(No Model.)

L. W. SWEM.

ADDING MACHINE.

No. 327,970. Patented Oct. 6, 1885.

Fig. 1.

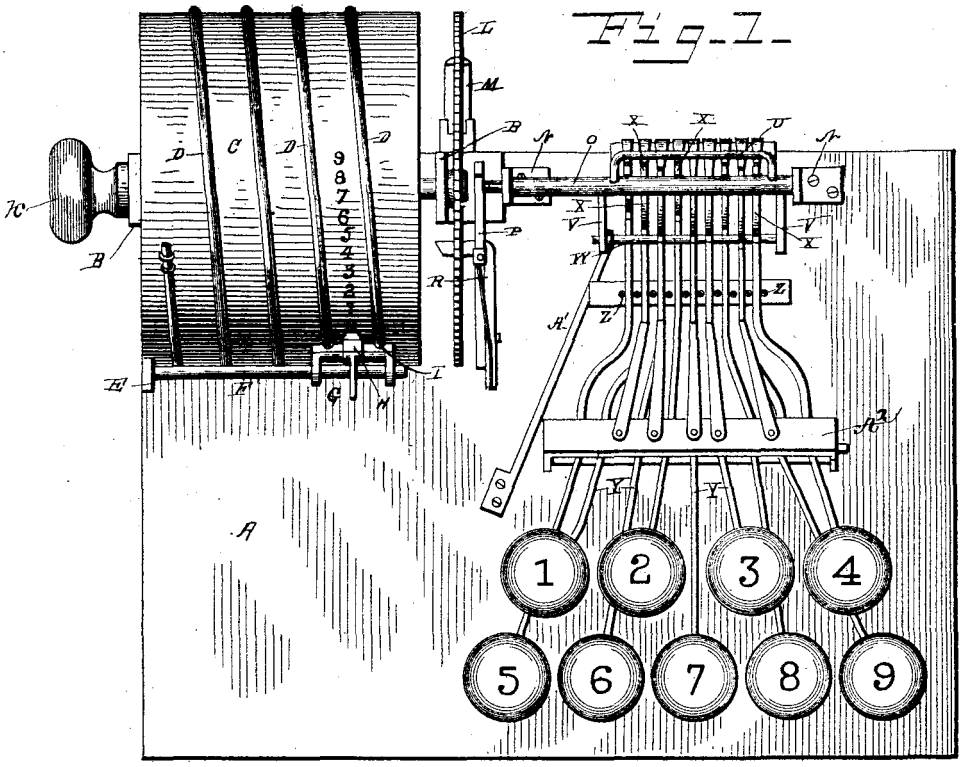


Fig. 2.

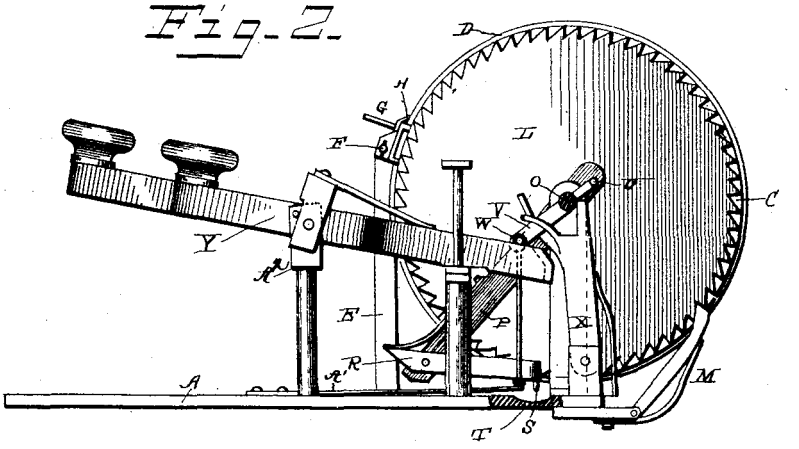
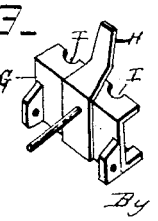


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LAWRENCE W. SWEM, OF WEST LIBERTY, IOWA.

ADDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,970, dated October 6, 1885.

Application filed June 15, 1885. Serial No. 168,752. (No model.)

To all whom it may concern:

Be it known that I, LAWRENCE W. SWEM, a citizen of the United States, residing at West Liberty, in the State of Iowa, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in adding-machines, and is designed to produce a machine of simple construction and efficient operation for the purpose.

The improvement consists, essentially, in the mechanism employed, as hereinafter described and claimed.

In the following description reference is had to the annexed drawings, showing, in Figure 1, a plan view of the device; Fig. 2, a side elevation; Fig. 3, a detail of the sliding indicator.

On a suitable base, A, are standards B, supporting the cylinder C, which is provided on its surface with a continuous spiral flange or tongue, D, or with its equivalent, a spiral groove.

On the base is erected another standard or post, E, having a projecting arm, F, parallel with and close to the surface of the cylinder, said arm having sufficient spring to allow its being forced slightly away from the said cylinder, for the purpose hereinafter set forth. On this arm travels the indicator G, the said arm passing through ears thereon. A finger, H, forms an index, which rests on the cylinder normally and grooves or recesses I on the said indicator receive the tongue D, and by the spiral form thereof cause the indicator to travel on the arm F, as stated. A thumb-piece on the said indicator forms a convenient means of throwing the same out of engagement with the cylinder, the arm F acting as a pivot.

On one end of the cylinder-shaft is a knob, K, and on the other a ratchet-wheel, L, provided with a spring-actuated retaining-pawl, M, secured to the base or bed plate A.

On standards N is journaled a rock-shaft, O, having one projecting end coincident with the cylinder-shaft, and provided with an arm, P, on the end of which is pivoted a pawl, R, spring-retained and engaging with the ratchet-wheel L. This pawl is provided with a lug or pin, S, Fig. 2, which, when the pawl is at its lowest position, rests in a recess, T, in the base or bed plate. The rock-shaft has between its bearings a bail, U, and also arms V, connected by a rod, W, and projecting from the shaft in a direction opposite that of the said bail U.

Projecting upward from the base and under the rock-shaft are a series of arms, X, with the upper free ends bifurcated, or V shape, as shown in Fig. 2. The lower ends of the arms are pivoted to a suitable frame attached to the bed-plate, and are spring-retained.

To a frame, A^2, elevated from the bed-plate, are pivoted a series of keys, Y, preferably numbered from "1" to "9." These keys are so bent that the outer ends are sufficiently apart to be conveniently manipulated, while the inner ends rest closely side by side and take up but little space laterally. The key arms or levers are guided by upright pins Z, and engage under one end of the V-shaped continuations of the arms X. Some or all of the keys may be spring-retained.

To the rod W is secured a spring, A′, which tends to keep the said arm in normal engagement with the tops of the keys.

When any one of the keys is pressed downward, the other end is elevated, carrying the rod W with it till the bail on the rock-shaft rests on one end of the V-continuation of the arm X, the said end of the key having engaged under the other end of the said V-shaped continuation and caused it to travel backward sufficiently to place the said end in position to receive the bail. This operation carries the pawl R over as many of the rack-teeth as the number on the key indicates, the "stop" end of the V-continuation being regulated in length for this purpose, it varying with each key. When the key is released, the spring A′ will cause the pawl R to carry the cylinder forward till the pin S on said pawl engages in the slot in the bed-plate and prevents farther movement. The other pawl prevents any retrograde movement of the cylinder, while offering no impediment to its forward motion.

On the cylinder are a series of numbers, from

"zero" or "1" upward, being spaced relative to the teeth on the ratchet-wheel, and placed between the parallel portions of the tongue D. It is evident that if the index be placed at "zero" and "9" and the keys be pressed and released, the cylinder will travel till the index points to "9." Then if "7" be operated the index will point to "16," and so on. When the limit of the cylinder has been reached, the indicator may be disengaged from the flange or track D and returned to the other end of the rod, on which it travels, and the cylinder turned by means of the knob till "zero" be reached.

If a groove be used in place of the tongue D, the indicator will be provided with lugs instead of recesses I.

I claim—

1. Combined with a cylinder having a spiral track, an indicator consisting of a frame having means of engagement with said track and carrying an index-finger, and a supporting-track for said indicator, consisting of a spring-arm parallel to the face of said cylinder, substantially as and for the purpose specified.

2. Combined with a ratchet-wheel and cylinder, a rock-shaft, an arm on one end thereof, a pawl pivoted to said arm and carrying a stop, keys operating said rock-shaft, and a bed-plate with a recess receiving said stop, substantially as and for the purpose specified.

3. In an adding-machine, an actuating mechanism consisting of a series of keys, a series of pivoted arms with the free ends bifurcated, one portion of which form stops, and a rock-shaft having a projecting bail engaging with the stops, and an opposite projection engaging with the keys, which operate both the arms and the said rock-shaft, substantially as and for the purpose specified.

4. An adding-machine consisting of a base, a cylinder supported thereon and provided with a spiral track on it, an indicator engaging normally with said track, a ratchet-wheel on the cylinder-shaft, and pawl-retained, a rock-shaft carrying a pawl engaging with and actuating the ratchet-wheel, a series of bifurcated pivoted arms, and a series of keys operating the said arms and the rock-shaft, the whole operating substantially as and for the purpose specified.

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

LAWRENCE W. SWEM.

Witnesses:
JOUT MAXSON,
C. A. W. KENT.