

TYPE WRITER.

937,599.

3 SHEETS—SHEET 1.



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J. M. HARRIS.
TYPE WRITER.
APPLICATION FILED SEPT. 11, 1907.

937,599.

Patented Oct. 19, 1909.
3 SHEETS—SHEET 2.

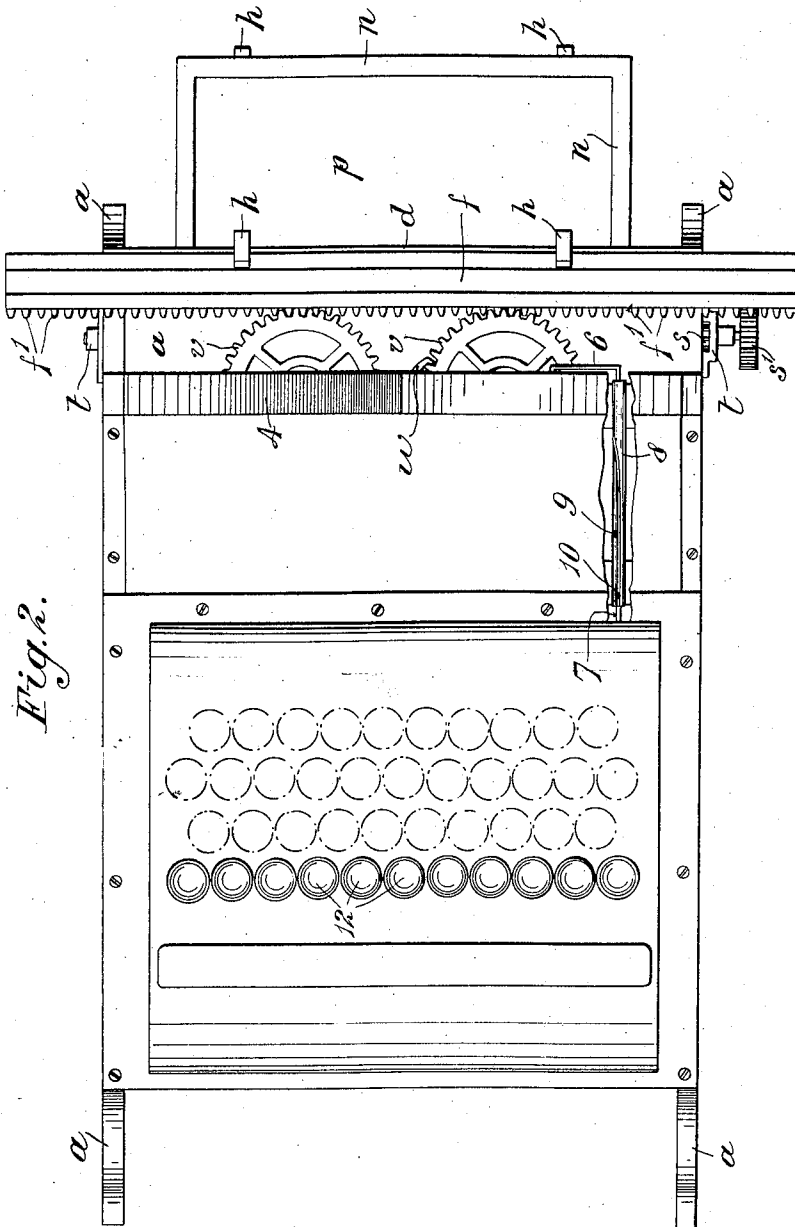


Fig. 2.



Fig. 8.

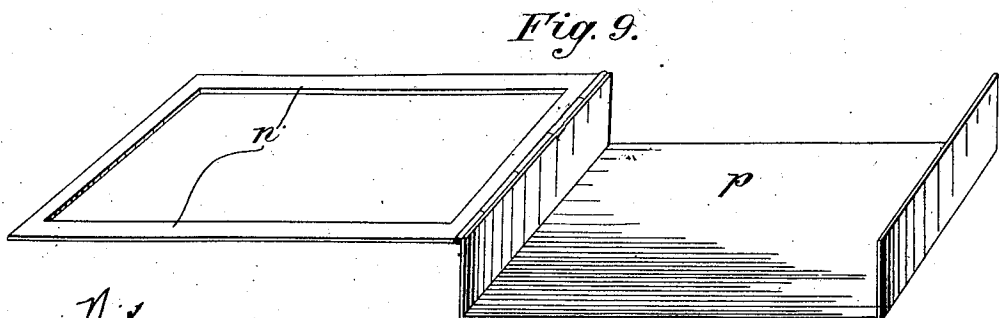
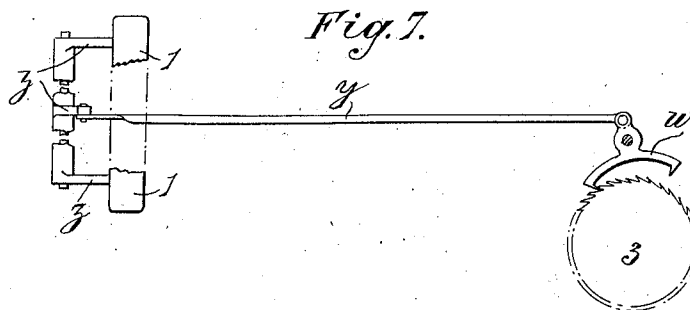
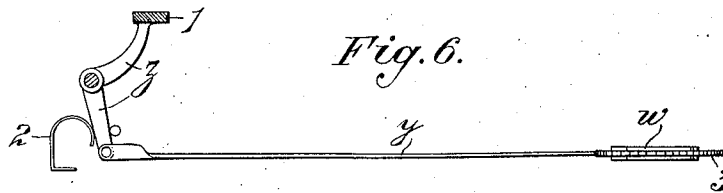
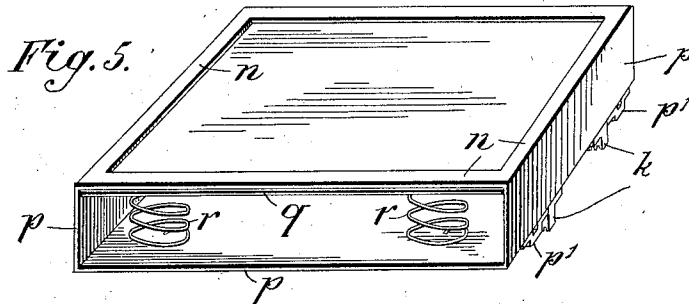
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UNITED STATES PATENT OFFICE.

JULIAN MYER HARRIS, OF JEPPESTOWN, JOHANNESBURG, TRANSVAAL.

TYPE-WRITER.

937,599.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed September 11, 1907. Serial No. 392,389.

To all whom it may concern:

Be it known that I, JULIAN MYER HARRIS, a subject of the King of Great Britain and Ireland, residing at Jeppestown, Johannesburg, South Africa, have invented Improvements in Type-Writers, of which the following is a specification.

This invention has for object to provide a portable typewriter of simple and improved construction and wherein the whole of the writing on the sheet operated upon is visible.

The machine comprises a frame open at one end and at the sides, a work supporting carriage arranged to travel in a longitudinal direction to effect the line spacing, in ways or guides that are themselves mounted to travel in a transverse direction to effect the word and letter spacing in suitable ways or guides fixed to the frame, and cranked type bars which are located above the carriage. This carriage is adapted to hold a loose sheet or sheets or an open book or the like on which the writing is to be produced. Normally the type characters bear upon inking pads located appropriately near the keyboard, the connections between the key levers and the type bars, and the mounting of the type bars, being such that when the key levers are depressed the corresponding type bars are simultaneously moved forwardly and partially rotated so as to move the type characters from the inking pads into appropriate contact with the paper. The carriage is normally located below the overhanging portion of the open ended frame and is moved rearwardly clear of such portion as the writing is effected so leaving the whole of the writing visible.

Figures 1 and 2 of the accompanying illustrative drawings show diagrammatically, in side elevation and plan respectively, parts of one construction of typewriter according to this invention. Fig. 3 is a side elevation and Fig. 4 a front elevation of the transversely movable ways or guides. Fig. 5 is a perspective view of the work supporting carriage. Figs. 6 and 7 are detail views of the letter spacing mechanism. Fig. 8 shows the inking pads in elevation. Fig. 9 illustrates a modified form of work supporting carriage.

a indicates the frame or body which is open at the rear end *b* and at the sides thereby forming a slot or guide *c* capable of admitting the largest book for use with

which the machine is designed. Two metal strips *d* which are undercut at *e*, are fastened on the top of the frame or body *a* at the rear end so that the undercut portions *e* form guides in which slides a bar *f* which is toothed at *f*¹ and provided with a tongue *g* running between the strips *d*. The bar *f* is provided with two downwardly and forwardly extending hook shaped bars *h* that are supported and guided at their front ends by means of rollers *i* running on a rail *j* fixed to the frame *a*.

p is a book holder of open sided box-like form which is furnished with a spring pressed back *q*, the arrangement being such that when the material to be written upon, such as a pad or book, is placed through the open sides of the book holder and against an open frame *n* forming the top of the holder, springs *r* will press the back *q* against the pad or book and keep it tight against the frame *n*. The under side of the book holder *p* is furnished with two socket like guides *p*¹ arranged to slide on the lower members of the bars *h*. In some cases the top or frame *n* may be hinged to the book holder as shown in Fig. 9.

k are toothed bars or racks fixed to the book holder in such position that when the holder is mounted on the bars *h* the racks *k* are engaged by a grooved roller *s* mounted in bearings *t* fixed to the frame or body *a* near its rear end. Thus an operator may turn the roller *s* with the right hand, as by means of a hand wheel *s*¹ in order to move the book holder inside the body *a* as far as necessary.

When an operating key 12 or the space bar 12^a is pressed downwardly the bar *f* is moved to the left by mechanism hereinafter described and carries with it the frame *n* and book holder with its writing matter a distance equal to the space of one letter. The roller *s* moves the frame the distance of a line space, or any number of line spaces at pleasure. The movement of the bar *f* is effected by the release of a spring tooth, or escapement that controls the rotation of a toothed wheel working into the toothed face of the bar *f*. In the example under notice the bar *f* is engaged by toothed wheels *v* one of which is fixed to a spring drum *v*¹ which tends to always draw the bar *f* endwise in one direction. The movements of the bar are controlled by an escapement anchor or dog *w*, Figs. 6 and 7, that is connect-

ed by a link y and lever z to a transverse bar 1 arranged below all the key and shift levers. Normally the bar 1 is held in its raised position by a spring 2 but when any key lever or shift lever is depressed the bar 1 is moved downwardly against the action of the spring 2 and the anchor or dog w moved to release the escapement wheel 3, whereupon the bar f is drawn by the spring drum v a distance equal to the space of one letter when the escapement anchor or dog w again engages the escapement wheel.

The inking pads 4, Figs. 1, 2 and 8, are arranged on upwardly extending planes, as shown, and the type characters 5, are mounted on the ends of crank arms 6 extending from type bars 7 which are mounted to slide in fixed tubular guides 8 each formed with a cam or inclined slot 9 engaged by a pin or projection 10, on the corresponding bar 7.

The several type bars are connected by levers and links generally indicated at 11 to the keys 12 which are located at the front end of the machine, the arrangement being such that upon depressing a key 12 the corresponding type bar 7 is caused to make a combined forward and rotary movement whereby the corresponding type character is moved rearward away from the corresponding inking pad 4 and downwardly onto the paper, the reverse action taking place under the action of a spring 13 when the key lever is released from pressure. Each lever 11 is provided with a lug 11^a adapted to strike the bar 1 when the lever is depressed.

The spring pressed platform q of the paper or book carriage is adapted to support books or writing materials of various thicknesses, upward movement of the platform q being so limited by the frame n as to insure the surface to be written upon always being in the correct position relatively to the type bars. The carriage guides or ways may if desired be furnished with rollers or balls to lessen friction.

It will be understood that typewriters embodying this invention are furnished with all the usual accessories and indicating devices commonly included in this class of machine.

What I claim is:—

1. In a typewriter, a frame or support open at one end and at the sides, a carriage adapted to hold an impression surface, type bars each carrying a type character, a transversely arranged inking pad located near the open end of said frame and on which the type characters of said type bars normally rest, type keys corresponding to said type bars, mechanism adapted when said keys are depressed to move said type characters from said inking pad into contact with paper or the like on said carriage at a part thereof projecting through the open end of said frame, ways or guides projecting through

the open end of said frame and on which said carriage can travel in a longitudinal direction; a carrier for such ways or guides, and ways or guides fixed to said frame in which said carrier can travel in a transverse direction.

2. In a typewriter, a main frame open at the sides and rear end, a paper-supporting carriage arranged in the opening in the frame so as to project rearwardly beyond said frame, and mounted for transverse and longitudinal movements in said opening, type-bars, an inking-pad mounted near the rear end of the main frame and against which pad the type-characters of the type-bars normally rest, and actuating mechanism for said type-bars, adapted to move said type-characters from the inking-pad and into contact with the paper at a point in rear of the main frame.

3. In a typewriter, a frame or support open at one end and at the sides, a carriage adapted to hold an impression surface, ways or guides projecting through the open end of said frame and on which said carriage can travel in a longitudinal direction, a carrier for such ways or guides, a supporting rail for said longitudinal ways or guides near the front end of said frame or support, ways or guides fixed to the rear end of said frame in which said carrier can travel in a transverse direction, longitudinally arranged racks on said carriage, a transversely arranged long pinion mounted to rotate on said frame and gearing into said longitudinal racks, type bars, each carrying a type character, a transversely arranged inking pad located near the open end of said frame and on which the type characters of said type bars normally rest, type keys corresponding to said type bars and mechanism adapted when said keys are depressed to move said type characters from said inking pads into contact with paper or the like on said carriage at a part thereof projecting through the open end of said frame.

4. In a typewriter, a machine frame, horizontally arranged tubular guides fixed to said frame each formed with a cam slot, type bars arranged to slide and partially rotate in said guides, the outer end portion of each bar being cranked, pins on said type bars engaging the slots of said guides, spring pressed type keys, type characters on the cranked outer ends of said type bars, downwardly facing inking pads on which said characters normally bear, a paper supporting carriage, and means connecting said type keys to said type bars.

Signed at Frankfort-on-the-Main, Germany, this twenty-eight day of August 1907.

JULIAN MYER HARRIS.

Witnesses:

JEAN GRUND,
CARL GRUND.