Dec. 12, 1933. F. B. YINGLING 1,939,157

ASSEMBLING DRUM

Original Filed May 1, 1924 2 Sheets-Sheet 1

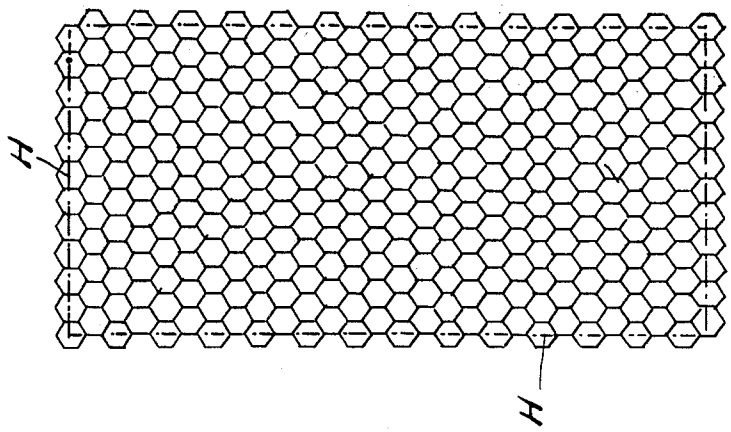


FIG. 2.

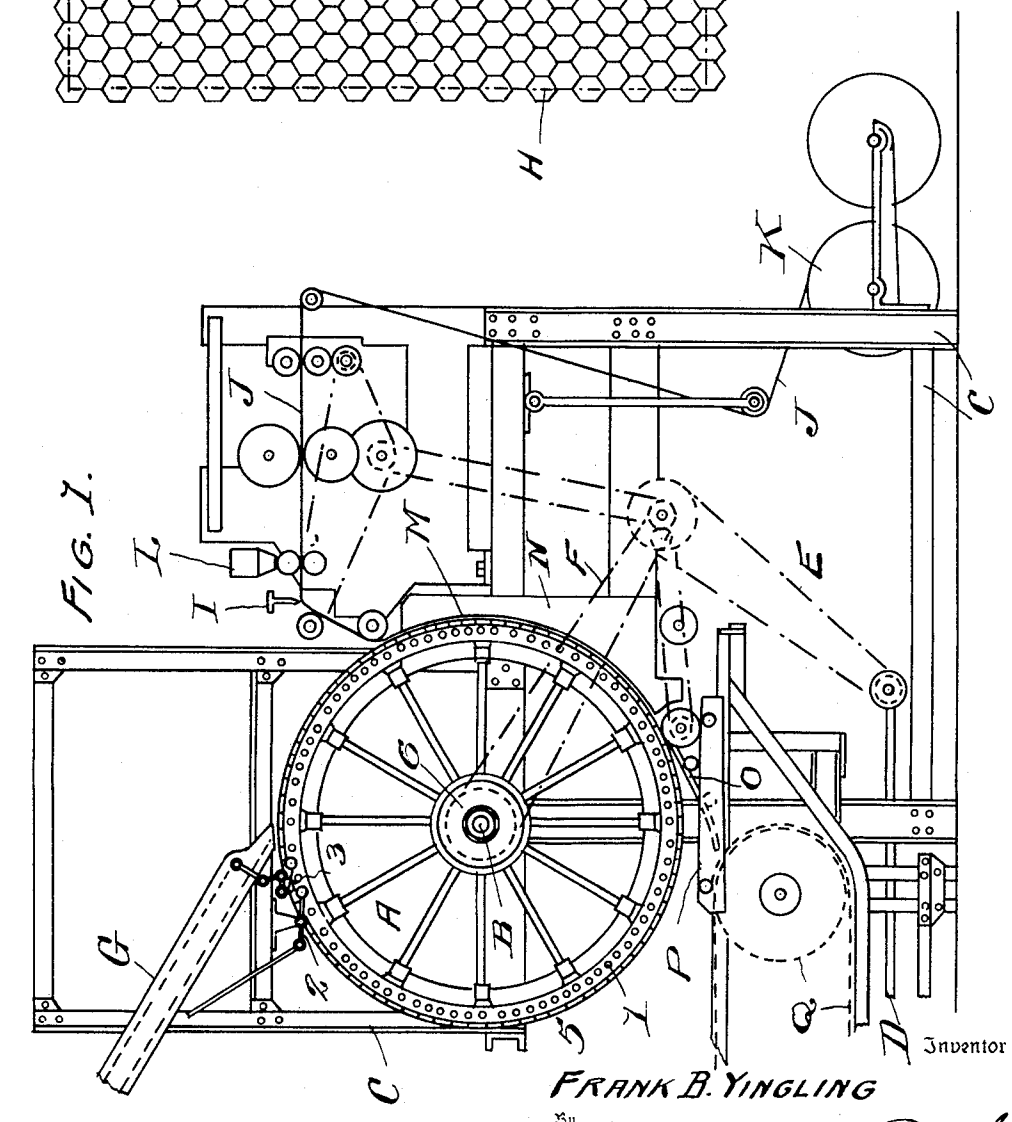


FIG. 1.

Inventor

FRANK B. YINGLING

By Tenelon B. Brock

Attorney

Dec. 12, 1933. F. B. YINGLING 1,939,157

ASSEMBLING DRUM

Original Filed May 1, 1924 2 Sheets-Sheet 2

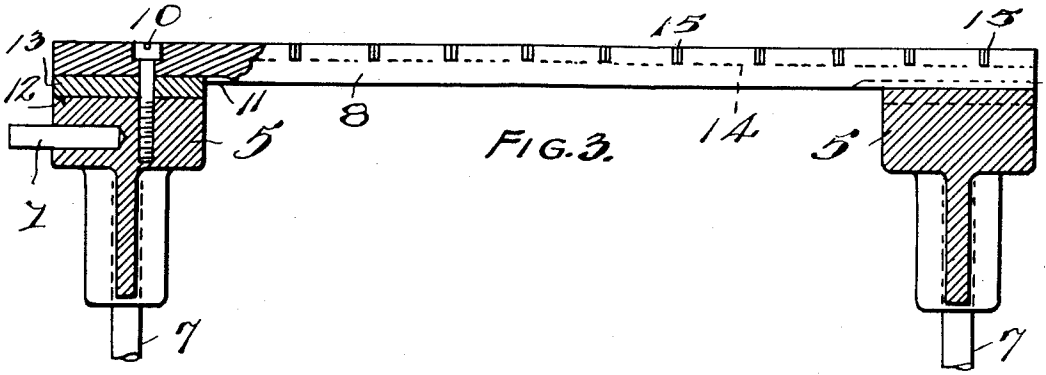


FIG. 3.

FIG. 4.

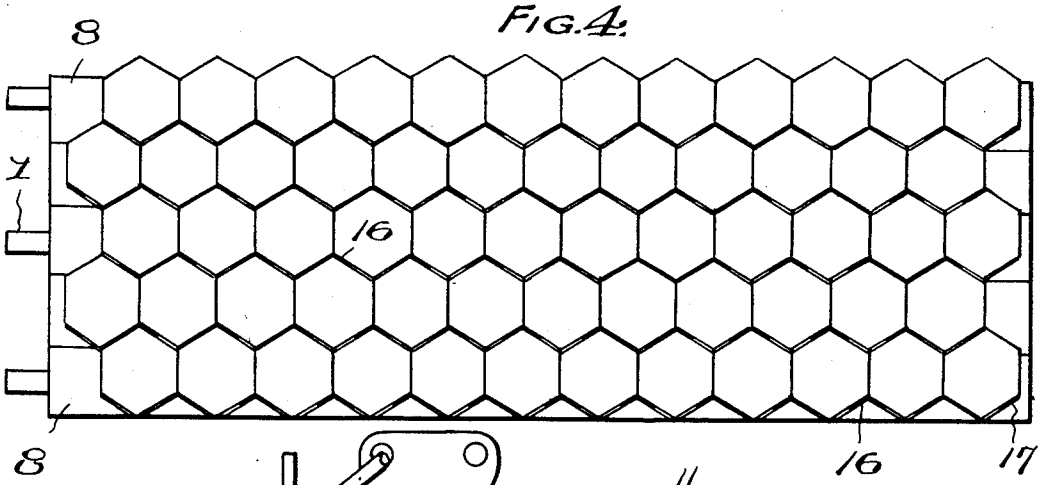


FIG. 5.

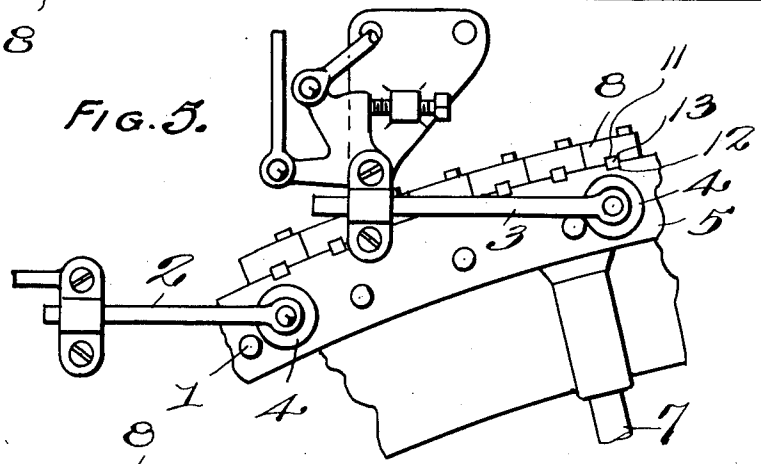
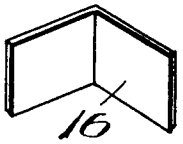


FIG. 7.



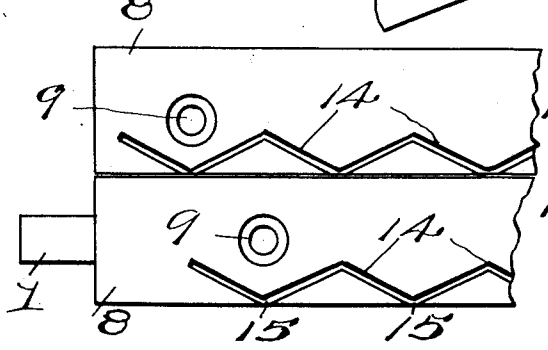


FIG. 6.

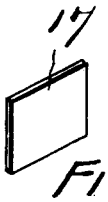


FIG. 8.

Inventor

FRANK B. YINGLING

By

Fenelon B. Brock

Attorney

Patented Dec. 12, 1933

1,939,157

UNITED STATES PATENT OFFICE

1,989,157

ASSEMBLING DRUM

Frank B. Yingling, Hamilton, Ohio, assignor to The Ceramic Machinery Company, Hamilton, Ohio

Original application May 1, 1924, Serial No. 710,383. Divided and this application January 25, 1930. Serial No. 423,458

5 Claims. (Cl. 154—1)

The present invention relates to improvements in assembling drums, which while capable of various uses are especially designed for use in a tile assembling and pasting machine as shown in my co-pending application for Patent Serial No. 710,383, filed May 1, 1924, and of which this application forms a division.

The invention consists in certain novel combinations and arrangements of parts in the assembling drum as will hereinafter be more fully set forth and claimed. In the accompanying drawings I have illustrated one complete example of the physical embodiment of my invention wherein the parts are combined and arranged according to one mode I have so far devised for the practical application of the principles of my invention.

Figure 1 is a view in side elevation at the rear end of the tile assembling and pasting machine, showing the relation of the assembling drum of the present application to the adjoining parts of the machine.

Figure 2 is a plan view of a sheet of tile as assembled and pasted on the drum.

Figure 3 is a detail cross sectional view of a portion of the drum showing one of the cross slats.

Figure 4 is a plan view of a portion of the drum showing the tile assembled thereon.

Figure 5 is a side view showing the automatic feed control devices for the tile actuated by the rotary movement of the drum.

Figure 6 is a detail plan view showing parts of two of the grooved slats of the drum.

Figures 7 and 8 are detail perspective views of two types of retainers or clips employed on the face of the drum to form pockets for the reception of the tile as they are deposited on the drum.

In Figure 1 the assembling drum which is indicated as a whole by the letter A, has its shaft B journaled in bearings in the frame C and the drum is revolved clockwise from the power shaft D, through sprocket chains E and F and their complementary wheels.

The tile as shown in Figures 2 and 4 are deposited in rows upon the assembling drum, through storage and gravity chutes or conveyers G located above the drum, and in this instance six sheets of tile (Figure 2) are fashioned, and provided with an adhesive backing during one revolution of the drum.

In Figure 1 after having been deposited on the drum the tile are carried to the right and downwardly, and while supported on the drum, a sheet of adhesive paper (see dot and dash lines H) is applied to the outer face of the tile.

These backings or sheets of paper are cut as by a knife or cutting shears I and the sheets are severed from a web J which is fed from a paper roller K, and suitable guide rollers are illustrated for properly feeding the web to the knife and for feeding the severed sheet from the knife to the drum.

A container L is provided from which the paste or adhesive is applied to the web before the sheet is severed, and then after passing the knife, the adhesive face of the sheet is brought into close frictional contact with the outer faces of a section of tile on the drum. As the sheet is being applied to the tile on the drum, the sheet passes between the drum and a complementary curved guideway M of a suitable heater N as the sheet of tile passes from between the curved guideways M and the periphery of the drum, the tile by gravity, drop from the drum and the sheet or section of tile with its backing adhering thereto is guided down an inclined plate O located beneath the drum. From this plate the backed section of tile is deposited upon a moving carrier-tray P that is conveyed to the left by endless chain conveyer Q and finally the sheets or backed sections of tile are formed in stacks as illustrated in my co-pending application for Patent Serial No. 392,132, filed September 12, 1929.

While I have shown the tile of hexagonal shape, it will be understood that tile of square, oblong, or other shapes may be assembled on the drum with slight modifications in the arrangement of the drum.

As shown the hexagonal tile are conveyed with opposite points aligned with the line of travel of the tile, in order that the trough, guideways and other parts of the machine through which the tile passes in longitudinal rows, may be fashioned with a minimum width, or as narrow as possible to economize in space, and provide a compact machine, as well as for preventing displacement or turning of the tile while en route through the machine.

The tile as shown are arranged in two rows and they are therefore fed to the drum through a double deck storage and feed chute G the tile in the transverse rows of the sheets being staggered.

In connection with the sheet G an automatic mechanism is utilized for controlling the feed of the tile to the drum, and the assembling mechanism is operated intermittently by the use of pins 1 arranged in annular series on the drum and projecting laterally therefrom. As the drum re-

volves clockwise these pins actuate levers 2 and 3 through their contact rollers 4 controlled in the free ends of the levers and these levers actuate the device which control the passing of the tile through the chute G.

The drum A as shown in the drawings includes a pair of spaced wheels and each of these wheels has a cast rim 5 and a hub 6 between which the radial steel spokes 7 form a rigid connection.

The peripheries of the rims 5 are machined and on these peripheries are supported a series of transversely extending slats 8 which are preferably made of metal and provided with screw holes 9 near their ends. By means of screws 10 which have their heads countersunk in the slats, the latter are rigidly secured at the peripheries of the two wheels and these slats form a cylindrical body or drum. For accurately adjusting these slats on the two wheels of the drum the under sides of the slats are provided with longitudinal keyways 11, and the rims 5 are provided with transversely extending exterior keyways 12 for the reception of the keys 13 that lock the slats on the wheels against displacement.

Each of the slats near one edge is fashioned with a zigzag groove 14 that extends longitudinally and substantially from end to end of the slat. If the groove is located at the extreme edge of the slat notches or slots 15 may be used in the edge of the slat. As shown in the drawings the slats are positioned on the wheels with the grooved edges of the slats in advance, that is, the grooved edges are located at the fronts of the slats as the drum revolves clockwise.

The angularity of the grooves 14 may be changed to adapt the drum for use with various shapes or sizes of tile and other changes may be made if necessary in the formation of the grooved slats.

The zigzag grooves of the slats are adapted to receive partition plates preferably of metal, and here shown in the form of a duplex or angular plate 16 and a straight flat plate 17.

As shown in Figure 4 the straight plates 17 are preferably used at the opposite ends of the grooved slats, while the duplex plates or partitions are used at corners of the zigzag grooves intermediate of the two ends of the slat. Instead of using the duplex plate 16 a pair of plates 17 may readily be substituted for the angular duplex plate if desired.

These partitions as indicated are inserted in the grooves of the slats and they form pockets on the exterior of the drum in which the tile are deposited with opposite points of the tile aligned with the direction of travel of the tile. Thus twelve tile are deposited in a row on a slat with the minor axes of the tile aligned transversely of the drum and a second staggered row of twelve tile follow successively after each transverse row. The major axes of each tile are thus aligned with the direction of travel of the tile and the minor axes of each tile are arranged so that the drum may be a minimum width, while its circumferential dimensions may be varied to accommodate different sizes of tile, and different numbers of sheets that are fashioned on the drum. By depositing the tile in the pockets with their major axes aligned with the direction of travel of the tile, the latter are guided by the angularly disposed plates or partitions 16, 17, into their correct positions in the pockets, and the tile remain in correct positions while the backing or adhesive paper sheet is being applied to the outer face of the tile in the section that is being formed.

As the backed section passes to the under side of the drum, the tile drop out of the pockets and are conveyed away from the drum as heretofore described.

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

1. The combination with a rotary drum adapted to assemble polygonal tile, of means for feeding the tile in rows with their major axes aligned with the direction of travel of the tile, means for applying a separate adhesive backing to a given area of the tile and means for delivering the backed tile section from the drum.

2. An assembling drum having an annular series of transversely extending grooves, and partitions in said grooves to form receiving pockets in the periphery of the drum.

3. An assembling drum having an annular series of zigzag transversely extending grooves in its periphery and partitions in said grooves to form pockets.

4. The combination with an assembling drum having an annular series of transversely extending zigzag grooves, and angular duplex plates in said grooves forming pockets.

5. An assembling drum comprising a series of peripheral slats extending transversely of the drum, said slats each having a longitudinally extending zigzag groove, and partitions in said grooves forming pockets.

FRANK B. YINGLING.