

N. NEWMAN.
AUTOMATIC ELECTRIC WEIGHING DEVICE.

APPLICATION FILED JUNE 29, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

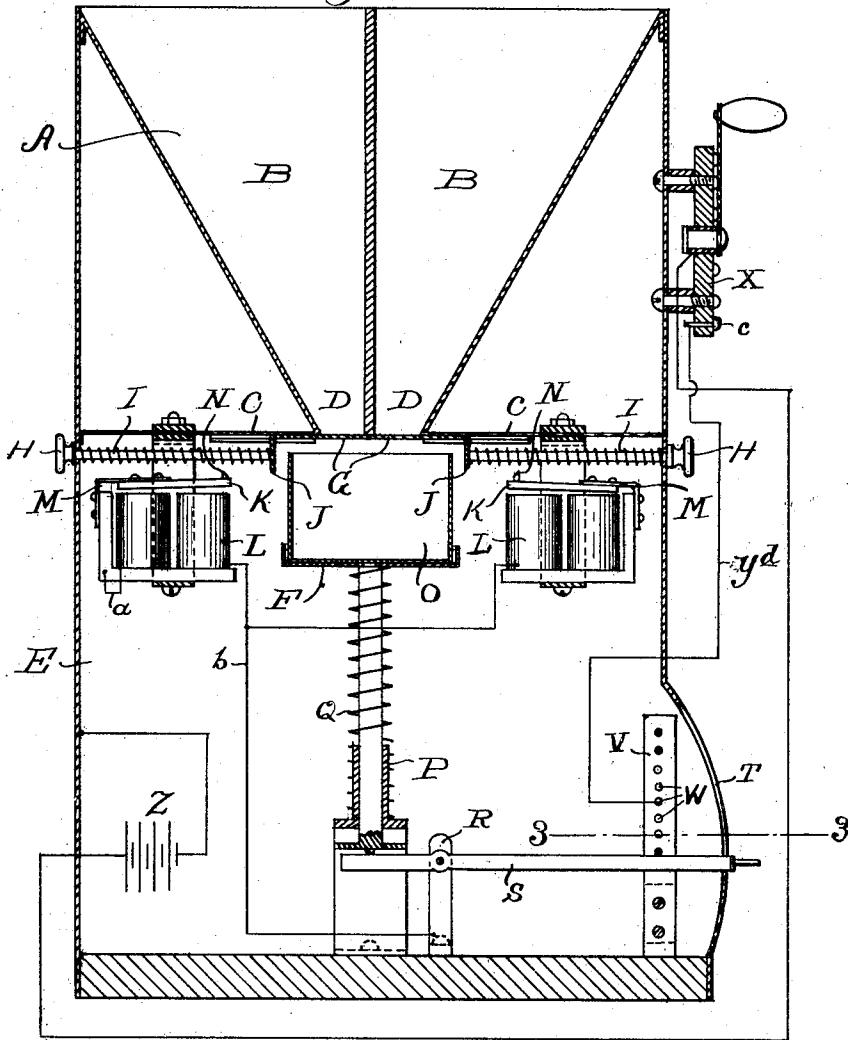
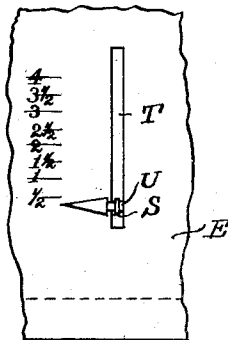


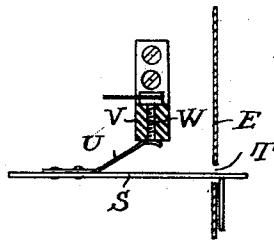
Fig. 2.



Witnesses:

C. K. Wilson
H. Walter Foster

Fig. 3.



Inventor:

Naftaly Newman
By *Rudolph [Signature]*
Attorney.

No. 741,975.

PATENTED OCT. 20, 1903.

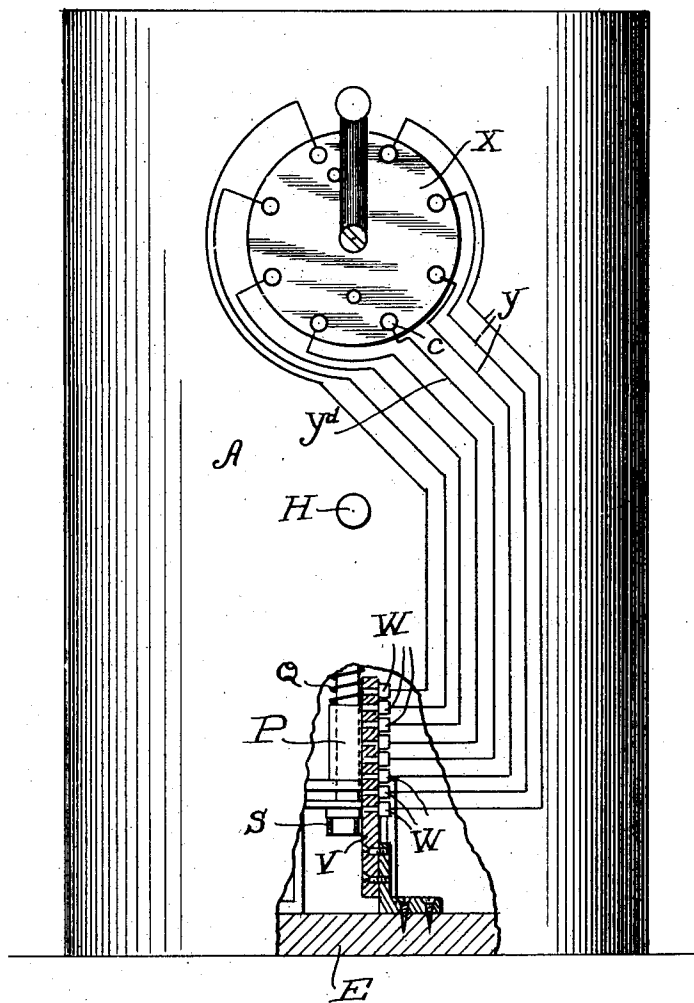
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2 SHEETS—SHEET 2.

Fig. 4.



Witnesses:

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Arthur W. Lotz

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UNITED STATES PATENT OFFICE.

NAFTALY NEWMAN, OF CHICAGO, ILLINOIS.

AUTOMATIC ELECTRIC WEIGHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 741,975, dated October 20, 1903.

Application filed June 29, 1903. Serial No. 163,586. (No model.)

To all whom it may concern:

Be it known that I, NAFTALY NEWMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Electric Weighing Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel construction in an automatic electrically-controlled weighing device, the object being to provide a simple and efficient device of this character; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a central vertical section of a weighing device constructed in accordance with my invention. Fig. 2 is a fragmentary detail elevation of same. Fig. 3 is a section of same on the line 3 3 of Fig. 1. Fig. 4 is a side elevation, partly broken away, showing electrical connections between certain parts of my device.

My said device is designed for groceries, coffee-stores, &c., and is designed to contain and to be operated to weigh such staples, as coffee, sugar, peas, beans, &c., as will readily flow from a hopper. To this end my device consists of a vessel A, divided into a plurality of compartments B, each having a hopper-bottom C and a discharge-spout D. Said vessel is suitably supported on a base E at a sufficient height to permit a weighing-scale F and electrically-operated devices partly controlled thereby to be interposed underneath the said vessel. Each of said discharge-spouts D is controlled by a valve G, movable in suitable guides and provided with a valve-stem H, passing through the wall of the support for said vessel and provided with a knob at its outer end. Said valves G are held normally closed by means of spiral compression-springs I, coiled on said valve-stems. Each of said valves is provided with a downwardly-extending flange or projection J, which is adapted, when said valve is opened, to be en-

gaged by the armature K of an electromagnet L, interposed below said vessel A, said armature being normally held out of contact with said electromagnet and in the path of said flange or projection by means of a flat spring M. The said armature carries a lug or projection N, having one inclined face, which is adapted to be engaged by said flange or projection J to force said armature out of the path of the latter and which is adapted to spring into the path of and hold said valve against closing after the same has passed over said lug N. By energizing said electromagnet said armature will be drawn out of the path of said projection J and release said valve G, which will immediately be closed by the spring I.

The weighing-scale F comprises a standard carrying a receptacle O at its upper end, into which the spouts of all hoppers feed, said standard being vertically movable in a sleeve P, suitably supported on said base E and normally held at the upper limit of its movement by means of the spring Q. Adjacent said sleeve P is a standard R, on which a lever S is pivotally mounted between its ends, one end of said lever projecting into the path of the standard of said scale and the other end of same passing through a slot T in the wall of the support and carrying an indicating-finger at its end, which registers on the scale on the wall adjacent to said slot T. Near said end of said lever a flat spring U is secured, which lies in light contact with a post V of a non-conducting substance. In said post V are a series of contact-points W, each of which has an electrical connection with an operative part of my device, as hereinafter described, so that said spring U acts as a switch to control a number of circuits. On said vessel A is a switchboard X, having posts corresponding in number with the said contact-points W and each of which is connected with one of the latter.

As the electrical circuits can be best described in connection with the operation of my device, I will proceed with the latter. It will be noted that the scale adjacent the slot T reads upwardly from " $\frac{1}{2}$ " to "1," these figures indicating pounds and the divisions

corresponding with the contact-points W and with the number of posts on the switchboard X. The latter are consecutively connected by the wires Y with the contact-points W.

5 The lever of the switchboard X is connected with one pole of the battery Z, the other pole thereof being connected with the member supporting the vessel A, and thereby with each of said valve-stems H. The armatures

10 of the electromagnets are electrically connected with the latter by means of the wires *a*, and a second wire *b* leads from the other end of the coils of each of said magnets to the standard R and are thus connected with

15 said lever S. The circuit between the battery and any one of the electromagnets is closed by opening the valve G, controlling the hopper of which some of the contents are to be weighed; but before said valve is opened

20 the lever of the switchboard X is turned to the desired button indicating the number of pounds to be delivered. Thus if said lever is turned to the button *c* the number of pounds to be delivered will be two, as the wire Y⁴

25 connects said button with the fourth contact-point corresponding with the division on the scale marked "2." The outer end of the lever S is held at the lower limit of its movement by gravity, so that after setting the lever of

30 said switchboard X and opening the desired valve G the electrical circuit still remains closed. As soon as said valve G is opened, however, the contents of the hopper controlled thereby will begin to flow into the receptacle O of the scale F, thus causing the

35 latter to gradually sink. This movement causes the outer end of the lever S to be raised, and when said spring U comes in contact with the fourth contact-point W the circuit is closed, thus energizing the electromagnet

40 then in the circuit. This immediately causes the valve G to be closed and at the same time opens the circuit, thus causing only a momentary use of the electric circuit and shutting off the flow of the coffee or other staple

45 to be weighed when the desired quantity has been delivered, thus rendering the weighing operation very rapid, exact, and easy.

Any number of hoppers may obviously be

50 used.

My device is very simple and efficient and saves a great deal of labor.

I claim as my invention—

1. The combination with a hopper, and a

55 spring-actuated valve controlling same, of a weighing-scale adapted to receive the contents of said hopper, and electric circuit-closing devices controlled by said valve and said scale for automatically shutting off the flow from

60 said hopper when a predetermined quantity has been withdrawn, including electromagnetic devices adapted to engage said valve to hold same open against the action of said

65 spring, a switchboard in the circuit having a plurality of contact-buttons, a second switchboard having a corresponding number of con-

tact-points consecutively connected with the contact-points of said first-named switchboard, a lever movable over said supplementary switchboard and controlled by said weighing-scale, connection between the lever of the

70 main switchboard and a battery connection between said battery and said valve, a shunt connection between said valve and said electromagnetic devices controlling same, and

75 connection between the latter and the lever of said supplementary switchboard, substantially as described.

2. In a device of the kind specified, the combination with a hopper, a spring-actuated

80 valve controlling same, an electromagnet, an armature controlled thereby and electrically connected therewith and adapted to engage said valve to hold same open against the action of said spring, and electrical connection

85 between said valve and one pole of a battery, of a weighing-scale adapted to receive the contents of said hopper, a weight-indicating lever controlled thereby, a switchboard over which said lever passes, a lever for separately

90 throwing each of the contact-points of said switchboard into an open circuit adapted to be closed by said indicating-lever, electrical connection between said last-named lever

95 and the other pole of said battery, and electrical connection between said indicating-lever and said electromagnet, whereby when said indicating-lever is turned by said scale into contact with the contact-point in the circuit said circuit will be closed and the elec-

100 tromagnet energized to release said valve, thereby closing the hopper and opening the circuit.

3. In a device of the kind specified, the combination with a hopper, a spring-actuated

105 valve controlling same, electromagnetic devices adapted to engage said valve when open to hold same against the action of said spring, and a weighing-scale adapted to receive the contents of said hopper, of a switchboard, a

110 lever controlling same, electrical connection between the lever of said switchboard and one pole of a battery, a shunt-circuit between the other pole of said battery and said electromagnetic devices controlled by said valve, a

115 lever controlled by said weighing-scale, electrical connection between said lever and said electromagnetic devices, and contact-points in the path of said lever having separate electric connection with the buttons of said switch-

120 board, whereby when said last-named lever is brought into contact with the point having electrical connection with said battery through the lever the circuit will be closed and said electromagnetic devices energized to

125 release said valve to shut off the flow from said hopper, substantially as described.

4. In a device of the kind specified, the combination with a hopper, a spring-actuated

130 valve controlling the same, and electromagnetic devices adapted to engage said valve when open to hold same against the action of

said spring, of a weighing-scale adapted to receive the contents of said hopper, an electric circuit closed at one point through said electromagnetic devices engaging said valve, and devices actuated by said weighing-scale for momentarily closing said circuit to energize said electromagnetic devices to release said valve, said circuit being opened by the

closing of said valve, substantially as described.

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

NAFTALY NEWMAN.

Witnesses:

RUDOLPH WM. LOTZ,
E. F. WILSON.

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