J. GRABER.

INDEX PLATE FOR CALCULATING MACHINES.

APPLICATION FILED JULY 30, 1909.

941,774. **Patented Nov. 30, 1909.**

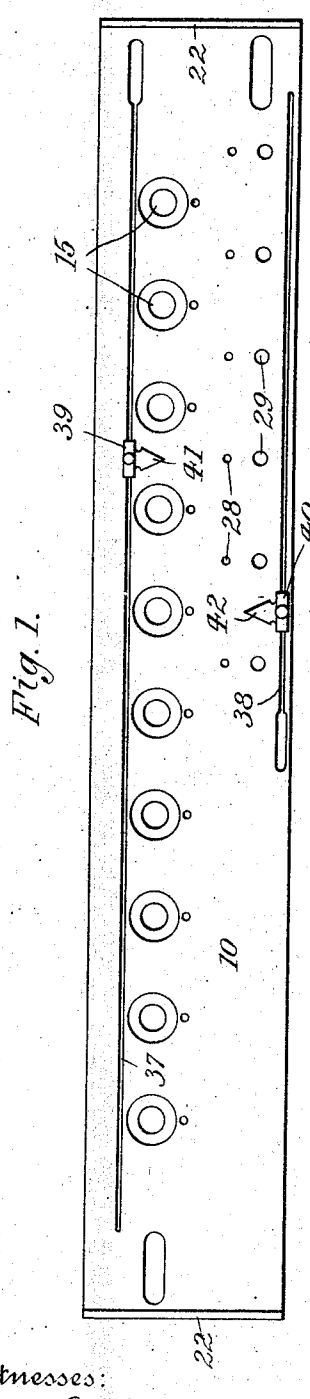

Fig. 1.

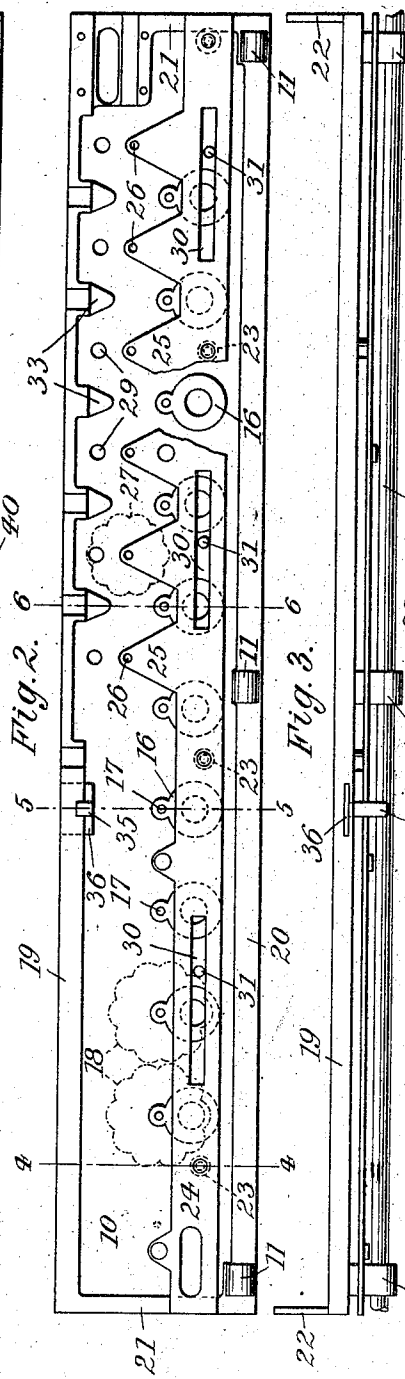

Fig. 2.

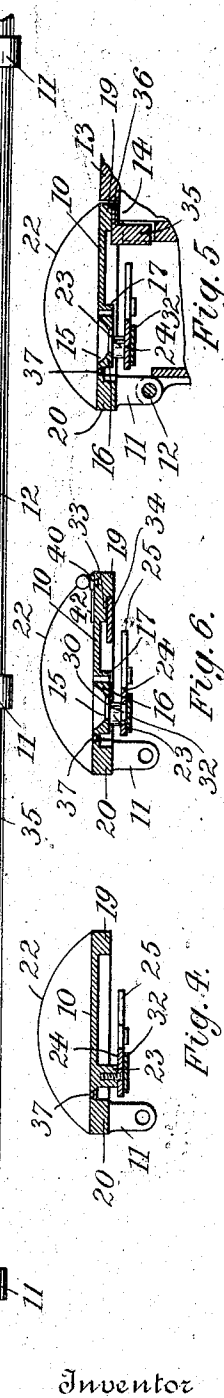

Fig. 3.

Fig. 5.

Fig. 6.

Fig. 4.

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UNITED STATES PATENT OFFICE.

JULIUS GRABER, OF NEW YORK, N. Y.

INDEX-PLATE FOR CALCULATING-MACHINES.

941,774. Specification of Letters Patent. Patented Nov. 30, 1909

Application filed July 30, 1909. Serial No. 510,412.

To all whom it may concern:

Be it known that I, JULIUS GRABER, a citizen of the United States, residing at New York city, Manhattan, county and State of New York, have invented new and useful Improvements in Index-Plates for Calculating-Machines, of which the following is a specification.

This invention relates to an improved calculating machine and more particularly to the index plate slidably secured to the body of the machine and adapted for the display of the product figures. Such a plate is marked "15" in Patent No. 897,659, granted to R. Rein, September 1, 1908, and the object of the invention is to simplify the construction of the plate and reduce its weight, so that it may be manipulated with less effort.

In the accompanying drawing: Figure 1 is a top view of the index plate; Fig. 2 a bottom view thereof; Fig. 3 a front view, and Figs. 4, 5 and 6 are cross sections on lines 4—4; 5—5, and 6—6, Fig. 2, respectively.

The index plate 10 is provided at its back with a series of depending perforated lugs 11 for the reception of a hinge-rod 12, by which the plate is slidably secured to the machine frame 13. This frame is provided with a rest 14 which engages the bottom of plate 10 at the front thereof and serves to sustain the plate in a horizontal position. Plate 10 is made comparatively thin and is provided with a row of windows 15 through which the product figures are adapted to be displayed. Each window is encompassed by a boss 16 integral with and depending from the bottom of plate 10. The inner wall of boss 16 is of flaring shape converging from top to bottom, (Fig. 6), while its outer wall is of circular shape and merges into a bearing 17 which is also integral with the bottom of plate 10. Bearings 17 receive the arbors of dials 18 displaying the product figures, which are exposed through windows 15, some of said dials being indicated by dotted lines in Fig. 2.

It may here be stated that the operative mechanism of the machine does not form part of the present invention, the latter relating solely to the construction of the index plate and adjoining devices for sustaining said operative mechanism.

Plate 10 has a depending integral rim or circumferential flange composed of a front section 19, a rear section 20 and end sections 21. Of these, front section 19 is adapted to rest on support 14, while rear section 20 carries the lugs 11. From the top of plate 10 extends at each end thereof an integral segmental finger-piece 22, by means of which the plate may be manipulated.

To the lower side of plate 10 is secured by studs 23 a rail 24 which is spaced therefrom to accommodate dials 18 and coöperating parts. Rail 24 is provided with a series of triangular projections 25 perforated as at 26 for receiving the lower ends of arbors carrying auxiliary dials 27, the upper ends of such arbors being received within perforations 28 of plate 10. Dials 27 are also mounted between plate 10 and rail 24, and their figures are exposed through a row of windows 29 of the plate. A series of longitudinal slots 30, in rail 24, are adapted to receive guide pins 31 of a slide 32, by means of which dials 18 are returned to their zero position.

Front rim 19 is provided between windows 29 with a series of stepped projections 33 for accommodating an auxiliary slide 34, by means of which dials 27 are retracted. Rim 19 is further provided with the usual nose 35 by means of which the plate is set and locked in position during the calculating operation. This nose has a heel 36 extending at right angle therefrom and cast into front rim 19, as indicated in Figs. 3 and 5.

Within the upper face of plate 10 are formed a pair of undercut longitudinal grooves 37, 38 extending along rows of windows 15, 29, respectively. These grooves accommodate tapering slides 39, 40 carrying pointers 41, 42, that move along the windows and serve to subdivide or separate the digits of the numbers exposed.

I claim:

1. In a calculating machine, a slidable index plate provided with a series of windows, and a series of bosses depending from the bottom of said plate around said windows.

2. In a calculating machine, a slidable index plate provided with a series of windows, and a series of circular bosses depending from the bottom of said plate around said windows and having flaring inner walls.

3. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, and a

circumferential rim extending around the plate.

4. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, a rail spaced from the lower side of the plate and having triangular projections, and dials journaled in said projections.

5. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, a front flange also depending from the plate, stepped projections integral with said flange, and a slide engaging said projections.

6. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, a rear flange also depending from the plate, perforated lugs integral with said rim, and a hinge-rod engaging said lugs.

7. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, a front flange also depending from the plate, and a setting nose having a laterally extending heel which is embedded within said flange.

8. In a calculating machine, a slidable index plate provided with a series of windows, a series of bosses depending from the bottom of said plate around said windows, and a pair of integral finger-pieces projecting upwardly from the ends of the plate.

Signed by me at New York city, (Manhattan,) N. Y., this 29th day of July, 1909.

JULIUS GRABER.

Witnesses:

W. R. SCHULZ,

FRANK V. BRIESEN.