

2 Sheets—Sheet 1.

No. 575,147.

Patented Jan. 12, 1897.

Fig. 1

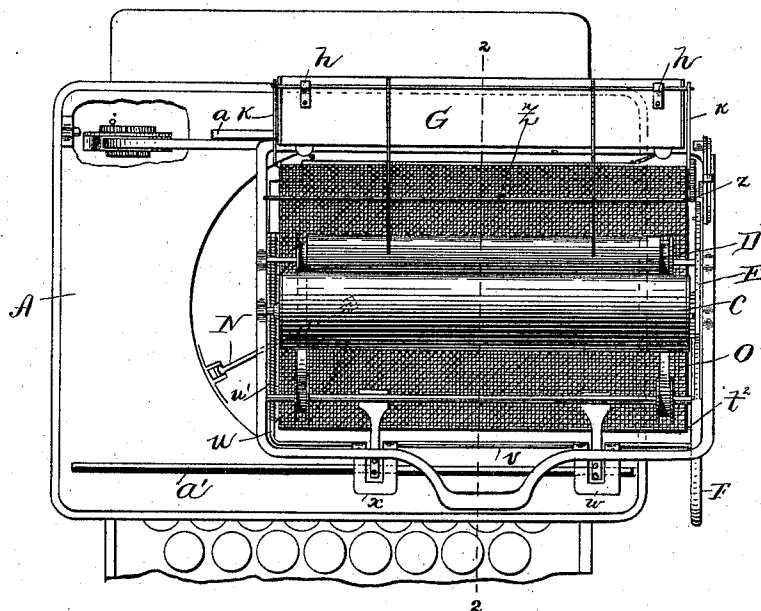
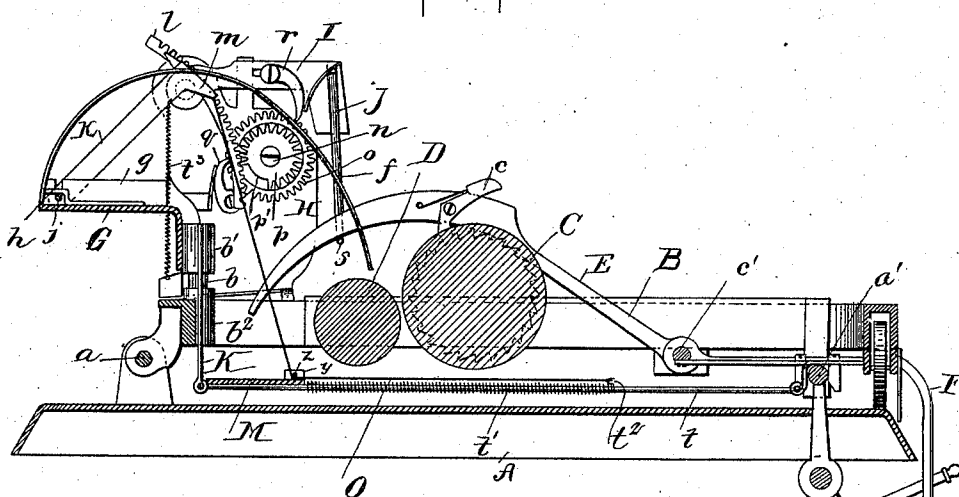


Fig. 2



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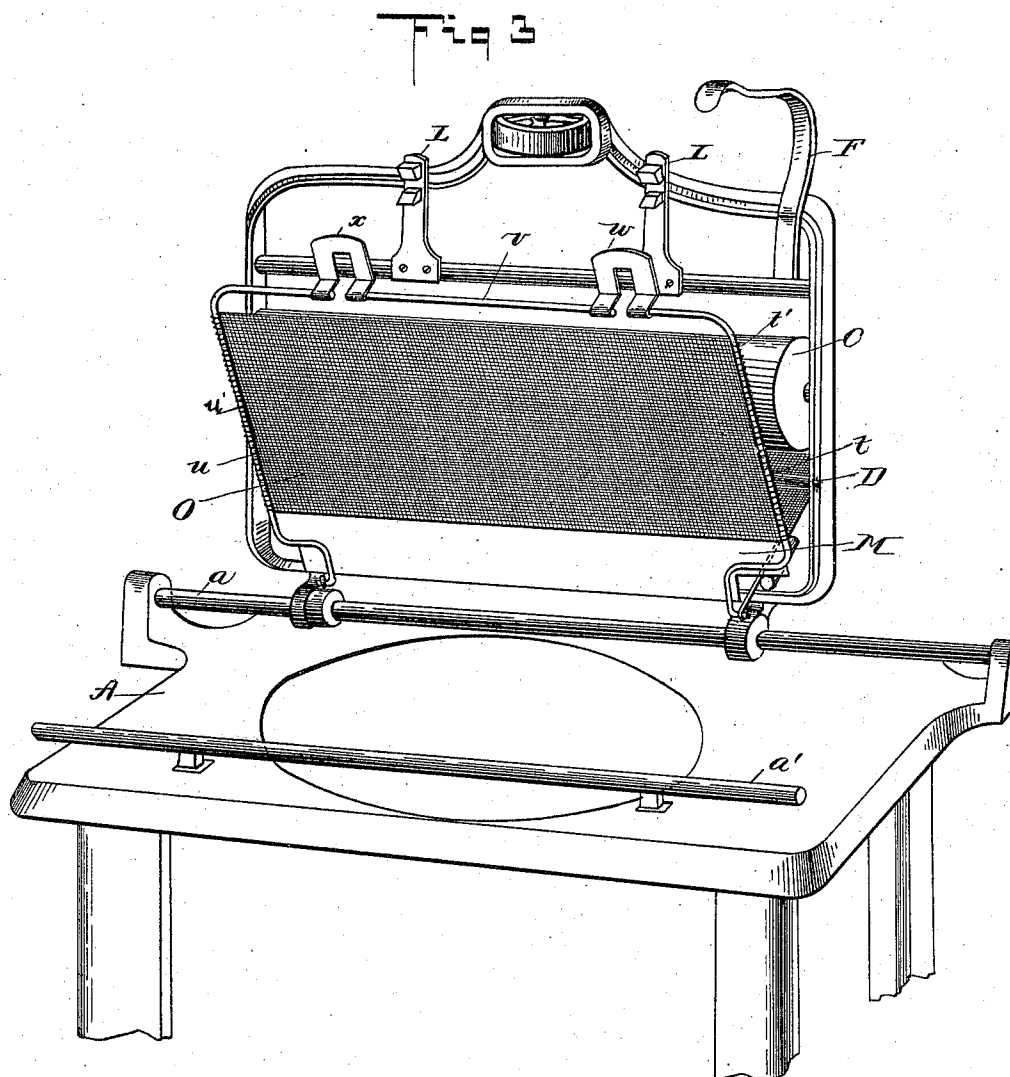
(No Model.)

2 Sheets—Sheet 2.

L. S. BURRIDGE & N. R. MARSHMAN.  
TYPE WRITING MACHINE.

No. 575,147.

Patented Jan. 12, 1897.



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# UNITED STATES PATENT OFFICE.

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## TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 575,147, dated January 12, 1897.

Application filed January 7, 1896. Serial No. 574,639. (No model.)

*To all whom it may concern:*

Be it known that we, LEE S. BURRIDGE and NEWMAN R. MARSHMAN, residents of the city, county, and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

Our invention relates to type-writing machines, and has reference more especially to improvements upon the type-writing machine for which we filed an application for Letters Patent, Serial No. 567,608, November 1, 1895.

The object of our invention is to provide a simple and efficient type-writing machine wherein a sheet may be employed as an inker and may be automatically and continuously fed by the operation of the machine proper so as to present a different surface to a printing-character after an operation of each of such printing-characters.

Our invention consists in the special matters hereinafter set forth and claimed, and will be explained with reference to the accompanying drawings, in which—

Figure 1 is a plan view of a type-writer embodying one form of our improvements. Fig. 2 is an enlarged sectional view thereof, the section being taken on line 2 2 of Fig. 1. Fig. 3 is a perspective view of the machine with the carriage raised and the inker-carrier swung on its pivot in order to more clearly show the said inker and inker-carrier. In this view some of the parts are omitted in order that the inker and inker-carrier may be shown clearly.

Referring particularly to the drawings, wherein portions of a type-writing machine of the "Remington" type are illustrated, A is the main body or frame of the type-writer, upon which are carried the usual back rod *a* and shifting rod *a'*, upon which the carriage B travels, the carriage being hinged upon the back rod in the usual manner. The carriage B also carries the usual impression-roller or paper-platen C and paper-roller D.

The impression-roller is rotated in any usual manner by means of a pawl *c*, which is carried upon the usual operating-lever E, which is pivotally hung at *c'* and extends downward to form the usual handle F.

Projecting from the carriage B are the usual recessed lugs *b*<sup>2</sup>, which persons skilled in the art will recollect have heretofore been employed to receive the studs on the rear paper-guide plate and thereby support the plate in position. In the present instance, however, the recesses in the lugs *b*<sup>2</sup> receive the studs *b*, projecting from the lugs *b'*, and serve to support a supporting bracket or table G, which in the present instance is shown as with flanges *g* at the ends.

Seated in slots in the flanges *g* and retained by the brackets *h* is a rock-shaft *j*, which carries arms *k*, upon one of which a toothed segment *l* is carried, a spring *l*<sup>2</sup> tending to pull said arms and segment in a downward direction.

Carried by each of the arms *k* is an inker-engaging device, shown in the present instance as consisting of a claw *m*.

The toothed segment or segmental rack *l* is located adjacent to a bracket H, which rises from the carriage B, and is provided with a shaft *n*, upon which a ratchet-wheel *o* and a mutilated pinion *p*, connected therewith, are mounted. The mutilated pinion *p* engages with the segmental rack *l*, a click *q*, which is spring-impelled, serving to prevent a reverse motion of the ratchet and pinion.

An arm I is pivoted to the bracket by one end and carries a pawl *r*, which is spring-pressed and engages in the teeth of the ratchet *o*. A rod J depends from the arm I and has a toe *s*, which extends beneath the lever E.

Brackets K depend from the socket *b'*. In these brackets is pivoted a frame or inker-carrier comprising bent-wire sections *t u*, which enter the eyes of the rods K, and the wire section *v*, which forms the front of the inker-carrier, the rods *ut* being joined thereto by means of ears *x w*. The horizontal portions of these ears bear upon the shifting rod and project over the same to a considerable extent, so as to allow the necessary backward movement of the shifting bar when it is shifted to allow of upper-case characters being printed, the ears at the same time allowing the passage and free movement of the guides L of the roller-shifter which embraces the shifting rod when the carriage and inker-carrier are

down, as shown in Fig. 2, which represents the parts shifted to print upper-case characters. Each wire  $t u$  is surrounded by a spiral spring  $t' u'$ , each of which terminates in a

hook or engaging device  $t^2 u^2$ .

A plate M is carried upon the frame of the inker-carrier and is provided with ears  $y$ , between which a rod  $z$  extends.

O is the inker, which is shown as of sheet form, and is engaged at its forward end by the hooks  $t^2 u^2$  and at its rear end by the claws  $m$ , the said inker passing under and behind the rod or guide  $z$  and being kept taut by the springs  $t' u'$ .

When the carriage is down, as shown in Fig. 2, the machine is in position to print or write, any usual printing agent, as N, being employed.

It will be observed that although we have shown the inker-carrier as attached to and moving with the carriage in its travel from end to end of the machine, yet nevertheless the carriage may be raised without raising the inker-carrier with it. The inker-carrier is, however, shown in the present instance as capable of being swung on its own pivot independently of the carriage. By this means the inker-carrier can, when desired, be swung on its pivot from over the type-well to give access to the types for cleaning and other purposes.

The operation of our device is as follows: Supposing the parts to be in the position shown in Fig. 2, the type-writer is manipulated to write in the usual manner, the printing agent striking the inker and pressing it against the paper which is carried on the impression-roller or platen C. When the end of the line has been reached, the handle-operating lever F is manipulated in the usual manner to release the rear rack (not shown) from its coöperating part and to permit the carriage to be slid back along its guides to start a new line. By the same operation the impression-roller is stepped around to shift the paper to the next line, and the lever E, coming against the toe  $s$  of the rod J, draws down upon the said rod, thereby swinging the lever I on its pivot and moving the joined wheels  $o p$  around one step by means of the pawl  $x$ . The movement of the pinion  $p$  has the effect of swinging the toothed segment  $l$ , with which it meshes, thereby pulling on the inker O against the tension of its springs  $t^2 u^2$  and drawing it back a short distance to present a new portion of the inker to the printing-characters after each line is written. This operation is repeated each time the impression-roller C is shifted to start a new line, and thus as the machine continues to be operated the inker is drawn back gradually as the arms  $k$  are swung on their pivot. Presently, however, the pinion  $p$  will have been rotated far enough to bring the mutilated part  $p'$  thereof opposite the segmental rack and to disengage the teeth of the pinion from those of the segmental rack. Thereupon the segmen-

tal rack, being no longer engaged with the pinion, will, through the medium of the springs  $t', u'$ , and  $t^2$ , be swung downward, the springs  $t' u'$  also serving to throw the inker into its extreme forward position, which is shown in Figs. 1 and 3. Further revolution of the wheel  $o$  will reengage the mutilated pinion  $p$  with the segmental rack, and the operations will be repeated.

It will thus be observed that by our invention the inker is automatically fed longitudinally or in the direction of the feed of the carriage and is also automatically fed at right angles to the feed of the carriage, so as to automatically and continuously present a different portion of the inker after each impression of a printing-character.

While our invention has been illustrated as combined with certain portions of a type-writing machine of the "Remington" type and as being applicable to such a machine without in any way changing the construction of such machines as at present existing, we would have it distinctly understood that we do not limit ourselves to the use of our improvements to a type-writing machine of any particular type.

It will be obvious to those skilled in the art that the apparatus which we have shown for carrying out our invention is susceptible of many variations, dependent upon the circumstances of use.

What we claim, and desire to secure by Letters Patent, is--

1. The combination with a mechanical writing-machine, of an inking device comprising an inker and means for automatically moving the printing portion of the inker in one direction in one plane by the travel of the carriage, and means for moving the printing portion of the inker at right angles thereto in the same plane as before by a rotation of the impression-cylinder, and restoring means for automatically bringing the inker to the initial position.

2. In a mechanical writing-machine, the combination of a printing agent and a carriage pivotally carrying an inker which is adapted to be swung from out of the path of the printing agent, and an impression-roller and means for shifting the impression-roller independently of the inker to expose the work, and connections between the inker and the means for shifting the impression-roller, for moving the center portion of the inker automatically on lines at right angles to the feed of the ribbon by a rotation of the impression-roller, as specified.

3. In writing-machines, the combination of a printing agent and a paper-platen, a carriage, a sheet-inker, an inker-carrier therefor, said inker-carrier being carried by and pivotally connected with the carriage and movable around its pivot independently of the carriage, whereby the sheet-inker may be swung out of the path of the printing agent and means for automatically moving said

inker at right angles to the feed of the carriage by a rotation of the paper-platen.

4. In a type-writer, the combination of a printing agent, a sheet-inker an impression cylinder or platen, means for conveying paper to be printed between said cylinder and printing agent, a guide as  $z$  over which the inker passes, and means for pulling the inker around the guide and for imparting a lateral motion to the inker and means for automatically restoring said inker to the initial position.

5. In a type-writing machine, the combination of a printing agent and a paper-carriage in operative relation, of an inker consisting of a sheet, an inker-carrier, means upon said inker-carrier for engaging one end of the sheet, and means upon said paper-carriage for engaging the other end of the inker.

6. In a type-writing machine, the combination of the paper-carriage, a paper-platen carried thereby, means for stepping said platen, an inker-carrier carried by said paper-carriage, springs upon the inker-carrier, an inker connected at one end to said springs, an inker-feeding mechanism connected with the other end of the inker and with the platen-stepping mechanism, whereby an operation of the platen-stepping mechanism will effect a movement of the inker.

7. In a type-writing machine, the combination of the paper-carriage, a paper-platen carried thereby, means for stepping said platen, an inker-carrier carried by said paper-car-

riage, springs upon the inker-carrier, an inker connected at one end to said springs, an inker-feeding mechanism connected with the other end of the inker and with the platen-stepping mechanism, whereby an operation of the platen-stepping mechanism will effect a movement of the inker, and means for effecting the restoration to the initial position of the inker and inker-feeding mechanism after a predetermined extent of movement of the inker in one direction.

8. In a type-writing machine, the combination of a paper-carriage, a paper-platen carried thereby, means for stepping said platen, an inker-carrier carried by said paper-carriage, springs upon said inker-carrier, an inker connected at one end to said springs, and inker-feeding mechanism connected with the other end of the inker, said inker-feeding mechanism comprising a pivoted rack, a mutilated pinion engaging therewith, and intermediate mechanism between said pinion and platen-stepping mechanism for operating said pinion, whereby an operation of the platen-stepping mechanism will effect the movement of the inker and the restoration to the initial position of the inker and inker-feeding mechanism after a predetermined extent of movement of the inker in one direction.

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