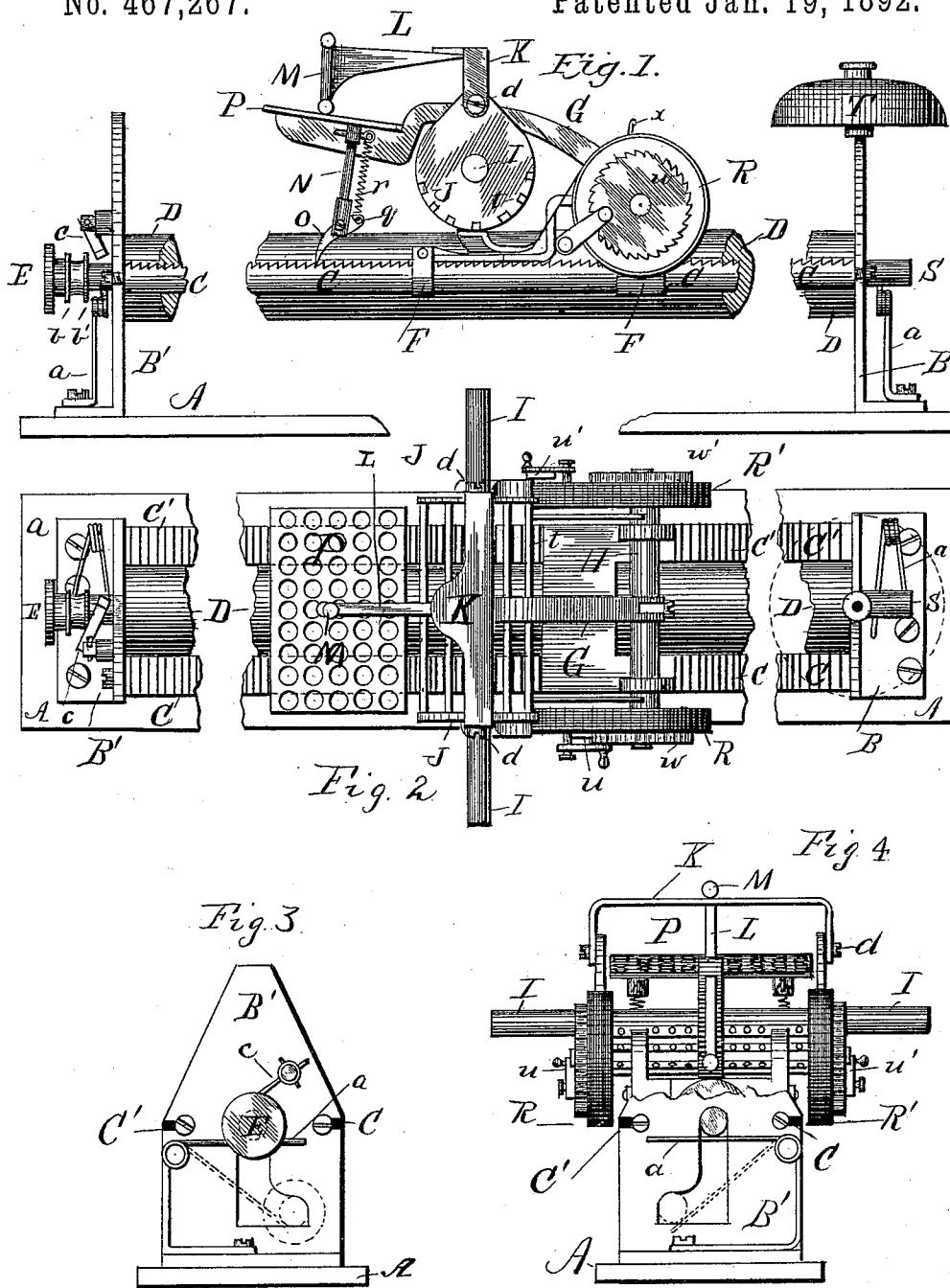


C. S. SNELL.
TYPE WRITING MACHINE.

No. 467,267.

Patented Jan. 19, 1892.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES SCOTT SNELL, OF LONDON, ENGLAND.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 467,267, dated January 19, 1892.

Application filed September 18, 1891. Serial No. 406,072. (No model.) Patented in England July 6, 1889, No. 10,929.

To all whom it may concern:

Be it known that I, CHARLES SCOTT SNELL, a subject of the Queen of Great Britain, residing at London, England, have invented certain new and useful Improvements in Type-
Writing Machines, (patented in England July 6, 1889, No. 10,929,) of which the following is a full, clear, and exact description.

My invention relates to improvements in type-writers in which the use of keys is dispensed with; and the objects of my improvements are the simplification of the mechanism in such a manner as to render the construction of an efficient type-writer cheaper than has hitherto been practicable, and, also, in the use of such machines to afford greater facility for acquiring rapidity of working. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1, Sheet 1, is an elevation of the entire machine suitably broken off so as to preserve the relative dimensions. Fig. 2 is a plan view thereof. Fig. 3 is a view of one of the end brackets, showing certain mechanism attached thereto; and Fig. 4 is an end elevation of the machine shown by Fig. 1 with part of the end bracket broken off to show the mechanism more clearly. Fig. 5, Sheet 2, is an elevation of a modification of the improved type-writer, and Fig. 6 is a plan thereof. Fig. 7 is an elevation of the carriage, showing a slight modification of the manner of holding and feeding the inking-ribbon, and Fig. 8 is a plan view of the same. Figs. 9, 10, and 11 are details applicable to the improved type-writer in general.

Similar letters refer to similar parts throughout the several views.

A base A, with vertical brackets B B' and toothed guide-bars C C', constitute the framework of the machine. Said toothed guide-bars C and C' are preferably arranged within slots in the brackets B B', as shown by Figs. 3 and 4, for the purpose of lateral adjustment. A roller D is borne by a spindle within slots in the brackets B B' in such a manner that when in one position, as shown by Figs. 1, 2, 3, and 4, the circumferential surface is pressed throughout its length by the guide-bars C C', and said pressure is maintained by means of a spring *a*. The sheet of paper that is to be printed upon is gripped between said

guide-bars, so as to present a smooth surface upon the upper side of the roller D. This is best shown by the cross-section, Fig. 11, in which the manner of folding the paper *p* is at once apparent. A thumb-head E and a projecting spindle *s* (which may or may not be provided with a similar thumb-head) enables the roller D to be forced down against the tension of the spring *a* and retained in the position shown by the dotted outline, Fig. 3, by the L-shaped slot in both of the brackets B B'. Upon the spindle of said roller D are also fixed one or more toothed wheels or ratchets *b b'*, which are differently pitched, so as to allow of a varying degree of space between the lines of the type-written matter upon the page *p*, which is fed by means of the thumb-head E. A spring-pawl *c* is arranged so as to engage with any of said toothed wheels or ratchets, as may be desired, and so afford a ready means for a given rate of feed corresponding to a predetermined space between the lines of matter. A carriage F, fitting the guide-bars C C', bears a pivoted arm G upon the transverse spindle H. Said arm G carries a rigid spindle I, which is sufficiently extended upon each side to allow of the free lateral movement of the type-segment J, which carries type-bars *t*, arranged around the lower half of its circumference. A cross-bar K is pivoted at *d* and provided with an extension L, carrying an index M. An extension of the arm G carries an index-plate P, upon which the letters, figures, or signs conforming to the use of the machine are marked, and each sign is preferably recessed or countersunk in order to allow of an appreciable degree of locking of the index M when this is placed upon any such sign. The type formed upon the bars *t* and carried by the type-segment J is so arranged as to correspond in every particular with the index-plate P, that when the index M is placed upon any figure marked thereon the position of the segment J (being free to move radially and laterally upon the spindle I) is such as to bring the corresponding figure of the type over the inking-tape in order to impress said figure on the paper.

Upon each side of the index-plate P is placed a vertical stud-piece N, carrying a pawl O at its extremity, pivoted at *q* and kept in contact with the toothed guide-bar C by means

of a spiral or spring *r*. The tension of this spring also maintains the arm *G* when at rest in such a position as to keep the type upon the segment *J* from contact with the surface of the paper on the roller *D*.

When a sign, figure, or letter is desired to be marked thereon and the index *M* is placed opposite the corresponding sign upon the index-plate *P*, the whole is depressed by the pressure of the hand upon *M*, and the pawl *O* causes the carriage *F* to advance through the space of one tooth of the guide-bars *C C'*, which corresponds to the desired space between each letter or sign; and so the carriage is fed and longitudinal spacing provided for by the depression of the arm *G* in the action of imprinting each letter, while the lower circumferential surface of *J* may be altered radially or laterally relatively to the points thereupon corresponding to marks upon the index-plate *P*. Two rollers *R R'* are provided with an inked tape, which is passed through suitable guides so that a portion of it crosses the bed of the machine directly under the vertical center of the type-segment *J* at right angles to the axes of said rollers *R R'*. A ratchet-wheel *w w'* is attached to the side of each of the tape-rollers, and a pawl *u u'* pivoted to the carriage *F* is arranged so that one such pawl may be placed in contact with the teeth of either of the ratchet-wheels *w w'*, as may be desired. Only one of said pawls *u u'* is to be in gear at one time, and when the machine is in use each depression of the arm *G* causes one of the rollers *R R'* to be advanced through the space of one tooth of the ratchet-wheels *w w'*, whichever may be in gear. Thus the inking-surface of the ribbon may be continually changed automatically until the inking or marking property thereof has become exhausted.

In order to audibly warn the operator of the end of the longitudinal traverse of the carriage *F*, which is equivalent to the termination of a line of type-writing, we provide a bell-gong *T*, rigidly attached to the framework, and a spring-slip or flexible metallic tongue *x* upon the carriage *F*, so that when the latter is approaching the end of the traverse the tongue *x* is pressed back by the edge of the gong *T* and the recoil causes the latter to sound sharply.

As the radial segment *J* forms an essential portion of my invention, with the cross-bar *K*, extension *L*, and index *M*, I have shown the whole in the perspective view, Fig. 9, as detached from the rest of the machine.

In certain cases I may somewhat modify the details of construction without departing from the essential features of my said invention, as shown by the elevation Fig. 5 and the plan Fig. 6, in which the segment *J* is provided with a semicircular plate of either india-rubber or metal type, and is supported by a spindle *I* between two arms *G G'*, sufficient room being allowed for the necessary lateral movement of *J* upon the spindle. A

plate *Q* is provided with an inking-pad and a central orifice through which the letter or sign to be impressed upon the paper may protrude when the index *M* is depressed, the whole surface of the type being inked by the radial and lateral movement of *J* during the operation of printing. In lieu of the spiral springs *r*, hereinbefore referred to, I employ an adjustable screw *U*, the point of which impinges upon a block *V* of india-rubber or the like, which causes the arms *G G'*, carrying the segment *J* and index-plate *P*, to lift when the pressure of the hand is released after printing each letter or sign.

Another slight modification consists in the substitution of spiral springs *a* for the coiled-wire spring before described, for the purpose of controlling the roller *D*. In every other respect the device is exactly similar to that shown by Figs. 1 and 2.

In the elevational view, Fig. 7, and the plan view, Fig. 8, a modification of the ink device is shown, where the inked tape is wound upon two rollers *R²*, the axes of which are parallel to the guide-bars *C C'*, and said rollers are mounted upon wire studs *y*, so that they are raised and lowered by each movement of the index *M*. A ratchet-wheel *w w'* is attached to each roller, and a cross-bar *w* (shown more particularly by Fig. 10) carries two pawls *u u'*, either of which may be placed so as to engage with the ratchet-wheels *w w'*. Said cross-bar *w* is attached to the arm *G* in such a manner as to feed either of the inked tape-rollers, which may be operated by dropping either of the pawls into gear.

What I claim, and desire to procure by Letters Patent of the United States, is—

1. In a type-writer, the combination of a type-segment *J*, transverse bearings on which said segment is adapted to oscillate, cross-bar *K*, index *M*, mounted thereon, index-plate *P* on arm *G*, and sliding carriage *F* with guide-bars *C C'*, automatic feeding device *O*, and paper-roller *D*, with spacing device *c b b'*, as set forth.

2. In a type-writer, the combination, with type-segment *J*, cross-bar *K*, index *M*, mounted thereon, and index-plate *P*, of rollers *R R'*, provided with inking-tape adapted to pass under the vertical center of the type-segment *J*, substantially as and for the purpose specified.

3. In a type-writer, the combination of a type-segment *J*, index *M*, and index-plate *P* with a sliding carriage *F*, guide-bars *C C'*, bell-gong *T*, and striking-clip *x*, mounted on a spring-shank adapted to permit said clip to spring under the bell, substantially as described and shown.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CHARLES SCOTT SNELL.

Witnesses:

GEO. THOS. HYDE,
AUG. L. PICAUD.