C. L. SHOLES.

Type-Writing Machine.

No. 207,558. Patented Aug. 27, 1878.

Fig. 1.

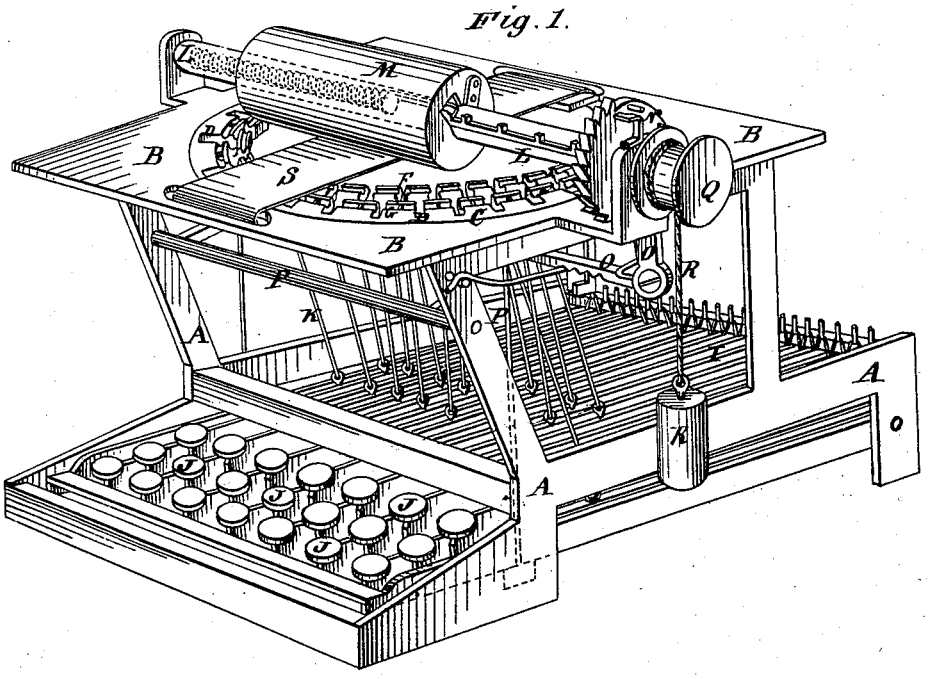

Fig. 2.

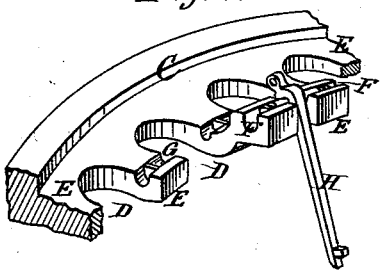

Fig. 3

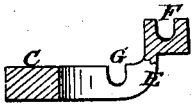

Fig. 4.

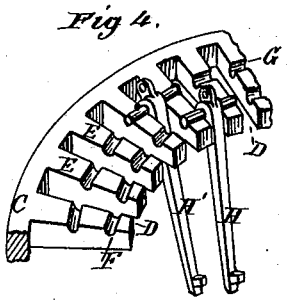

Fig. 5.

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UNITED STATES PATENT OFFICE.

C. LATHAM SHOLES, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE TYPE WRITER COMPANY, OF NEW YORK, N. Y.

IMPROVEMENT IN TYPE-WRITING MACHINES.

Specification forming part of Letters Patent No. **207,558**, dated August 27, 1878; application filed March 27, 1878.

To all whom it may concern:

Be it known that I, C. LATHAM SHOLES, of Milwaukee, Wisconsin, have invented Improvements in Type-Writing Machines, of which the following is a specification:

The invention relates to the type-bars of type-writing machines; and its nature is in combining a type-bar which has two trunnion-like journals with a circular annular disk which has a radial slot through its inner periphery, and a straight journal-bearing groove in its upper surface on each side of said slot, and in line parallel with the chord of an arc of said disk; in combining two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot; and in combining two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other and in a higher or lower plane, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot.

The accompanying drawing and following description fully illustrate the invention.

The figures of the drawing represent views as follows: Figure 1, a view of a type-writing machine; Fig. 2, a perspective view of part of a circular annular disk with a type-bar pivoted thereto; Fig. 3, a sectional view of said disk; Fig. 4, a view of another form of said disk with type-bars pivoted thereto, and Fig. 5 a view of a type-bar with trunnion-like journals.

The description is as follows: A represents the side plates of the main frame of a type-writing machine; B, the top plate on the side plates, A; C, a circular annular disk in a hole or recess in the top plate, B; D, a series of radial slots through the disk C, from the inner periphery outward; E, a series of arms made by the slots D through the disk C; F, a concentric series of pairs of straight journal-bearing grooves in the upper surface and near the inner periphery of the disk C, each pair in line parallel with the chord of an arc of said disk, and one of each pair in the arm E on each side of every alternate slot D; G, another like series of pairs of journal-bearing grooves in the disk C, only farther from the center, and in lines across the alternate slots D; H, a type-bar with a trunnion-like journal on each side, and pivoted in a pair of the inner journal-bearing grooves F in the disk C; H′, a like type-bar, only longer than the type-bar H, and pivoted in a pair of the outer journal-bearing grooves G in the disk C; I, a series of pivoted levers under the type-disk C; J, a key on the end of each pivoted lever I; K, a connecting-wire attached to each key-lever I, and to the corresponding type-bar H or H′ above; L, a long axle in bearings across over the top plate, B; M, a cylindrical platen, on the long axle L; Q, a pulley on the end of the long axle L; R, a cord attached to and wound on the pulley Q, and to the other end of which is attached a weight; and S, an inking-ribbon, fixed so as to move over the striking-point of the types of the type-bars H and H′, and under the paper wrapped around the platen M.

The pairs of straight grooves F and G, respectively, are made to fit the pairs of trunnion-like journals of the type-bars H and H′, respectively, so that in vibrating up and down the type end of either type-bar cannot move in any direction except in the vertical plane of the radial line, cannot wabble, but must inevitably vibrate in the same plane, and strike always at the same place.

By making the type-bars H′ longer than the type-bars H, and the grooves G farther from the center than the grooves F, and putting each type-bar of each series in every alternate slot D, the type-bar journals or trunnions may be nearly or quite twice as long as they could be if the type-bars of the two series H and H′ were the same length, and the grooves of the two series F and G were the same distance

from the center, which helps insure the vibrations of the type-bars to be always in the same planes, and the accuracy of the types always striking at the same place. As the lines of the grooves are chords of arcs of the circle of the disk C, the types necessarily must strike at the point in the center.

Figs. 2 and 3 show a form of disk, C, in which the outer series of grooves, G, are in a lower plane than the inner series, F; while Fig. 4 shows a form in which the two series of grooves F and G are in the same plane.

There are some advantages in having the two series of type-bars hung in different planes. They are thus farther apart, and have more freedom of action, and are less liable to collide in passing one another in their vibrations.

This invention is an improvement on my Patent No. 199,382, January 22, 1878. The journal-bearing grooves of that patent are curved, whereas in this invention they are straight. The trunnions of the type-bars are necessarily straight, and straight journals in curved bearings can touch only in two places, and can never fit as perfectly as in straight bearings. Therefore

What I claim is as follows:

1. The combination of a type-bar which has two trunnion-like journals with a circular annular disk which has a radial slot through its inner periphery, and a straight journal-bearing groove in its upper surface, on each side of said slot, and in line parallel with the chord of an arc of said disk, in a type-writing machine, substantially as described.

2. The combination of two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot, in a type-writing machine, substantially as described.

3. The combination of two series of type-bars, those of one series longer than those of the other, and of which each has two trunnion-like journals, with a circular annular disk which has a series of radial slots through its inner periphery, and two concentric series of pairs of straight journal-bearing grooves in its upper surface, one series around the other, and in a higher or lower plane, and each pair in line parallel with the chord of an arc of said disk, and one of each pair of each series on each side of every alternate slot, in a type-writing machine, substantially as described.

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