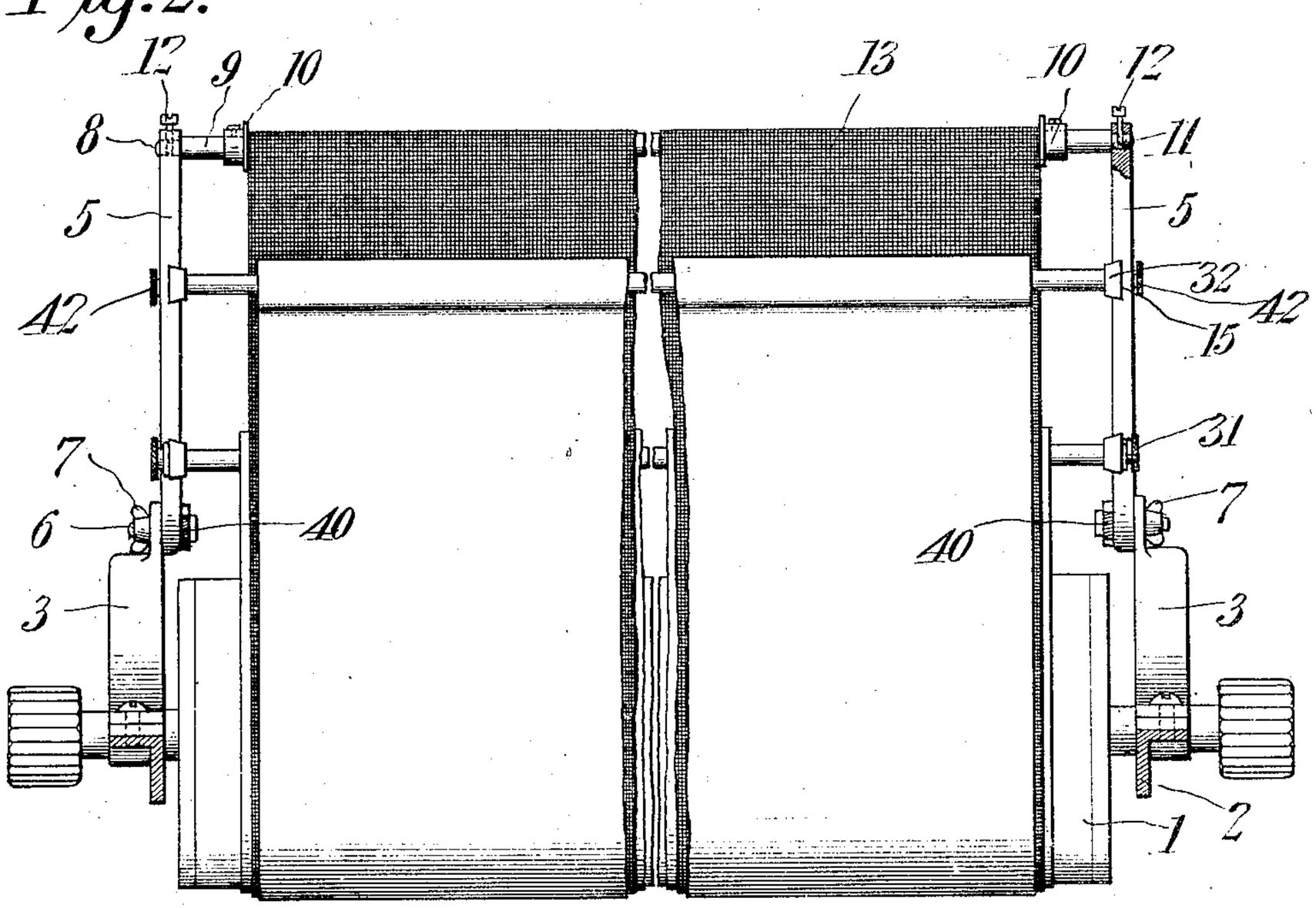


Fig. 2.



WITNESSES:

E. P. Stewart

F. T. Chapman

James O. Stevenson INVENTOR

By C. A. Snow & Co.

ATTORNEYS

No. 887,143. PATENTED MAY 12, 1908.

J. O. STEVENSON.

TYPE WRITER ATTACHMENT.

APPLICATION FILED JULY 9, 1907.

2 SHEETS—SHEET 2.

Fig. 3.

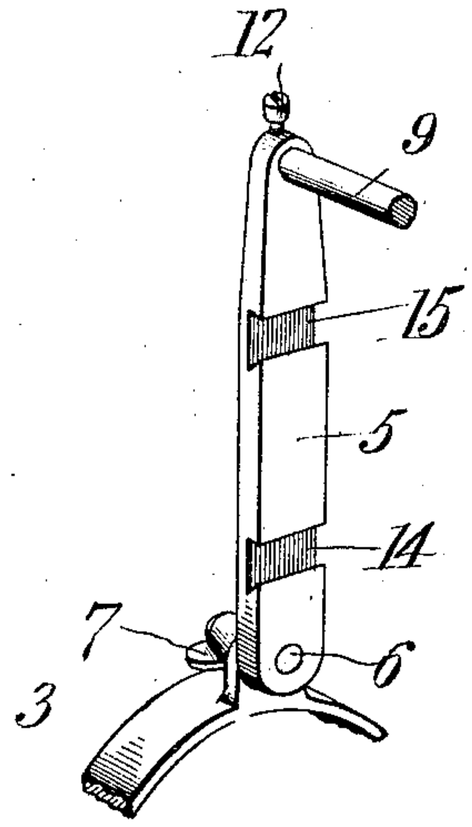


Fig. 4.

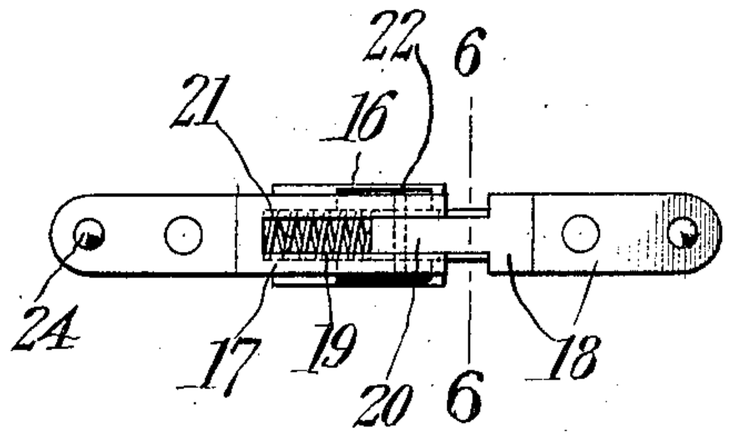


Fig. 5.

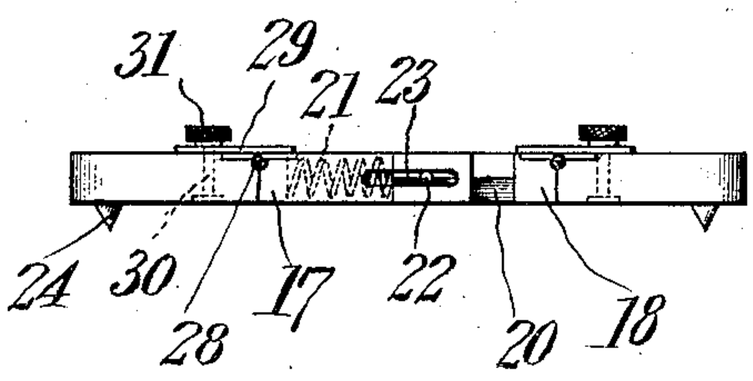
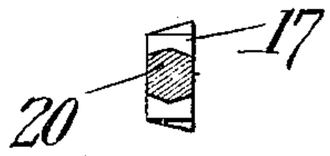


Fig. 6.



WITNESSES:

E. G. Stewart

F. J. Chapman

James O. Stevenson INVENTOR

By Church & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES O. STEVENSON, OF OKLAHOMA, OKLAHOMA.

TYPE-WRITER ATTACHMENT.

No. 887,143. Specification of Letters Patent. Patented May 12, 1908.

Application filed July 9, 1907. Serial No. 382,840.

To all whom it may concern:

Be it known that I, JAMES O. STEVENSON, a citizen of the United States, residing at Oklahoma, in the county of Oklahoma, Oklahoma, have invented a new and useful Type-Writer Attachment, of which the following is a specification.

This invention has reference to improvements in typewriter attachments, and its object is to provide means whereby multiple copies of typewritten matter may be produced upon a long web of paper through the intermediary of an endless carbon band or ribbon, so that copies of many papers may be made without danger of losing the same because of a multiplicity of papers, since with the present invention copies of a great many papers may be made *seriatim* upon a single web which may be preserved for future reference.

The present invention is for an attachment to take the place of separate carbon sheets and separate second sheets, thus economizing in the time usually taken to arrange sheets for each page written. The attachment also assures a copy of all matter passing through the machine, since the copies are made upon a continuous roll of paper so that there is no possibility of losing any part of the copy of the original matter.

The present invention is applicable to various types of machines and comprises essentially two standards, one at each end of the platen-carrying frame or carriage, together with a spool for the support of one end of an endless band of carbon paper or ribbon which is made to travel with the platen about the latter and over said spool. The standards also carry at each end extensible supports for two reels, one of which constitutes the initial carrying reel for a long web of paper and the other of which constitutes the receiving reel for the paper web, said web being carried around the platen between said platen and the carbon web. When desired, the standards may carry another pair of reels for a paper web which will be arranged exterior to the carbon band.

The attachment is so arranged that it will not interfere in any way with the ordinary use of the typewriter for making original copies, and when one carbon copy is desired the carbon paper or band will be coated on but one side and the inner band of paper will be employed, thus giving one straight carbon copy upon the paper web. When, however, two copies are desired, the outer web of paper is made of a special thin paper on which the impressions are made in reverse but through which they may be easily read by transmitted light.

The invention will be fully understood from the following detailed description, taken in connection with the accompanying drawings forming part of this specification, in which;—

Figure 1 is a vertical section through the typewriter platen, showing the attachment in operative relation thereto; Fig. 2 is a front elevation; Figs. 3, 4 and 5 are detail views; and Fig. 6 is a cross section on the line 6—6 of Fig. 4.

Referring to the drawings, there is shown a platen 1 mounted in the usual manner upon a carriage 2, of which only the side bars are shown but which may be taken as indicative of any style of typewriter carriage.

Fast upon the side bars 2 are brackets 3 which may, if desired, remain upon the carriage when the other portions of the structure are removed. Each bracket 3 terminates in a central, radially-upward projecting ear 4, to which is fixed a standard or post 5 by means of a pivot pin 6 projecting from the lower end of the standard 5 through the ear 4 and receiving a wing nut 7 or any other type of thumb-nut.

The upper ends of the standards 5 receive pintles 8 formed on the ends of a rod 9, which rod carries flange collars 10. The pintles 8 may be each provided with a circumferential groove 11 within its bearing in the standard 5, and a set-screw 12 extending through the upper end of the bearing and engaging in said groove will serve to hold the standards 5 from spreading, and at the same time this structure does not interfere in any manner with the rotation of the rod 9.

Passing over the rod 9 between the flange collars 10 is a web 13, which web also extends around the platen 1. This web may be made of any suitable material capable of carrying the substances used for producing the so-called carbon copies upon paper, and, if desired, this web may be made of the carbon paper of the market and may be applied by being passed around the platen and rod 9 between the collars 10, and the two ends may

be united in any suitable manner, as, for instance, by pasting, so as to form a continuous web.

Upon the inner face of each standard 5 are two dovetail cross slots 14—15, one quite close to the lower end of the standard and the other near the upper end thereof. The dovetail slot 14 receives the dovetail section 16 of a bar composed of two members 17—18. The member 17 is provided with a longitudinal slot 19 receiving a tongue 20 on the other member. The tongue may be of hexagonal or other suitable shape, so that one member can not turn with relation to the other, but is still free to telescope therein. Between the end of the tongue 20 and the base of the recess or slot 19 there is housed a spring 21 the tendency of which is to force the member 18 away from the member 17, but in order that this movement may be so limited as to not entirely separate the two members of the bar the member 17 may be provided with another slot 22 in which engages a pin 23 projecting from the tongue 20. Near the outer ends of each bar composed of the members 17 and 18 is a conical stud 24 forming a seat for a reel spindle 25 or 26 as the case may be.

Considering that there is a bar 17—18 in the slot 14 of each standard 5, then the conical studs 24 at the corresponding ends of the bars will constitute journal bearings for the spindle 25 and those at the other ends of the bars will constitute journal bearings for the spindle 26, the bearings being of the needle or point type, offering but slight friction to the rotative movement of the spindle.

The reel spindle 25 will constitute the carrier for the unused web 27 of paper, which web is carried down alongside the carbon paper between the latter and the platen and thence upward until its end is secured to the reel spindle 26. Now, when the carbon web is in place it does not fit tightly upon the platen 1 before the paper roll has been attached, but as soon as the paper roll with its supporting bars 17—18 is in place, the tendency of the springs 21 being to force the spindles 25 and 26 away from each other, the carbon paper will be put under sufficient tension to bring the paper web 27 into good frictional contact with the carbon paper and with the platen 1.

When a sheet of paper is placed in the typewriting machine in position to be acted upon by the type in the usual manner the paper feed will cause the rotation of the platen and at the same time the paper web 27 and the carbon paper 13 will be caused to travel with said platen. The frictional engagement of the platen with the paper web will cause the unwinding of the latter from the roll carried by the reel spindle 25 and coincidently the frictional contact of the traveling band 13 of carbon paper will act upon the reel spindle 26 or upon the paper web already wound thereon to rotate the same and thus wind up the web 27 on said reel spindle 26. It will be readily understood that when the type makes an imprint upon the paper used for the original copy there is also a carbon impression made upon the web 27, and as this web is continuously unwinding from the reel 25 and wound again upon the reel 26 there will be a succession of copies upon the web 27 of the original imprints made by the typewriting machine; that is, for each successive page of original typewritten matter there will be a corresponding copy upon the web, and these copies will follow one another in regular order.

When the paper web upon the reel 25 is exhausted and all wound up upon the reel 26, then the reels 25 and 26 may be removed from the typewriter and a charged reel put in the place of the reel 25, which latter, being empty, may replace the removed reel 26. Now, in order to facilitate the removal of the reels and the placing of other reels in position, the ends of the two members 17—18 carrying the studs 24 are made separate from the main portion of said members and are united thereto by hinges 28, while a sliding plate 29 carried by the hinged portion of each member and capable of being moved into and out of operative relation to the body portions of the members 17—18 is provided for locking these hinged portions in place or for so unlocking them that they may be turned on their hinges. For this purpose there is provided a threaded pin 30 extending through the hinged portion and through the sliding plate 29, and a thumb-nut 31 serves to clamp or loosen the sliding plate 29 in its operative or inoperative position. It is only necessary that one of the bars 17—18 be hinged and the other one may be solid or unbroken except that it should be telescoping.

As the paper is unrolled from the reel 25 the paper web thereon becomes, of course, of constantly decreasing diameter, while the paper web on the reel 26 is constantly increasing in diameter. This would cause a shifting of the carbon web laterally were it not for the fact that each bar 17—18 is capable of moving longitudinally in the dovetail slot 14, and, therefore, this portion of the device is self-adjusting to the varying diameters of the paper web roll upon the reels 25 and 26.

Fitted to the slots 15 are other bars 32, one of which may have hinged sections like the bars 17—18 already described, and both of the bars 32 may be telescoping. The bars 32 carry reels 33 and 34 similar to the reels 25 and 26 and when in place the paper web 37 carried upon the reel 33 is passed around the platen outside of the carbon web 13 until it is wound upon the reel 34. In this case the carbon web should be coated on both sides, while the paper web 37 is made of a specially

thin paper, since the impressions received from the carbon web 13 are in reverse, and, consequently, can be best read by transmitted light. The feeding of the paper web 37 is accomplished by its frictional contact with the carbon web 13. The bars 32 may be made quite similar to the bars 17—18 but they have interposed between them a spring 38 which is put under stress by being extended so as to tend to draw the reels 33—34 toward each other.

Since it is sometimes desirable to tear off from the web 37 the second carbon copy in order that it may accompany the original, there is provided a bar 39 extending across the front of the platen a short distance above the same, and this bar may be supported by side arms 40 fast to the standards 5 by the same bolts 6 which secure said standards to the brackets 3, or other means may be provided for this purpose. The bar 39 may have its upper edge 41 properly shaped to form a tearing edge. The original copy and the web 37 are carried up between the bar 39 and the carbon copy, and when the original letter is finished they may be drawn together until the original letter has passed the edge 41, when the portion of the web 37 containing the carbon copy may be easily torn from the main body of the web instead of passing to the reel 34. This will mean that the roll of paper upon the reel 33 decreases in diameter without a corresponding increase in diameter of the roll of paper upon the reel 34. Now, in order that the carbon web 13 may not become loose because of the fact that the reel 34 carries no paper, the spring 38 comes into action and will draw the two reels together, thus taking up any slack that might otherwise occur in the carbon web 13. When the paper web 37 is allowed to wind upon the reel 34 the two parts of the bars 32 may be secured together to operate as though the bar were solid by means of a clamp screw 42 which may be so arranged as to bind the two members of the bar 32 in fixed relation one to the other, thereby putting the spring 38 out of action. When the carbon copies formed on the web 37 are not to be torn off the bars 32 may be made solid, in which case the telescoping action of the bars 17—18 will be sufficient to maintain the carbon web 13 in a taut condition. The web 37 is only used when it is desired to make more than one carbon copy of the original writing, and where only one carbon copy is desired a carbon web coated on one side only is all that is necessary.

On typewriting machines where the paper is easily detached the carbon web may be made endless, but on other machines it is necessary to join the ends after having been placed in position, and this may be done by a narrow layer of a suitable mucilaginous substance.

It will be observed that the standards 5 are supported at their lower ends upon the pins or studs 6 and are held in place by the clamp nuts 7. It is therefore possible to swing the standards 5 about the studs 6 as an axis, so that these standards 5 may be moved toward the front or to the rear, or be adjusted vertically as shown, at the will of the operator; and, as before stated, they may, together with the parts carried thereby, be entirely removed from the typewriter carriage.

I claim:—

1. A typewriter attachment comprising suitable standards attachable to a typewriter carriage at each end of the platen thereof, a rotatable support journaled in the free ends of the standards and adapted to receive an endless transfer band also embracing said platen, and telescoping spring-actuated supports mounted in the standards and adapted to receive paper-web supporting and winding reels on the two ends of the supports.

2. A typewriter attachment comprising end standards adapted to be secured to a typewriter carriage at the two ends of the platen, a rotatable bar joining the upper ends of the standards, and a pair of telescoping spring-actuated longitudinally-slidable bars or supports mounted one in each standard and each having journal bearings for paper-web reels.

3. A typewriter attachment comprising end standards adapted to be secured to a typewriter carriage at the two ends of the platen, a rotatable bar joining the upper ends of the standards, and a pair of telescoping spring-actuated longitudinally-slidable bars or supports mounted one in each standard and each having journal bearings for paper-web reels, one of said bars or supports having its ends hinged to the main body thereof and provided with lugs for holding said ends rigid with the bars.

4. A typewriter attachment comprising end standards adapted to be attached to a typewriter carriage at the ends of the platen, a rotatable rod connecting the free ends of said standards and adapted to support an endless web of impression material also passing around the platen, telescoping spring-actuated laterally-movable bars carried by said standards and adapted to receive the supporting reels of a paper web interior to the web of impression material, and other bars carried by the standards and adapted to receive and support the reels of a paper web exterior to the web of impression material.

5. A typewriter attachment comprising end standards arranged to be secured to a typewriter carriage at the ends of the platen, a rotatable bar connecting the free ends of the standards and carrying flange collars, said bar and platen being adapted to receive an endless web of impression transfer material, telescoping spring-actuated longitudinally-

slidable bars mounted in each standard, one of said bars having hinged ends and lock members therefor, the said bars coöperating to support paper-web reels within the impression web, and other longitudinally-sliding bars mounted in the standards and coacting to support paper-web reels exterior to the impression web.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES O. STEVENSON.

Witnesses:
A. W. McKEANE,
STEPHEN BROWNE.