

(No Model.)

3 Sheets—Sheet 1.

C. H. PERRY.
TYPE WRITING MACHINE.

No. 393,259.

Patented Nov. 20, 1888.

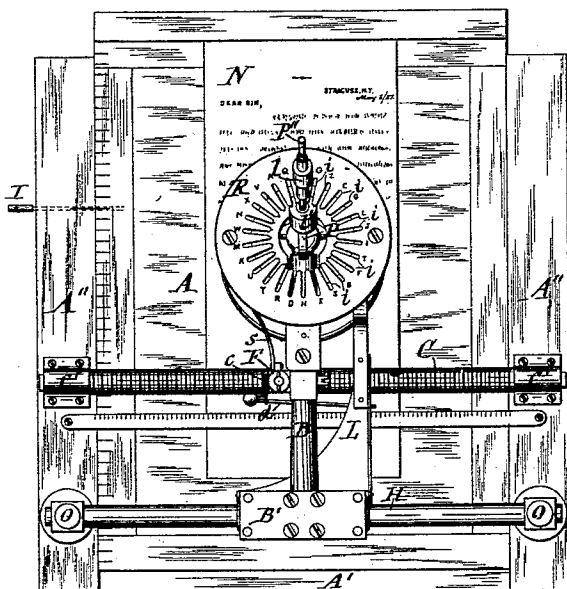


Fig. 1

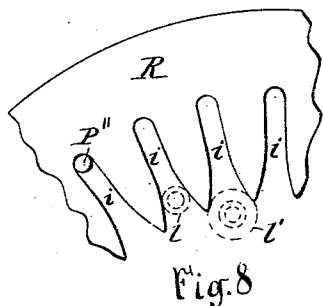


Fig. 8

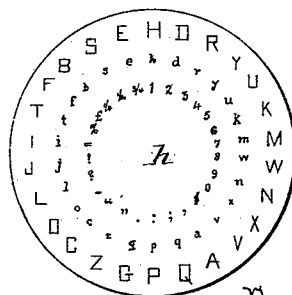


Fig. 5

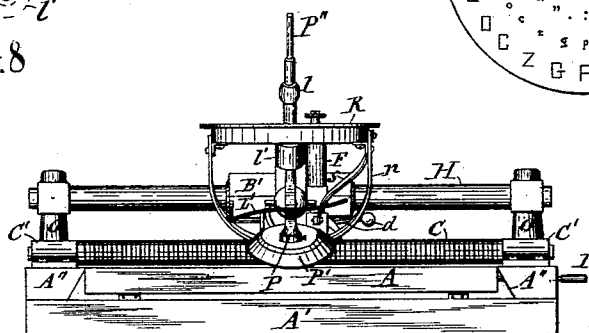


Fig. 2

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(No Model.)

3 Sheets—Sheet 2.

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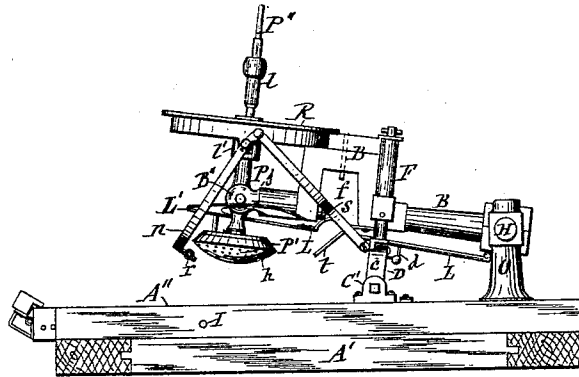


Fig. 3

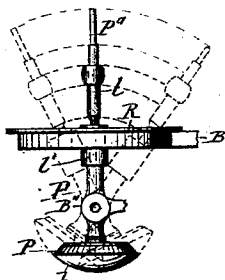


Fig. 7

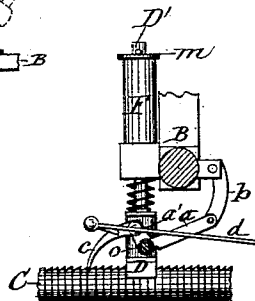


Fig. 6

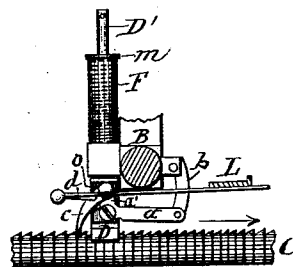


Fig. 6

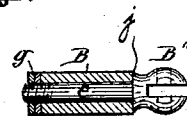


Fig. 9

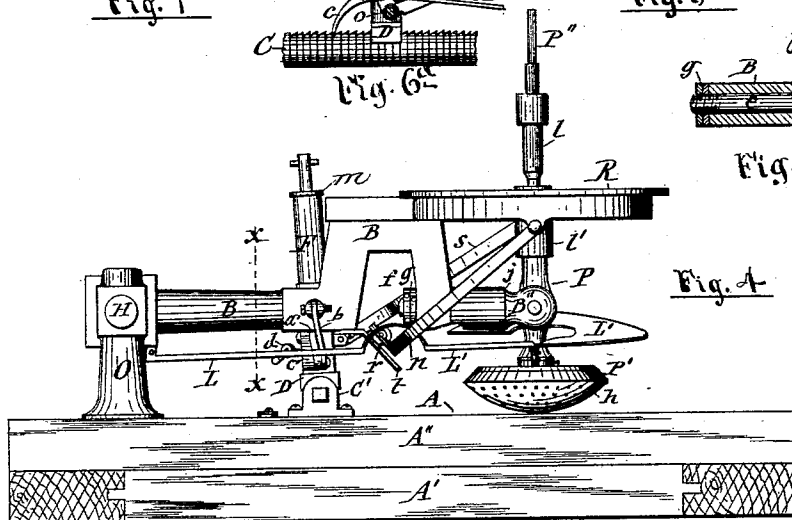


Fig. 4

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(No Model.)

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C. H. PERRY.

TYPE WRITING MACHINE.

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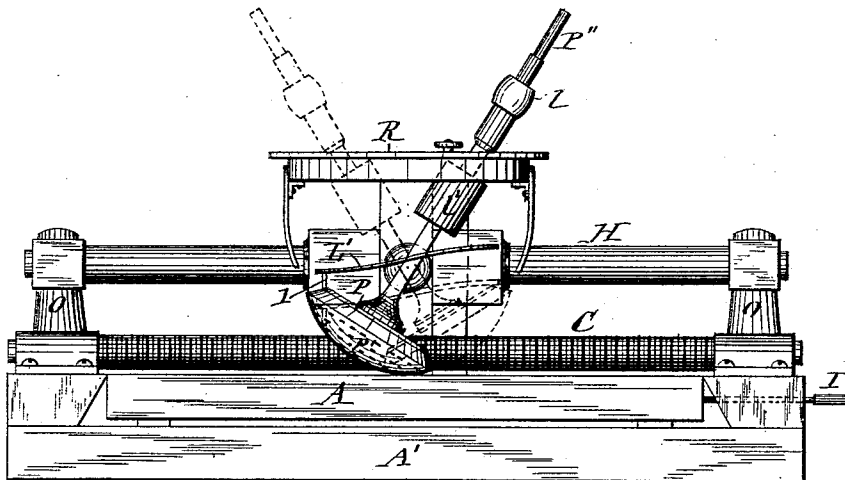


Fig. 10

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INVENTOR,

Charles H. Perry.

BY

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES H. PERRY, OF ONEIDA, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 393,259, dated November 20, 1888.

Application filed May 23, 1887. Serial No. 239,160. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. PERRY, of Oneida, in the county of Madison, in the State of New York, have invented new and useful
5 Improvements in Type-Writing Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention consists in a novel construction and combination of the constituent parts
10 of a type-writing machine, in which simplicity, efficiency, and convenience of operation are combined, all as hereinafter fully described, and specifically set forth in the claims,

15 In the annexed drawings, Figure 1 is a top plan view of a type-writer embodying my invention. Fig. 2 is a front view of the same. Figs. 3 and 4 are elevations of opposite sides of the machine and on different scales. Fig.
20 5 is a face view of the printing-plunger. Figs. 6 and 6^a are transverse sections on line *x x*, Fig. 4, as viewed in the direction toward the front, showing the feed mechanism in two of its operative positions. Fig. 7 is a front
25 view of the printing-plunger, showing the same in its various operative positions for bringing different fields of type into use. Fig. 8 is an enlarged plan view of a section of the notched guide-plate, showing the printing-plunger and
30 its sleeves in different positions for engaging the notches of said plate. Fig. 9 is a detached sectional view of the universal joint by which the printing-plunger is connected to its oscillatory carrying-arm; and Fig. 10 is a front
35 elevation of the printing-plunger with the spacing-lever riding thereon, and showing the same in different positions to produce different spacings.

Similar letters of reference indicate corresponding parts.

A represents the platen upon which to place the paper to be imprinted. Said platen is mounted movably on a base, A', provided with parallel guide-cleats A'' A'', between which
45 the platen A slides. A pin, I, inserted removably in the side of one of the guides A'', and entering one of a series of holes in the edge of the platen A, serves to retain the latter in its position while printing a line across
50 the paper placed on the platen.

N in Fig. 1 of the drawings designates a

sheet of paper in position to be imprinted by the type-writer.

Horizontally across the rear end is extended a guide-bar, H, which may be either cylindrical and rigidly secured at its ends to posts O
5 O, fastened to the top of the cleats A''; or said bar may be square or polygonal in cross-section and journaled in the said posts. On the guide-bar H slides a sleeve, B', from which is
60 extended toward the front of the machine an arm, B. Either of the aforesaid constructions and arrangements of the guide-bar H allows the arm B to oscillate vertically toward and from the platen A. On the free end of the
65 arm B is pivoted the printing-plunger P, preferably by a universal joint, which may be obtained by dividing the arm transversely near its free end, or at *j* in Figs. 4 and 9 of the drawings, and providing the end of the main portion
70 of the arm with a cylindrical internal channel extending lengthwise thereof, and forming the end portion, B'', with a spindle, *e*, which is inserted into the aforesaid channel and adapted to turn therein. The end of the spindle
75 is screw-threaded, and protrudes in a recess, *f*, in the arm B, and is provided with nuts *g*, by which the spindle is retained in the channel of the arm, as best seen in Fig. 9 of the drawings. The end portion, B'', of the arm B is bi-
80 furcated, and in the bifurcation is pivoted the plunger P by a pin passing transversely through the said arm end B'' and intervening plunger. The said plunger is thus connected to the oscillatory arm B by two pivots ar-
85 ranged axially at right angles to each other, and thus affording a universal oscillatory motion of the printing-plunger P on the arm B. The lower end of the plunger is provided with an annular head, P', which has on its under
90 side a convex or spherical face, *h*, carrying different fields of types arranged in circles of different diameters and concentrically on the face *h*, as shown in Fig. 5 of the drawings. From the plunger P projects upward a guide arm or stem, P'', and on this arm slide longitudinally
95 sleeves *l* and *l'*, of different diameters. The guide-arm is surrounded by a guide-plate, R, which is secured to the arm B, and is provided with a central aperture, through which the aforesaid guide-arm projects. Around the edge of this aperture are arranged bearings ar-

resting the lateral oscillations of the plunger, and thereby determining the position of the plunger to print the required letter or character. Said bearings I preferably form of a series of recesses or notches, *iii*, extending radially outward and equal to the number of types in one of the circles on the face *h* of the plunger and distributed correspondingly with said types. The notches terminate equidistant from the center of the aperture, as shown in Fig. 1 of the drawings. The main portion of each notch is of a width to allow the bare guide-arm *P''* to enter the same, as shown in Figs. 7 and 8 of the drawings. The ends of the notches adjacent to the central aperture are flaring, so as to allow the sleeves *l* and *l'*, of different diameters, to enter different distances. The depths of the notches and their flaring entrances or inner ends are so gaged that by swinging the printing-plunger on its pivot and carrying the bare guide-arm *P''* thereof into one of the notches the entire depth thereof the convex face *h* is so tilted as to bring one of the types of the greatest circle into a perpendicular line extended from the axis of oscillation of the plunger to the platen, and thus in proper position for printing. By slipping the sleeve *l* into position on the guide-arm *P''*, to cause said sleeve to enter the flaring end of the notch *i*, the oscillation of the plunger *P* is limited, so as to bring one of the types of the smaller circle in printing position, and by slipping the larger sleeve, *l'*, in position on the guide-arm *P''*, so as to cause it to enter the flaring end of the notch *i*, the oscillation of the plunger is further limited to bring the type of the still smaller circle in printing position. The different positions of the bare guide-arm *P''* and its two sleeves *l l'* in the notches *iii* of the plate *R* are illustrated in Fig. 8 of the drawings.

The printing is effected by throwing the guide-arm *P''*, or one of its sleeves *l l'*, into the notch *i*, which is marked to correspond to the type to be brought into operative position, and then depressing the arm *B*, so as to cause the type to strike the paper lying on the platen.

The arm *B* is normally sustained in an elevated position by a spring-support consisting of a sleeve, *F*, secured in an upright position to the side of the arm *B* and sliding longitudinally on a stem, *D'*, which rises from a post, *D*, and projects through an aperture in a cap, *m*, on the upper end of the sleeve. Inside of the sleeve is a spiral spring, as indicated by dotted lines in Fig. 6 of the drawings. Said spring, bearing at one end on the shoulder of the post around the base of the stem and at the opposite end on the cap *m*, serves to support the arm *B* in its elevated position.

The post *D* rides on a horizontal feed-bar, *C*, which is extended across the top of the platen *A* and rigidly secured at its ends. The said feed-bar is notched transversely and at uniform distances apart, similar to a ratchet.

In a recess, *o*, in the rear side of the post *D* pivoted a two-armed lever, *a a'*, the arm *a* of

which is connected with the arm *B* by a link, *b*, as shown more clearly in Fig. 6 of the drawings. To the other arm, *a'*, is pivoted a dog or pawl, *c*, adapted to engage the notches of the feed-bar *C*. From the said dog projects rigidly a lever, *d*, over the free end of which is a lever, *L*, which is pivoted at one end to the sleeve *B'* of the arm *B*, and is extended toward the front of the machine, where it is formed with a plate, *L'*, which surrounds the plunger *P* and rests upon the top of the head *P'*, and thus supports the free end of the lever *L*.

In depressing the arm *B* to cause the printing-plunger *P* to imprint the paper lying on the platen *A*, the link *b* tilts the lever *a a'*, so as to cause the dog *c* to be drawn toward the post *D*, as shown in Fig. 6 of the drawings, and in releasing the arm *B* from the aforesaid pressure and allowing the same to rise from the platen *A* the link *b* draws up the arm *a* and causes the other arm, *a'*, of the lever to push the dog *c* from the post *D*, and by the engagement of said dog with one of the notches in the feed-bar *C* the post *D* is pushed along on the said bar and carries with it the arm *R*, as illustrated in Fig. 6 of the drawings, and thus the spacing between the letters to be printed is effected.

During the latter part of the descent of the arm *B* the lever *L* strikes the top of the free end of the lever *d*, and thereby throws the dog *c* out of engagement with the feed-bar *C*, and consequently controls the movement of the post *D* on the feed-bar and the spacings between the letters to be printed, as aforesaid. In order to regulate the aforesaid feed motion to conform the spacing to the different widths of letters to be printed, I bend the plate *L'* out of a horizontal plane, as shown in Figs. 2, 3, 4, and 10 of the drawings, thereby providing said plate with bearings at different elevations above the head *P'*, and thus causing the lever *L* to be supported at different elevations when the head *P'* is tilted by the swinging of the plunger-stem *P''* into the different notches *iii* of the guide-plate *R*. That portion of the plate *L'* which is diametrically opposite the portion of the head *P'* which carries the widest letters—such as *M* and *W*—is provided with a downward-projecting pin, *l*, bearing on the head *P'*, as illustrated in Fig. 10 of the drawings. Consequently, when the plunger-stem *P''* is swung into a position to print said wide letters, the lever *L* is raised, so as to prevent it from striking the lever *d* until the dog *c* has moved the post *D* on the feed-bar *C* the proper distance to produce the requisite space for the wide letter about to be printed. To opposite edges of the plate *R* is pivoted a yoke, *n*, which is adapted to pass across the under side of the plunger-face *h*, and has pivoted to it the inking-roller *r*. To the under side of the arm *B*, back of the plunger *P*, is secured a plate, *t*, which carries the ink to be supplied to the inking-roller. The said yoke is caused to automatically pass across the face *h* to ink the type, and rearward to traverse the plate *t*

to be replenished, by means of a rod, *s*, connected at one end with the yoke above its pivot and at the opposite end to the post *D*.

My improved type-writer can be operated very expeditiously by one hand of the operator, the hand being laid upon the plate *R* and used to depress the arm *B*, so as to imprint the paper lying on the platen *A*, and the guide-arm *P'* of the printing-plunger being manipulated by the fingers of said hand to throw the said guide-arm into the notch marked corresponding to the letter to be printed.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the platen and the oscillatory arm *B*, the printing-plunger *P*, connected to said arm by a universal joint and provided with a spherical printing-face having the types arranged in concentric circles thereon, a sleeve sliding longitudinally on the stem of the printing-plunger, and the annular guide-plate *R*, rigidly secured to the arm *B* and surrounding the stem of the plunger, and provided with bearings for said stem and its sleeve, substantially as described and shown, for the purpose set forth.

2. In combination with the platen, an oscillatory arm arranged movably toward and from said platen, a printing-plunger pivoted on said arm, a guide-arm extended from the plunger, and a guide-plate provided with notches adapted to receive said guide-arm by the oscillations of the latter, as and for the purpose set forth.

3. In combination with the platen, an oscillatory arm arranged movably toward and from said platen, a printing-plunger connected with said arm by a universal joint, a guide-arm extended from the plunger, and an annulus surrounding said guide-arm and provided with a series of notches adapted to receive the guide-arm, substantially as described and shown.

4. In combination with the platen, an oscillatory arm arranged movably toward and from said platen, a printing-plunger pivoted on said

arm, a guide-arm extended from the printing-plunger, a guide-plate carried on the oscillatory arm and provided with notches flared toward their open ends, and sleeves of different diameters adapted to slide longitudinally on the guide-arm and adapted to enter the notches of the guide-plate, substantially as and for the purpose specified.

5. In combination with the oscillatory arm *B*, post *D*, and spring supporting said arm, the plunger *P*, pivoted to the front end of said arm, the ring *R*, secured to said arm above the pivot of the plunger, the yoke *n*, pivoted to opposite edges of said ring, the inking-roller *r* on said yoke, the rod *s*, connected at one end to the yoke above its pivot and at the opposite end to the post *D*, and the inking-plate *t*, secured to the arm *B* back of the plunger, substantially as described and shown.

6. In combination with the platen, the bar *H*, the arm *B*, sliding on said bar, the printing-plunger *P*, pivoted to the arm *B*, the ratchet *C* under the arm, the post *D*, mounted movably on the ratchet and connected with the arm *B*, the lever *a a'*, pivoted on the post, the dog or pawl *e*, pivoted on one arm of said lever, the link *b*, connecting the other arm of said lever with the arm *B*, the lever *d*, extending from the dog *e*, and the lever *L*, extending across the top of the lever *d* and terminating with the plate *L'*, surrounding the plunger *P*, and provided with bearings of different elevations supporting the free end of the lever *L* upon the plunger-head *P'*, substantially as described and shown, for the purpose set forth.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 13th day of May, 1887.

CHARLES H. PERRY. [L. S.]

Witnesses:

C. BENDIXON,
N. M. SEAMANS.