(No Model.)

A. W. HALLENBORG.

TYPE ALIGNER FOR TYPE WRITING MACHINES.

No. 418,791. Patented Jan. 7, 1890.

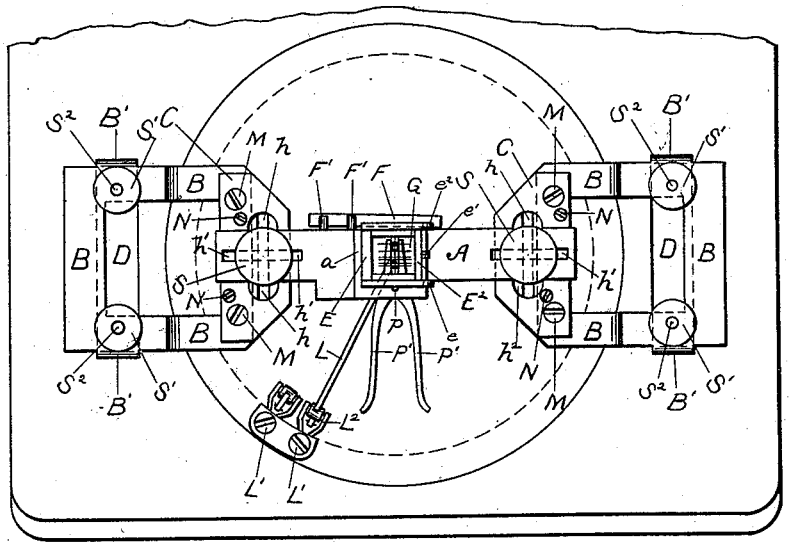

FIG. 1.

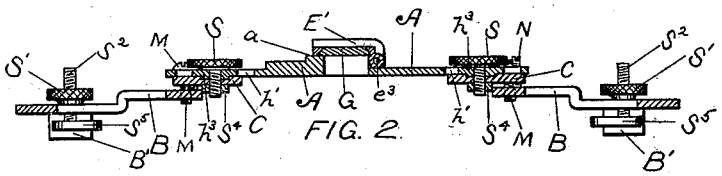

FIG. 2.

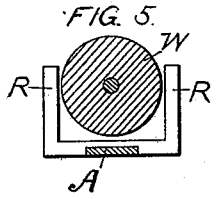

FIG. 5.

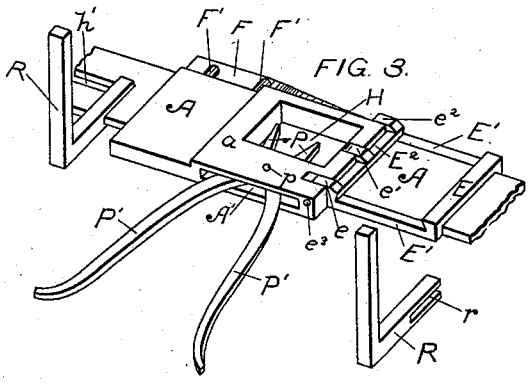

FIG. 3.

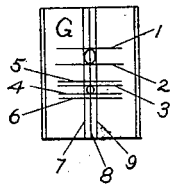

FIG. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

AXEL W. HALLENBORG, OF MALDEN, MASSACHUSETTS.

TYPE-ALIGNER FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 418,791, dated January 7, 1890.

Application filed June 26, 1888. Serial No. 278,229. (No model.)

To all whom it may concern:

Be it known that I, AXEL W. HALLENBORG, a subject of the King of Norway and Sweden, residing at Malden, in the county of Middlesex and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Type-Aligners for Type-Writing Machines, of which the following is a full specification.

My invention consists of an improved device especially adaptable for type-writing machines, in which the letters are secured to arms or levers hung in a type-basket, over which the aligner is placed, as hereinafter described, and illustrated in the accompanying drawings.

Figure 1 is a plan view showing the aligner in place over the type-basket. Fig. 2 is a longitudinal section through the center line of my device. Fig. 3 is a perspective enlarged view of the central portion of the aligner. Fig. 4 shows the etched glass gage, and Fig. 5 shows one form of detachable centering-guide sometimes employed.

I preferably construct my improved aligner in five principal parts A B B C C, of brass or other suitable material. The end portions B B are secured to the frame of the type-writer in any desired manner, preferably by means of downwardly-projecting tongues B′, which fit into the ends of the ribbon-slots D and are secured to the edges of the slots in any convenient way—as, for instance, by clamps S^5 and screws S^2 passing up through the plates B and tightly held by means of nuts S′. To the end pieces B B are attached, by means of screws M, the plates C C, to which in turn is secured the central bar A by means of the thumb-screw S passing down through the slots h' h in the parts A and C, respectively, and held by nuts S^4 on the under side of the plates C. On the raised central portion of the bar A is the rectangular opening H, and to said raised portion is hinged on a pivot e^3 the frame E E′ E^2 in such a manner that when the frame is open, as shown in Fig. 3, no part of the same may come above the level of the upper surface a of the said raised central portion, for reasons presently to be stated. The end portions of the hinged frame are beveled, as shown in Figs. 2 and 3, to admit the sliding gage G, made of glass or any transparent substance, the said gage not being shown in Fig. 3. The frame is held in an open or closed position by means of the spring F, secured to the side of the central bar in any desirable manner—as, for instance, by pins F′ F′—the free end of said spring bearing preferably against cornered portions e^2 of the frame, as shown in the drawings, whereby the frame may act somewhat as the blade of a knife. When the frame is closed, the lower surface of the glass gage rests on the surface a. Pivoted at p to the raised central portion of the bar A, and adapted to work within the slot A′ on the side of said bar, are the tongs P, working inside the rectangular opening H.

N N are screws which pass from above through tapped holes in the plates C C and bear against the upper surface of the plates B, while the screws M pass loosely through holes in the upper plates C and screw into tapped holes in the lower plates B. The screws M N thus act as leveling-screws in a manner easily understood, whereby the plates C, and with them the central bar A, may be adjusted at different heights above the frame of the machine. The aligner is also adjustable longitudinally and laterally, its longitudinal adjustment adapting it for different machines in which the distance between the ribbon-slots varies. The plates A and C are kept with their slots h' h always perpendicular to each other by means of a guide h^3, Fig. 2, whose under portion is tongued to slide easily within the wide groove h^2, sunk slightly below the level of the plate C, and the upper portion of the said guide h^3 sliding in the slot h', while the thumb-screw S passes down through the center of the said guide and through both the slots h' h.

When it is desired to align the type-writer, the aligner is secured, as above described, to the upper surface of the machine, the paper roller and carriage being turned back out of the way. The under surface of the glass gage when the frame is closed must be in exactly the same horizontal plane as the bot-

tom of the paper-roller when the latter is down in position for writing. The gage is etched or marked in any convenient manner with lines, as clearly shown in Fig. 4, to aid in aligning the type.

The particular gage shown in Fig. 4 is adapted for use on type-writers having an upper and lower case letter on each type-block. To this end I preferably use the central line 8 and side lines 7 and 9 parallel therewith to locate the position of the letter-carrying block at the end of the type-bar laterally. The parallel lines 1 2 3 4 5 6 at right angles to 7 8 9 locate the position of the said letter-carrying block in the other direction—that is to say, when the type is correctly aligned the upper-case letter or capital will rest in the space occupied by the letter O, Fig. 4, while the lower-case or small letter on the same block will be in the center of the space occupied by o between the lines 3 and 4. The lines 5 and 6 determine the position of the top and bottom portions, respectively, of such small letters as project above or below the line—as, for instance, p q.

In order to ascertain whether or not the surface *a* is in the same plane with the bottom of the paper-roller, the frame E E′ E² is thrown back in the position shown in Fig. 3, and the paper-roller of the machine is lowered in place. By sighting across the level of the surface *a* one can easily see whether or not this said surface is at the right height. It is for this reason that the parts of the frame, when open in the position shown in Fig. 3, are below the level of the surface *a*. There is then no further use for the paper roller, which is again thrown up out of the way. The frame is then closed in the position shown in Figs. 1 and 2, the glass gage being of course in position, and the center bar is adjusted by means of thumb-screws S, so that the center of the glass gage coincides approximately with the center of the circle of the type-basket. The aligner is now in proper position, and all that is necessary is to bring each type bar and block successively into such a position that the letters shall correspond with the lines on the gage, the screws L′ being of course first loosened, thus allowing extreme freedom of motion. The tongs P grasp the shank of each type-block and aid in holding said block in proper position under the gage. The said tongs being pivoted at the point *p*, the block may be moved to the right or left by simply turning the handles P′ in either direction, while at the same time the bar and block may be moved backward and forward within the tongs, the pressure on the handles being loosened. To aid in the first place in bringing the type-block approximately perpendicular to the line of the paper-roller, the frame E being turned back and the tongs opened wide apart, as shown in Fig. 3, the type-bar is pressed up, so that the block projects above the level of the surface *a*, and any of the operations commonly employed—such as undercutting, twisting the type-block, &c.—may be easily accomplished above the opening H and a perfect alignment secured by trial with the etched gage G.

In order to facilitate the central adjustment of the bar A, I sometimes employ guides R R, easily detachable, consisting of metal strips bent at right angles and having slots *r*, adapted to tightly embrace the central bar A in a manner easily understood by reference to Fig. 3. When these guides are pressed firmly up against the bar A and the inner surface of the upright portions of the guides are in contact with the surface of the paper-roller, the said bar will then be in correct lateral position. If desired, such guides may be made as shown in Fig. 5, each having two arms R to pass on either side of the paper-roller W, with the slot in the middle to fit over the bar. This form is particularly desirable when the aligner is used on machines with rollers of varying diameters.

I do not confine myself to the exact form of marking the glass gage herein shown, as obviously in machines where there is but one letter on each type-block a different marking would be necessary; also, the lines must be differently spaced for different fonts of type. I therefore commonly employ interchangeable gages variously marked to be used on different machines, but all of which are preferably beveled at the sides and adapted to slide into the same frame and to be used with the same aligner.

I claim—

1. A type-writer aligner consisting of a perforated central bar provided with a transparent gage, the lower surface of which determines the height of the type during alignment, the said gage being marked with a series of lines, substantially as and for the purposes described.

2. A type-writer aligner consisting of a longitudinally and laterally adjustable perforated central bar, in combination with a frame hinged thereto, a transparent gage marked with a series of lines, and a pair of tongs pivoted to the said bar, all constructed, arranged, and operated substantially as and for the purposes described.

3. In a type-writer aligner, a transparent gage G, the lower surface of which determines the height of the type during alignment, the said gage being marked with a series of lines, whereby the correct positions of the type-blocks may be determined, substantially as described.

4. In a type-writer aligner, a perforated central bar, in combination with a pair of tongs pivoted thereto, substantially as described.

5. In a type-writer aligner, a perforated central bar A, in combination with end pieces B, slotted intermediate pieces C, leveling-screws M N, and means, substantially as described, whereby said pieces are secured together and

to the type-writer frame, substantially as set forth.

6. The combination, with the central bar A of a type-writer aligner, of the detachable guides R R and the paper-roller W of the type-writer, substantially as described.

7. In a type-writer aligner, a perforated central bar, in combination with a frame hinged thereto and provided with a gage, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand.

AXEL W. HALLENBORG.

Witnesses:
WM. B. H. DOWSE,
ALBERT E. LEACH.