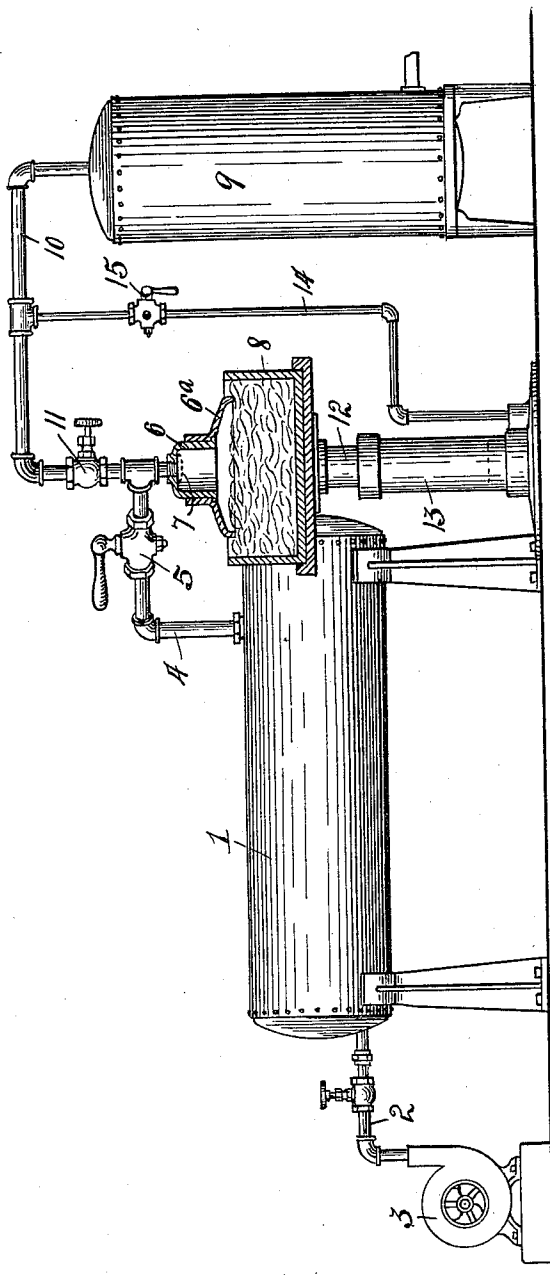


J. P. CROWLEY.
PNEUMATIC MEASURING MACHINE.
APPLICATION FILED MAR. 2, 1912.

1,052,653.

Patented Feb. 11, 1913.



WITNESSES:
D. C. Watter
E. C. Thomas.

INVENTOR.
Joseph P. Crowley,
By Owen & Owen,
His attys.

UNITED STATES PATENT OFFICE.

JOSEPH P. CROWLEY, OF TOLEDO, OHIO.

PNEUMATIC MEASURING-MACHINE.

1,052,653.

Specification of Letters Patent.

Patented Feb. 11, 1913.

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To all whom it may concern:

Be it known that I, JOSEPH P. CROWLEY, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Pneumatic Measuring-Machine; 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, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

My invention relates to means which is more particularly designed for use in connection with the measuring and packaging of tobacco, but is not restricted to such use, as it may be used in any connection for which it is adapted or appropriate.

The primary object of my invention is the provision of means which utilizes vacuum action to draw or gather into a receiving head a predetermined quantity of tobacco or other similar matter preparatory to the packaging of such matter.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which parts of the same are shown in section.

Referring to the drawings, 1 designates a vacuum tank, which has connection through a pipe 2 with a pump 3 or other suitable means that is operable to create a vacuum in the tank. This tank also has communication, as through a pipe 4 having a valve 5 therein, with a hollow matter-receiving head 6 of any suitable shape or size for holding a predetermined quantity of tobacco or other matter.

The head 6 is shown in the present instance as having a flaring mouthpiece 6^a loosely mounted for longitudinal sliding movements thereon. The purpose of the mouthpiece 6^a is to facilitate a drawing of tobacco or other matter into the head 6, as the edge of the mouthpiece is adapted to rest upon the matter acted upon without the zone of the head to close a predetermined area of such matter to the atmosphere, whereby the matter inclosed by the mouthpiece is free to be drawn into the head by suction action therein. A screen 7 is secured within the in-

ner end of the head over the communicating end of the pipe 4 to prevent the drawing of matter into such pipe.

The tobacco or other matter, having been drawn into the head 6 from a box 8 or other suitable source of supply, a knife or other suitable trimming member (not shown) is run across the bottom of the head to trim the matter therefrom flush with the open end of the head, the mouthpiece 6^a being raised on the head for such purpose. This having been done, the matter is forced from the head into a bag or other suitable receptacle (not shown) by any suitable means, as for instance, by compressed air from a tank 9, which has a pipe 10, with a control valve 11, leading to the inner end of the head. The pipes 4 and 10 connect without their valves and have common communication with the head.

The box 8, for carrying the tobacco or other matter, is shown in the present instance, as having its raising and lowering movements controlled by air pressure from the tank 9, the box being mounted on a plunger 12 working in a cylinder 13, which has communication with the pipe 10 through a pipe 14 having a control valve 15 disposed therein. It is to be understood, however, that my invention is not limited to any particular manner of moving the matter to be acted on into and out of weighing-head engaging position, as any suitable means may be provided for such purpose.

In the use of my invention the vacuum within the tank 1 is maintained at a predetermined pressure, as a variation of such pressure changes the quantity and consequently the weight of the matter drawn into the head 6, inasmuch as the greater the suction or vacuum action the more firmly will the matter be packed in the receiving head. It is found in practice that the weight of tobacco drawn within the weighing head 6 can be determined to a nicety by using heads of predetermined sizes and creating a vacuum of predetermined force. While the head 6 in a way measures the quantity of the material drawn therein, it more accurately, in conjunction with the vacuum force measures the weight of such material, for the head might be filled with a greater or less quantity of compressible matter such as tobacco by changing the vacuum force.

It is evident that while I have illustrated a particular mechanism having a hollow

head into which matter may be drawn and also forced therefrom by pneumatic action, the invention is not restricted to any particular form of mechanism of this type or to
5 any particular construction or arrangement of the parts thereof except in so far as such limitations are specified in the claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is,—
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1. A pneumatic measuring machine having a hollow head of predetermined size into which matter is drawn by suction.

2. A pneumatic measuring machine having a hollow suction measuring head composed of a plurality of relatively movable parts.
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3. In combination, a hollow matter-receiving member, suction means for drawing matter into said member, and means for forcing the matter therefrom.
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4. In combination, a hollow matter-receiving head, pneumatic suction means for drawing matter into said head, and pneumatic means for forcing matter therefrom.
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5. In combination, a source of matter supply, a matter-receiving head, said source of supply and head being relatively movable, and suction means for drawing matter from
30 the source of supply into said head.

6. In combination, a hollow matter-receiving head of predetermined size into which matter is drawn by suction, and a mouthpiece for said head mounted for free longitudinal sliding movements thereon. 35

7. In combination, a hollow matter-receiving head and separate valve-controlled pneumatic means in communication with the head for drawing matter therein and forcing it therefrom. 40

8. A machine of the class described having in combination a hollow head open at one end, and suction means and fluid pressure means both in valve-controlled communication with the inner end of said head. 45

9. In a machine of the class described, a hollow head open at one end, means operable to draw a quantity of loose matter therein, means operable to force such matter from the head, and means carrying matter to be drawn into the head, said means and head being relatively movable toward and away from each other. 50

In testimony whereof, I have hereunto signed my name to this specification in the presence of two subscribing witnesses. 55

JOSEPH P. CROWLEY.

Witnesses:

C. W. OWEN,
E. E. THOMAS.