C. W. & G. W. DAVIS.

TYPE WRITER.

APPLICATION FILED NOV. 9, 1908.

1,054,093.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 1.

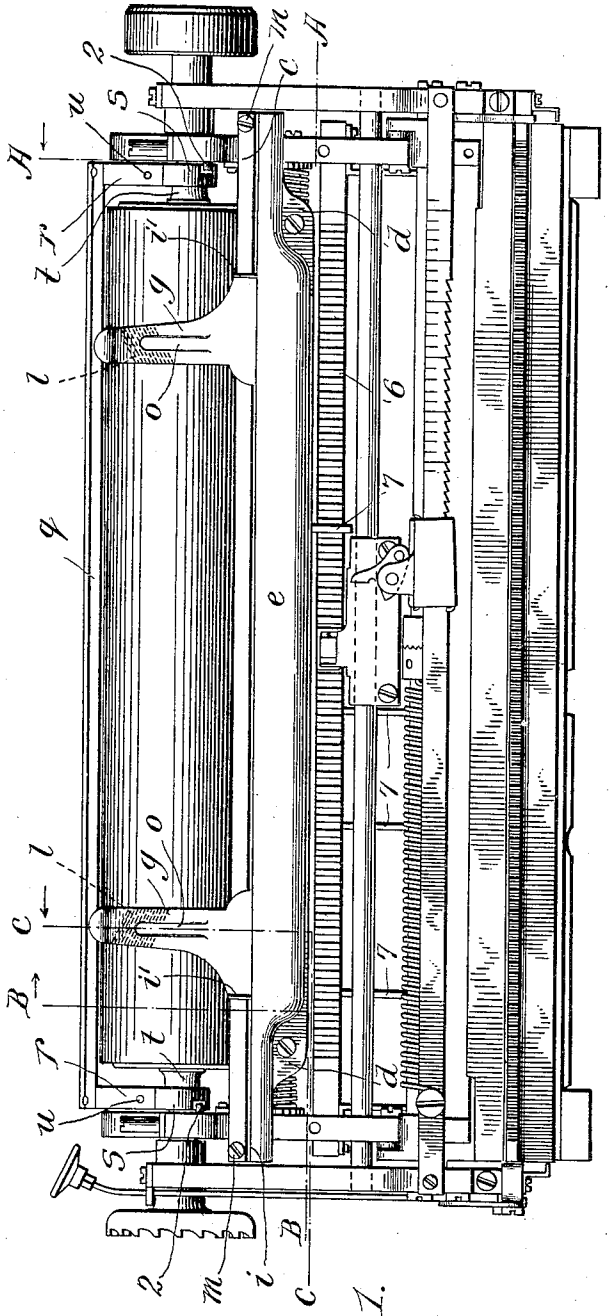


Fig. 1.

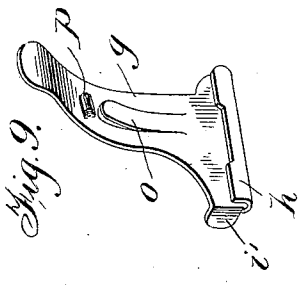


Fig. 9.

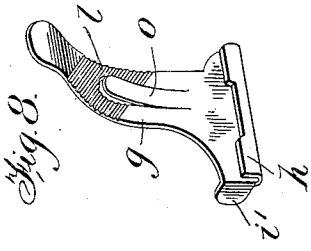


Fig. 8.

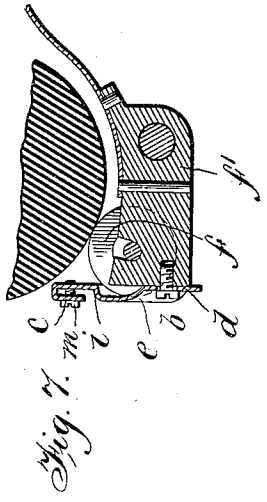


Fig. 7.

Witnesses

Inventor

Charles W. Davis

George W. Davis

By Attorney

William P. McFeat

C. W. & G. W. DAVIS.

TYPE WRITER.

APPLICATION FILED NOV. 9, 1908.

1,054,093.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 2.

Fig. 2.

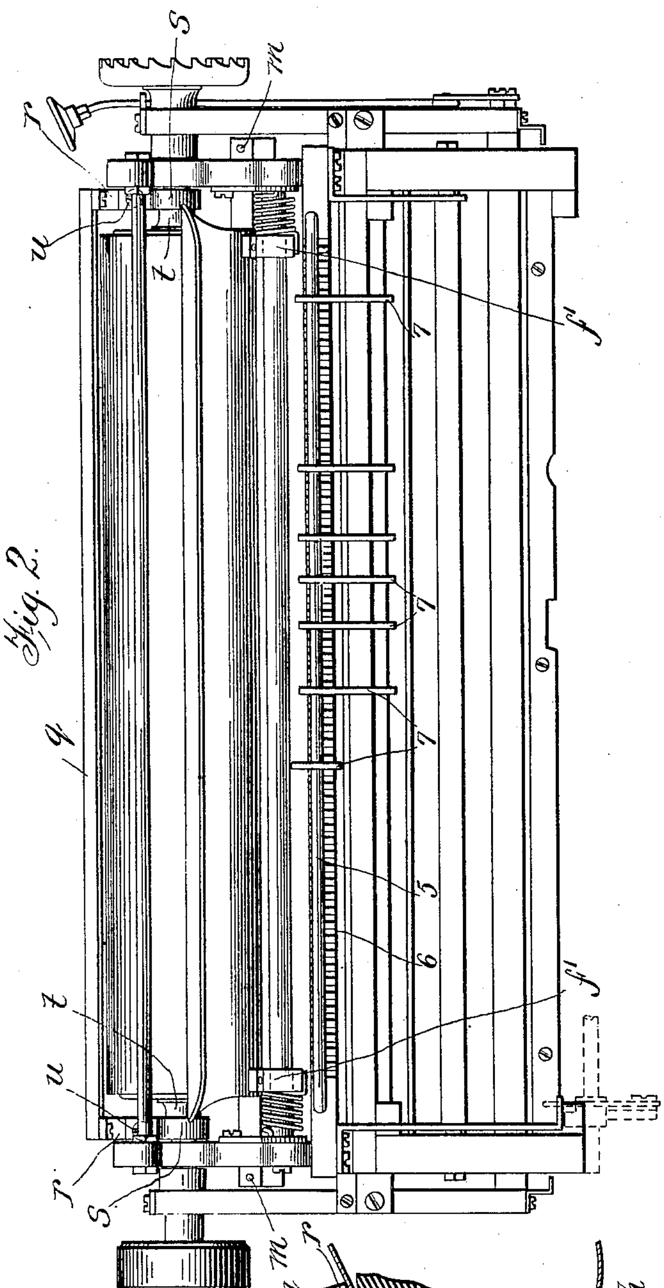


Fig. 5.

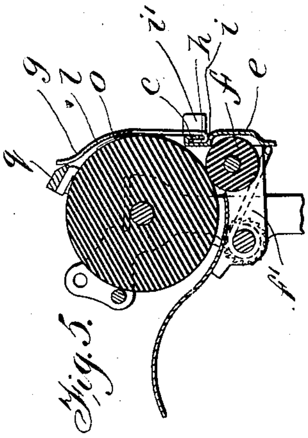


Fig. 4.

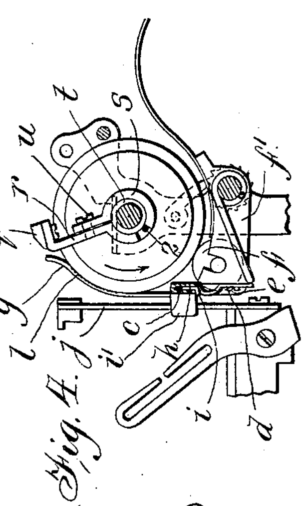
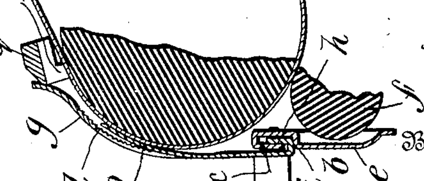


Fig. 6.



Witnesses

Fred. F. Searl

Albert A. Batchelor

Charles W. Davis

George W. Davis

Inventor

By Attorney

William P. McFeat

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

C. W. & G. W. DAVIS.

TYPE WRITER.

APPLICATION FILED NOV. 9, 1908.

1,054,093.

Patented Feb. 25, 1913.

3 SHEETS—SHEET 3.

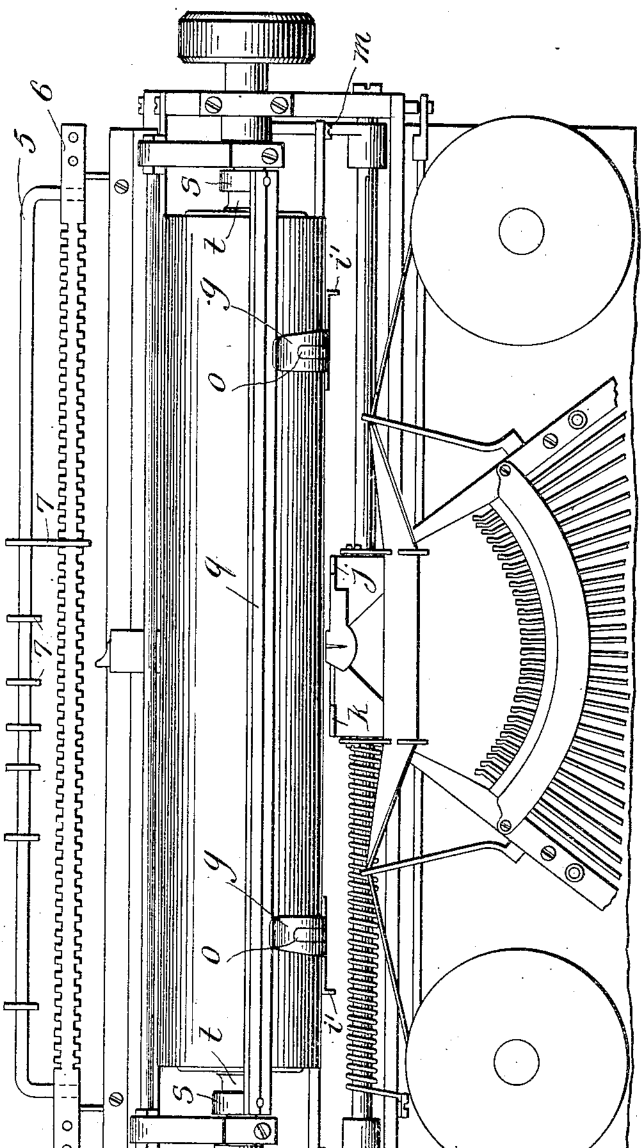


Fig. 3.

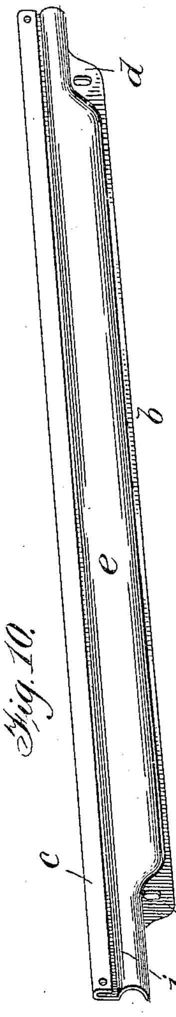


Fig. 10.

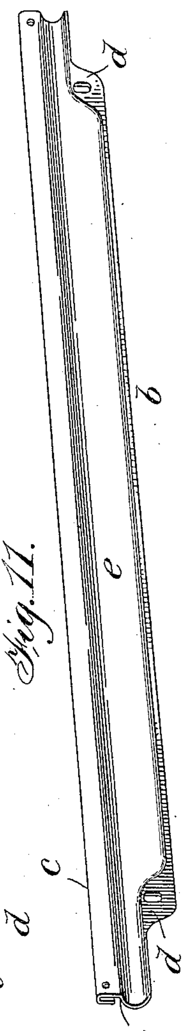


Fig. 11.

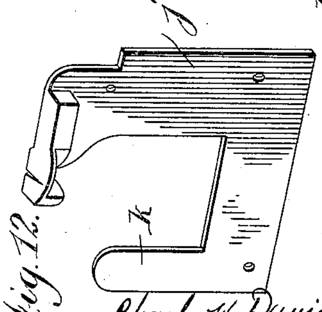


Fig. 12.

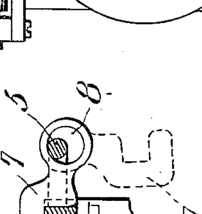


Fig. 13.

Witnesses

Fred J. Sears

Albert W. Batchelor

Charles W. Davis

George W. Davis

Inventor

By Attorney

William P. McFeat

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES WESLEY DAVIS, OF MONTREAL, AND GEORGE WILLIAM DAVIS, OF WESTMOUNT, QUEBEC, CANADA.

TYPE-WRITER.

1,054,093. Specification of Letters Patent. **Patented Feb. 25, 1913.**

Application filed November 9, 1908. Serial No. 461,840.

To all whom it may concern:

Be it known that we, CHARLES WESLEY DAVIS, of the city of Montreal, Province of Quebec, Canada, and GEORGE WILLIAM DAVIS, of Westmount, Province of Quebec, Canada, both subjects of the King of Great Britain, have invented certain new and useful Improvements in Type-Writers; and we do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates particularly to the means for retaining the paper in contact with the platen and it has for its object to provide a combined paper clip guide and cover partially inclosing the feed roll for the purpose of protecting such feed roll from the inky particles knocked off the ribbon by the impact of the type, and furthermore to adapt the clips to act upon the paper and stretch the same tightly upon the platen. An additional object being to automatically prevent the stretching action of the clips during the reversal or turning back of the platen and paper thereon; and such clips are prevented from coming into the path of the type by an extension of the support for the top type guide.

While we have illustrated and described carriage and tabulator stops, we do not herein claim same as such form the subject matter of a divisional application filed March 6, 1911 under Serial No. 612,533.

For full comprehension, however, of our invention reference must be had to the accompanying drawings forming a part of this specification and wherein:

Figure 1 is a face view of the carriage and carriage frame of a type writing machine removed and provided with the invention, the view being taken from the key board toward the rear of the machine and illustrating particularly the combined paper clip and paper stretcher, and combined paper clip guide and feed roll cover; Fig. 2 is a rear view of such carriage and carriage frame illustrating in addition to some of the parts shown in Fig. 1; the new tabulator stops and, their carrier; Fig. 3 illustrates in plan view sufficient of an assembled machine to disclose the improvements in proper positions with relation to the type mechanism and paper supporting and feeding devices; Fig. 4 is a sectional view taken on line A A Fig. 1, and illustrating particularly the new paper clip the rail upon which it is slidably supported, the means for lifting the stretching portions of the clips from the paper and the portion of the type-bar guide engaged by the clips; Fig. 5, is a sectional view taken on line B B Fig. 1, and illustrating the stretching portions of the clips lifted from the paper; Fig. 6 is an enlarged sectional view taken on line C C Fig. 1 and more clearly illustrating the feature of Fig. 5; Fig. 7 is a detail transverse sectional view illustrating the bearing for the feed roll and the manner of supporting the combined paper clip guide and feed roll cover; Fig. 8 is a detail perspective view of one of the clips having the means for stretching the paper formed as an integral part of such clip; Fig. 9 is a similar view showing a modification of the paper stretching means; Fig. 10 is a perspective view of the combined paper clip guide and feed roll cover; Fig. 11 is a perspective view of the reverse side of such combined member; Fig. 12 is a perspective view of the top guide supporting plate illustrating particularly the standard added thereto which, with such support are adapted to act as stops for the paper clips, to prevent the latter intersecting the path of the type bars during writing, or the return of the carriage; Fig. 13 is a detail transverse sectional view of the tabulator bar and the means for connecting the tabulator stops thereto.

The invention comprises a member *b*, consisting of a single piece of sheet metal of substantially **S**-form in cross-section (see Fig. 4) one side edge being folded back upon itself to form a rail *c*, while the main portion is pressed to form a concavity *e* adapted to accommodate and cover the portion of the feed roll *f*, exposed to the ribbon (not shown), and support the clips, thus retaining them in proper position upon the rail, and to impart rigidity to this member *b*, rigidity being essential because the bending of the member would cause the clips to act unevenly upon the paper and to bind on the rail, the ends of the concavity are reduced in width thus producing flanges *d* to afford means for attaching this member to the feed roll bearings *f'*.

A further feature of the invention consists in forming each of the clips, indicated at *g* (and which consists of a curved resilient finger) with an upturned lip *h* to engage the rail and lie slidably upon the ledge *i*

presented by the top of the exterior of the embossment *e*, while each clip also has a laterally extending lug *i'* serving as a means for moving it and a pair of screws *m* act as limiting stops preventing the displacement of the clips from the rail. These lugs are also adapted to respectively engage the top guide support *j* and a standard *k* formed preferably in one piece with the lower horizontal part of such support.

The end portion of the side of each clip toward the paper is formed with diagonal serrations *l*, lying with their upper ends toward the ends of the platen, and a tongue *o* is struck out of the main body of the clip and is sprung toward the platen thus giving it a tendency to bear upon the latter independently of the serrated end. If desired small diagonally arranged rollers, *p*, may be mounted in the ends of the clip instead of having the serrations, as shown in Fig. 9 without departing from the spirit of the invention. These clips can be moved to and fro along the rail *c* and thus be caused to act on the side edges of the paper being written upon whatever may be the width of the latter, and as the platen is rotated by the operator before writing each new line the serrations *l* (or rollers *p*) tend to make the side portions of such paper move outwardly, the effect being that the paper is stretched laterally and an even surface is presented. When the platen is reversed or turned back the action of the stretching devices would be converted into a contracting action, it is therefore arranged that a portion of each clip with the stretching means shall be automatically lifted from the paper, thus preventing the stretching action, the tongue *o* remaining in bearing relation with the paper and holding it in place. The preferred means for this purpose consists of a bar *q*, of wedge-like cross-sections carried by a pair of arms *r* formed to present friction bearings *s* clamped upon the steel hubs *t* of the platen by means of screws *u*, so that they will move with the hubs within certain limits and, when stalled, permit the hubs to rotate independently of them. These arms preferably consist of brass or other metal suitable for bearings. A pair of pins 2, carried by the side frames of the vibratory carriage register with slots 3 on the outer edge of each of the bearings *s* and limit the angular displacement of the arms and consequently the wedge-like bar *q* in order that when the platen is reversed or turned back such bar accompanies it to a position beneath the ends of the clips where its carrying arms are stalled by the pins 2 and such ends of the clips and the stretching devices are lifted from the paper. Upon the first turn of the platen in the direction of normal feed the bearings will accompany it until the arms are again stalled by the pins 2, in which latter position the wedge bar is clear of the ends of the clips and permits the stretching devices to again act upon the paper.

Another feature of this invention relates to the tabulator stops and consists of a rod 5 carried by the tabulator bar 6 and the stops 7 each having its eye 8 sufficiently larger in diameter than the rod to allow freedom of movement to enable the stops to be readily set in place, removed, and shifted along the rod to different positions with relation to the bar. The advantage being that the stops are prevented from being lost and therefore are always available.

What we claim is as follows:—

1. In a typewriting machine, the combination with a platen, a feed roll and a ribbon,—of paper-clips for the platen and a guide for said paper-clips comprising a plate which is pressed to form a concavity adapted to receive the side of the feed roll adjacent to the ribbon and formed with a turned over edge constituting a rail for the paper-clips, the said concavity forming a shoulder upon which the paper-clips rest.

2. In a typewriting machine, the combination with the vibratory carriage, a platen and feed roll,—of a cover for the feed roll consisting of a plate of substantially S-form in cross-section, means for attaching the said plate to the side frames of the vibratory carriage and a pair of paper clips slidably attached to the said plate.

3. In a typewriting machine, the combination with the platen and means for feeding the paper over such platen, of a paper clip the bearing surface whereof presents a device of the same thickness throughout its length and extending across such bearing surface, diagonally with relation to the axis of the platen for acting upon the paper upon the platen and stretching the same toward the ends thereof.

4. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a paper clip the bearing surface whereof carries a diagonally set roller of the same thickness throughout its length for acting on the paper upon the platen and stretching the same toward the ends of the platen.

5. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable independently along the platen and each having a roller mounted in its bearing end of the same thickness throughout its length and extending across the same diagonally with relation to the axis of the platen, the roller of one clip being at an opposite angle to the roller upon the other clip.

6. In a typewriting machine the combination with the platen and means for feeding

the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, and means for preventing the action of such devices when the paper feed is reversed.

7. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed; and means automatically actuated by the paper feed mechanism for preventing the action of such devices when the paper feed is reversed.

8. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed; and a bar for lifting the clips when the latter is reversed, clamps secured to the hubs of the platen by friction connection and carrying such bar, and means permitting limited movement of such clamps with the platen.

9. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, auxiliary means adapted to continuously clip the paper independently of the said devices; and means for preventing the action of such devices when the paper feed is reversed.

10. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, such clips having tongues adapted to clip the paper independently of such devices; and means for preventing the action of such devices when the paper feed is reversed.

11. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, auxiliary means adapted to continuously clip the paper independently of the said devices; and means automatically actuated by the paper feed mechanism for preventing the action of such devices when the paper feed is reversed.

12. In a typewriting machine the combination with the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, such clips having tongues adapted to clip the paper independently of such devices; and a bar for lifting the stretching portions of the clips when the platen is reversed, clamps secured to the hubs of the platen by friction connection, and carrying such bar, and means permitting limited movement of such clamps with the platen.

13. In a typewriting machine the combination with the carriage frame the platen and means for feeding the paper over such platen, of a pair of paper clips adjustable along the platen, and carrying devices adapted to stretch the paper laterally when it is moved in the direction of normal feed, auxiliary means adapted to continuously clip the paper independently of the said devices; and a bar for lifting the stretching portions of the clips when the latter is reversed, clamps secured to the hubs of the platen by friction connection and carrying such bar, and a pin on the carriage frame engaging a slot in one of the clamps for permitting limited movement of such clamps with the platen.

14. In a typewriter of the sliding type bar type, comprising the combination of a platen; a top type guide supporting plate presenting a vertical supporting portion; a standard at the opposite side of the top type guide to the said vertical supporting portion of the plate; a pair of adjustable paper clips one of which has a lug adapted to engage such supporting plate, and the other a lug adapted to engage the standard for the purpose of preventing such clips from intersecting the path of the type.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

CHARLES WESLEY DAVIS.
GEORGE WILLIAM DAVIS.

Witnesses:
FRED J. SEARS,
ARTHUR H. EVANS.