Dec. 28, 1937. H. KLAUCKE 2,103,681

CHUCK

Filed Sept. 17, 1936 2 Sheets-Sheet 1

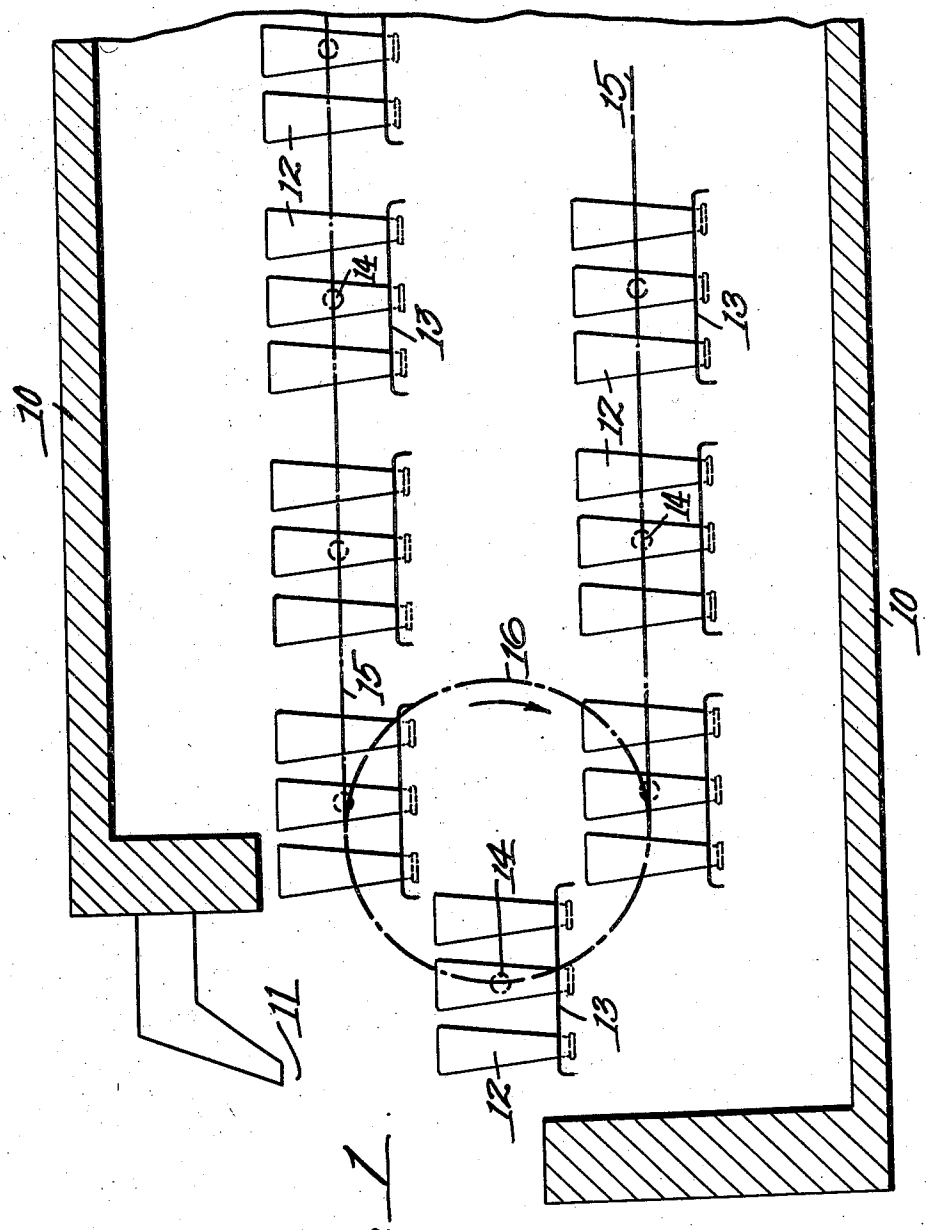


FIG. 1

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Fig. 2.

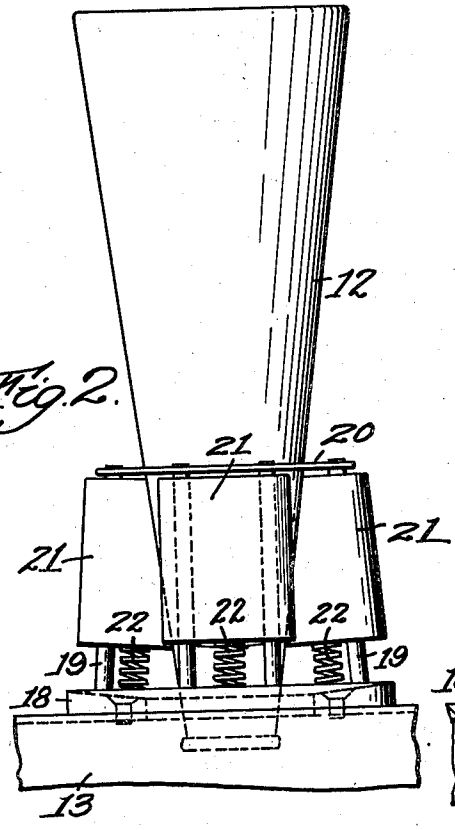
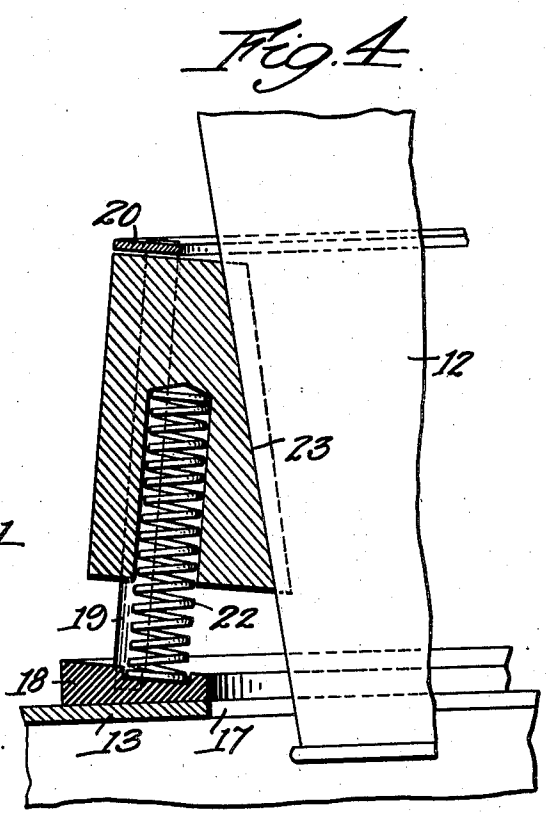


Fig. 4.



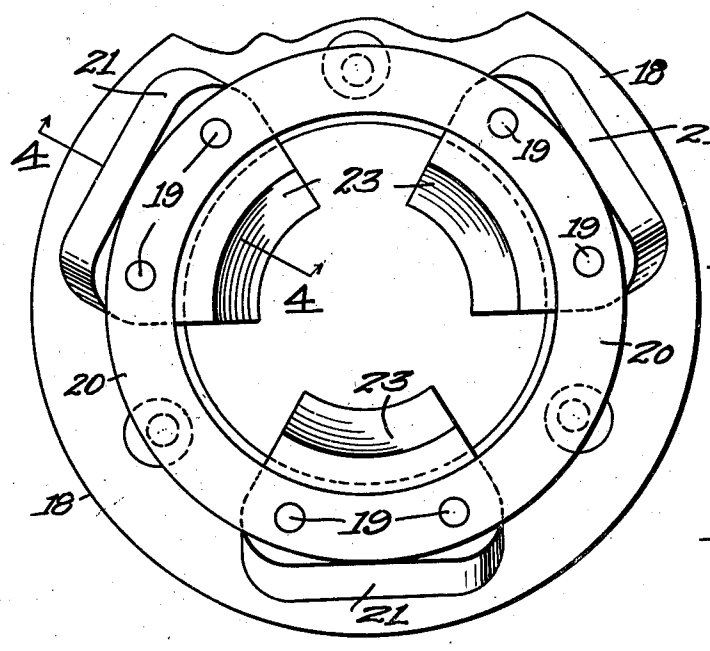


Fig. 3.

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UNITED STATES PATENT OFFICE

2,103,681

CHUCK

Hermann Klaucke, Worcester, Mass., assignor to Baldwin-Duckworth Chain Corporation, Worcester, Mass., a corporation of Massachusetts

Application September 17, 1936, Serial No. 101,293

2 Claims. (Cl. 198—131)

This invention relates to the drying and draining of bottles made of pulp or similar material used for transporting and storing oil and other liquids.

The principal objects of the invention are to provide an efficient chuck for holding such bottles gently but firmly so that there is no danger of crushing or distorting them and yet they can be carried on an endless conveyor in a drier so arranged that the bottles can be sprayed inside primarily and then dried for about forty-five minutes, sprayed again and dried afterwards for forty-five minutes; to provide chucks of which a large number can be closed simultaneously and accurately and which can be opened easily; to provide a construction by which approximately 4500 bottles per hour can receive that treatment and the total capacity of the drier shall be very high, as for example, as many as 7000 bottles, and to provide means whereby a large number of bottles can be sprayed inside, received on a conveyor in the oven, carried intermittently through the oven to give them a long drying period, and brought back again to the starting point where they can be removed by attendants or again sprayed with a second spraying, and put back on the conveyor for further drying.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 is a longitudinal sectional view of a drier provided with a conveyor therein for drying the bottles referred to above;

Fig. 2 is a side view of the clutch in which the bottles are located;

Fig. 3 is a plan of the same, and

Fig. 4 is a sectional view on the radial line 4—4 in Fig. 3.

This invention is designed for carrying out a step in the process of preparing bottles made of wood or other vegetable pulp for the transportation of oil and other liquids. Such bottles have been made heretofore and have been used for the same purpose. This invention relates to the drying of a protecting spray on the inside surface of the bottles. This is particularly difficult for the reason that the bottles are sprayed twice and have to be dried after each spraying.

In the first place a drying oven 10 is provided which has an inlet opening 11 through which these bottles 12 can be introduced in a series, as indicated. In the present case forty-five bottles are carried on each of several trays 13 and the trays are pivotally mounted by means of pivots 14 on an endless chain 15 which is supported by sprocket wheels 16 within the drier.

In each tray 13 there are rows of perforations for receiving the small ends of the bottles and a corresponding number of chucks for holding them. Around each of a series of perforations 17 on the tray is a circular disc 18 which carries straight rods 19 which are inclined inwardly. At the top they are connected by a ring 20. These rods 19 are in pairs and each pair carries a slidable jaw 21, these rods constituting the guides therefor. By springs 22 these jaws are held upward against a ring 20. Each jaw is provided with a concave clutch surface 23 on the inside. Three of them are shown around the circle and they clutch a bottle when the bottle is pushed in far enough to force them downwardly a little.

In the present case they are dropped in by hand at the outside of the opening 11, the tray 13 being located at that time outside the drier, and one bottle is left loose in each clutch. They are all pushed down in the clutches so that their lower ends are on a level to facilitate spraying, inside from below. The insides of the bottles are subjected to a preliminary spraying. Now each tray, in order, is moved inwardly and hung on the pivot pins 14 on the conveyor while that is stationary. The conveyor carries them forward intermittently through the drier from the inlet 11 until it brings them back to the inlet. Then each tray is lifted out again as it comes around to this point and the bottles are sprayed a second time in the same position as before. As many sprayings are employed as desired. The trays are put back on the conveyor and the bottles dried again, preferably for about forty-five minutes. This is done by an intermittent motion which leaves in certain cases about forty-five minutes for the drying process.

It will be seen, therefore, that this clutch is capable of holding the bottles against being misplaced on the conveyor and yet it holds them by its slanting concave surfaces which fit the surfaces of the bottle. Thus the bottle is not injured and comes out of its operation in its original conical shape. In order to release the bottles from the chuck one of the jaws 23 of each chuck is pushed downwardly, thus releasing all tension and allowing the bottles to be removed.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A chuck for carrying conical containers comprising a frame, pairs of inclined rods carried thereby and each pair constituting an inclined

guide for a jaw, a plurality of jaws located on said guides and adapted to move up and down at an inward inclination upon them, and a spring between each pair of rods for moving the jaws to their clasping position.

2. A chuck for carrying pulp bottles comprising a frame, pairs of inclined rods carried thereby and each pair constituting an inclined guide, a jaw located on each of said guides and adapted to move up and down at an inward inclination upon them, springs for moving the jaws in one direction, each jaw having an inner surface inclined downwardly toward the center for clasping the conical surface of the bottles, and means for holding said rods at the top.

HERMANN KLAUCKE.