C. L. SHOLES.

Type-Writing Machine.

No. 199,382. Patented Jan. 22, 1878.

Fig. 1,

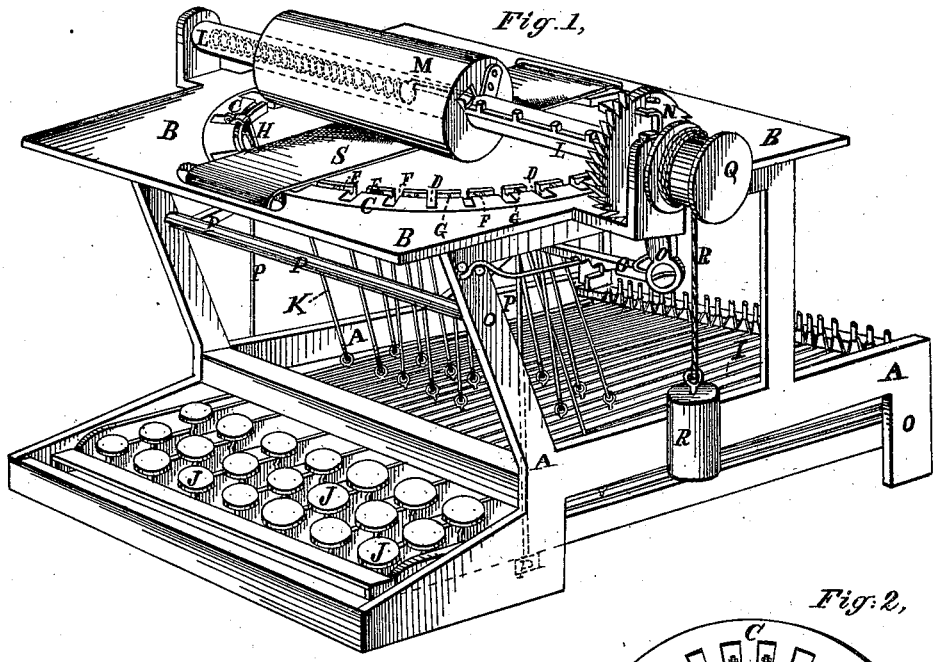
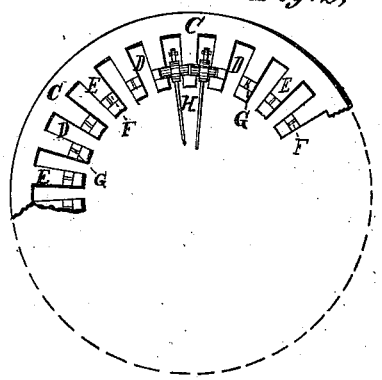


Fig. 2,



Attest

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C. LATHAM SHOLES, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE TYPE WRITER COMPANY.

IMPROVEMENT IN TYPE-WRITING MACHINES.

Specification forming part of Letters Patent No. **199,382**, dated January 22, 1878; application filed January 2, 1874.

To all whom it may concern:

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

The nature of the invention is in combining a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper surface, and a radial vertical slot through its inner periphery or inner edge; and in combining a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper surface, and a radial vertical slot through its inner periphery or inner edge, and with a partition or stop across the journal-bearing groove of such disk.

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, and Fig. 2 a view of part of the annular circular disk.

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, an annular circular disk within an aperture in the top plate B; D, a series of radial vertical slots through the inner periphery or inner edge of the disk C; E, a series of tongues or arms made by the slots D in the disk C; F, a journal-bearing groove in the upper surface of each disk-arm E; G, a partition or stop across each journal-bearing groove F; H, a type-bar within each slot D, and with a trunnion or journal in the groove F of each contiguous arm E of the disk C; I, a series of levers pivoted near the bottom at the hind part, and extended through to the fore part of the main frame A B; J, a key on the fore end of each lever I; K, a connecting-wire attached to each key-lever J I, and to the corresponding type-bar H; L, a long shaft or main axle across over the middle of the disk C, in bearings attached to the top plate B; M, a cylinder on and attached so it may turn with and slide along the main axle L; N, a ratchet-wheel on near one end of the main axle L; O, the letter-space ratchets, attached and pivoted so they may work in the ratchet-wheel N; P, the vibratory frame, pivoted in line across over the key-levers J I; Q, a pulley attached to the end of the main axle L, so it may turn independently in one direction, but engage and turn with the axle in the reverse direction; R, a weight and cord attached to the pulley Q; and S, an inking-ribbon attached to spools within the main frame A B, and extended up through the top plate B, and across over the middle of the disk C, under the cylinder M.

The function of the annular circular disk C is to hold the type-bars H in the same unvarying relative position. The disk is a metal plate, which will not warp and twist, and the type-bars attached to it must necessarily be held in the same relative position.

The function of the grooves F is to receive and bear the trunnion-journals of the type-bars H. The series of grooves is concentric, and necessarily each is exactly the same distance from the striking-point at the center, so that the type-bars, if of the same length, must necessarily strike, when vibrated, at the same place; and the trunnion-journals, set in the journal-bearing grooves F of the disk C, must necessarily keep each type-bar H in the same relative position.

The function of the partition or stop G is to prevent each type-bar H from moving in the direction of the line of its journal-bearing groove F. In the drawing not only is the series of the journal-bearing grooves F concentric, but each separate groove F is in itself concentric, and the line of the combined grooves is therefore a circle.

It is not necessary that each separate groove should be concentric; but it is a convenient form in which to make them, and insures the series being concentric, and therefore equidistant from the center; and when so made, if the trunnions H are all of the same length, each a chord of an equal arc of the concentric line, then only one stop, G, is necessary. In either direction the continuous trunnion H will strike against the stop G, and be held from

moving in that direction, and the other end of each separate trunnion, in either direction, becomes in itself a stop for the next contiguous trunnion to strike and stop against, and so on; but it is, perhaps, better to put a stop, G, across the groove F of every disk-arm E, so as to isolate and make each type-bar and its trunnion H independent of all the others. The most perfect freedom and accuracy combined is, perhaps, thus best insured.

The combination of two ratchets, attached together side by side, pointed practically in the same direction, and pivoted so they may vibrate in the same plane in one direction, but one pivoted separately, so it may vibrate independently in a plane at a right angle to that of the joint vibration, so they may vibrate in parallel planes in the reverse direction, with only one series of ratchet-teeth and notches, and with the key-levers, vibratory frame, paper-carriage, and platen of a type-writing machine, and the combination of a horizontal bar, attached and pivoted so it may vibrate across in front of the key-levers, with the vibratory frame and letter-space ratchets of a type-writing machine, form no part of this invention; and the combination of a slotted disk with the pivoted type-bars of a type-writing machine is a common and well-known device; but the improvements which do constitute the invention, and which I therefore claim, are as follows:

1. The combination of a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper suface, and a radial vertical slot through its inner periphery or inner edge, substantially as described.

2. The combination of a type-bar of a type-writing machine, which type-bar has a trunnion or journal on each side, with an annular circular disk, which disk has a journal-bearing groove in its upper surface, and a radial vertical slot through its inner periphery or inner edge, and with a partition or stop across the journal-bearing groove of such disk, substantially as described.

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