

Aug. 26, 1924.

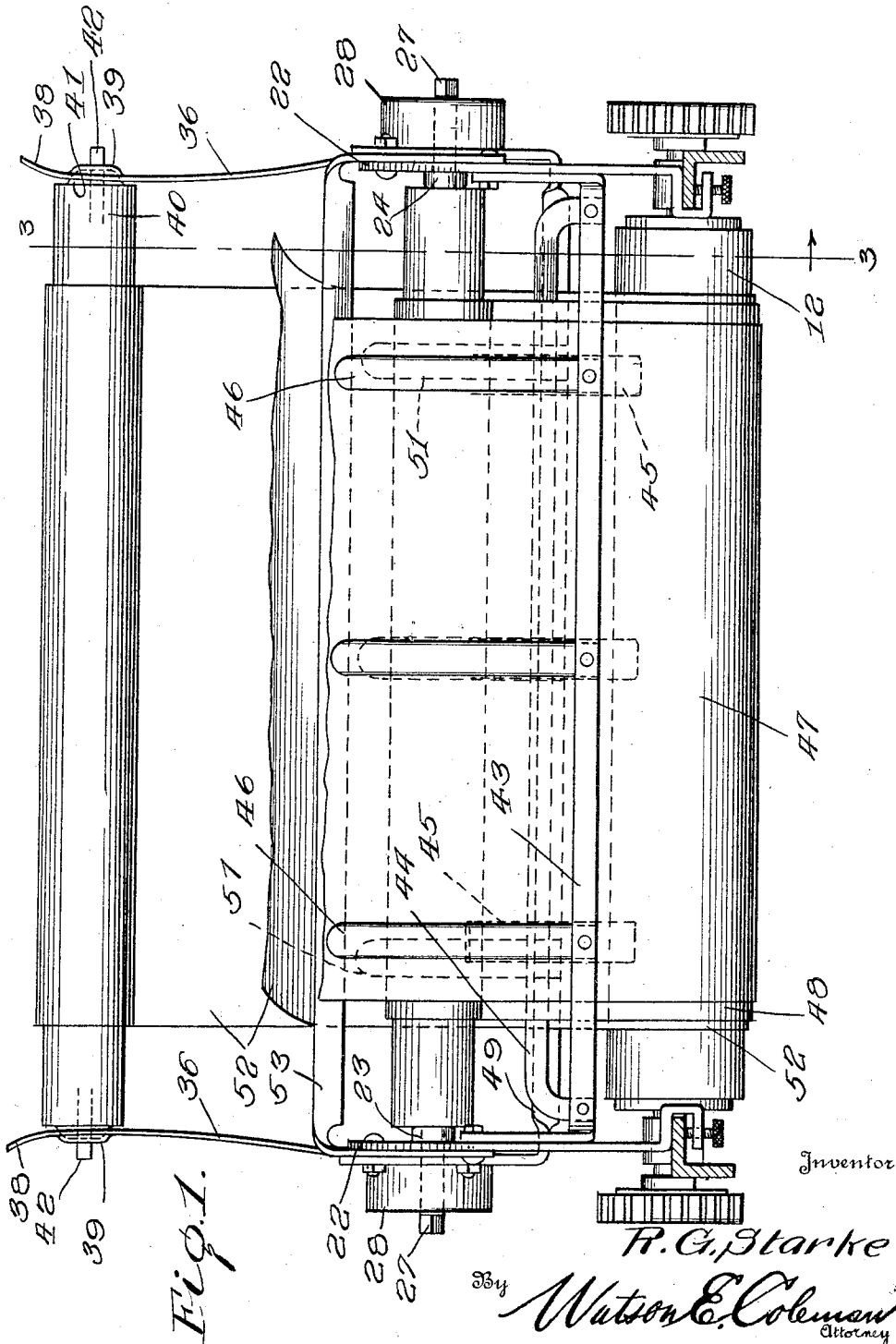
1,506,031

R. G. STARKE

TYPEWRITER ATTACHMENT

Filed Feb. 28, 1923

2 Sheets-Sheet 1



Aug. 26 , 1924.

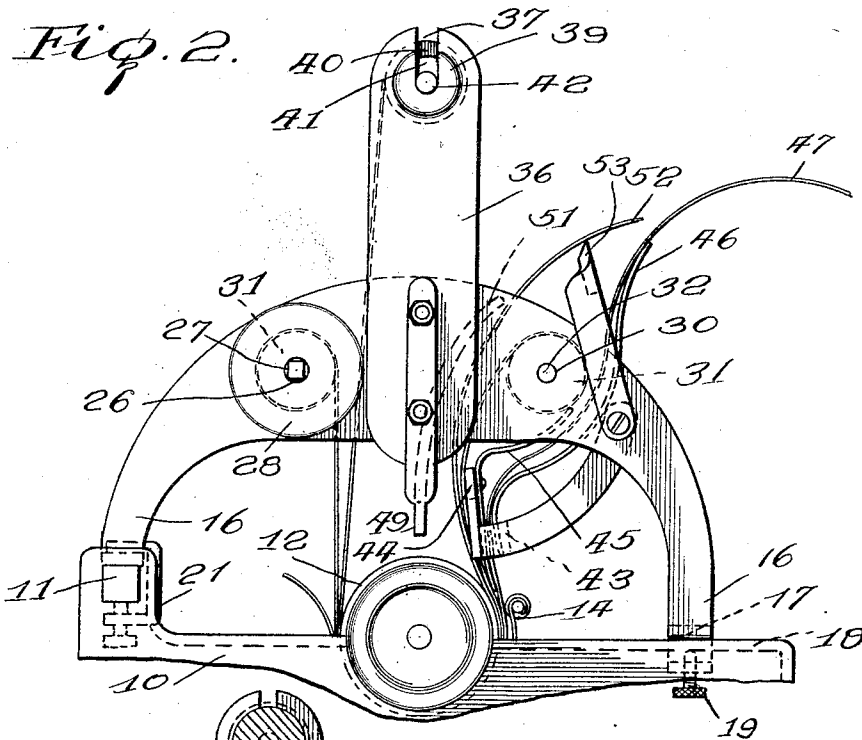
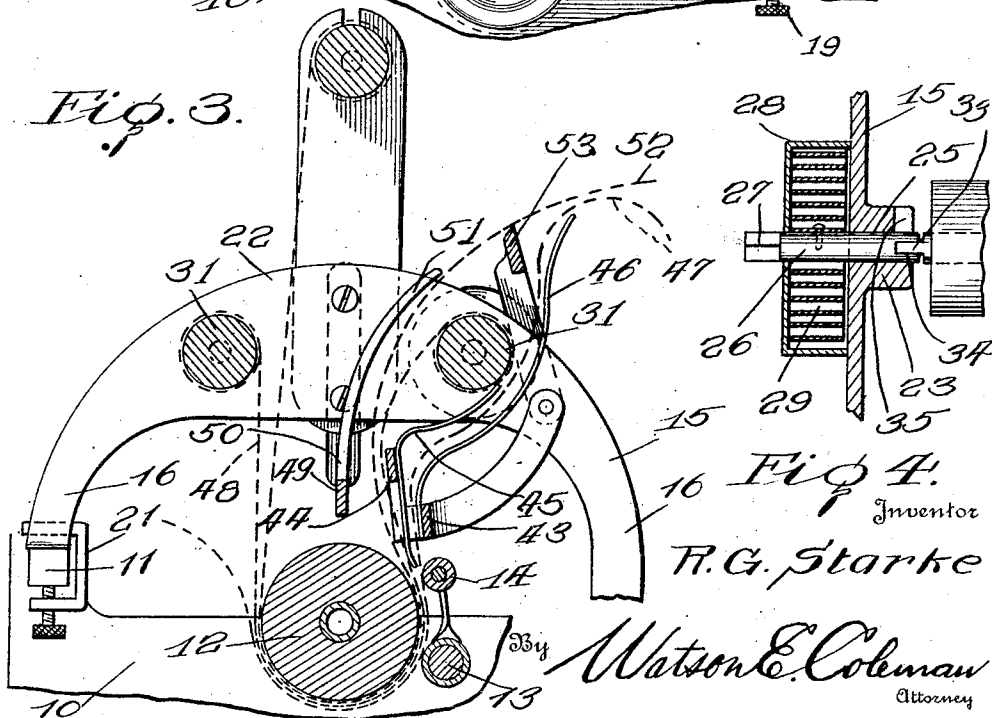
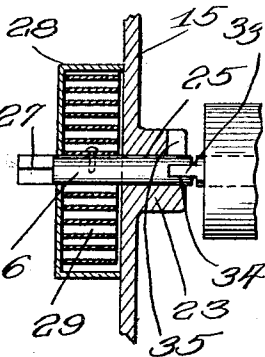
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TYPEWRITER ATTACHMENT

Filed Feb. 28, 1923

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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TYPEWRITER ATTACHMENT.

Application filed February 28, 1923. Serial No. 621,872.

To all whom it may concern:

Be it known that I, ROBERT G. STARKE, a citizen of the United States, residing at Delray, in the county of Palm Beach and State of Florida, have invented certain new and useful Improvements in Typewriter Attachments, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to typewriter attachments, and more particularly to a device attachable to the carriage of a typewriter to be supported thereby, and having means for holding carbon and second sheet paper for continual use with the carriage.

An important object of the present invention is to provide means for supporting above the carriage of a machine carbon paper to be utilized with the platen of the carriage, the carbon being mounted at its opposite ends upon a pair of rollers having novel and improved means maintaining the carbon under tension preventing misalignment or crumpling of the same.

A further object of the invention is to provide means for feeding the carbon and a second sheet or carbons and second sheets to the platen roller having means whereby the second sheets may be severed at a desired point.

A still further object of the invention is to provide a device of this character which may be simply and inexpensively constructed, which is readily operated, and which may be readily applied to the carriage.

An additional object of the invention is to provide a device of this character which by slight changes in the attaching means employed for securing the same to the carriage may be applied to the carriages of various makes of typewriters.

These and other objects I attain by the construction and arrangement shown in the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein like reference characters designate like parts throughout.

In the drawings:—

Figure 1 is a front elevation showing a typewriter attachment constructed in accordance with my invention applied to the carriage of a typewriter;

Figure 2 is a side elevation thereof;

Figure 3 is a section on the line 3—3 of Figure 1 and

Figure 4 is a detail sectional view showing the mounting of the drive pintle of the carbon rollers.

Referring now more particularly to the drawings, the numeral 10 designates side members of a typewriter carriage, 11 the rack bar connecting the rear ends of the side bars, 12 the platen, 13 the paper tensioning device coacting with the platen and 14 the platen guides for guiding the edges of the paper during its passage about the platen. The parts hereinbefore set forth are all parts of the normal construction of a typewriter carriage and form no part of my invention.

The numeral 15 designates inverted U-shaped members, the ends of the legs of which are provided with means for engaging the carriage at opposite sides thereof, one leg of each end member 15 in the present instance being shown as provided with a channel end 17 receiving a flange 18 of a side member 10 and having a clamping screw 19 for engaging the flange 18, the other of the legs being shown as having an offset end 20 which is engaged by a clamp 21 embracing the rack bar 11 hereinbefore referred to. These forms of construction may be altered as desired, the ends of the legs merely engaging against rigid portions at the ends of the typewriter carriage at the front and back thereof. The bight portions 22 of the end members 15 are relatively widened as indicated, and have extending inwardly from their inner faces a pair of lugs 23 and 24. Each end member has formed therethrough at the lug 23 a bore 25 opening therethrough in which is rotatably mounted a shaft 26 having a squared shank 27 at its outer end. Secured to the outer face of each end member 15 is a casing 28 through which the corresponding stub shaft 26 extends, the stub shaft having secured thereto within the casing one end of a spiral spring 29, the outer end of which is secured to the casing. The spiral springs 29 at opposite ends of the casing are oppositely attached so that upon rotation of the stub shafts 26 thereof in the same direction, one of the springs 29 will be unwound and the other thereof wound. The lugs 23 have formed therein pintle sockets 30, and the lug 23 of each of

the end members aligns with the lug 24 of the other of the end members.

The numeral 31 indicates rollers each roller 31 having at one end a pintle 32 for engagement in a socket 30 of the lug 24 and at the opposite end with a flattened pintle 33 adapted to be engaged in a slot 34 formed in the inner end of the stub shaft 26 and in which it may be engaged by movement through a slot 35 formed in the lug 23 and with which the slot 34 of the stub shaft 26 is alignable. This slot is formed at the upper end of the lug and the roller is accordingly entered from the top of the lug and is held in position within the slot 34 of the shaft by gravity when aligned with this slot. When rotated or in any position except in alignment with the slot 35 of the lug 23, the pintle 33 is unremovable from the end of the shaft.

Secured to each end member at the right portion thereof and extending upwardly therefrom is a spring arm 36, the spring of the arms urging the same toward one another. Each arm 36 has its upper end furcated, as indicated at 37, the upper extremity of the furcated portion being bowed outwardly, as indicated at 38. At the lower end of the furcation a semi-spherical socket 39 is formed having as its center the lower end of this furcation. The numeral 40 designates a second sheet roller having at the ends thereof semi-spherical portions 41 having axial pintles 42 of a size to enter the furcations 37 of the arms 36. The distance between the ends of the roller 40 proper is greater than the normal distance between the spring arms 36. This roller is engaged between the arms by forcing the same downwardly with the pintles engaged in the furcations 37. The semi-spherical portions 41 will ride upon the arms at the sides of the furcations, forcing the arms outwardly until the semi-spherical socket 39 is reached when the arms will spring inwardly clamping against the arms of the roller. When in this position the roller is held against upward movement and has a braking effect applied thereto by the engagement with its ends of the arms 36. At the same time it is rotatably mounted not only upon its pivots but upon the semi-spherical portions 41 at the ends of the roller.

By the construction above set forth the rollers 31 are supported in spaced relation to and vertically above the platen 12 of the carriage and the roller 40 supported above the rollers 31 and in such a manner that it is readily removable for the placement of a fresh supply of paper. Assuming now that the roller 40 has thereon a supply of second sheet stock and the rollers 31 a supply of carbon which is wound upon one of the rollers and passed about the platen roller 12 between the platen roller and the sheet ten-

sioning device 13 and engaged with the other of the rollers, the second sheet being passed about the platen between the carbon sheet and the platen, it will be seen that if a first sheet be inserted at the back of the platen roller in the usual manner, rotation of the platen will cause the carbon to be withdrawn from the rear roller 31 and fed toward the forward roller 31. The forward roller 31 has the spring 29 of the stub shaft 26 associated therewith fully wound whereas the spring of the stub shaft 26 of the rearmost roller 31 is released. This paper as drawn from the rear roller 31 of the platen is fed to the forward roller 31 and is wound thereon by the rotation of the roller under the influence of the spring 29. At the same time paper is drawn from the roller 40 as needed and fed to the platen for use. The tension of the springs 29 will be such that it may be overcome by the frictional engagement provided by the tensioning device 13 against the platen 12. Accordingly the carbon paper will continue to be fed from the rear or carbon feeding roller 31 to the forward or carbon rewind roller 31. When the paper has been completely withdrawn from the carbon holding roller, the spring thereof will be tensioned and it will be obvious that by releasing the tension 13 from the platen 12 this spring will act to rewind the paper upon the carbon holding roller until the tension of the springs 29 of the rollers 31 becomes balanced. The completion of rewinding upon the carbon holding roller may be accomplished in either of two manners; a key may be applied to the squared end of the stub shaft 26 associated therewith and rotated to draw the paper from the roller 31 against the increasing tension of its spring 29, or the tensioning device 13 of the platen may be applied and the platen rotated to accomplish this result.

Secured to the forward legs of the end members 15 are the ends of a bar 43 extending longitudinally of the platen and in proximity to the paper guide 14 thereof. To this bar adjacent its ends is secured the ends of a second bar 44 paralleling the bar 43 and positioned slightly above and rearwardly thereof. To the bar 44 are secured spring fingers 45, the lower ends of which extend into proximity to the platen 12 and the upper ends of which curve about the forward face of the forward roller 31 in spaced relation thereto. To the bar 43 are secured spring fingers 46, the lower ends of which are vertically spaced above the lower ends of the spring fingers 45, these fingers curving outwardly and upwardly from the bar 43. Between the spring fingers 45 and 46 the original sheet 47 from the platen is guided, thus preventing this sheet from falling downwardly and interfering with the op-

erator's view of the platen. The bar 44 serves as a guide about which the carbon sheet 48 passes from the platen 12 to the rewind roller 31. Secured to the bight portions of the end members 15 is a third bar 49 having extending upwardly therefrom fingers 50 which are in spaced relation to the rewind carbon roller 31 and have their upper ends curved forwardly, as indicated at 51.

15 The second sheet 52 is guided between the bar 49 and fingers 50 and the carbon sheet 48 upwardly until its end engages against the curved portions 51 of the fingers 50. This curvature causes the second sheet to be directed outwardly and over the edge of a knife 52 extending longitudinally of the platen and having its ends secured to the end members 15. By engaging the second sheet with the hand, the same may be severed 20 against the knife 52 at any desired point.

From the foregoing it will be obvious that a carbon sheet 48 is at all times held under tension and accordingly cannot become wrinkled or folded upon the platen. It will 25 furthermore be obvious that all of the sheets employed in the machine will be fully guided so that jamming thereof is prevented. While I have disclosed in the present instance a single second sheet roller and a single pair of carbon rollers, it will be obvious that the construction could be extended to provide for several duplicates without in any manner departing from the spirit of my invention and I accordingly do not limit myself to the 30 specific structure hereinbefore set forth except as hereinafter claimed.

I claim:—

1. An attachment for typewriters comprising end members adapted for engagement with the carriage of the typewriter to be supported thereby, a carbon sheet holding roller and a carbon sheet rewinding roller having their ends supported by said end members for rotation and springs for said rollers tending to rotate the rollers in opposite directions. 40

2. An attachment for typewriters comprising end members adapted for engagement with the carriage of the typewriter to be supported thereby, a carbon sheet holding roller and a carbon sheet rewinding roller having their ends supported by said end members for rotation, and springs for said rollers tending to rotate the rollers in opposite directions of equal strength and each of insufficient strength to shift the carbon sheet engaged therewith against the action of the paper tensioning device of the carriage platen. 50

3. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers passing about said platen and secured to a 60

second roller, and means for tensioning said sheet at opposite sides of the platen.

4. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers passing about said platen and secured to a second roller, and means engaged with said rollers rotating the rollers in a direction tending to withdraw the carbon sheet from the platen. 70 75

5. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers passing about said platen and secured to a second roller, and means engaged with said rollers rotating the rollers in a direction tending to withdraw the carbon sheet from the platen, each of said means being insufficient to cause rotation of the platen. 80 85

6. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers passing about said platen and secured to a second roller, a second sheet wound upon a third roller and extending between said platen and said carbon sheet, said carbon sheet intermediate the platen and the second roller serving as a guide to prevent folding of the free end of the second sheet in one direction, the carbon sheet engaging said second roller at the side thereof next adjacent the second sheet, and fingers paralleling such portion of the carbon sheet preventing folding of the second sheet in the opposite direction. 90 95 100 105

7. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers, passing about said platen and secured to a second roller, a second sheet wound upon a third roller and extending between said platen and said carbon sheet, said carbon sheet intermediate the platen and the second roller serving as a guide to prevent folding of the free end of the second sheet in one direction, fingers paralleling such portion of the carbon sheet preventing folding of the second sheet in the opposite direction, and a knife positioned above said second roller, said fingers directing said second sheet over said knife. 110 115 120

8. An attachment for typewriters embodying a carriage having the usual platen comprising a structure carried by said carriage including a plurality of rollers, a carbon sheet wound upon one of said rollers, passing about said platen and secured to a second roller, a second sheet wound upon a third 125 130

roller and extending between said platen and said carbon sheet, said carbon sheet intermediate the platen and the second roller serving as a guide to prevent folding of the free end of the second sheet in one direction, fingers paralleling such portion of the carbon sheet preventing folding of the second sheet in the opposite direction, and a knife positioned above said second roller, said fingers directing said second sheet over said knife, the mounting of the third roller including means maintaining the roller in alignment with the platen and tensioning the roller to resist rotation thereof.

9. In combination with a shiftable carriage of a typewriter including end frames, a rack bar connecting the rear ends of the end frames and a platen rotatably supported by the end frames, comprising a pair of end members each embodying a pair of legs one of which clampingly engages said side

member adjacent the forward end thereof and the other of which engages said rack bar, a pair of rollers carried by said end members and rotatable thereon, means engaging the rollers tending to rotate the same in opposite directions, a carbon sheet wound upon one of the rollers, passing about the platen and engaged with the other of the rollers, a spring arm secured to each of said end members and extending upwardly therefrom and having a furcated upper end, said spring arms being provided in adjacent faces thereof at the lower ends of the furcations thereof with sockets, and a second sheet roller provided upon its ends with projections adapted to engage in said sockets and with pintles rotatable in said furcations.

In testimony whereof I hereunto affix my signature.

ROBERT G. STARKE.