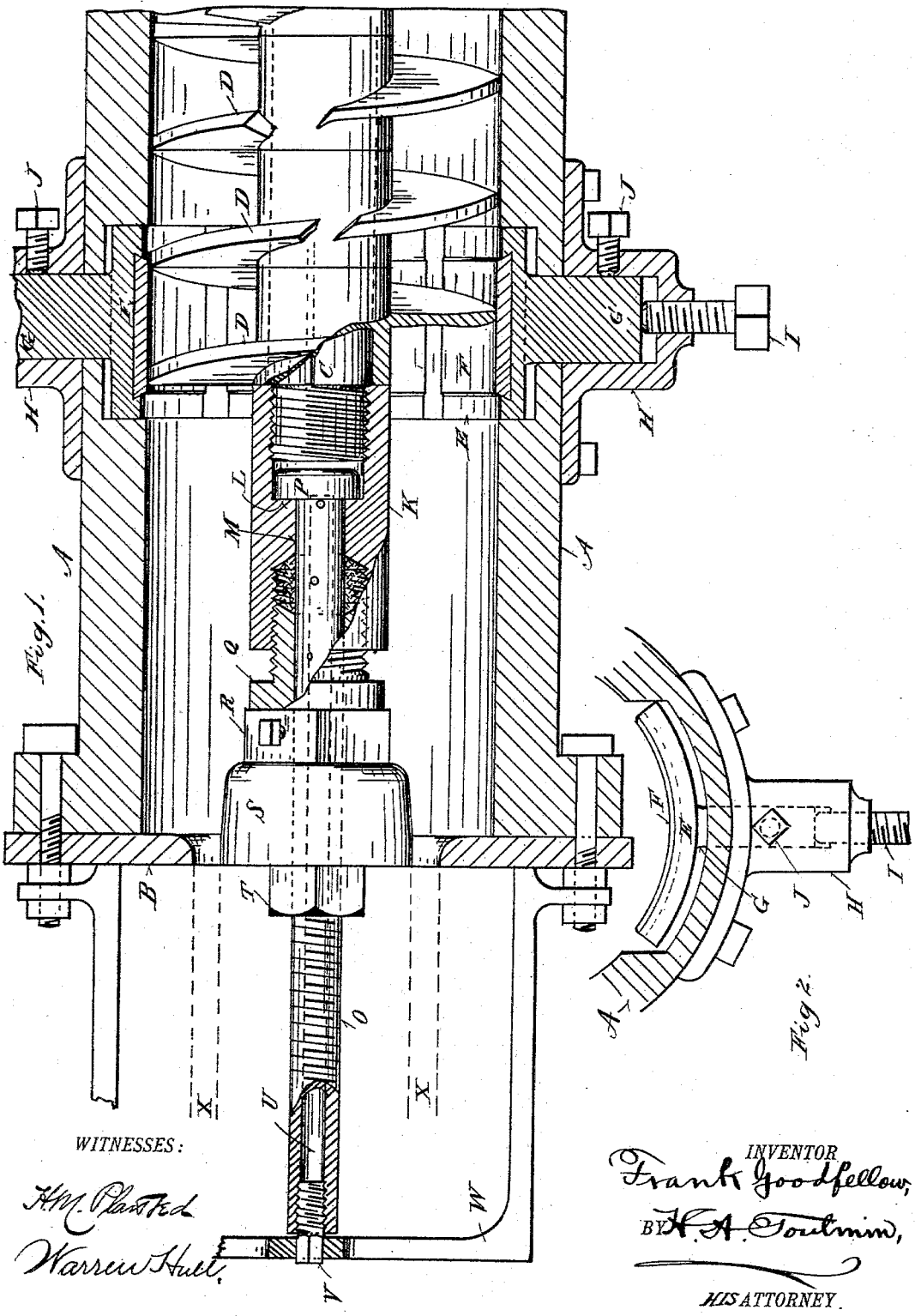
(No Model.)

F. GOODFELLOW.

TILE MACHINE.

No. 490,110. Patented Jan. 17, 1893.



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TILE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 490,110, dated January 17, 1893.

Application filed April 18, 1892. Serial No. 429,553. (No model.)

To all whom it may concern:

Be it known that I, FRANK GOODFELLOW, a citizen of the United States, residing at Vienna Cross Roads, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Tile-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to certain new and useful improvements in tile machines.

My improvements have reference to an adjustable bearing for the outer end of the mud conveyer shaft; have reference to a stationary core carried by the conveyer shaft; and have reference to other points of detail hereinafter described and set forth.

In the ordinary method of making tile, the mixture of which the tile is composed is forced through a die plate having a core supported therein by radiating arms between which the tile mixture or mud is forced by a conveyer, or otherwise, and appears from the die plate in the shape of a tile. The arms divide the mud, which unites again before it reaches the die, but such reunion is not perfect, and the tile tends to crack at these lines of division under the drying and baking process to which it is subjected. Again, the disadvantage in using a rotary core, as is sometimes done, is that the tile is scored spirally on the inside, and the core has a tendency to wabble, thus varying the thickness of the tile wall on one side or the other. By my device, now to be described, I obviate the above mentioned difficulties, as the bridge of radiating arms is done away with, the core is stationary though carried by a revolving shaft, and the outer end of said shaft is provided with an adjustable bearing which prevents the wabbling of the same, and affords no impediment to the outward flow of the tile mixture.

In the accompanying drawings forming a part of this specification, and on which like reference letters indicate corresponding parts; Figure 1, represents a longitudinal sectional view of a portion of a mud box, with a conveyer, and my improvements applied thereto; and Fig. 2, a detail side view of one section of the conveyer bearing.

The letter A designates a mud box of circular or other convenient shape, which extends from the hopper of the tile machine from which the mud is taken after being duly mixed and prepared. On the outer end of said box is a die plate B, bolted or otherwise secured thereto, so as to be removable therefrom, and a different size substituted, according to the size of tile to be made. Within the box is a conveyer shaft C, having an inner bearing with the hopper of the machine (not shown), and extending some two and a half feet from said hopper. Upon the said shaft is mounted a screw conveyer conveniently formed in sections D, so as to be easily removed therefrom, and adapted to feed the mud from the hopper to the outer end of said mud box. The outer bearing of the said conveyer shaft is preferably formed by a number of adjustable segments E, which bear upon the outer blades of the conveyer, thus allowing a clear passage of the mud through the box, while the outer end of the said revolving shaft is stayed and kept centrally located with regard to the die plate B. The usual or any approved means for revolving the conveyer may be used, but are not shown, as they form no part of my invention.

Each section E, is fitted with a bearing piece F, of any suitable material, such as Babbitt metal, dried hickory, or the like. This piece is adapted to be secured to its segment by a dovetailed groove therein, or otherwise, so that it may be replaced when worn out. An outer extension G on each segment, extends through the wall of the mud box, and into a suitable socket box or guide H, bolted or otherwise secured to said box, and having an adjusting screw I, whereby the segment is adjusted inward, and a set screw J to fix it in its adjusted position, thus forming a closed socket for said extension. The width of said bearing piece F, is preferably sufficient to take in one pitch of the conveyer, whereby the latter is supported at every point of its circumference. There are preferably four segments forming the said bearing, whereby the shaft may be readily adjusted in any direction. It will thus be seen that no obstacle is presented to the movement of the mud, while the outer end of the conveyer shaft is firmly supported in the desired central position, and adjusted to take up wear.

I will now describe the preferred form of attaching the core, and the means for preserv-

ing it stationary. A sleeve K is adapted to be secured on the outer end of the conveyer shaft, either by screw threading it thereon, as seen in Fig. 1, or otherwise, so that it will revolve therewith. A shoulder L, and a central opening M, are formed, in which latter is mounted a core pin O, having a shoulder or head P, which bears against the said shoulder L. A gland Q fits into the stuffing box at the outer end of said sleeve, and prevents the entrance of mud and water to the bearings M and L. A square collar, or other irregularly shaped piece R, is fixed upon the said core pin by a set screw or otherwise, and the core S, adapted to form the inside of the tile, is held in place upon the said core pin by a nut T, carried by the outer screw threaded portion of said pin, which jams it against the collar R, or other suitable stop. The sleeve and gland being round afford no engagement with the mud about them on its passage to the core and die, but the square or other shaped collar R, by its irregular shape is kept stationary under the action of the outflowing mud, and causes the pin O to also remain stationary, while the shaft revolves. This core pin is preferably provided with a longitudinal cavity U, closed at the outer end by a plug V, and at the inner end communicating by the openings *u*, with the bearings M and L, and the gland Q. The core pin extends any convenient distance outside of the die plate, and thus it is not necessary to remove the plate or open the mud box in order to oil the bearing between the pin and its connection with the revolving shaft.

When the machine is first started, and the mud has not yet reached the die plate, it may be desired to support the core in its exact central position within the die until the tile projects therefrom. A convenient bracket W, having arms adapted to be bolted to the die plate or otherwise, serves to steady the core during such primary operation of the machine, and it may be removed therefrom as soon as the tile begins to project as indicated by the dotted lines X. Thus it will be seen that there is no necessity of opening the mud box to oil the bearing of the shaft or core pin; that the outer end of the conveyer shaft is firmly held in its central position, without obstructing the flow of mud; that the core remains stationary while the shaft revolves; and that the said core and shaft may be adjusted to the true central position by the encircling bearing, as before described.

The conveyer and shaft may be of either integral or detachable form, as shown and described, also in collar and core integral.

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

1. In a tile machine, the combination with the die plate and a rotary shaft, of a core supported by said shaft and adapted to remain stationary during the rotation of the shaft.

2. In a tile machine, the combination with a die plate, the mud box and the conveyer shaft mounted therein, of a core for said die plate supported by said shaft, and intermediate connections between said core and shaft, whereby the core is adapted to remain stationary under the action of the outflowing material during the rotation of said shaft.

3. In a tile machine, the combination with the mud box, the die plate and a rotary shaft in said box, of a core for said plate, a core pin engaged with said core and shaft along their common axis, and adapted to allow the rotation of said shaft without rotating said core.

4. In a tile machine, the combination with the die plate, the mud box and a rotary shaft mounted therein, of a core pin extending outside of said box, and having a longitudinal oil cavity with inlet and outlet openings therefor, and a shoulder to prevent longitudinal movement, a sleeve secured to said shaft, and provided with a bearing surface for said pin and shoulder, and revolubly connected to said core pin, an irregular shaped collar and a core secured to said pin, whereby the bearings between said core pin and sleeve may be oiled from outside the mud box, and the core will remain stationary under the action of the outflowing material.

5. In a tile machine, the combination with the mud box, the screw conveyer and an inner bearing for the same at the hopper end, of an adjustable outer bearing for said conveyer, and adapted to present no obstruction to the outflowing material, and means to adjust said bearing.

6. In a tile machine the combination with the mud box, the screw conveyer mounted therein, and the inner bearing for the same at the hopper end, of an outer bearing for said conveyer composed of segments bearing on the conveyer blades, each segment having an outward extension and adjusting means engaging therewith, whereby the segments are adjusted to keep the conveyer centrally located, and steadied at its outer end.

7. In a tile machine, the combination with the mud box, a screw conveyer mounted therein, and the inner bearing for the same at the hopper end, of an outer bearing composed of segments each having a bearing strip detachable therefrom, and also having an outward extension, a guide box for said extension mounted on the outside of said mud box, and adjusting means whereby each segment is adjusted to regulate said outer bearing.

8. In a tile machine, the combination with the die plate, the mud box, the screw conveyer shaft mounted therein, and an adjustable bearing for the outer end of said shaft, consisting of encircling segments bearing on the conveyer blades, of a core for said die plate, intermediate connections between said core and conveyer shaft, whereby said core is revolubly connected to said shaft, and adapted to remain stationary without being af-

fected by the rotation of the latter, and the core is adjusted centrally in said die plate.

9. The combination with a mud box and its conveyer shaft mounted therein, of an adjustable bearing for said shaft having an extension through the wall of said mud box, a guide box having a closed socket for said extension, and mounted on said mud box, and adjusting means for said extension, whereby the conveyer shaft is adjusted, and the mud prevented from exuding about said extension.

10. The combination with a die plate, a mud box, and a rotary shaft mounted therein, of a core pin revolubly connected to said shaft, a core and an irregular-shaped collar carried by said pin, whereby the core is kept stationary by the action of the outflowing mud upon the said collar, and unaffected by the rotation of said shaft.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK GOODFELLOW.

Witnesses:
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