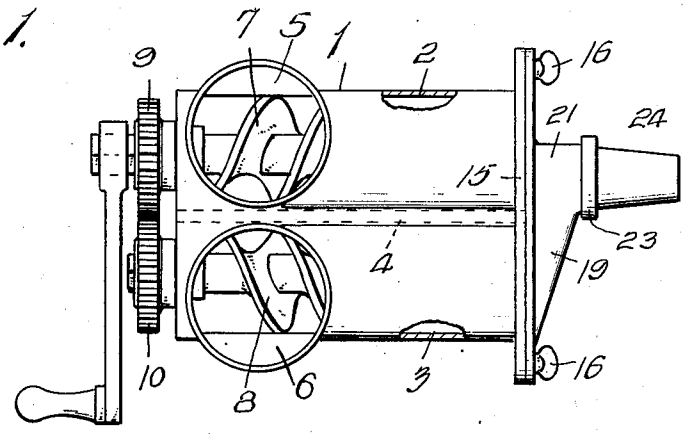
May 27, 1930. S. ALLEN 1,759,928

NOZZLE STRUCTURE

Original Filed April 5, 1926

Fig. 1.



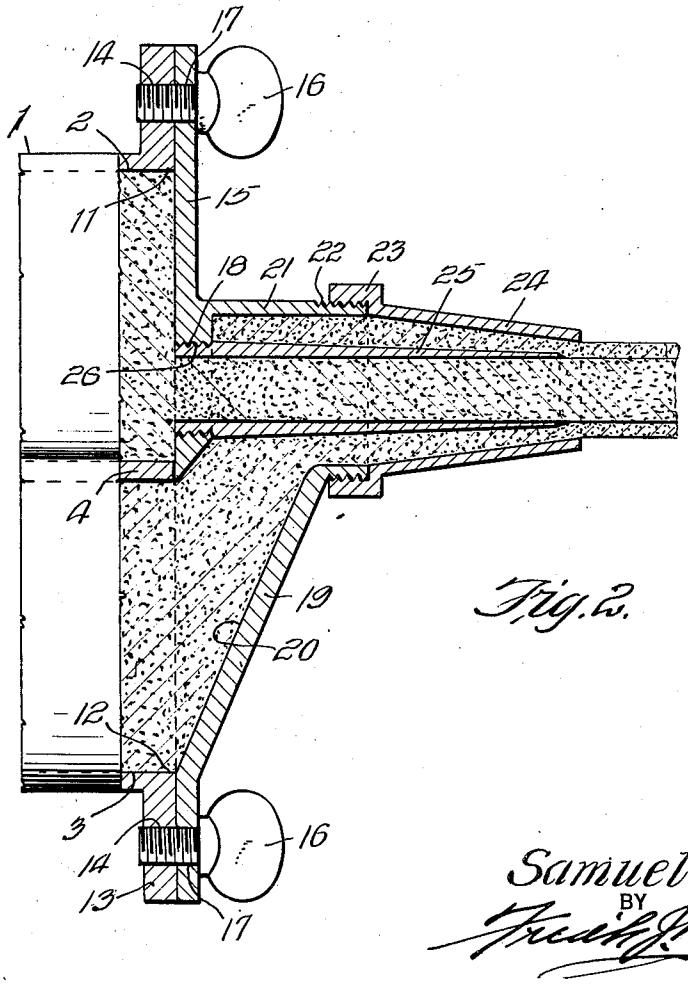


Fig. 2.

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NOZZLE STRUCTURE

Original application filed April 5, 1926, Serial No. 99,774. Divided and this application filed May 23, 1927. Serial No. 193,566.

This application is filed as a division of my co-pending application, Serial Number 99,774, and relates to the nozzle structure thereof.

My invention relates to a nozzle structure for screw conveyor machines discharging two different materials or substances, one of which substances is employed as a coating, jacket or covering for the other substance.

A further object of the invention is to provide a nozzle structure wherein the nozzles proper may be readily changed for nozzles of different sizes in bore, and both of which nozzles are detachably carried by a closure plate adated to be detachably secured to the discharge end of a casing having two independent cylinders arranged side by side so that the contents of each cylinder will be discharged through its respective nozzle and with one nozzle surrounding the other nozzle.

A still further object of the invention is the provision of a nozzle structure for screw conveyor machines which possesses advantages in points of simplicity and efficiency, and, at the same time proves itself comparatively inexpensive in cost of manufacture.

With the above and other objects in view, the invention consists in the novel features of construction, arrangement and combination of parts hereinafter more fully described and finally pointed out in the claim hereto appended.

Referring to the accompanying drawings forming a part of this specification, wherein like characters of reference denote similar parts throughout the several views:

Fig. 1 is a top plan view of a two cylinder screw conveyor machine to which is applied the nozzle structure embodying the feature of my invention.

Fig. 2 is a horizontal sectional view of the nozzle structure.

Referring to the drawings, the reference character 1 designates a casing having a pair of cylinders 2 and 3 arranged side by side and separated by means of the wall 4 and having the feed openings 5 and 6, respectively. The cylinders 2 and 3 are provided with the screw conveyors 7 and 8, respectively, which are revolved by intermeshing gears 9 and 10 at the same speed and in opposite directions preferably toward each other. The end of the casing 1 adjacent the discharge ends 11 and 12 of the cylinders 2 and 3, respectively, is provided with an outwardly directed flange 13, as shown in Figs. 1 and 2, and which flange is provided with a pair of screw threaded openings 14.

The nozzle structure comprises a closure nozzle plate 15, which is removably fixed to the flange 13 of the casing so as to span the discharge ends 11 and 12 of the cylinders 2 and 3, respectively, by means of the thumb screws 16 which screws pass through openings 17 in the plate 15 and have engagement with the screw threaded openings 14 of the casing flange 13.

The plate 15 is provided with a screw threaded opening 18 which is a smaller diameter than the bore of cylinder 2 and communicates with the discharge end thereof and so positioned in the plate 15 as to assume a position adjacent the cylinder partition 4, as clearly shown in Fig. 2. The plate 15 is further provided with a neck member 19 provided with an inclined passage 20 terminating at its inner end in a size the same as the diameter of the discharge end 12 of cylinder 3, and which communicates therewith. The inclined neck member 19 terminates at this outer end in a tubular cylinder head 21 which is arranged concentric with the screw threaded plate opening 18 and which is externally screw threaded at its outer end, as at 22 for engagement with the inner internally screw threaded end 23 of a detachable suitably tapered exterior discharge nozzle 24. A suitable detachable internal discharge nozzle 25 having its inner end exteriorly screw threaded as at 26, has engagement with the internally screw threaded opening so that the longitudinal axis of the internal discharge nozzle 25 will be the same as the longitudinal axis of both the tubular head 21 and the exterior discharge nozzle 24. The bore of the internal discharge nozzle 25 is preferably non-tapered and the exterior of the nozzle is preferably tapered as shown in Fig. 2, although not necessarily so. The discharge end of the

internal discharge nozzle 25 preferably stops short of the outer edge of the exterior discharge nozzle 24 so that coating substance being discharged from cylinder 3 will start to contact and coat the substance passing through the internal discharge nozzle 25 from cylinder 2. Both the internal and external discharge nozzles 25 and 24 being detachable, it is evident that they may be changed from time to time for smaller or larger nozzles or for nozzles of various shapes in cross section, as the occasion demands, or necessitates.

It is apparent from the foregoing description that a nozzle structure of the type shown is applicable to any machine which discharges two different kinds of materials, or substances, one of which acts as a core and the other as a coating therefor. One such type of machine is disclosed in my co-pending application, Serial Number 99,774, which is a hot tamale forming machine although it is apparent and to be understood that the device is not limited in its use to such class of machines.

The many advantages of the herein described invention will readily suggest themselves to those skilled in the art to which it appertains.

From the foregoing description, it is evident that a simple device for this purpose has been disclosed, but it is to be understood that I do not desire to restrict, or limit myself to the very details of the construction shown and described, which is merely illustrative, it being obvious that changes, not involving the exercise of invention, may be made without conflicting or departing from the spirit of the invention within the scope of the appended claim.

What I claim is:

In combination with a two cylinder machine for discharging two different substances at the same time, of an end plate, screw threaded means for detachably connecting said end plate to the machine, said end plate including a neck portion having an inclined discharge passage, said neck portion terminating in a tubular head, external screw threads for said head, an outer discharge nozzle having internal screw threads at its inner end for screw threaded connection with the tubular head of the neck portion of said end plate, said end plate having an internally screw threaded opening in axial alignment with the tubular head of said neck portion of the plate, an internal nozzle, the inner end of said internal nozzle being externally screw threaded for screw threaded connection with the internally screw threaded opening of the end plate.

In testimony whereof I have hereunto affixed my signature.

SAMUEL ALLEN.