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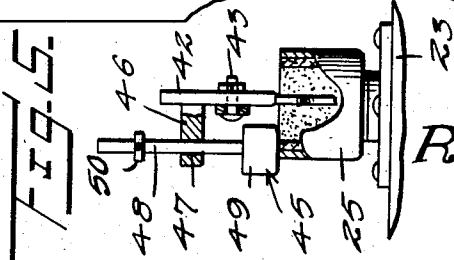
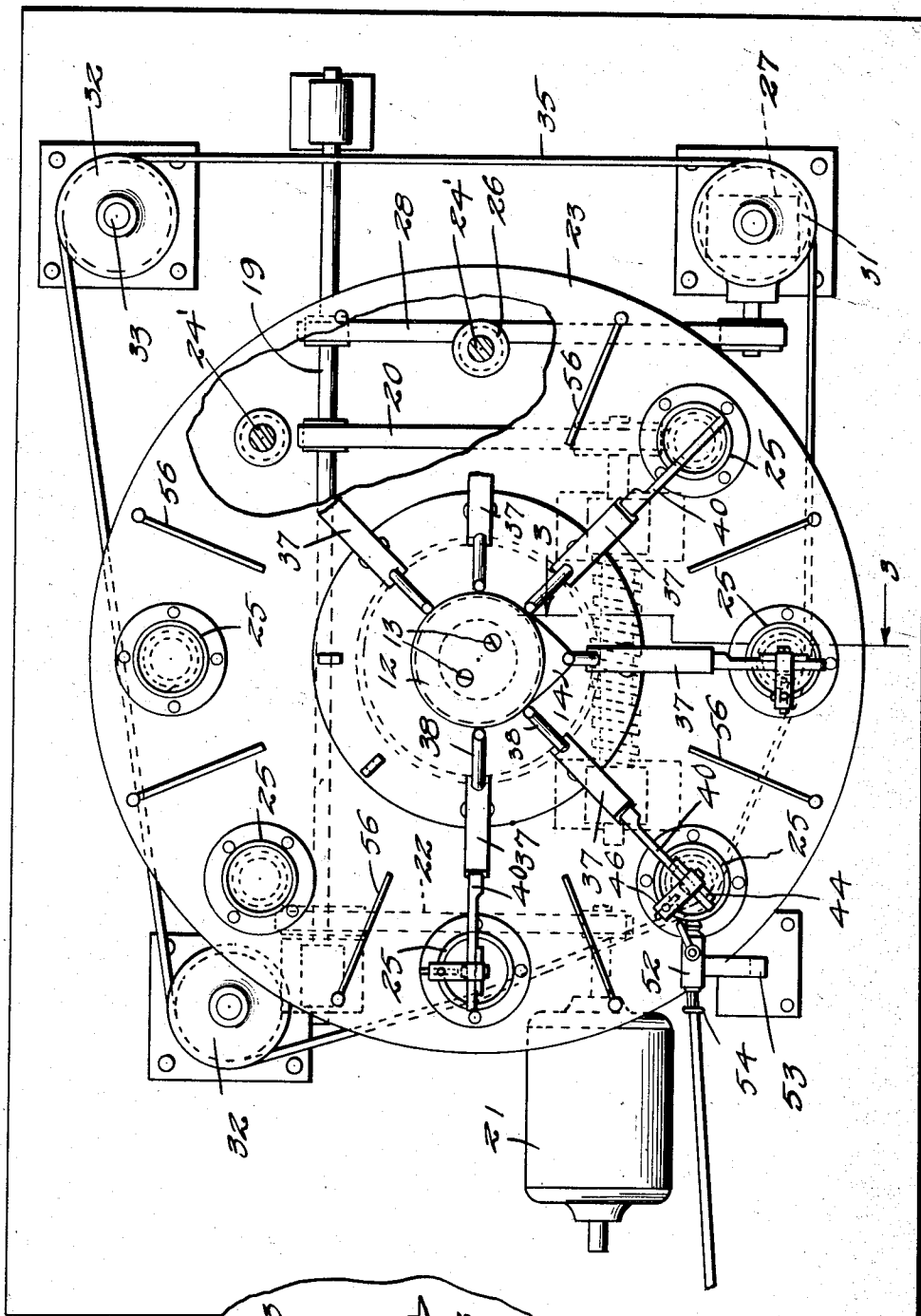
G. W. LANE ET AL
POTTERY MAKING MACHINE

2,224,653

Filed Aug. 5, 1938

2 Sheets-Sheet 1

FIG. 1



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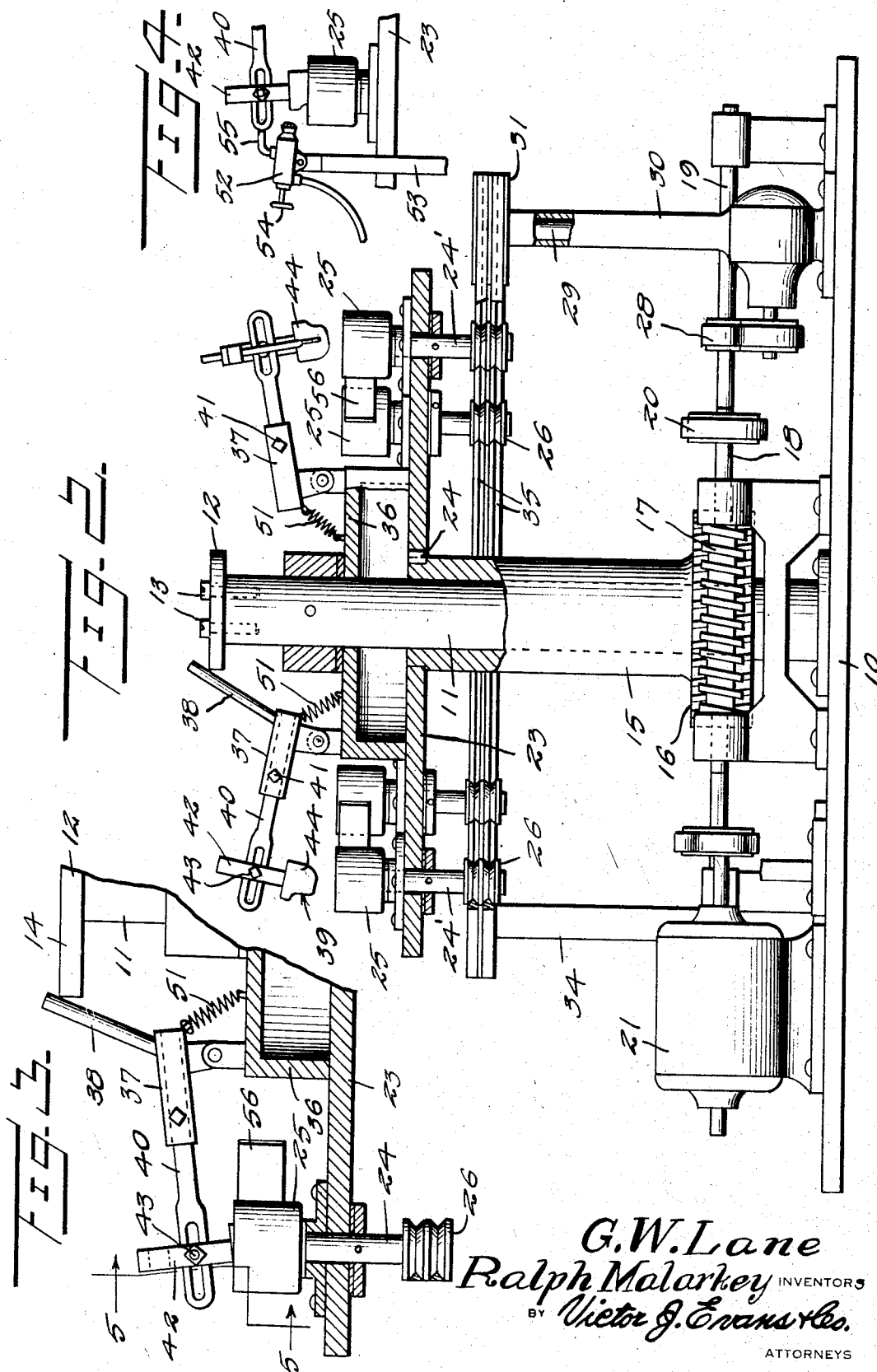
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UNITED STATES PATENT OFFICE

2,224,653

POTTERY MAKING MACHINE

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Application August 5, 1938, Serial No. 223,356

1 Claim. (Cl. 25—24)

This invention relates to pottery making machines the present embodiment of the invention being particularly designed for forming articles such as cups and the like from plastic clay preparatory to final finishing thereof.

An object of the invention is to provide a machine in which a stationary cam is employed to lower the shaping tools into operative position at a certain point in the rotation of the mold supporting table.

A further object is to provide apparatus of this type in which the molds are rotated axially on the table when they arrive at a predetermined point of each complete revolution of the table, and during such axial rotation of the molds the shaping tools are lowered to operative position by the stationary cam.

A further object is to provide apparatus of this type in which the shaping tools are provided with scrapers for removing excess material from the articles being formed.

A further object is to provide a device of this character in which a water jet will intercept each mold at a predetermined point in its circular orbit around the cam for wetting the article being shaped.

A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of this specification,

Figure 1 is a plan view of a pottery making machine constructed in accordance with the invention.

Figure 2 is a side elevation of the machine shown in Figure 1 with portions broken away and parts removed.

Figure 3 is a detail sectional view showing one of the molds and a related shaping tool moved by the cam into operative position relatively to the mold.

Figure 4 is a detail side elevation showing the water spray.

Figure 5 is a detail sectional view with parts in elevation showing one of the molds, shaping tool,

and scraping tool carried thereby for removing excess material from the article being shaped.

Referring now to the drawings in which like characters of reference designate similar parts in the various views, 10 designates a base plate from the center of which rises a stationary post 11 which is equipped at the top with a cam 12 the latter being secured stationary through the medium of screws 13 or other connectors. As best shown in Figure 1 the edge of the cam is circular through an angular advance of about 270 degrees and the cam is provided for the remaining 90 degrees with a substantially triangular shaped lobe 14.

A tubular shaft 15 is sleeved upon the post 11 and is equipped at the bottom with a worm gear 16 which meshes with a worm 17 carried by a stub shaft 18 which is connected to a driving shaft 19 through the medium of a belt drive 20, as shown in Figure 1. The driving shaft is driven through the medium of an electric motor 21, the shaft of which is connected to the driving shaft 19 by a belt drive 22. A circular table 23 is keyed to the tubular shaft as shown at 24 in Figure 2 and is equipped with a circular series of vertically disposed rotatably mounted stub shafts 24', disposed concentric with the axis of rotation of the table and projecting above and below the table. Each shaft is equipped above the table with a respective mold 25 and below the table is equipped with a belt pulley 26, as best shown in Figure 2.

As best shown in Figures 1 and 2 a conventional reduction gear mechanism 27 is secured to the base plate 10 and is driven from the driving shaft through the medium of a belt drive 28. A stand shaft 29 is housed in a casing 30 and is driven by the reduction gear mechanism. The stand shaft is equipped at the top with a pulley 31 over which and loose pulleys 32 arranged on respective stand shafts 33, mounted in respective housings 34, a belt drive 35 is trained, as best shown in Figure 1. Preferably the belt drive 35 is formed of two belts of V-shaped cross section fitting in corresponding grooves in the pulleys 27 and 32, and likewise the pulleys 26 of the mold rotating shafts 24 are formed with a pair of grooves. The arrangement is such that while in the present embodiment eight molds are shown, only a group of three of the molds will be simultaneously driven since the belt drive 35 and pulleys 27 and 32 are arranged to hold the belt out of engagement with the pulleys of five of the molds while holding the belt drive in engagement with the pulleys of three of the molds located

next adjacent each other at a point substantially midway between the pulley 27 of the reduction gear mechanism and the shaft 32 of the pulleys 32, during one complete revolution of the table 23.

5 Simultaneously with axial rotation of a group of the molds, shaping tools are applied to the material in the molds as will now be described. A platform 36 is secured to the table and surrounds the stationary post 11 below the cam 12.

10 Pivotally mounted on the platform near the edge thereof and adjacent respective molds is a plurality of tool holders 37 having respective upstanding inclined rods 38 which ride on the edge of the cam 12. During a portion of the rotation of the table the rods will ride on the circular edge of the cam so that the tool holders remain stationary but during the remaining portion of the revolution, namely, when the group of molds is being rotated axially, the rods of the tool holders 20 adjacent the rotating molds will ride on the triangular cam lobe 14 and lower the outer end of the tool holder to bring the respective shaping tool 39 into engagement with the plastic material and shape the material in the mold, then lift the 25 tool.

Each shaping tool comprises a shank 40 which is adjustably mounted in the respective tubular holder 37 through the medium of a set screw 41. The shank is slotted at the outer end and the stem 30 42 of the shaping tool is adjustably secured to the shank 40 through the medium of an adjusting bolt 43 passed through the slot in the shank. The stem is equipped at the lower end with the conventional blade 44 having a contour desired to 35 be imparted to the plastic material in the mold.

While each shaping tool is performing its operation on the material in the respective mold a scraper 45, best shown in Figure 5, operates to remove excess material from the plastic article being shaped. To accomplish this purpose the 40 stem 42 of each shaping tool is equipped with a laterally extending bracket arm 46 having an opening 47 near its outer end to slidably receive a stem 48 which is equipped at the bottom with a blade 49 adapted to ride on the rim of the mold and the upper edge of the article being shaped and remove excess material simultaneously with the lowering of the blade 44 of the shaping tool into the mold. A stop collar 50 on the stem 48 50 engages the bracket arm 46 which limits downward movement of the scraper blade 49 when the respective shaping tool is lifted from the mold by the rod 38 thereof riding on to the circular edge of the cam coincident with the pull of a respective coiled spring 51 which is connected to 55 the platform 36 and to the inner end of the tool holder 37.

As best shown in Figures 1 and 4 a spray nozzle 52 is pivotally secured to the upper end of a 60 standard 53 which is located laterally of the table at a predetermined point in the rotation of the table to spray the material in the molds successively as the axially rotating molds pass the spray nozzle during rotation of the table. The 65 spray nozzle may be of any conventional type provided with a manually controlled valve 54 and also provided with an automatic valve the stem 55 of which is intercepted by the ends of the tool holder shanks to open the valve as a mold arrives 70 in front of the nozzle.

Radially disposed partitions 56 are secured to the table between adjacent molds to prevent plastic material escaping from one mold on to the next succeeding mold.

In operation the material to be shaped is placed 5 in the molds and the motor 21 started. The table 23 is driven through the worm 17 and worm gear 16 at a predetermined speed while at the same time the belt drive 35 rotates, in the present embodiment, three of the molds axially. Simul- 10 taneously therewith, the rods 38 of the shaping tools of these molds have wiping engagement with the triangular lobe 14 of the stationary cam which progressively lowers the shaping tool into the mold, the controlling spring 51 raising the shap- 15 ing tool out of the mold as the rod recedes along the lobe from the apex thereof. The material in the axially rotating molds is sprayed with water as each mold passes the spray nozzle 52. When the shaping tool is lowered the associated 20 scraping tool will simultaneously be lowered into engagement with the top edge of the mold and the plastic material therein and will ride on the top edge to remove surplus material as the shaping blade 44 of the shaping tool moves down- 25 ward within the article to be shaped in the mold. When the shaping tool is withdrawn the collar 50 of the scraping tool will engage the bracket arm 46 and lift the scraping tool to released position. 30

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

35 In a pottery making machine, a rotary platform, a mould on the platform, a stationary cam at the center of the platform above the mould, a tubular holder pivotally mounted on the plat- 40 form between the cam and the mould, a spring connected to the holder and to the platform normally holding the holder in released position, an upwardly inclined rod fixed to the holder engaging the cam to rock the holder to operative 45 position against the tension of said spring, a shank adjustably mounted in the holder, a stem adjustably secured to the free end of the shank, a blade on the stem having a contour desired to be imparted to plastic material in the mould, a 50 laterally extending bracket arm secured to said stem, a second stem mounted to slide on the bracket arm, a scraper blade on the second-named stem shaped to remove excess material from the upper edge of the mould simultane- 55 ously with the shaping of the article by the shaping blade, a stop collar on the second-named stem adapted to engage the bracket arm for limiting movement of the scraper blade stem when the 60 shaping tool is moved to released position by said rod riding onto the low side of the cam coincident with the pull of said spring, means for rotating the mould, and a spray nozzle having a control 65 valve adapted to be engaged by the free end of the toolholder shank to open the spray nozzle as the mould arrives at the spray nozzle during rotation of the platform.

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