

No. 649,513.

Patented May 15, 1900.

F. P. GORIN.

ATTACHMENT FOR TYPE WRITING MACHINES.

(Application filed Apr. 28, 1899.)

(No Model.)

Fig. 1.

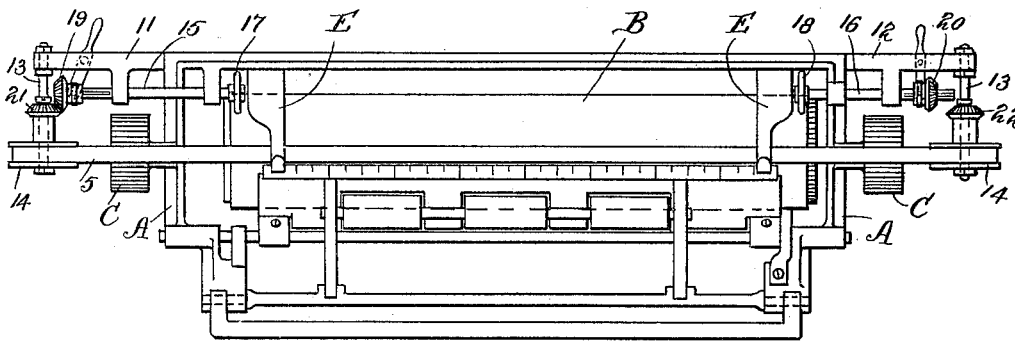


Fig. 2.

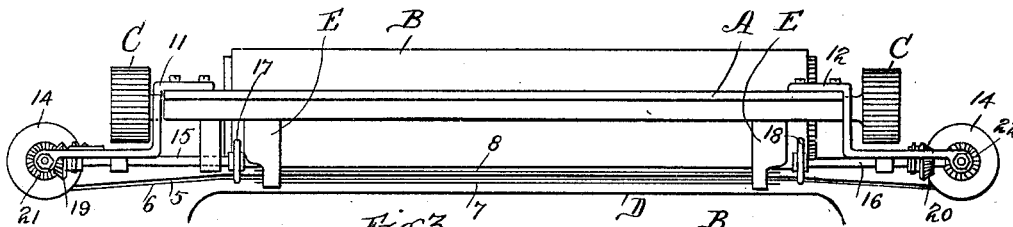


Fig. 3.

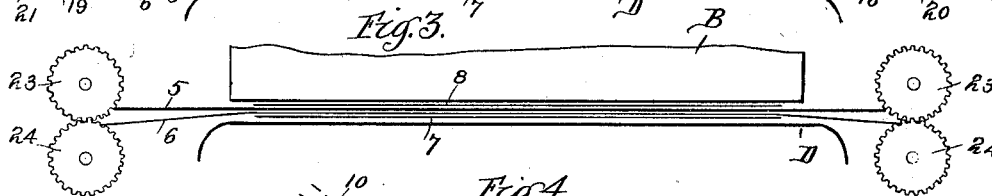
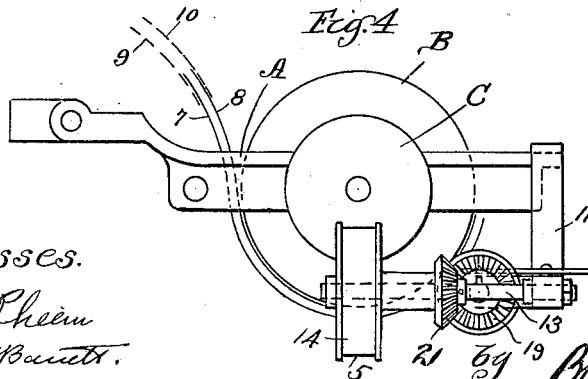


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

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CHARLES F. LANGDON, ALFRED R. URION, FRANK B. GIFFORD, AND
REUBEN S. DICKINSON, OF SAME PLACE.

ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 649,513, dated May 15, 1900.

Application filed April 28, 1899. Serial No. 714,783. (No model.)

To all whom it may concern:

Be it known that I, FRED P. GORIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois,
5 have invented a new and useful Attachment for Type-Writing Machines, of which the following is a specification.

This invention relates to attachments for type-writing machines.

10 One object of the invention is to provide an auxiliary ink-ribbon attachment for type-writing machines which may be readily applied to any of the standard constructions and makes of type-writing machines and
15 whereby two or more original copies may be made on the machine at the same time.

Other objects of the invention will appear more fully hereinafter.

20 The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally more particularly pointed out in the appended claims.

25 Referring to the accompanying drawings and to the various views and reference-signs appearing thereon, Figure 1 is a bottom plan view of paper-feed carriage of a type-writing machine, showing the auxiliary ink-ribbon attachment applied thereto. Fig. 2 is a front
30 elevation of the paper-carriage, showing the application of the auxiliary ribbon attachment, unessential parts being omitted. Fig. 3 is a similar view, somewhat in diagram, parts broken out and parts omitted, illustrating a slightly-different arrangement of the attachment of my invention embodied in the principles thereof. Fig. 4 is an end view of the paper-carriage.

40 Referring to the drawings, reference-sign A designates the paper-feed carriage; B, the feed-roll, suitably journaled in the carriage-frame and having the hand-grips C at the ends thereof, by which it may be rotated by
45 hand when desired, and D designates the usual and ordinary ink-ribbon. These parts may be of any of the usual standard makes of machines or any suitable or desirable construction and arrangement and may be asso-

ciated with the usual or any ordinary or well-known arrangement of apparatus (not shown) for actuating the same in a manner familiar and well known to every type-writer operator. Such operating mechanism is therefore
55 not shown, and further description thereof in the present application is unnecessary.

The primary object of my invention is to provide an arrangement wherein duplicate original copies may be made simultaneously. In the ordinary operation of a type-writing
60 machine the record-paper is fed through the machine around the feed-roll B and under suitable guides, whereby it is held in proper position, such paper passing over the usual ink-ribbon D and between such ribbon and
65 the feed-roll. Heretofore in the usual operation of making duplicate copies it has been the usual custom to employ sheets of carbon-paper placed between the leaves of the record-paper, so that the stroke of the key in
70 writing would not only impress the character or letter from the ink-ribbon to the surface of the immediately-overlying record-sheet, but the same stroke would impress the same letter or character from the sheet or sheets of
75 carbon-paper placed between the additional sheets of record-paper employed, thus producing the duplicate copies required. This operation possesses objectionable features, such as the handling of the sheets of carbon-paper and
80 the prearrangement of such carbon-sheets between the sheets of record-paper upon which the original and carbon copies of the record are to be made, and each set of carbon copies required involves a separate handling of the
85 sheets of carbon and a separate arrangement of the carbon-sheets between the record-sheets. This separate handling and proper arrangement of the sheets consumes time, which in a busy establishment is a matter of
90 material consequence, and besides the carbon-paper wears out rapidly, and hence becomes a material item of expense, and, moreover, it is difficult, if not impossible, to produce a carbon copy which may be press-copied.

95 It has been proposed to remedy the objections above noted by employing a duplicate arrangement of ink-ribbons; but the diffi-

culty heretofore experienced in employing a duplicate arrangement of ink-ribbons has been the fact that when an ink-ribbon operates between adjacent sheets of record-paper each stroke of a key will cause an impression to be made on both sheets of the record-paper, the one impression—namely, the one on the under sheet—being reversed. This of course is objectionable, and it has been endeavored to avoid this objection by running through the machine with the record-sheets an additional sheet of paper to receive the reverse impression from the under side of the auxiliary ink-ribbon. This, however, introduced another objectionable feature—namely, the handling of the additional protecting-sheet—which involves very nearly as much care and handling as the carbon-sheets in the common method, and besides such protecting-sheet rapidly becomes impregnated with the ink from the ink-ribbon and will in a short time give off objectionable smudging during the writing operation to the sheet of paper which it is designed to protect.

To avoid the objections above noted and to provide a simple arrangement adapted to be applied to any standard style or make of type-writing machine, I provide one or more auxiliary ink-ribbons 5, arranged parallel with the ordinary or usual ink-ribbon D and interposed between such ink-ribbon D and the feed-roll B of the machine, and I provide such auxiliary ink ribbon or ribbons 5 with a protecting strip or sheet 6, of paper, cloth, or other suitable material, arranged to move or travel with the auxiliary ink-ribbons. In the particular form illustrated I have shown one such auxiliary ribbon 5, with its protecting-strip 6; but it is obvious that two or more of such auxiliary ribbons may be employed, each provided with its protecting-strip 6, within the spirit and scope of my invention.

In operation one sheet of record-paper (indicated at 7) is passed through the machine between the ordinary ink-ribbon D and the auxiliary ink-ribbon 5, the protecting-strip 6 being arranged between the under surface of the ink-ribbon and the upper surface of the sheet 7, as clearly indicated. A second record-sheet 8 is arranged to pass over the auxiliary ink-ribbon 5 and between the same and the feed-roll B. The same arrangement is observed where two or more auxiliary ink-ribbons, with their associated protecting-strips 6, are employed. Thus when the type-keys are operated the sheet of record-paper 7 receives the impression of the character on its under surface from the ink-ribbon D and is protected from a reverse impression from auxiliary ribbon 5 by the protecting-strip 6, while the under surface of record-sheet 8 receives the impression of the same character from the auxiliary ink-ribbon 5 upon the under side of such sheet 8, and so on.

In priming the machine for initial opera-

tion care must be taken to properly introduce the record-sheets 7 8, &c., so that the under sheet 7 will always pass between the ordinary ink-ribbon D and the first auxiliary ink-ribbon 5 and the subsequent sheets of record-paper will pass between adjacent auxiliary ink-ribbons. After the machine has been initially primed in the manner thus indicated additional sheets may be introduced without difficulty, as indicated in Fig. 4, by placing the front edges 9 10 of the succeeding sheets respectively under and over the rear edges of the previously-introduced set of sheets 7 8. Thus as rapidly as one set of record-sheets is completed fresh record-sheets are introduced and fed into the machine.

The auxiliary ink-ribbons 5 may be suitably supported and arranged in any desired manner. As illustrative of an operative arrangement, but to which my invention is not limited, I have shown brackets 11 12 suitably secured at the ends of the paper-feed carriage A, each bracket supporting a shaft 13, upon which is mounted a spool 14, upon which the auxiliary ribbon is wound, the relative arrangement of the spools 14 being such that the portion of the ribbon 5 extending from one spool to the other occupies the desired relation and position with respect to the ink-ribbon D and the feed-roll B, as above explained, and if more than one auxiliary ink-ribbon is employed the additional ones being supported upon additional spools. In practice I prefer the periphery of spools 14 to be slightly below the plane of the operating-leg of the ribbon, as clearly indicated in Fig. 2, the ribbon passing over the guides E, by which the edges of the record-sheets are held to the roll B—that is, between such guides and the roll B—thus imparting a desirable tension to the ink-ribbon, and in the arrangement shown in Fig. 2, wherein the protecting-strip 6 for the auxiliary ink-ribbon is applied directly to the under side of the ribbon, such protecting-strip may be wound with the ink-ribbon upon the spools 14. If desired, however, the protecting-strip 6 may be wound on a separate spool, as indicated in Fig. 3. In either case the protecting-strip is separate from and independent of the auxiliary ink-ribbon and when worn or impregnated or saturated with ink may be removed and replaced by another protecting-strip without necessitating any renewal of the ink-ribbon.

Any suitable or convenient mechanism for imparting a feed to the auxiliary ribbon or ribbons and the protecting strip or strips may be employed. As merely illustrative of an operative mechanism embodying its principles I have shown a shaft 15 16, journaled in each of the brackets 11 12 and each carrying a friction-roller 17 18, arranged to contact with the periphery of feed-roll B, by which such shafts are rotated whenever the paper-feed roll B is rotated. Each shaft 15 16 carries a gear 19 20, splined thereon and

adapted to be moved longitudinally of such shafts to carry the same into and out of engagement, respectively, with bevel-gears 21 22, connected to the spools 14. By moving 5 the gear 19 into engagement with gear 21 and correspondingly moving gear 20 out of engagement with gear 22 it will be seen that whenever feed-roll B is rotated to advance the record-sheets through the machine a cor- 10 responding rotation is imparted to shaft 15 and thence through the intermeshing gears 19 and 21 to the auxiliary ribbon-spool 14 at the left of the machine, thereby feeding the auxiliary ink-ribbon from the spool on the 15 right side of the machine to the spool on the left side and coiling the same on the latter. Similarly, when the entire length of auxiliary ribbon has been thus fed to the spool on one side of the machine the feed-gears for 20 spool at the opposite side of the machine may be thrown into action and the ink-ribbon fed back again to its original spool. In this manner clear sharply-defined original copies may be made and the life of the auxiliary ribbon 25 greatly prolonged before renewal thereof is required.

In the construction shown in Fig. 3, wherein the protecting-strip 6 is wound on separate spools, a suitable arrangement of inter- 30 meshing gears 23 24 may be employed to secure coincidence of travel between each auxiliary ribbon and its protecting-strip.

From the foregoing description it will be seen that I provide an exceedingly-simple ar- 35 rangement capable of being applied to or removed from any of the standard makes of type-writing machines, wherein one or more original ink-copies can be easily and rapidly made, wherein the objections to the use of car- 40 bon-sheets are avoided, and wherein duplication of copies may be effected rapidly and expeditiously and without modifying the construction or usual operation of the machine.

It will be obvious that many variations and 45 changes in the details of construction and arrangement would readily suggest themselves to persons skilled in the art and still fall within the spirit and scope of my invention. I do not desire, therefore, to be limited or re- 50 stricted to the exact details of construction and arrangement shown and described; but,

Having now set forth the object and nature of my invention and a construction embodying the principles thereof and having de- 55 scribed such construction, its function, and mode of operation, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent of the United States, is—

60 1. In a type-writing machine, the combination with the paper-feed carriage, the paper-feed roll, and the usual ink-ribbon, of an auxiliary ink-ribbon carried by said feed-carriage and arranged to be interposed between 65 the usual ink-ribbon and said roll, and an independent protecting-strip for said auxiliary

ink-ribbon also carried by said feed-carriage and arranged to move with said auxiliary ink-ribbon and interposed between said auxiliary ink-ribbon and the adjacent surface of 70 the underlying record-sheet, as and for the purpose set forth.

2. In a type-writing machine, and in combination with the paper-carriage and the usual feed-roll and ink-ribbon supported on 75 said carriage, of an auxiliary ink-ribbon arranged to be interposed between the usual ink-ribbon and the feed-roll, means for feeding said auxiliary ink-ribbon, and an independent protecting-strip applied to the under 80 side of said auxiliary ink-ribbon, said protecting-strip arranged to be fed coincidently with said auxiliary ink-ribbon, as and for the purpose set forth.

3. In a type-writing machine, the combina- 85 tion with a paper-feed carriage, a feed-roll journaled therein, and the usual ink-ribbon, of brackets carried by said carriage, spools carried by said brackets, an auxiliary ink-ribbon carried by said spools and interposed 90 between said roll and the usual ink-ribbon, means for actuating said spools for feeding said auxiliary ink-ribbon, and an independent protecting-strip applied to the under side 95 of said auxiliary ink-ribbon and arranged to be fed coincidently therewith, as and for the purpose set forth.

4. In a type-writing machine, and in combination with the usual feed-roll and ink-ribbon, of an auxiliary ink-ribbon interposed 100 between said usual ink-ribbon and said roll, an independent protecting-strip arranged to extend parallel to said auxiliary ink-ribbon and adjacent to the under side thereof, and means for coincidently feeding said auxiliary 105 ink-ribbon and its protecting-strip in a path transverse to the line of feed of the record-sheets, as and for the purpose set forth.

5. In a type-writing machine, the combination with the paper-feed carriage and usual 110 feed-roll and ink-ribbon, of a duplicate ink-copy mechanism, supported on said carriage and comprising an auxiliary ink-ribbon and an independent protecting-strip arranged on the under side thereof, said auxiliary ribbon 115 and its protecting-strip arranged to extend transversely of the line of feed of the record-sheets, as and for the purpose set forth.

6. In a type-writing machine, the combination with the usual feed-roll or platen, and 120 inking devices, of a duplicate ink-copy mechanism comprising an auxiliary ink-ribbon arranged to be interposed between the usual inking devices and said roll, and an independent protecting-strip for said auxiliary 125 ink-ribbon, said protecting-strip interposed between said auxiliary ink-ribbon and the adjacent surface of the underlying record-sheet, whereby the underlying record-sheet is protected from the ink of said auxiliary ribbon, 130 as and for the purpose set forth.

7. In a type-writing machine, the combina-

tion of a paper-feed carriage, brackets mounted at the ends thereof, a shaft mounted in said brackets, auxiliary ink-ribbon spools carried by said brackets, detachable gearing
5 between said shaft and spools, a paper-feed roll, and means for driving said shaft from said roll, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 25th day of April, 1899, in the presence of the subscribing witnesses.

FRED P. GORIN.

Witnesses:

E. C. SEMPLE,
S. E. DARBY.