

[54] **MACHINE TO STUFF TOYS**

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53/124 R; 222/193, 373, 402.2, 504

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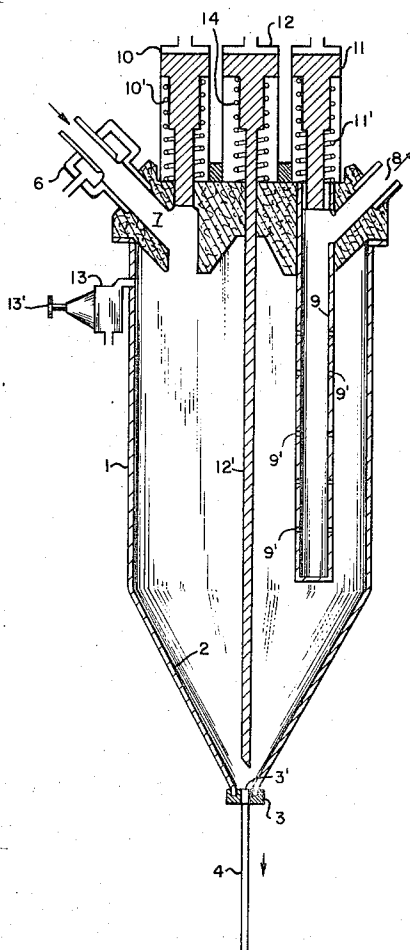
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[57] **ABSTRACT**

A pneumatic device secured to an upright support comprising a distribution reservoir communicating with an external supply of stuffing material and air under pressure, a prolonged tubular element operably attached to a conical distribution valve, said tubular element adapted to inject stuffing into toys. The device is primarily operated by two foot levers operably engaging a first, second, and third spring loaded control valve jack which controls the flow of stuffing and air to and from the distribution reservoir.

5 Claims, 3 Drawing Figures



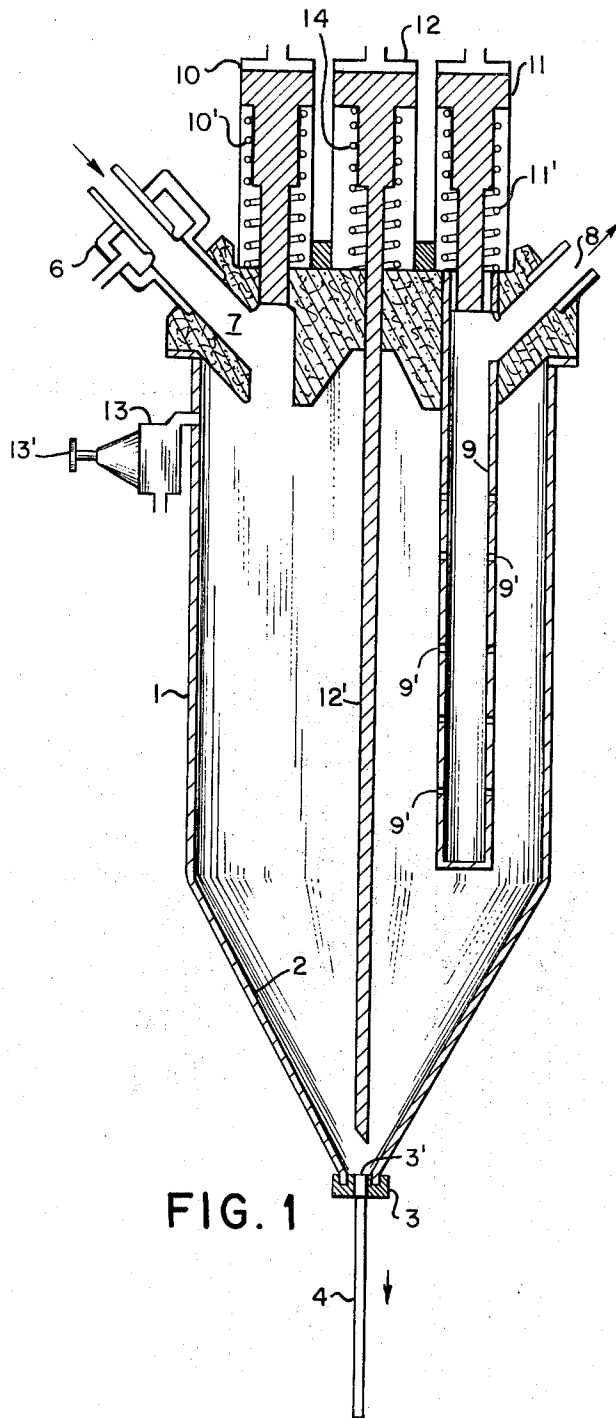


FIG. 1

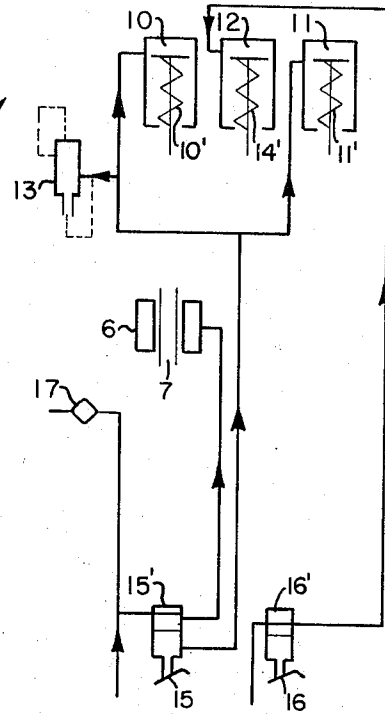


FIG. 2

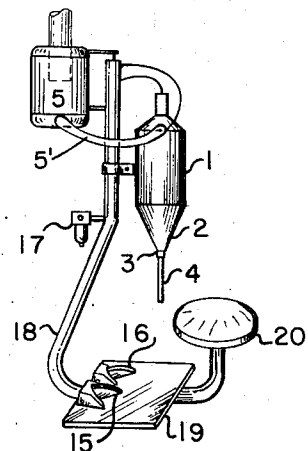


FIG. 3

MACHINE TO STUFF TOYS

BACKGROUND OF THE INVENTION

The invention consists of a pneumatic device for stuffing machine, intended mainly for toys.

Known devices of this sort used to make toys are operated either mechanically or pneumatically, but such machines require constant manual operation, specially when special hardnesses are required; in addition to this, heavy parts comprise reservoirs which must be fed, compression devices, and complicated distributors, the whole not being easy to handle, and presenting great complexity.

The device, according to the invention prevents all of these inconveniences, and starting from a totally mechanical unit, provides a complete work post with adjustable seat, and functional location of all elements so as to offer, under the least of complexity all the facilities to the operator, who by using his feet keeps his hands free to perform the stuffing rapidly and in any direction at any desired hardness.

SUMMARY OF THE INVENTION

It comprises a reservoir furnished with three automatic valves activated by jacks which in turn are activated by pedals so as to push the stuffing into the reservoir, stop the reservoir to make it air-tight, then to inject the compressed air into the reservoir until the desired pressure is obtained, and finally open the exhaust hole where the stuffing material was brought through the tubular injecting duc, so assuring the addition of the stuffing into every desired corner of the receiving envelope.

BRIEF DESCRIPTION OF THE DRAWINGS

On the attached drawings given as examples, and not intended to set a definite manner to realize the invention;

FIG. 1 shows the machine as a whole in a longitudinal section partially fragmented.

FIG. 2 is a schematic view of the pneumatic circuit, and the controls.

FIG. 3 shows the machine in perspective including the distributing reservoir.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The machine, FIGS. 1, 2, 3 is formed by a distributing reservoir 1 with a lower conical hopper 2, to whose apex is attached an interchangeable tube called "injecting tube" 4, on a mounting 3 into which is constructed a needle valve seat 3'.

The stuffing, either a synthetic matter or of any other kind, coming from the supply reservoir 5, is drawn in by a depressing valve system 6 through the hole 7. This "carrying air" goes through the hole 8 after it is filtered and has passed through the apertures 9' in element 9 which prevents the stuffing from going out.

When the distributing reservoir 1 is filled-up, openings 7 and 8 are closed by depressing pedal 15 lowering the jacks 10 and 11 which are withdrawn by the springs 10' and 11' when pressure is released.

The hole in the valve seat 3' in mounting 3 is closed by needle 12' incorporated to the jack 12. Compressed air is then blown at the pressure rate required by the desired stuffing hardness by means of the injector of the pressure regulator 13. When the distributing reser-

voir 1 is under pressure, it is only needed to open the hole by raising the jack 12 withdrawing needle 12' from valve seat 3'. Spring 14 eases the automatic rise from the moment the pneumatic pushing pressure ceases. The stuffing then goes out through the tube 4.

All the controls are activated by the pedals 15, 16.

The air coming through the filter 17 feeds the two pedal controlled distributors 15' and 16'. From the distributor 15' controlled by pedal 15 it may go either to the depression valve system 6, or to the jacks 10, 11, or to the pressure regulator 13. From the distributor 16' controlled by pedal 16 it may go to the jack 12.

When the distributors 15, 16 are in the position shown in the schematic FIG. 2 stuffing is made. The depression valve system 6 inserts the stuffing into the reservoir 1 through the hole 7. The distributing air goes out through the hole 8 through the apertures 9' in filter 9 when the jacks or valves 10, 11 are in a raised position.

The distributor 16' activated when pedal 16 is depressed closes the hole in valve seat 3' by means of the jack being lowered. If on the contrary, the pedal 15 is pushed, the air will be sent to the jacks 10 and 11 which will lower and close the holes 7 and 8, and will also open the pressure regulator 13 which passes air to and places the distributing reservoir 1 under pressure.

Then, by pushing the pedal 16 the jack 12 is freed, and it raises by spring 14 and opens the hole in valve seat 3' by means of the needle 12'.

The machine is mounted on the frame structure 18, and stabilized by the stand base 19 to which is secured the moving seat 20, so as to form a complete unit with the least of complexity.

For a description of the operation of the device, attention is particularly invited to partially fragmented schematic FIG. 2. The system is made operable by attaching the device to an external source of air pressure (not shown). The air conduits lead into regulator 13, filter 17, supply reservoir 5, and distributors 15' and 16' controlled by pedals 15 and 16; the distributors 15' and 16' are conductively attached to the source of air pressure (not shown). Air and stuffing materials flow through the system as regulated and controlled by jacks or valves 10, 11 and 12, and the associated needle 12', valve seat 3', and injector tube 4. When the system is activated, a depressing of pedal 16 through distributor 16' passes air to jack or valve 12 depressing spring 14 carrying needle 12' closing injector tube 4. With the system activated and jacks or valves 10 retracted by spring 10', and jack or valve 11 retracted by spring 11', air and stuffing materials would flow into distributing reservoir 1 from supply reservoir 5 through supply conduit 5' through depression valve system 6 and hole 7. Air passes through the apertures 9' and out through hole 8, with element 9 serving as a filter.

To place the distributing reservoir 1 under pressure, pedal 15 is depressed passing air to jack 10 and jack 11 closing holes 7 and 8. Air is simultaneously admitted through regulator 13 to distributing reservoir 1. With the distributing reservoir 1 under pressure and filled with stuffing, a releasing of pedal 16 withdraws needle 12' opening valve seat 3' causing air and stuffing to flow through injector tube 4.

The filling-up of the distributing reservoir 1 is made automatically, and the operator may do something else.

When the toy is held with both hands the injector tube 4 is easily turned toward the part to be filled up,

and there is no need to intervene except for controlling the level and direction of the stuffing according to controllable hardnesses.

The synchronization of both the distribution and the injection guarantees a great speed in the performance without any loss of raw material, or manual operation for stuffing.

This machine may be used whenever it is desired to push into any other object any granulous or powdery product at a controllable pressure within a certain volume.

The disassembly of the different elements, and the access to them are simplified by the fact that the operator can reach instantaneously the jacks which are grouped at the upper part of the distributing reservoir.

Nevertheless, the shape, size, and disposition of the different elements may vary within the limits of their equivalents, as well as the material used for their manufacture without altering because of that, the general conception of the invention just described.

I claim:

1. A pneumatic device for stuffing toys comprising:

- a. an upright frame structure,
- b. mounted on a stand base,
- c. a distributing reservoir having a substantially flat top and a conical base secured to said frame structure,
- d. a multiplicity of spring loaded control valve jacks operably attached to the substantially flat top of the said distributing reservoir said valves controlling the flow of stuffing materials and air to and from said distributing reservoir,
- e. an injector tube operably attached to the conical base of the said distributing reservoir, said injector tube,
- f. attached to the apex of said conical base of said distributing reservoir by means of a mounting frame into which is constructed a valve seat,

g. a supply reservoir mounted on said frame structure adapted to receive and supply air and stuffing materials to said distributing reservoir through,

h. a tubular conduit means interconnecting said supply reservoir and said distributing reservoir, and

i. control means for activating and deactivating said control valve jacks controlling the flow of air and stuffing materials to and from said distributing reservoir.

2. The invention of claim 1 wherein said multiple control valve jacks comprise:

a. a first control valve jack controlling the flow of air and stuffed material from said supply reservoir to said distributing reservoir,

b. a third control valve jack controlling the flow of air from said distributing reservoir,

c. a second control valve jack controlling the flow of air and stuffing material from said distributing reservoir,

d. through a valve seat to,

e. an injector tube.

3. The invention of claim 2 including:

a. a first foot control pedal operably engaging,

b. a first distributor passing air to the said first and said third control valve jacks,

c. a second foot control pedal operably engaging,

d. a second distributor passing air to the said second control valve jack for injecting stuffing into toys.

4. The invention of claim 2 including a filter mounted internal of said distributing reservoir in association with said third control valve jack, said filter permitting the passage of air from said distributing reservoir while preventing the passage of stuffing materials.

5. The invention of claim 1 including a pressure regulator for controlling the pressure of air admitted to said distributing reservoir thereby controlling the degree of compaction of the stuffing materials passing through said injector tube.

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