No. 643,786. Patented Feb. 20, 1900.

E. W. BRACKELSBERG.

TYPE WRITING MACHINE.

(Application filed June 26, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

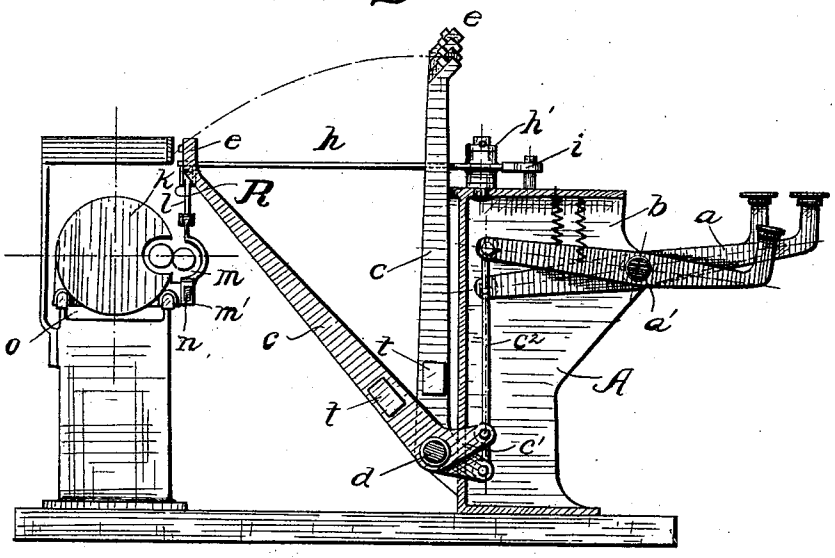
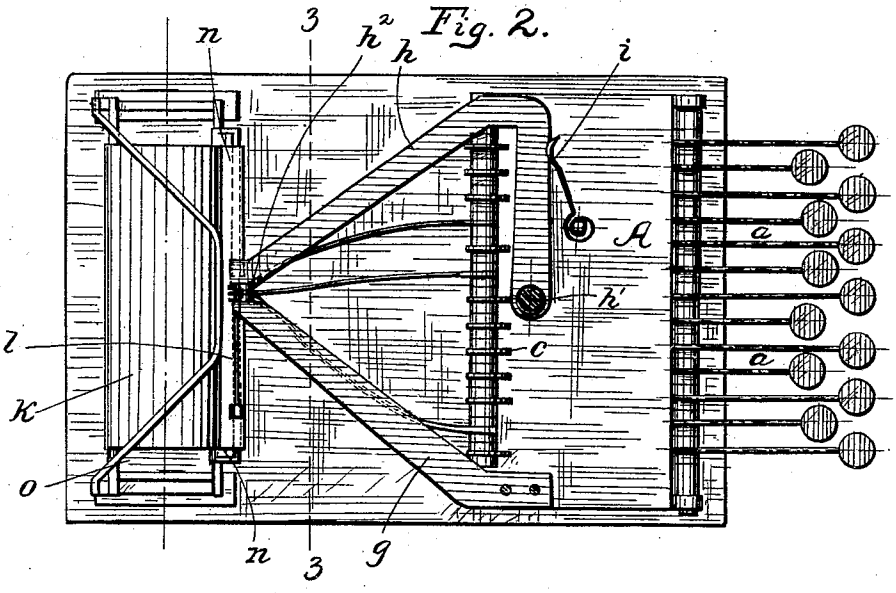


Fig. 2.



Witnesses
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Inventor
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Fig. 5.

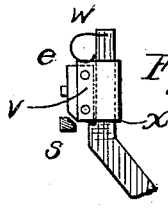


Fig. 3.

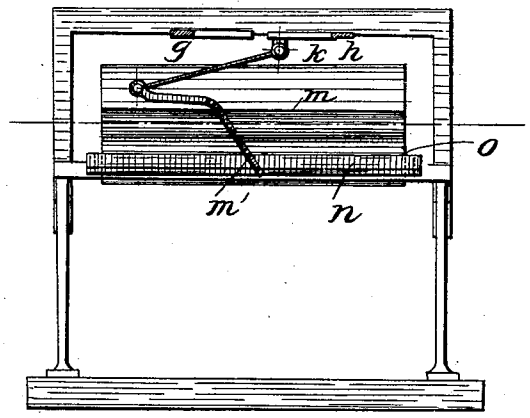
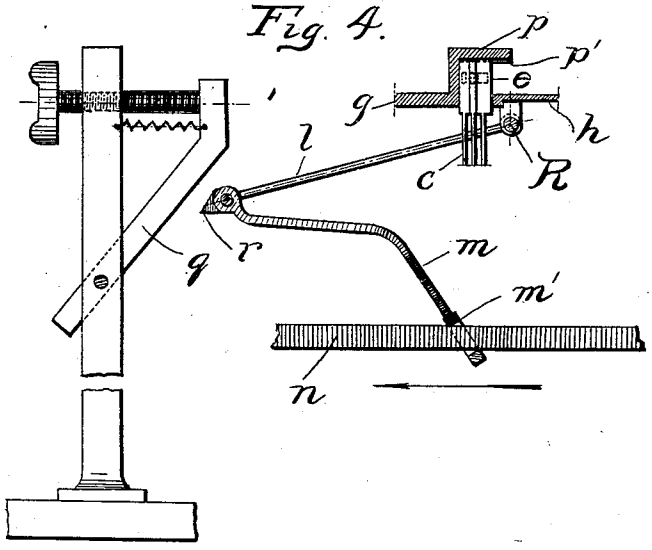


Fig. 4.



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UNITED STATES PATENT OFFICE.

ERNST WILHELM BRACKELSBERG, OF OHLIGS, GERMANY.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 643,786, dated February 20, 1900.

Application filed June 26, 1897. Serial No. 642,423. (No model.)

To all whom it may concern:

Be it known that I, ERNST WILHELM BRACKELSBERG, a citizen of the Kingdom of Prussia, residing at Ohligs, in the Kingdom of Prussia and German Empire, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to a type-writing machine, and has for its object to provide a machine in which characters, &c., can be assembled either singly or in groups in one operation, thus securing speed in the operation of the machine. This object is accomplished by assembling the type-levers in horizontal alinement and by my peculiar mechanism leading them when operated upon simultaneously in groups to a single point and in a close justified alined relation.

The invention consists in the parts, as hereinafter shown and described and claimed.

In the drawings, Figure 1 is a longitudinal vertical sectional view through a machine arranged and constructed according to my invention. Fig. 2 is a plan view of the complete machine. Fig. 3 is a transverse section or elevation taken at a point indicated by the lines 3 3, Fig. 2. Fig. 4 is a detached view, partly in section, of the paper-feeding mechanism. Fig. 5 is a detail view of the end of a type-lever, illustrating a modification of the means of alinement of the type.

The object of this invention is to arrange the type-levers and the means for guiding the same in such a manner that the type-levers in their movement from the point of rest to the point of printing or impression will be caused to be brought together and assembled side by side no matter how many of the type-levers are operated upon simultaneously. This construction allows of the grouping for printing or impression of one or more letters or characters at one operation, which will allow great speed being acquired in the usual type-writer as contradistinguished from the method now in vogue of operating one type-lever at a time. By my invention I employ several such alphabets—*i. e.*, one set of capitals and two or more sets of small letters and several repetitions of those letters which frequently occur—as, for example, the letters "e," "o," "i," &c.

If, for example, the letters in the alphabet be grouped in the following manner—"R, m, p, f, j, b, z, v, w, g, o, d, a, e, i, r, n, m, s, c, h, t, q, x, y," with several repetitions, as above stated—then I am enabled to write in one movement by striking simultaneously the corresponding keys the words "in," "an," "it," "of," "man," "you," "sets," "occur," "there," "modern," &c., and the following can be written in two movements or strokes: "therewith," "themselves," or any word of two syllables or two words each of a limited number of letters. Therefore it will be seen that by the grouping of letters, as indicated, sentences containing thirty or forty letters can be written with from eight to twelve movements, whereas as many movements are necessary in striking single letters as there are letters and spaces contained in the sentence.

Referring to the drawings, *a* designates the key-levers, which are pivotally secured substantially midway their length on the rod *a'*, suitably secured in the frame A. Connecting the inner ends of the key-levers and the projection *c'* of the type-levers *c* are the rods c^2, the type-levers being normally held in an upright position by the springs *b*, interposed between the key-levers and the top of the frame. The projection *c'* upon the type-levers being at an angle to the body thereof and extending forwardly therefrom, a downward movement of the key-levers will effect a rearward movement of the type-levers, as plainly shown in Fig. 1.

The type-levers are journaled upon a straight rod *d*, secured in the frame A, and consequently when at rest project upwardly in alinement and extend substantially across the entire machine. In order to cause the type to assemble centrally of the width of the machine, to one side of the frame is secured an immovable guide-bar *g*, the rear end thereof projecting inwardly to about the center of the machine at a point directly in front of the platen or impression-plunger.

h designates a movable guide-arm pivotally secured to the frame A at *h'*, the rear end h^2 being normally held against the rear end of the stationary guide-arm *g* by the spring *i*, secured to the frame and bearing against the movable arm *h*. Therefore by referring to Fig. 2 it will be seen that when a key-lever

is actuated it will either strike against the inclined surfaces of the stationary guide-arm *g* or the movable guide-arm *h*, according to the side of the machine upon which the type-levers are located, and will be guided toward the central part of the machine and will finally rest between the ends of the guide-arms *g* and *h*, the guide-arm *h* moving outward against the tension of the spring *i*, as shown more especially in Fig. 2. This lateral movement of the type end of the type-levers is due to a portion of the type-levers being formed of spring material, preferably weakened by the removal of a portion thereof, as at *t*, or, if desired, I may provide a hinge-joint at this point, the action being the same.

As thus far described the operation will be apparent. By depressing two or more of the keys simultaneously the type-levers are caused to move rearwardly with the same speed, and consequently in transverse alinement, the guide-arms *g* and *h* bringing the type *e*, carried by the type-levers, together, whereby they are properly justified, when they assume a position of rest, due to the action of spring *i* upon the movable guide-arm *h*.

In order to assure perfect alinement of the type, the end of the stationary guide-arm *g* may be angled, as shown at *p*, Fig. 4, the under side of the extreme end formed with a groove *p'* to receive the extreme end of the type-levers, which thereby assures that the type are in perfect alinement.

In Fig. 5 is shown a modification of the alining mechanism, which consists in forming the end of the type-lever slightly reduced, forming a shoulder X. The type *e* in this construction are secured to a U-shaped strap V, which is slidingly arranged on the reduced end of the key-lever and is normally held against the shoulder X by means of a spring W. In this arrangement I project laterally from the end of the stationary guide-bar *g* a bar S, with which the lower edge of the type abut when the type-levers are projected, and consequently all of the type having a base upon the bar S are in alinement.

k designates the platen.

O designates the carriage, which is movable laterally across the machine in suitable guides, the said carriage carrying upon its front side a transverse bar *n*, which extends entirely across the carriage. The carriage and its parts, consisting of the paper-feeding mechanism, &c., not being a part of this invention and as there is no claim laid thereto, it is not shown or described in detail.

Pivotally secured to a depending lug R upon the end h^2 of the movable guide-bar *h* is a lever *l*, and connecting the opposite end of the said lever with the transverse-bar end carried by the carriage is a link *m*. The lower end of the said link *m* is provided with a loop *m'*, which embraces the bar *n* and serves as a clamp therefor when the rod *l* and the link *m* are moved in one direction, as will be presently described.

As previously described, the movement of the end h^2 of the guide-bar *h* corresponds in point of distance to the width of type grouped, and consequently the width of the printing or impression. Therefore it is necessary to move the carriage a distance corresponding to the outward movement of the lever *h*, but alternately therewith. The rod *l*, being carried by the movable lever *h*, moves the link *m*, and consequently the loop *m'*, therewith. The path of travel of the carriage is in the direction of the arrow, Fig. 4. Consequently as the loop moves in a direction opposite to the arrow it slides upon the bar *n*; but when it is moved in the direction of the arrow it impinges upon the bar *n* and carries the bar, and consequently the carriage, therewith.

The spaces between the words or characters are produced by key-levers having a blank thereon. In printing letters or characters separately—*i. e.*, one at a time—the spacing may be effected through the medium of an adjustable stop *q*, Fig. 4, the end of the rod *l* being provided with a stop-piece *r*, which abuts against the same.

What I claim as my invention is—

1. In combination with a pair of converging, inclined guide-bars, one of which is rigid, the other spring-pressed and pivoted, a series of pivoted type-bars and mechanism for actuating the same, each of the said type-bars being recessed at *t* to weaken it for yielding laterally when brought in contact with one of the said guide-bars in its forward motion, substantially as set forth.

2. In combination with a pair of converging, inclined guide-bars, a series of pivoted type-bars and mechanism for actuating the same, each of the said type-bars being flexible in a lateral direction and arranged to be bent and guided by one of the said guide-bars, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ERNST WILHELM BRACKELSBERG.

Witnesses:
A. OHLIGER,
OTTO BUTZ.