W. J. PASINSKI.

ADDING MACHINE.

APPLICATION FILED JULY 2, 1919.

1,342,459.

Patented June 8, 1920.

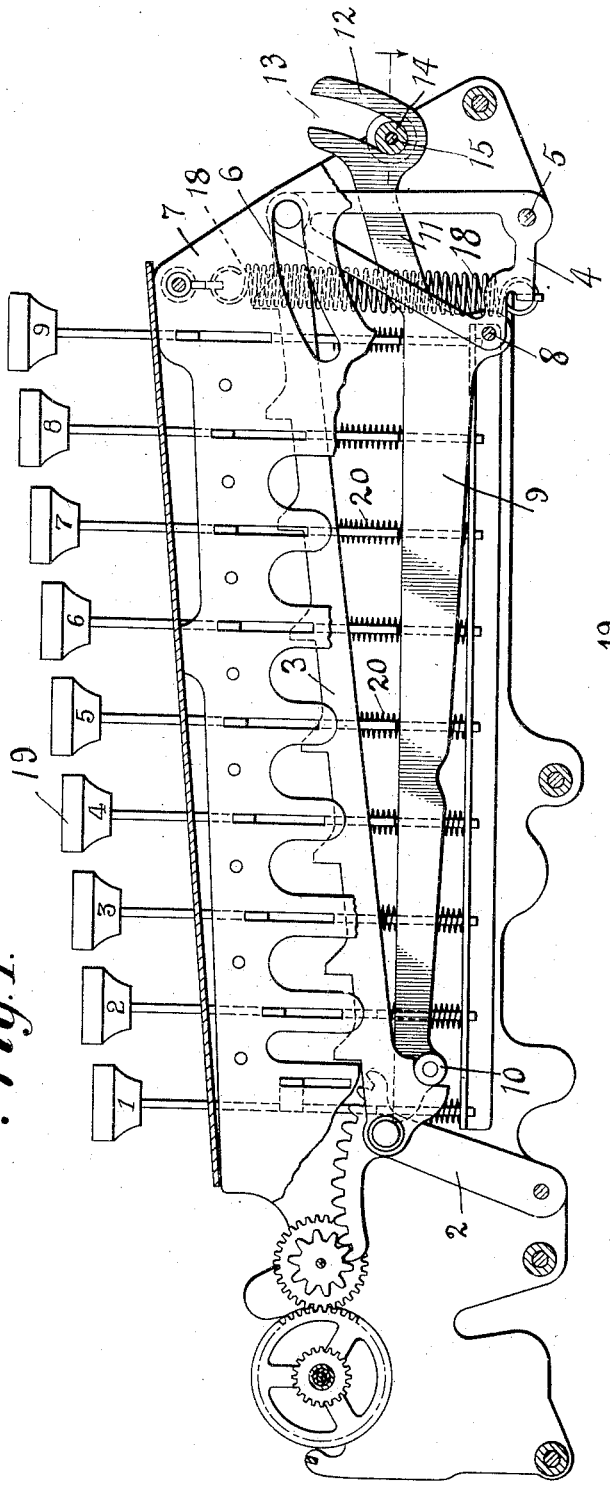

Fig. 1.

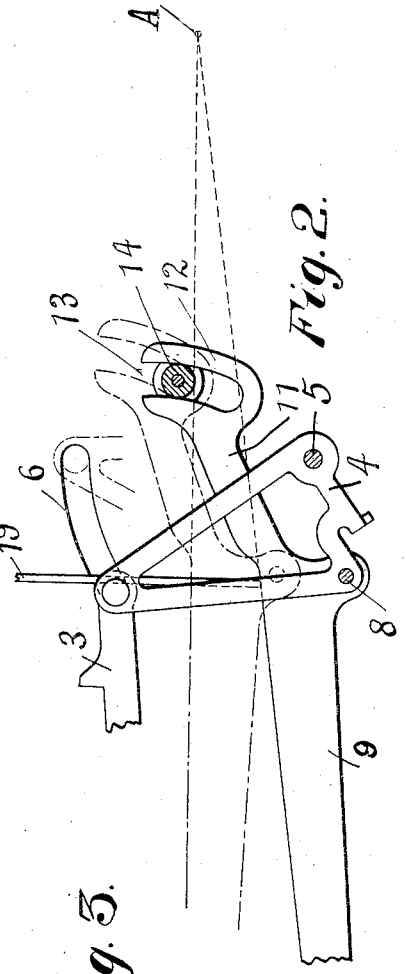

Fig. 2.

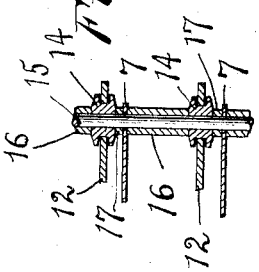

Fig. 3.

Walter J. Pasinski INVENTOR

BY Reeder, Gibbs & Davis & Macauley

His ATTORNEYS

UNITED STATES PATENT OFFICE.

WALTER J. PASINSKI, OF DETROIT, MICHIGAN, ASSIGNOR TO BURROUGHS ADDING MACHINE COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

ADDING-MACHINE.

1,342,459. Specification of Letters Patent. Patented June 8, 1920.

Application filed July 2, 1919. Serial No. 308,320.

To all whom it may concern:

Be it known that I, WALTER J. PASINSKI, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Adding-Machines, of which the following is a specification.

The present invention relates to that type of adding or calculating machines known as "key driven," inasmuch as the power for operating the adding mechanism is derived from the striking of keys which ordinarily are arranged in denominational rows, each row comprising nine keys. Reference may be had to prior Patents Nos. 1,156,600 and 1,282,425 issued October 12, 1915 and October 22, 1918, respectively, upon inventions of one Allen A. Horton.

The object of the present invention is to bring about lever action comparable to that of the key operated lever of said Patent No. 1,282,425, using a lever of considerably less length as in the construction of Patent No. 1,156,600, while at the same time attaining uniformity in key depression.

In the drawings which accompany and form part of this specification, Figure 1 represents a vertical longitudinal section of a machine embodying the present invention, with an elimination of details unnecessary to the understanding of said invention; Fig. 2 represents certain of the parts in action together with a diagrammatic representation illustrating the character of the lever action; and Fig. 3 is a detail horizontal cross-section on the line 3—3 of Fig. 1.

In view of the disclosures of the above mentioned patents and others, and the quite extensive commercial use of the machine of the type here concerned, it will be quite unnecessary to describe such machine in all its parts. Adding mechanism is illustrated at the left of Fig. 1 and numeral 2 designates a gear segment which is in mesh with a gear pinion of the adding mechanism. There is pivotally coupled to this gear segment a rearwardly extending bar 3 which at its rear end is pivotally coupled to a lever or a pivoted plate of triangular form, same being designated 4. Its lower rear portion is mounted upon a fixed pivot at 5 and the stud which connects its upper end with said bar 3 is confined in an arc-shaped slot 6 in one of the division plates 7 of the frame-work. The forward portion of this triangular plate supplies a fulcrum 8 for a lever 9 which extends forward to a point adjacent the gear segment 2. This lever somewhat resembles that designated F in Patent No. 1,282,425, being free at its forward end unlike the lever designated A in Patent No. 1,156,600. The roller 10 at the forward end of this lever is merely for limiting purposes, the same seating normally in a notch of the bar 3 as shown in Fig. 1.

Now instead of either coupling the forward end of the lever with the bar as in the construction of Patent No. 1,156,600, or extending the lever rearward and there mounting it upon a fixed pivot as in the construction of Patent No. 1,282,425, the present invention provides for a novel control of the lever at the rear in shortened form which properly restricts its movement on the "floating" fulcrum 8, and provides for uniform key action upon the lever. Thus the latter extends rearward and upward beyond the part mounted on the floating fulcrum, as shown at 11, and has an enlargement 12 of somewhat segmental form, which enlargement is made with a curved slot 13. This slot is occupied by a double flanged roller 14, the flanges providing for preservation of proper lateral relationship between the roller and the slotted enlargement of the lever. Fig. 3 shows the manner of mounting a series of these rollers, it being of course understood that the machine will have a considerable number of levers 9. The rollers are journaled upon a rod 15 extending through division plates 7, and suitable spacing sleeves 16 and collars 17 will be employed to preserve the proper lateral relationship of parts.

Springs 18 normally uphold the triangular plates or levers 4 and the levers 9, and correspondingly hold rearward the bars 3 and the gear segments 2. The keys 19 are mounted as usual and have shoulders overlying the upper edge of the lever 9, and said keys are normally held up by springs 20.

Fig. 2 illustrates the effect of depressing one of the keys and the extreme extent of movement of parts is here illustrated, inasmuch as the numeral key 9 is the one depressed. The key operates directly upon the lever 9 forcing it downward and causing the triangular lever 4 to swing counter-clockwise driving the bar 3 forward and corre-

spondingly actuating the gear segment 2. In this action the lever is at all times guided and controlled by the continuing engagement between the roller 14 and the sides of the cam-like slot 13. The relationship of parts and the shape and disposition of said slot are such that the swing of the lever corresponds with that of a lever extending farther rearward as indicated by the dotted lines, and fulcrumed at a point A corresponding with the fixed fulcrum of the lever F of Patent No. 1,282,425, but being in line with the top edge of the lever.

It will be noted that the co-action between the guiding slot and the roller is unvarying in character, and as this co-action controls the lever in its displacement by any one of the keys, it is manifest that the key action will be uniform.

Although there is this rearward prolongation of the lever, it is not carried to anything like the extent of the prolongation required when the lever is to be mounted upon a fixed pivot at the rear; therefore the advantages are attained of reducing the over-all dimensions of the machine, lightening its total weight, and effecting saving of materials.

I claim

1. The combination with adding mechanism and a series of keys, of a lever operated upon by the latter; a pivotally mounted member supplying a movable fulcrum for said lever, the latter extending rearward therefrom and having a guiding slot; and a frame fixture in said slot; together with operating connections between the lever and the adding mechanism.

2. The combination with adding mechanism and a series of keys, of a lever operated upon by the latter; a pivotally mounted member supplying a movable fulcrum for said lever, the latter extending rearward therefrom and having a guiding slot; and a frame fixture in said slot; together with operating connections between the said pivotally mounted member and the adding mechanism, the forward end of the lever being free.

3. The combination with adding mechanism including a gear segment, and a series of depressible keys; of a bar coupled to said segment; a pivotally mounted member to which the opposite end of said bar is coupled; a lever fulcrumed upon said member and extending along the keys, which are adapted to operate upon it,—the forward end of said lever being free and a prolongation rearward of its fulcrum having a curved slot; and frame fixture having a roller occupying said slot.

WALTER J. PASINSKI.