M. PARIDON.

BOX FILLING MACHINE.

APPLICATION FILED MAR. 14, 1916.

1,206,901. Patented Dec. 5, 1916.

Fig. 1.

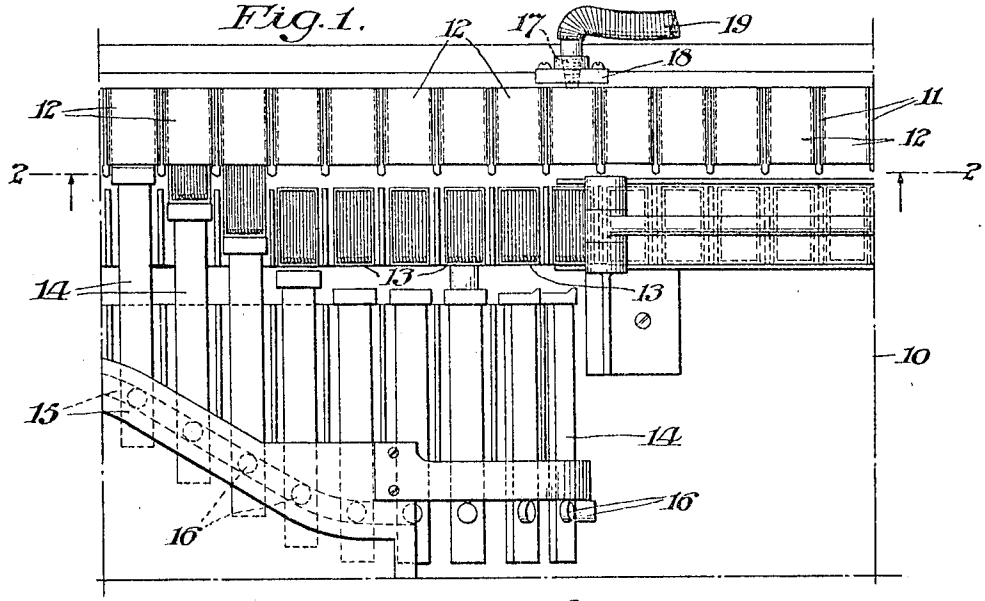


Fig. 2.

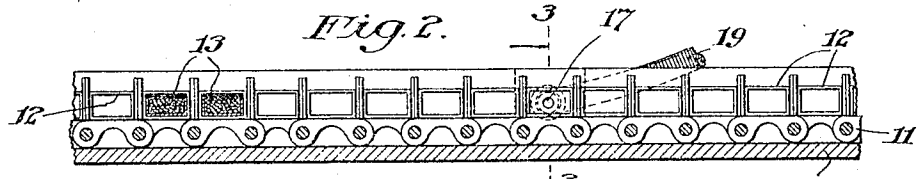


Fig. 3.

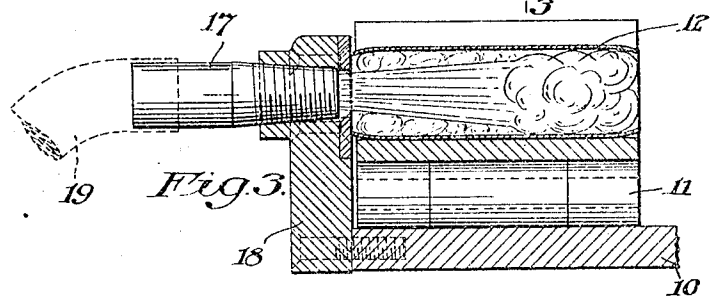


Fig. 4.

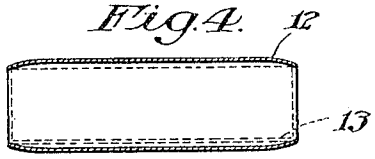


Fig. 6.

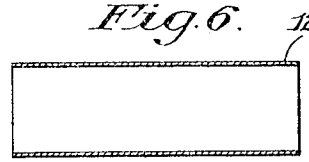
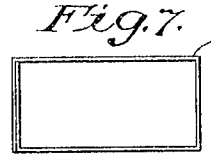


Fig. 5.



Fig. 7.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

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BOX-FILLING MACHINE.

1,206,901. Specification of Letters Patent. Patented Dec. 5, 1916.

Application filed March 14, 1916. Serial No. 84,022.

To all whom it may concern:

Be it known that I, MICHAEL PARIDON, a citizen of the United States, and resident of Barberton, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Box-Filling Machines, of which the following is a specification.

This invention relates to box-filling machines, and more especially to machines for filling and closing boxes of the tray-and-shuck type commonly used for holding matches.

The object of my invention is to provide a simple and efficient means whereby the edges of the open ends of wooden box-shucks are straightened or "squared" to facilitate the association of the trays therewith. Such shucks each comprise a strip of thin veneer bent into appropriate form having its ends overlapped and glued together to constitute one of the narrow longitudinal sides of the shuck; a thin paper label being glued or pasted to the "tubular" body. The edges of the material at the ends of the shuck warp or turn inward and thus distort and contract the rectangular end openings, thereby rendering it difficult to insert the complementary match tray into the shuck. Hence in machines for filling and closing match boxes of the type mentioned it has heretofore been necessary to employ mechanical means for spreading the ends of the shucks in order to enable the insertion of the filled trays thereinto.

According to my invention I provide means whereby a jet of steam or vapor is directed into the open ends of the shucks preparatory to the insertion of the trays into the shucks, which steam or vapor, moistening the interior of the shuck material, causes the fibers of the wood to expand and thus straighten out the ends of the shuck; or, in other words, the end openings are straightened or "squared" to permit the ready entry of the trays thereinto without the employment of any mechanical opening device whatever.

More specifically stated, my invention consists in the combination with a box-shuck carrier, of a steam or vapor nozzle arranged in such relation thereto that a jet of fluid enters the shucks successively. Thence the shucks are advanced to a station whereby the trays and their contents are pushed into the successive shucks, all as will be hereinafter described and claimed.

In the drawings, which illustrate a preferred form of embodiment of my invention, Figure 1 is a plan of part of a match-box filling machine employing a tray-and-shuck conveyer and means for endwise pushing the trays into the opposing open ends of their complementary shucks, showing a steam or vapor nozzle arranged adjacent the path of the outer ends of the shucks. Fig. 2 is a longitudinal vertical section, as on the line 2—2 of Fig. 1. Fig. 3 is an enlarged transverse vertical section adjacent the nozzle, as on the line 3—3 of Fig. 2, showing more clearly the mode of introducing the steam or vapor into the shuck. Fig. 4 is a longitudinal vertical section of an ordinary wooden match-box shuck. Fig. 5 is an end view thereof. Figs. 6 and 7 are views similar to Figs. 4 and 5 respectively, of the shuck immediately after it has been treated according to my invention.

Referring to the drawings, 10 designates a bed, and 11 a continuously traveling tray-and-shuck conveyer mounted to travel thereon. This conveyer comprises, in the form illustrated, relatively wide metal links jointed together to constitute an endless chain. It is provided with two longitudinally-extending rows of transverse channels or pockets, one row being designed to receive and carry the shucks 12 and the other row to receive and carry the complementary trays 13. At a suitable point on the bed are reciprocable plungers 14 which are carried by a conveyer traveling adjacent to and concertedly with the tray-and-shuck conveyer. A suitably-disposed stationary camway 15 on the bed receives studs 16 on the respective plungers during their travel, and effects their timely reciprocation toward and from the trays in such a manner that the plungers push the opposing trays endwise into their complementary shucks.

17 designates a nozzle which is supported on a bracket 18 affixed to the bed plate adjacent to the tray-and-shuck conveyer, such nozzle being positioned to discharge toward the open ends of the progressing shucks on the conveyer. The nozzle is connected by means of a hose or pipe 19 with a suitable source of steam or vapor, and hence the jet is discharged across the path of the shucks and into and through the interior thereof.

The nozzle, (or other fluid applying device,) is arranged at a suitable point in advance of the tray-inserting mechanism to insure the efficient straightening action of the moisture on the in-turned ends of the shucks before the trays are entered thereinto.

After the association of the complementary trays and shucks the moisture in the shuck material evaporates, and the ends of the shuck thereupon resume their previous in-turned or warped condition and tend to lock the tray within the shuck.

It is to be understood that my invention is not limited to the particular boxing mechanism nor to the specific construction of the steam or vapor applying device herein shown and described.

A separate application for patent covering the process of treating wooden boxes as hereinbefore described, is filed simultaneously herewith.

I claim—

1. The combination with means for supporting a box-shuck, of a steam or vapor discharging member positioned to inject steam or vapor into the interior of the shuck.

2. The combination with means for supporting a series of box-shucks, of a steam or vapor discharging member, and means for effecting a relative movement between the said shucks and the said member, whereby the interior of the shucks are subjected progressively to the action of the steam.

3. The combination with a steam or vapor discharging member, of means for feeding box-shucks in a path adjacent said member, whereby steam or vapor is discharged directly into the open ends of the progressing shucks.

4. The combination with a shuck carrying chain, of a steam or vapor discharging member adjacent thereto directed toward the path of the open ends of the shucks in said chain.

5. In a machine of the kind described, the combination with means for feeding box-shucks and trays in endwise relation to each other, and means for associating the shucks and trays, of means for moistening the ends of the shucks before the trays are associated therewith.

Signed at Barberton, in the county of Summit and State of Ohio, this 11th day of March A. D. 1916.

MICHAEL PARIDON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."