April 4, 1933. L. HAGE 1,903,337

MEANS FOR OPERATING ADDING MACHINES AND THE LIKE

Filed June 8, 1931 3 Sheets-Sheet 1

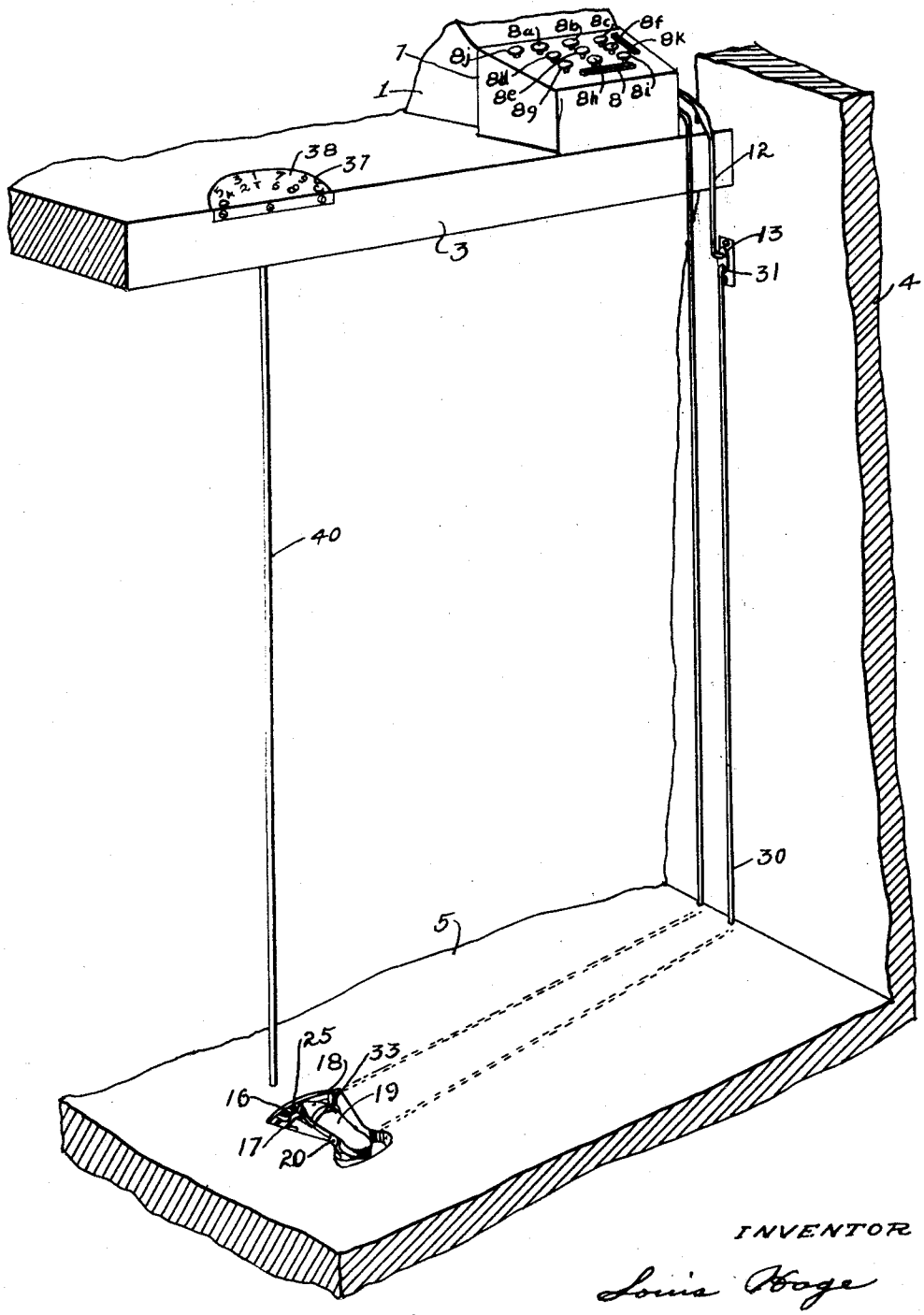


FIGURE 1

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April 4, 1933. L. HAGE 1,903,337

MEANS FOR OPERATING ADDING MACHINES AND THE LIKE

Filed June 8, 1931 3 Sheets-Sheet 2

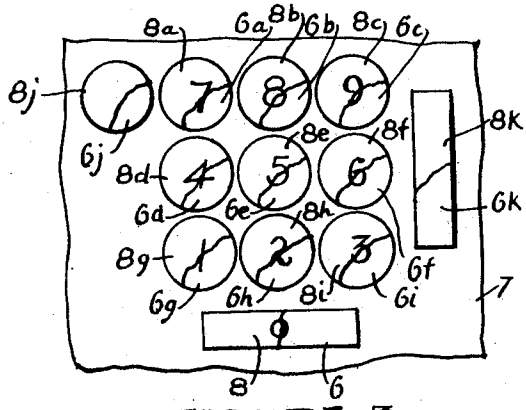


FIGURE 3

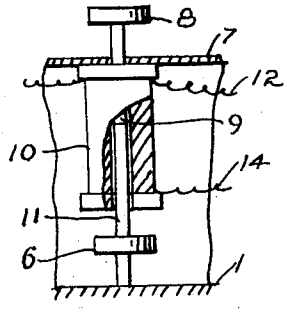


FIGURE 4

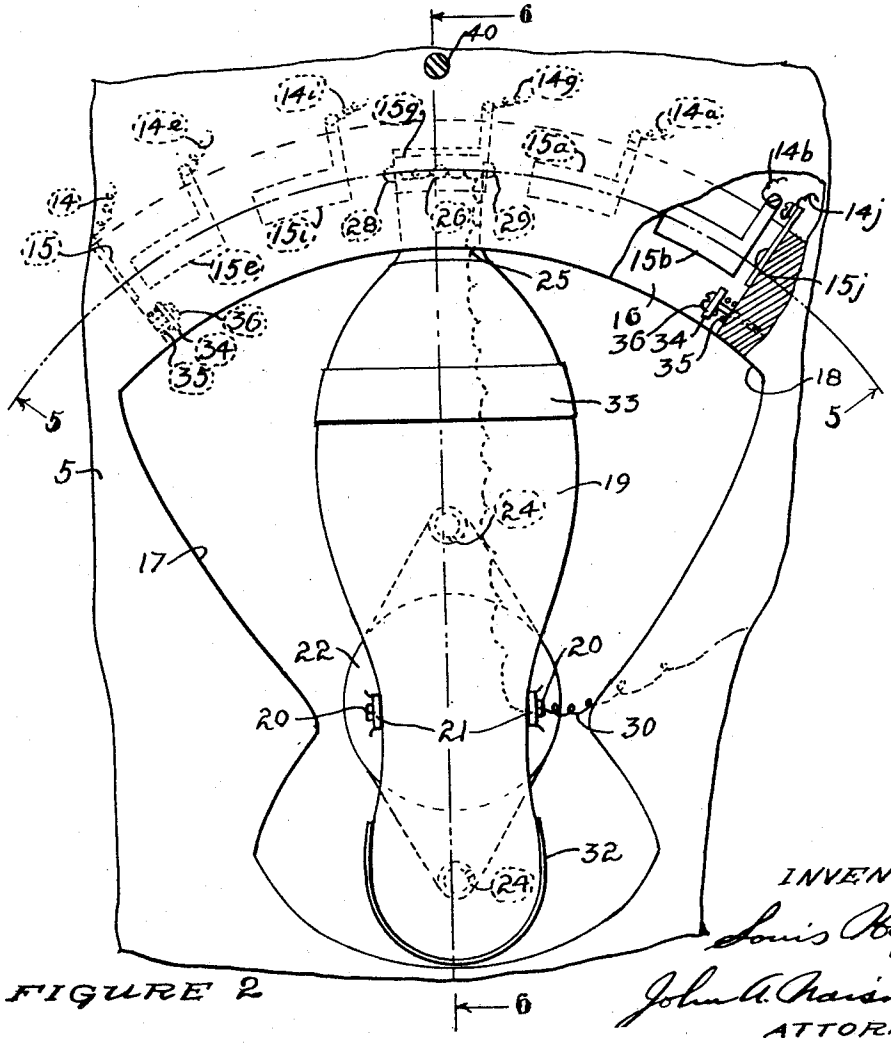


FIGURE 2

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MEANS FOR OPERATING ADDING MACHINES AND THE LIKE

Filed June 8, 1931 3 Sheets-Sheet 3

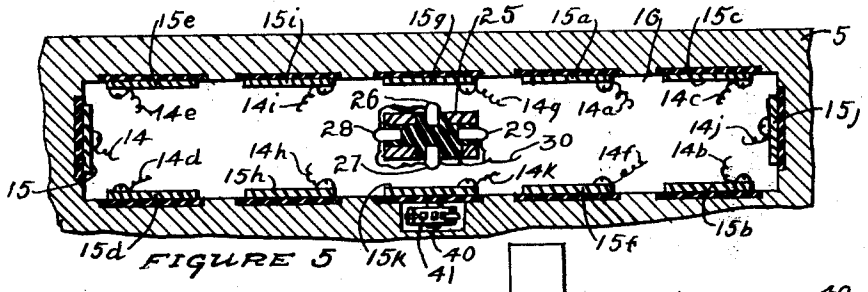


FIGURE 5

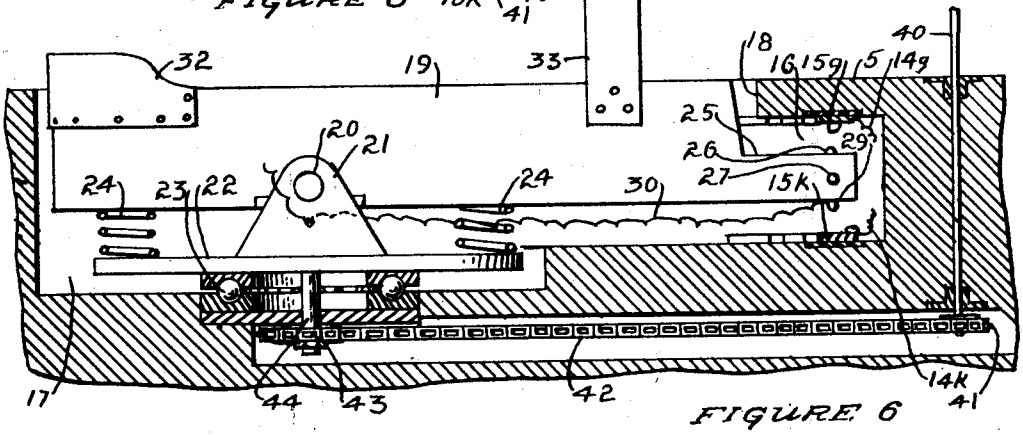


FIGURE 6

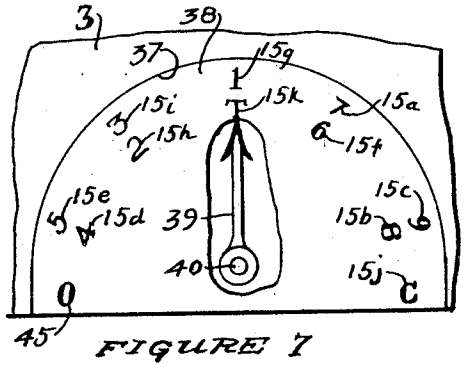


FIGURE 7

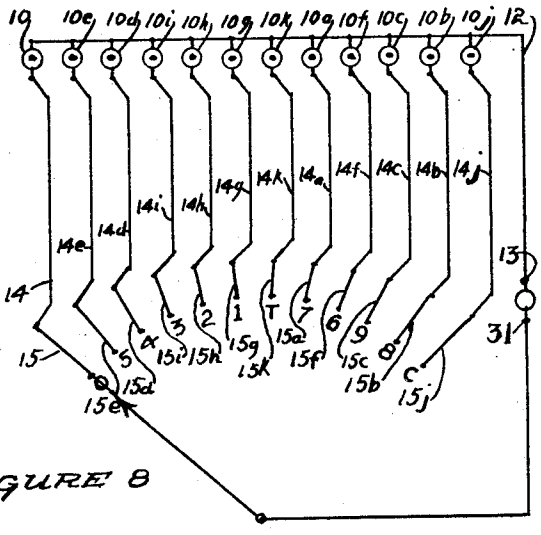


FIGURE 8

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Patented Apr. 4, 1933

1,903,337

UNITED STATES PATENT OFFICE

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MEANS FOR OPERATING ADDING MACHINES AND THE LIKE

Application filed June 8, 1931. Serial No. 542,902.

It is one object of the invention to provide means of the character indicated that may be rendered operative by the foot, thereby leaving the hands of the operator free for the performance of other duties.

It is another object to provide a means of the character indicated that may be accurately and positively operated without the use of the hands.

It is still another object to provide a means of the character indicated that may be operated by hand or without the use of the hands as desired by the operator.

It is also an object of the invention to provide a means of the character indicated provided with means whereby each operation may be visually checked by the operator.

Finally, it is an object of the invention to provide means of the character indicated that will be positive and accurate in operation, economical to manufacture and install, simple in form and construction, and highly efficient in its practical application.

In the drawings:

Figure 1 is a perspective illustration of one embodiment of the invention in an operative position, parts broken away.

Figure 2 is a plan view of the parts disposed in the floor for operation by the foot.

Figure 3 is a plan view of the case and operating parts mounted upon an adding machine, parts broken away.

Figure 4 is a sectional view through one of the adding machine key operating units, partly in section and part broken away.

Figure 5 is a section on line 5—5 of Figure 2.

Figure 6 is a section on line 6—6 of Figure 2.

Figure 7 is a plan view of the indicator device.

Figure 8 is a diagram of the wiring of an electrically operated means for actuating the machine keys.

In the particular embodiment of the invention herein disclosed, I show at 1 a portion of an adding machine disposed upon a counter 3 abutting a wall 4 and spaced above a floor 5. The type of adding machine selected for the purpose of illustration is electrically operated and fitted with twelve keys, ten of the keys, as 6 to 6*i* inclusive, operating the mechanism for registering the numerals from naught to nine, the key 6*j* being the correction key, and the key 6*k* being the key for registering the totals.

Mounted on the machine 1 with its upper portion spaced above the keys thereof is a case 7, and mounted in the top of case 7 are keys 8 to 8*k*, inclusive, these latter keys being disposed directly over the corresponding keys in the machine below.

Each of the keys in case 7, as 8, is mounted in the following manner. It is provided with a stem of magnetic material as 9 passing through the top of case 7 and a distance into a solenoid 10 mounted on the under side of said top. The stem 9 moves freely in the solenoid and rests upon a pin 11 of non-metallic material which in turn rests upon the machine key 6 therebelow. When, therefore, the solenoid 10 is energized by passing an electric current therethrough the stem 9 and pin 11 are actuated to depress the key 6. The twelve solenoids are connected in parallel by a wire 12 which is connected to an electrical circuit as at 13.

The solenoid 10 is connected by a wire 14 to a switch plate 15, and each of the other solenoids is connected to a similar plate as shown. The twelve switch plates are disposed on the walls of an arcuate recess 16 disposed in a horizontal plane in floor 5, five of the plates being arranged in an arc on the top of the recess, five on the bottom, and one on each end as clearly shown in Figure 5.

The floor 5 has a recess 17 formed therein, the said recess having an arcuate end 18 at which point it has open communication with recess 16.

At 19 I show a foot-piece pivotally mounted at 20 upon upstanding ears 21 on a plate 22, the plate 22 being mounted on ball-bearings 23 and to rotate in a horizontal plane. The part 19, therefore, has a pivotal movement in a vertical plane and also a pivotal movement in a horizontal plane. Springs as 24 are inserted between plate 22 and part 19 on either side of the pivotal mounting 20

to normally maintain the said part 19 in a horizontal position.

Upon the forward end of part 19 is formed a nose portion 25, this portion extending forwardly into recess 16 and having electricity conducting switch points as 26—27—28—29 mounted in its top, bottom and two sides as shown and connected in parallel to a wire 30 which is connected to the same electrical circuit as wire 12 as at 31. By this means any single solenoid circuit may be closed by bringing one of the switch points on nose 25 into contact with the appropriate plate in recess 16.

An upstanding plate 32 is mounted on the heel end of piece 19, and a strap 33 is mounted on its forward portion so that when the operator's foot is inserted therein the piece 19 may be tilted both upwardly and downwardly with equal ease. On each end of recess 16 is a plate as 34 backed by a spring 35 and held by a screw 36 so that a little pressure is required to force the side switch points on nose 25 into contact with the end plates in recess 16 and prevent their accidental contact.

At the inner edge of counter 3 is formed a recess 37 fitted with a cover 38 lying flush with the counter top. At 39 is a pointer disposed within the recess and mounted on a rod 40 extending downwardly through the counter and into the floor just forwardly of recess 16. On the lower end of the rod is mounted a sprocket 41 connected by a chain 42 to a second sprocket as 43 mounted on a shaft 44 depending from the center of plate 22 and rotating as a unit therewith. The indicia shown at 45 to 45*k* correspond to the indicia appearing on keys 8 to 8*k* and are arranged in the order of the plates 15 to 15*k*, the outer row corresponding to the plates mounted in the top of the recess 16, and the lower row the plates mounted on the bottom of recess 16, the end bars corresponding to the plates mounted upon the ends of recess 16. The result of this construction is that as the piece 19 is moved to contact with any plate its position will be indicated by the pointer 39.

When the device is in use, the clerk stands at the counter with his hands free for wrapping packages and with one foot on the footpiece 19. While he is wrapping the package he moves his foot to swing the piece 19 to the right or left and up or down as required to operate the selected solenoids and the keys thereunder to register the charge for that package, and finally operating the proper key to secure the total charge. By glancing at the indicator 39 as the work proceeds the clerk may see that the proper contacts are being made.

It is to be understood, of course, that while I have herein shown and described but one specific embodiment of the invention, changes in form, construction, and method of installation and operation may be made within the scope of the appended claims, it being clear that other means such as hydraulic means or compressed air may be substituted for the electrical means described without departing from the spirit of the invention.

I claim:

1. The combination with a machine having a bank of keys, of foot controlled mechanism adapted to selectively actuate said keys, said mechanism including a plurality of control elements, one for each key, disposed in an arc and both above and below a given horizontal plane, and a pedal element pivotally mounted at the center of the arc and swingable into engagement with each control element to render the same operative.

2. The combination with a machine having a bank of keys, of magnetically actuated means for operating each key operatively disposed in an electrical circuit, a hollow arcuate support, switch terminals for said circuits disposed on the opposing inner walls of said support, and a vertically and horizontally swingable pedal element having switch terminals mounted therein and connected to said circuits and swingable into engagement with the first mentioned terminals.

3. In a structure of the character described, a pedal element swingable in either a vertical or a horizontal plane, supporting means having an arcuate recess formed therein into which the toe end of the pedal extends, switch terminals disposed in arcuate formation on the top, bottom and both ends of said recess, switch terminals disposed on the toe end of said pedal element, a bank of keys, magnetically actuated means for operating each key disposed in parallel in an electrical circuit connected to the terminals in said pedal element, each magnetically actuated means being connected to one of the switch terminals in said recess whereby any one magnetically actuated means may be rendered operative by movement of the pedal to bring two switch terminals into contact.

4. The structure set forth in claim 3 in combination with resiliently mounted means disposed on the ends of the recess, said means being forcibly depressible to permit the terminals on the pedal element to contact with the terminals on the ends of the recess.

5. The combination with a machine having a bank of keys, of foot controlled mechanism adapted to selectively actuate said keys, said mechanism including a plurality of control elements, one for each key, disposed in arcs disposed on opposite sides of a given plane, and a pedal element pivotally mounted at the center of the arcs and swingable into engagement with each control element to render the same operative.

6. The combination with a machine having a bank of keys, of foot controlled mechanism adapted to selectively actuate said keys, said mechanism including a plurality of control elements, one for each key, disposed in part in spaced arcs and in part between the ends of said arcs, and a pedal element pivotally mounted to swing into engagement with each control element to render the same operative.

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