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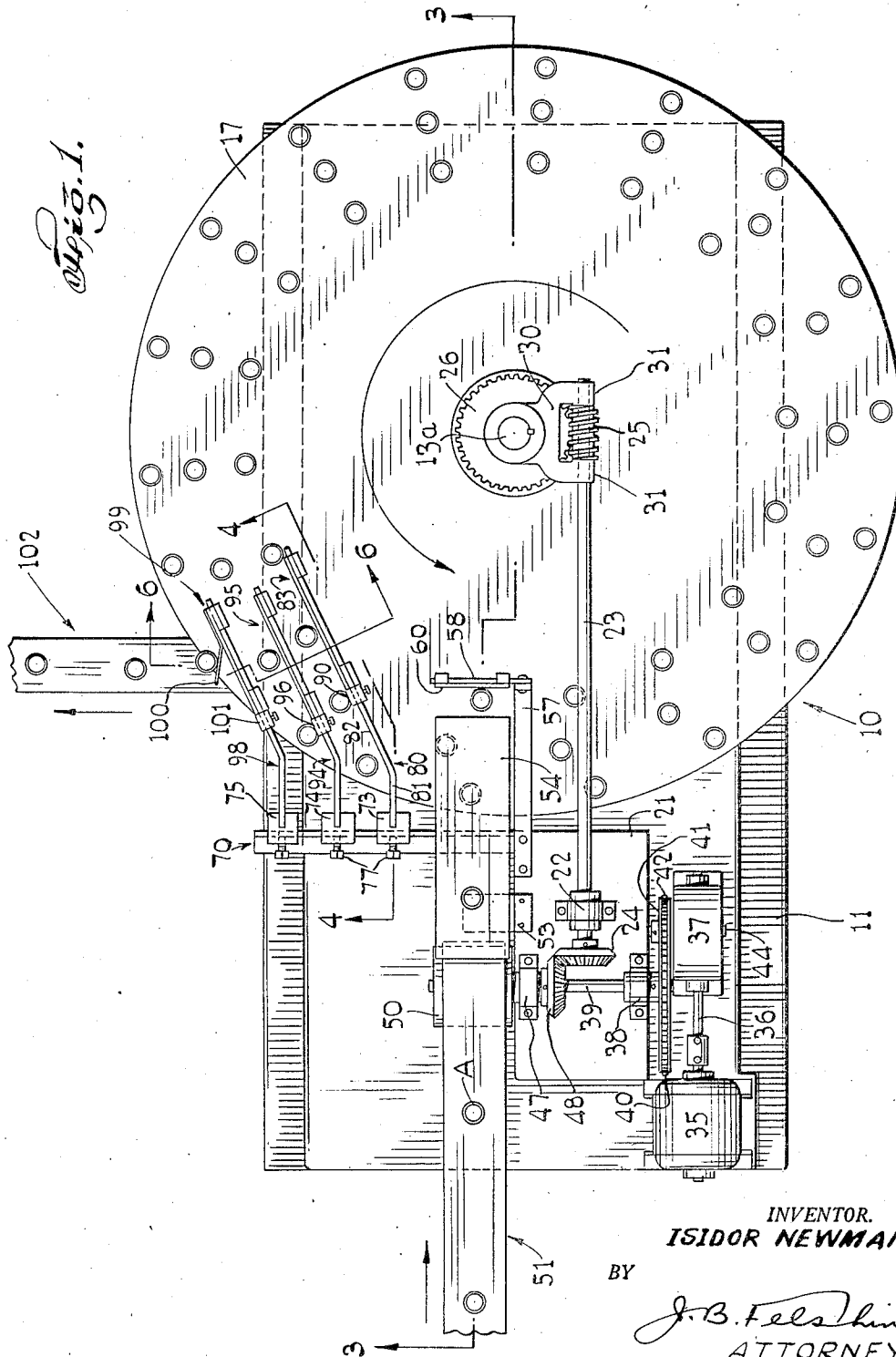
I. NEWMAN

2,338,348

DRYING MACHINE

Filed Jan. 20, 1942

3 Sheets-Sheet 1



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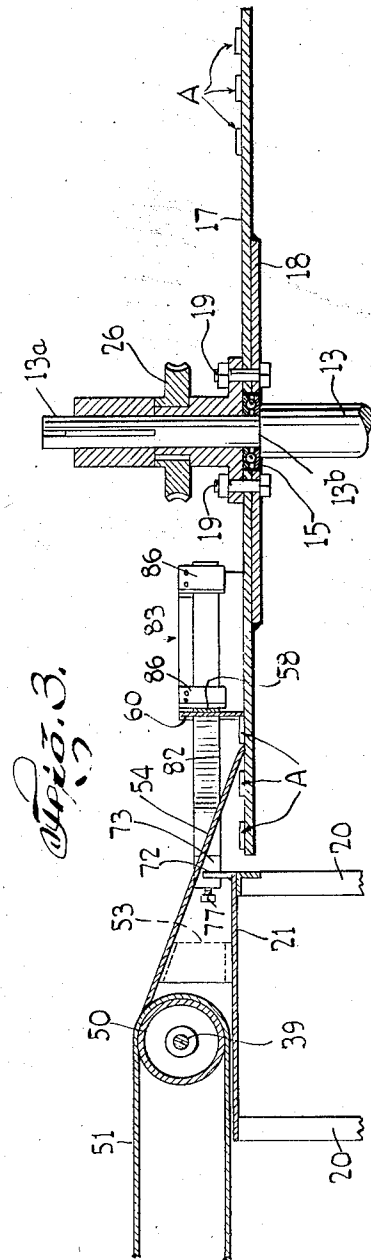
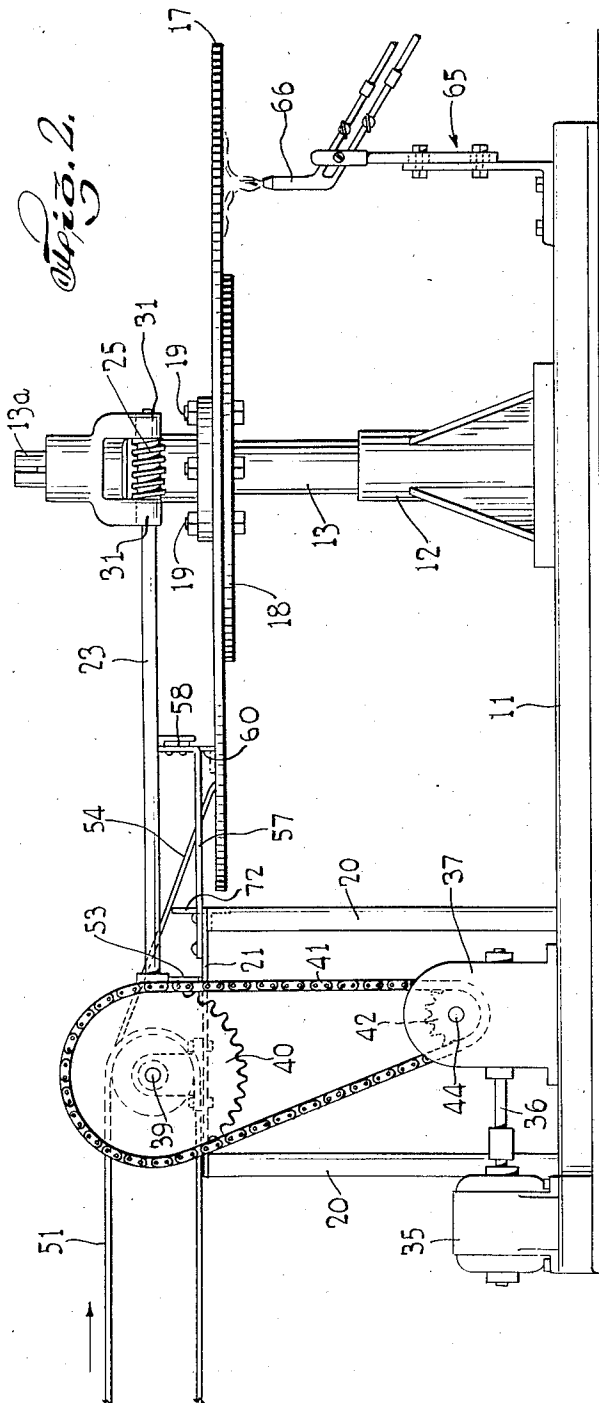
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DRYING MACHINE

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3 Sheets-Sheet 2



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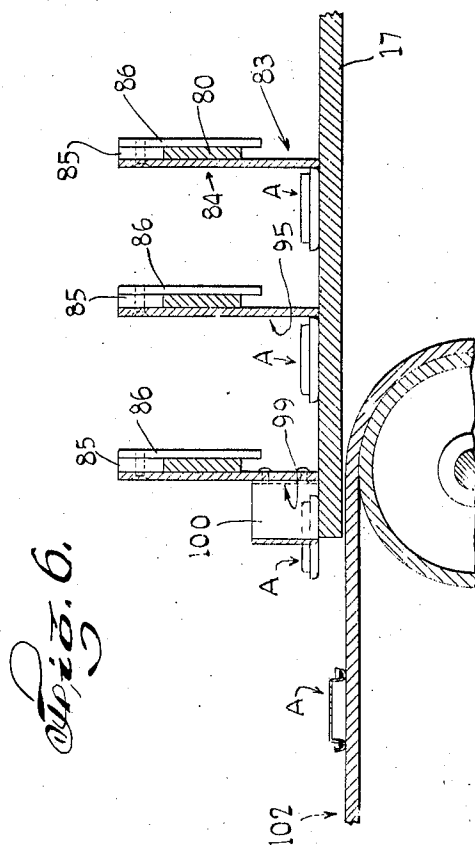
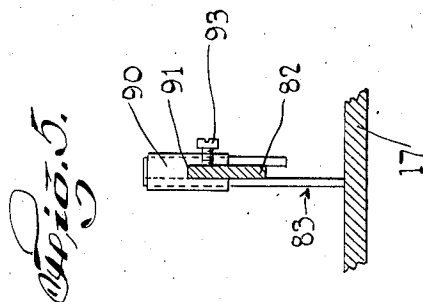
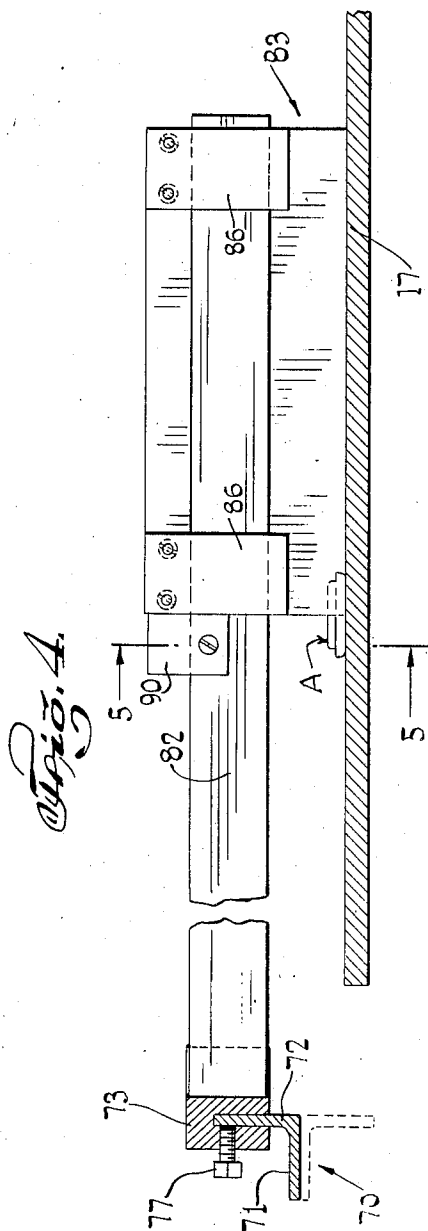
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DRYING MACHINE

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3 Sheets-Sheet 3



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2,338,348

DRYING MACHINE

Isidor Newman, New York, N. Y.

Application January 20, 1942, Serial No. 427,453

2 Claims. (Cl. 34—56)

This invention relates to drying machines. It is particularly directed to a machine for drying sealing material on can caps or other articles.

An object of this invention is to provide a drying machine, in which a supply of articles to be dried are continuously deposited from a conveyor onto a horizontal, rotary, heated table, inwardly of the outer periphery of the table, means being provided to automatically and progressively move the articles radially outwardly on the table after the articles have rotated through predetermined angles, means being further provided to move the articles off the table after they had made a predetermined number of turns on the table.

A further object of this invention is to provide in a drying machine of the character described, means to adjust the number of turns each article is to have on the table before being moved off the table, said means being further adjustable to accommodate articles of various sizes.

Yet another object of this invention is to provide a strong, durable and compact machine of the character described, which shall be relatively inexpensive to manufacture, smooth and positive in operation, and yet practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements, and arrangement of parts which will be exemplified in the construction hereinafter described, and of which the scope of application will be indicated in the following claims.

In the accompanying drawings, in which is shown one of the various possible illustrative embodiments of this invention,

Fig. 1 is a top plan view of a drying machine embodying the invention;

Fig. 2 is a side elevational view thereof;

Fig. 3 is a cross-sectional view taken on line 3—3 of Fig. 1;

Fig. 4 is an enlarged, cross-sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a cross-sectional view taken on line 5—5 of Fig. 4; and

Fig. 6 is an enlarged, cross-sectional view taken on line 6—6 of Fig. 1.

Referring now in detail to the drawings, 10 designates a drying machine embodying the invention, for drying the sealing material in can caps, or for drying any other suitable articles. The machine 10 comprises a fixed platform or base 11, on which there is mounted a vertical

socket 12 receiving the lower end of a vertical upstanding shaft 13 fixed to the socket in any suitable manner. Shaft 13 has a reduced upper end 13a forming a chamber 13b. Rotatably mounted on the reduced portion 13a of shaft 13 is a hub 14, an annular thrust bearing 15 being interposed between said hub and shoulder 13b.

Fixed to hub 14 is a circular, horizontal table 17, to the underside of which is fixed a circular disc or plate 18, disposed beneath the table. Table 17, disc 18 and hub 14 are attached together by bolts 19. It will now be understood that the table 17 is rotatable with the hub 14 and disc 18 on shaft 13.

Means is provided for rotating the table 17 about its vertical axis. To this end, there is fixed to the platform 11, a stanchion 20 carrying a fixed table 21 at a level somewhat above the table 17, and disposed at one side thereof. Mounted on table 21 is a horizontal bearing 22 in which is journaled one end of a horizontal shaft 23. At one end of shaft 23 is a bevel gear 24 disposed above table 21. Shaft 23 is disposed above the table 17, and carried by the opposite end thereof, is a worm 25 meshing with a worm wheel 26 fixed to the hub 14.

Received on the upper reduced end of shaft 13, and keyed thereto, is a bracket 30 formed with a pair of spaced horizontal bearings 31 in which shaft 23 is journaled on opposite sides of worm 25. Mounted on the platform 11 is an electric motor 35 connected by horizontal output shaft 36 to a reduction gearing 37 or belt drive. On table 21 is a horizontal bearing 38 in which is journaled a horizontal shaft 39, disposed at right angles to shaft 23, and at substantially the same level. Carried by shaft 39 is a sprocket wheel 40 connected by a sprocket chain 41 to a sprocket wheel 42 on the output shaft 44 of the reduction gearing 37.

Shaft 39 is journaled in a second horizontal bearing 47 mounted on table 21. Carried by shaft 39 is a bevel gear 48 meshing with bevel gear 24. It will now be understood that table 17 is driven through motor 35 and shafts 39 and 23.

Carried by shaft 39 is also a pulley 50 receiving one end of a belt 51. The other end of the belt 51 passes over a similar pulley (not shown). The belt 51 may be disposed in a vertical plane substantially passing through the axis of the table 17. Can caps or any other similar articles may be deposited on the belt and moved in a direction of the arrow towards the table 17.

Means is provided to guide the caps from belt

51 onto table 17. To this end, there is fixed to table 21, a bracket 53 supporting one end of a downwardly inclined ramp or guide 54. The upper end of ramp 54 is disposed adjacent the pulley 50, so that articles A will pass from the belt 51 onto the ramp 54 and slide down onto the top of the table 17, inwardly of the periphery of the latter.

Stop means is provided to limit movement of articles A radially of the table 17 after said articles are deposited on the table. To this end, there is fixed to table 21 a horizontal arm 57 extending radially inwardly over the top of table 17. Fixed to the outer end of arm 57 is an arm 58 extending at right angles to the arm 57. Slidably mounted on arm 58, is a stop member 60 extending downwardly substantially to the top surface of table 17. Stop member 60 is spaced from the adjacent end of ramp 54 substantially by a distance equivalent of the width of the article to be deposited on the table 17. Thus, articles A will pass from the belt 51 down the ramp 54, onto the table 17, and will strike the stop member 60. Rotation of the table 17 in the direction of the arrow will carry the articles A around the table in a circular path, as soon as they are deposited thereon.

Means is provided to heat the table 17. To this end, there is fixed to the platform 11, a vertically adjustable bracket 65 carrying a gas burner 66 located beneath the table 17 or any other heating element. The nozzle of the burner 66 points upwardly so that the flame will contact the underside of the table 17. The gas burner is preferably located at a point relative to the table 17, substantially opposite the location of table 21.

Means is provided to permit the articles A deposited on the table, to travel a predetermined number of times around the table before they are moved off the table. To this end, there is fixed to the table 21, a horizontal T-shaped member 70, having a horizontal web or wall 71, and a vertical wall 72. Member 70 extends substantially tangentially to table 17.

Slidably mounted on vertical wall 72 of member 70 are a plurality of similar blocks 73, 74 and 75. Each of said blocks has a vertical slot in its underside to receive the vertical wall 72. Each of said blocks may furthermore be fixed to wall 72 by a set screw 77. Fixed to block 73 is a bracket arm 80 having a portion 81 disposed at right angles to member 17 and projecting into a slot in block 73, and fixed thereto, as by welding or in any other suitable manner. Extending from portion 81 is a portion 82 disposed at an obtuse angle relative to portion 81 and overlying the table 17.

Mounted on portion 82 of arm 80, is a shift member 83. Said member 83 comprises a vertical plate 84 contacting one surface of arm 80. The lower edge of plate 84 contacts table 17. Fixed to the upper end of plate 84 is a bar 85 disposed above the upper edge of portion 82 of said arm 80. Fixed to the rear surface of bar 85 are a pair of spaced, downwardly extending, vertical members 86 contacting the rear surface of portion 82 of arm 80. Slidably mounted on portion 82 of bracket arm 80 is a stop block 90 having a slot 91 in its lower edge to receive the upper edge of portion 82 of arm 80. Block 90 may be fixed to portion 82 of arm 80 by a set screw 93. Plate 84 is disposed diagonally across the circular path of the articles disposed on table 17, for the purpose hereinafter appearing.

Attached to block 74 is a bracket arm 94, similar to bracket arm 80 and parallel thereto, and carrying a shift member 95, similar to shift member 83. On bracket arm 94 is an adjustable stop 96 similar to the adjustable stop 90.

On block 95 is a bracket arm 98 similar to bracket arm 94 and parallel thereto, and carrying a shift member 99, similar to shift members 83 and 95. On shift member 99, however, is an outwardly extending plate 100 extending to the edge of table 17, for the purpose hereinafter appearing. On bracket arm 98 is a stop block 101, similar to stop block 96.

It will now be understood that the blocks 73, 74 and 75 may be adjusted longitudinally on member 70, to adjust the radial positions of the shift members 83, 95 and 99. Furthermore, by adjusting the blocks 90, 96 and 101 on the bracket arms 80, 94 and 98, respectively, the positions of the shift members 83, 95 and 99 may be adjusted.

The operation of the drying machine will now be explained:

The articles A move along belt 51 onto ramp 54 and slide down onto the top of the table 17, inwardly of the outer periphery thereof. The articles A contact stop 60, and then immediately start rotating, with the table, along a circular path. When the articles strike shift member 83 they are shifted radially outwardly until they pass the shift member, and then rotate again in a larger circular path with the table. Said articles are then closer to the periphery of the table. When the articles reach shift member 95, they are again shifted outwardly or radially to a position close to the periphery of the table. As the articles pass the shift member 95, they continue rotating in a still larger circular path close to the edge of the table. When said articles strike the shift member 99 they are engaged by plate 100, and move off the table 17 onto a second belt 102 which carries the articles to any suitable container.

Although the drawings show the articles A to be cap cans, it will be understood that any suitable articles may be dried on the drying machine disclosed in this application.

It will be understood furthermore that any suitable number of shifting devices may be used, and furthermore, the shifting devices may be adjusted to accommodate articles of various diameters. In other words, the distance between the shift members may be adjusted, as explained hereinabove.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A machine comprising a fixed vertical shaft, a table rotatably mounted thereon, a hub rotatable on said shaft and fixed to said table, means on the shaft to rotatably support the hub thereon, a worm wheel on the hub of said table, a horizontal shaft above said rotary table, a worm carried by said last shaft and meshing with said worm wheel, and a bracket fixed to

said first shaft and having a bearing to journal said second shaft.

2. A machine comprising a vertical shaft, a table, means to mount the table on said shaft for rotation thereon, a worm wheel, means to fix said wheel to the table to rotate with said table coaxially of said shaft, a horizontal shaft, a worm carried by said horizontal shaft and meshing

with said worm wheel, a bracket on said vertical shaft and having a bearing to journal said horizontal shaft, a belt, a pulley for said belt, a shaft carrying said pulley, means to rotate said horizontal shaft and said pulley shaft, and means to lead articles from said belt onto said table.

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