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F. McM. SAWYER.

TILE MOLD.

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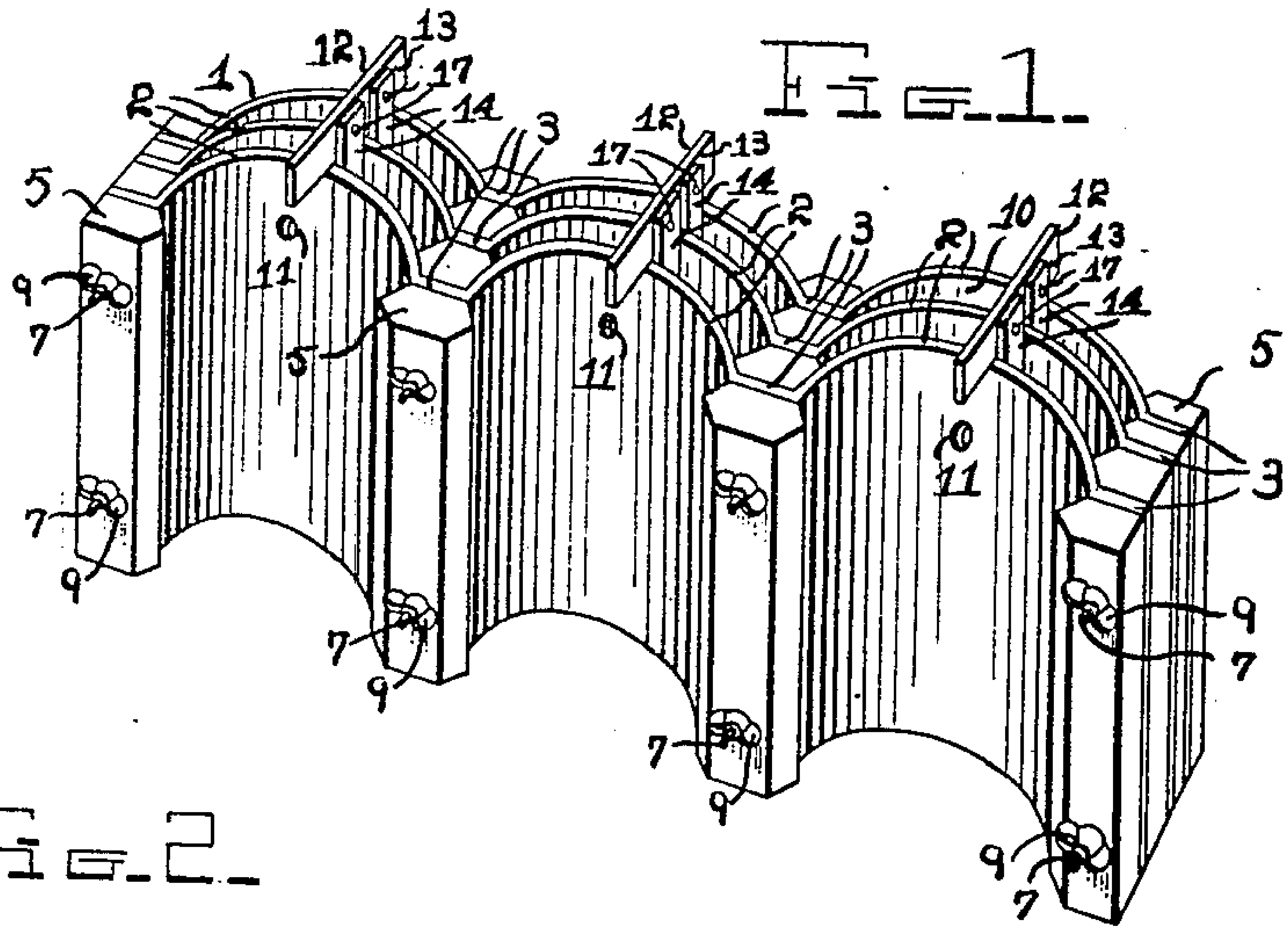

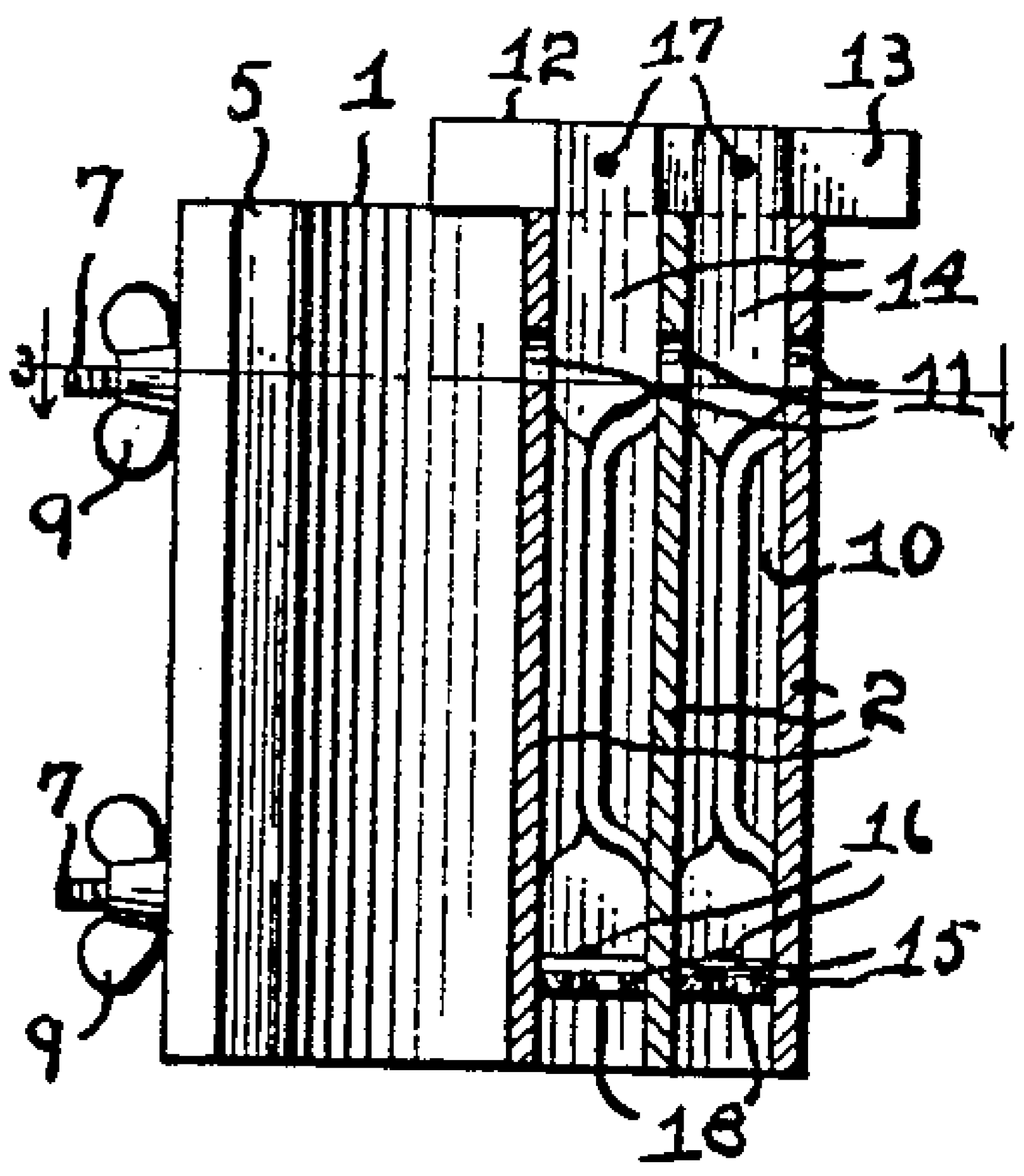

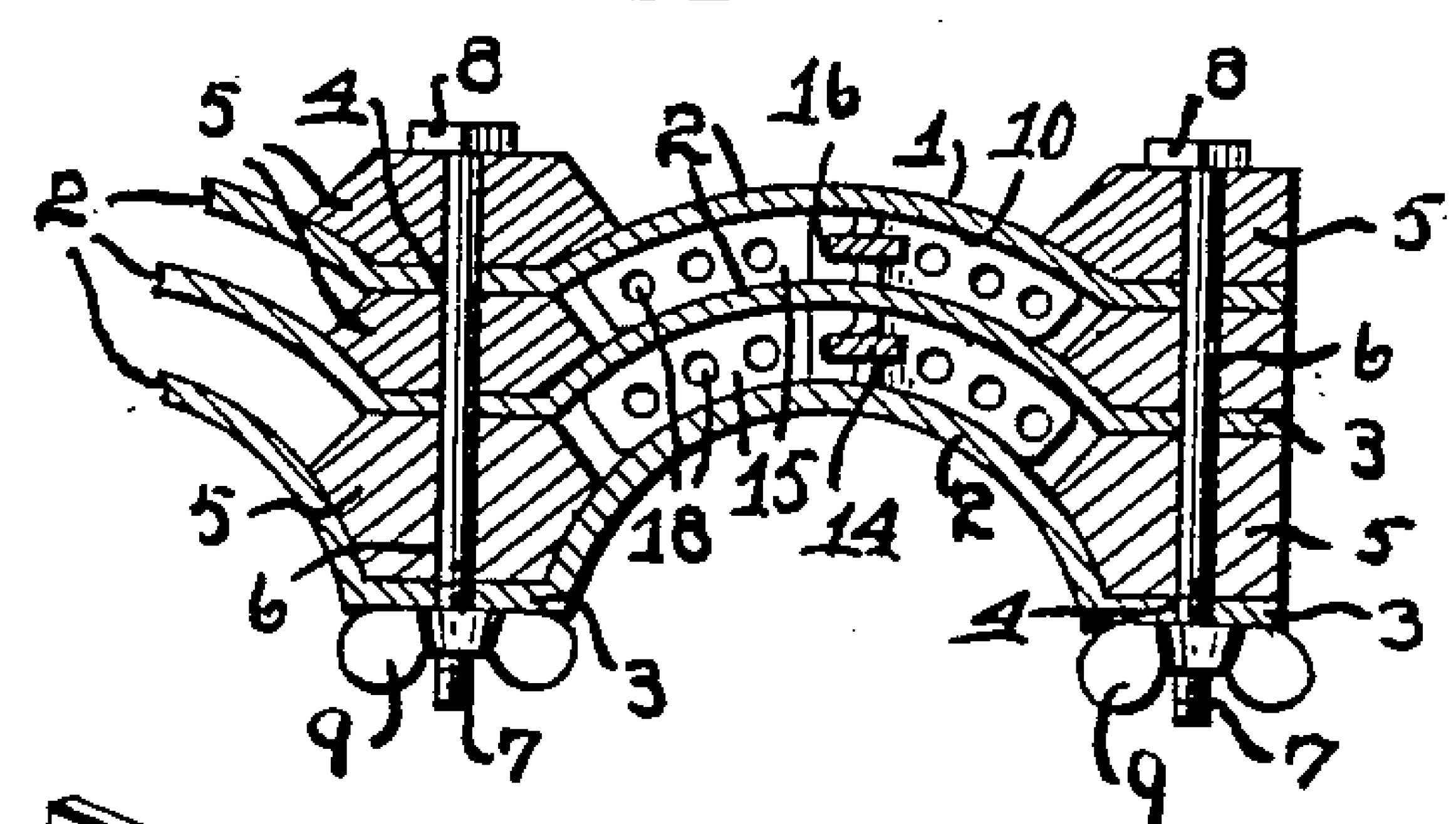

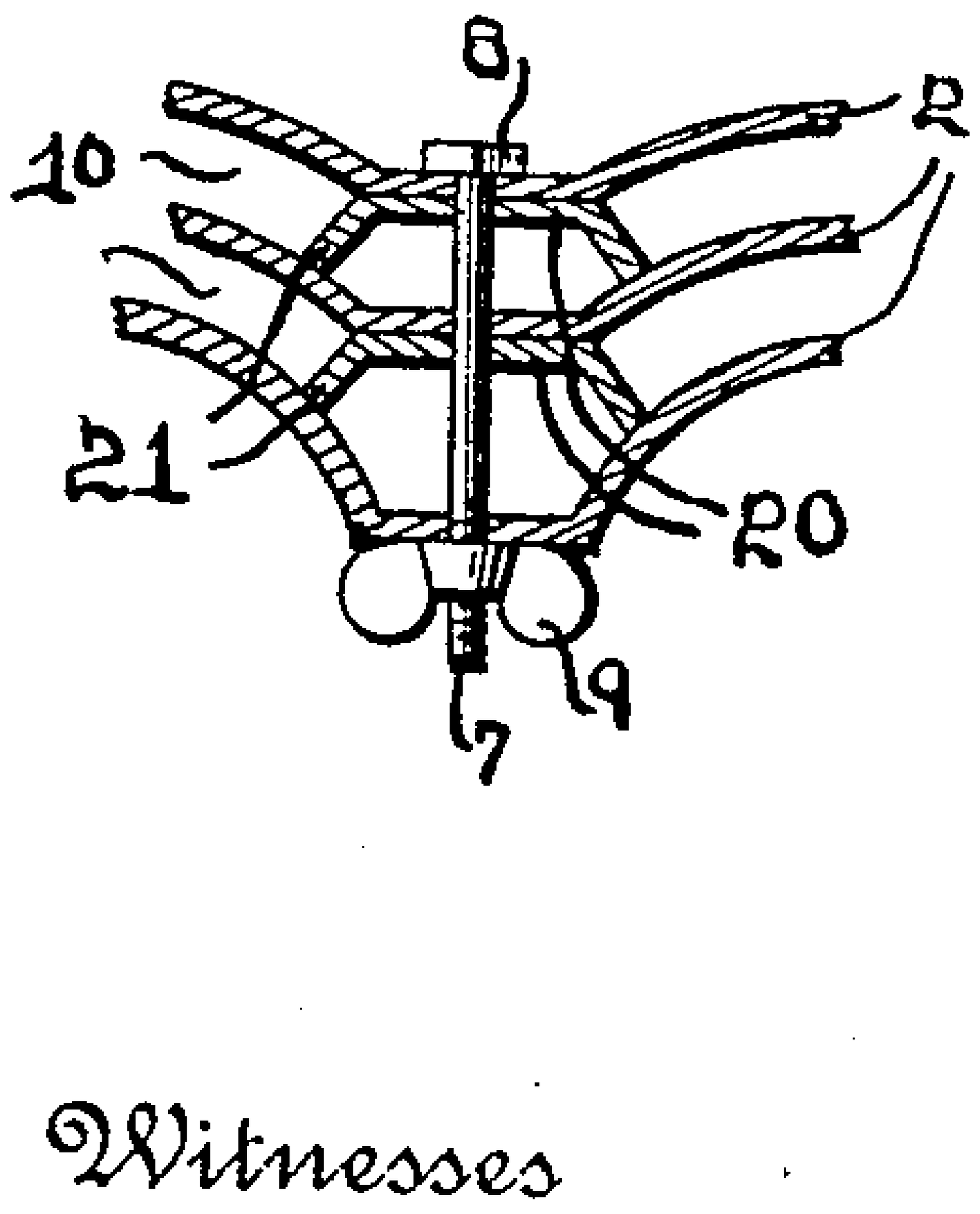

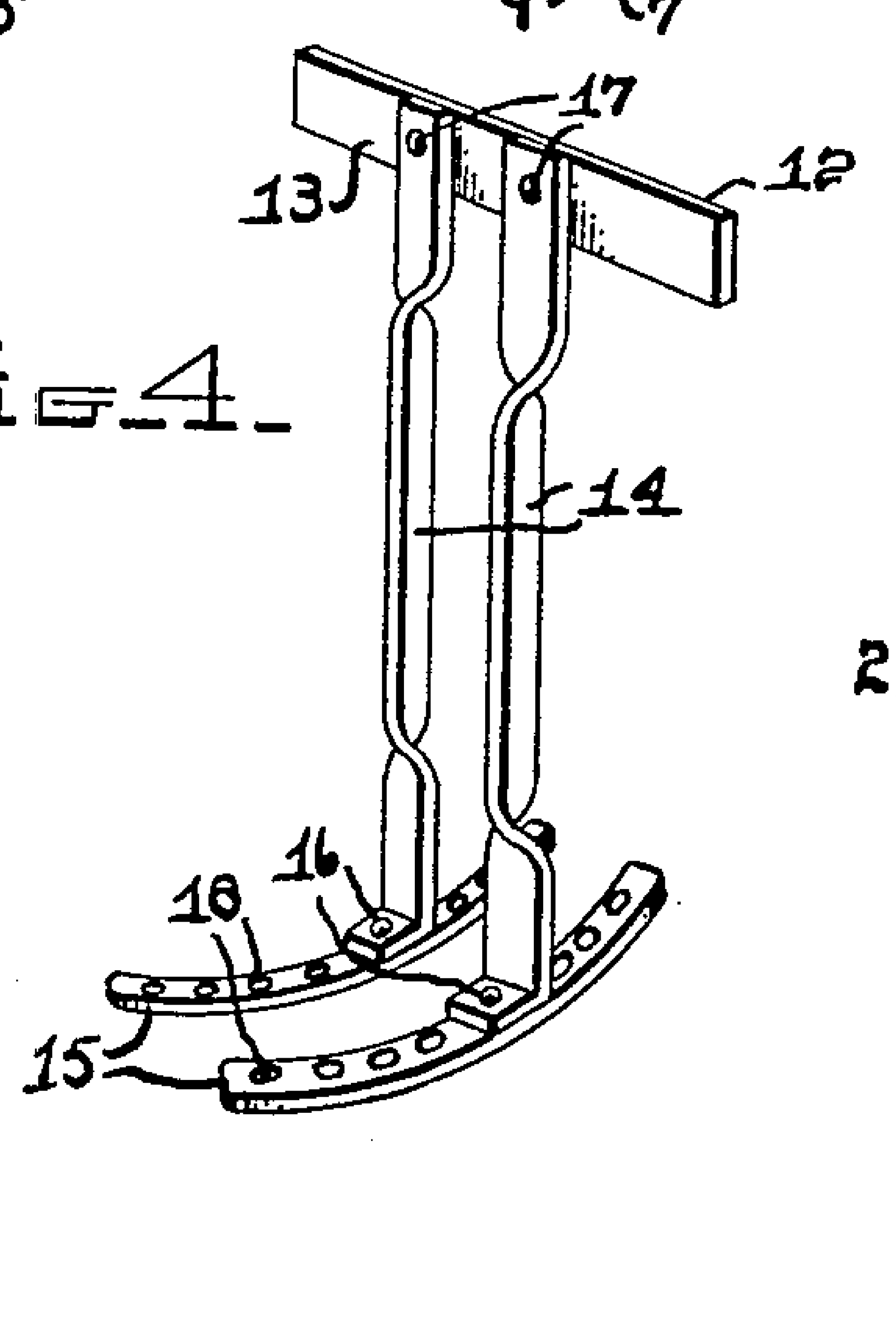

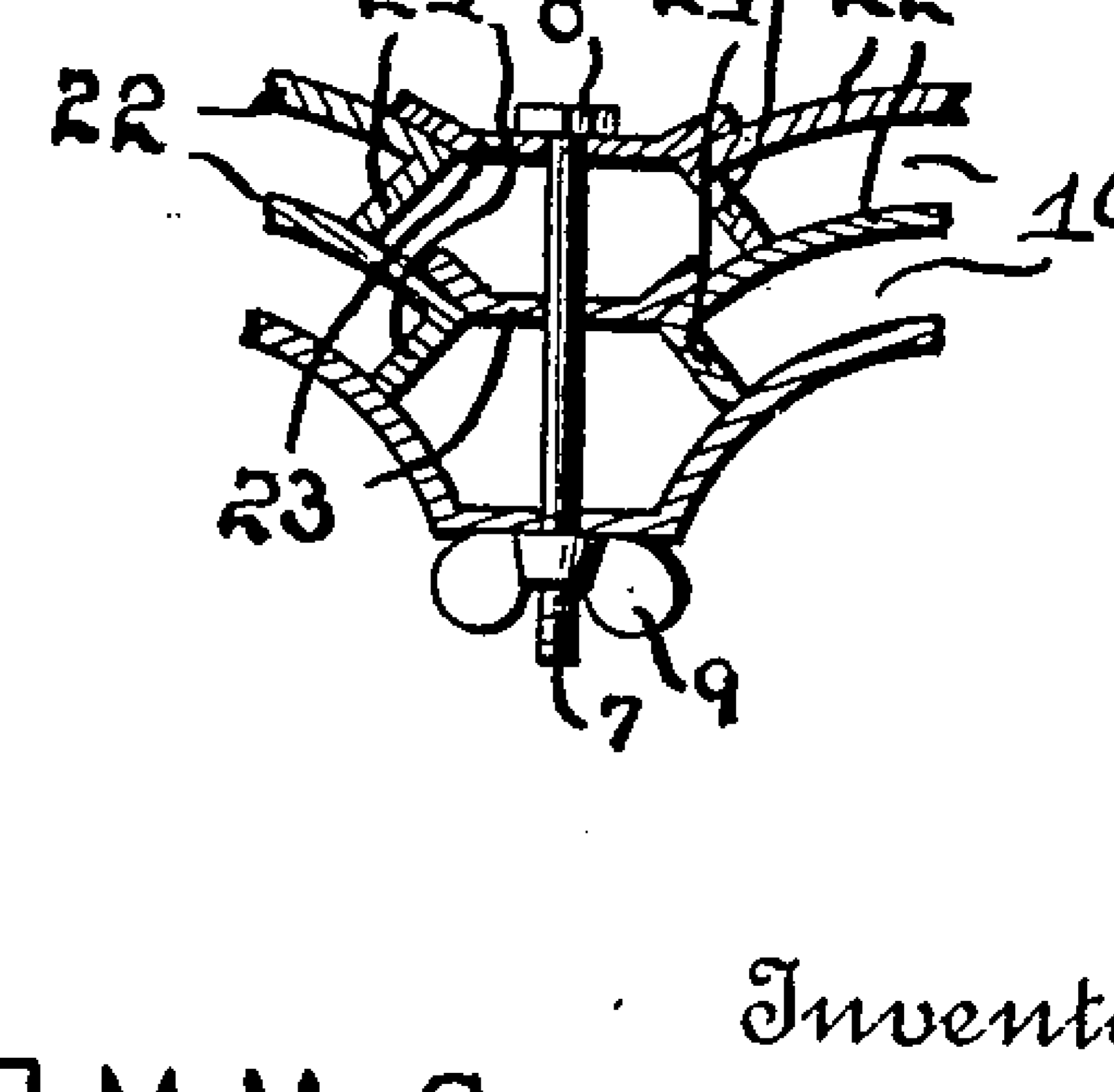

Witnesses
L. B. James
C. H. Griesbauer

Inventor
F. McM. Sawyer
by A. B. Willson & Co
Attorneys

UNITED STATES PATENT OFFICE.

FRANK McM. SAWYER, OF CHARLOTTE, NORTH CAROLINA.

TILE-MOLD.

No. 829,896. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed March 1, 1906. Serial No. 303,688.

To all whom it may concern:

Be it known that I, FRANK McM. SAWYER, a citizen of the United States, residing at Charlotte, in the county of Mecklenburg and State of North Carolina, have invented certain new and useful Improvements in Tile-Molds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in molds for molding roofing-tiles and other like articles.

One object of the invention is to provide a mold of this character which will be composed of a comparatively few pieces or parts, adapted to be readily assembled and separated and in which a large number of tiles or the like may be simultaneously molded.

Another object of the invention is to provide a combined spacer and agitator for molds of this character which will be of simple, durable, and comparatively inexpensive construction and well adapted for the purpose intended.

A further object of the invention is to improve and simplify the construction of devices of this character, and thereby render the same more efficient and durable and less expensive.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a tile-mold constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a detail horizontal sectional view taken on the plane indicated by the line 3 3 in Fig. 2. Fig. 4 is a perspective view of a portion of one of the combined spacing and agitating devices for use in the mold, and Figs. 5 and 6 are detail views showing modified forms of spacing-strips or devices for the mold-pieces.

In the practice of my invention I employ a number of transverse mold-pieces 1, which are preferably, but not necessarily, formed of sheets of metal bent at suitable points to form mold-sections 2, which shape the sides of the molded tile or other article. As shown, these side mold-sections 2 are curved longitudinally; but they may be of any other shape or form, according to the nature of the articles to be molded. Any number of the mold-sections 2 may be formed in each transverse mold-piece, and between each one and at the outer edges of the two outer sections are flat portions or flanges 3, which are formed with apertures 4 to receive clamping devices. The transverse mold-pieces 1 are assembled side by side, as shown in the drawings, and are spaced apart by means of strips or blocks 5, which are arranged between the flat portions or faces 3 and upon the outer faces of the two outer or end pieces 1. These spacing blocks or strips 5 are shaped to fit the transverse mold-pieces, as clearly shown in Fig. 3 of the drawings, and they are formed with transverse openings 6, which aline with the openings 4 in the pieces 1, so as to receive clamping bolts or rods 7. Two of the clamping-rods 5 extend through each of the vertical rows of blocks or strips 5 to securely unite the latter and cause them to serve as the longitudinal pieces or portions of the mold. As shown, the clamping-rods 7 have heads 8 at one end and winged nuts 9 upon their opposite screw-threaded ends; but it will be understood that any other suitable form of clamping devices may be substituted for these rods or bolts. The blocks or strips 5, it will be observed, not only space the transverse mold-pieces 1 apart, but also close the ends of the mold-cavities 10, which are formed between the side mold-sections 2, the edges of the blocks or strips 5 being suitably shaped for this purpose. In order to form holes or openings in the molded tiles, so that they may be nailed in position upon a roof or the like, I preferably form in the side mold-sections 2 alining openings 11, through which a rod or the like may be passed.

In order to space the side mold-sections 2 apart to prevent them from springing while being filled and in order to agitate the plastic material after it has been placed in the mold and before it hardens to remove air-bubbles from the material, I provide a combined spacer and agitator 12. The latter, as clearly shown in Fig. 4 of the drawings, consists of a longitudinally-extending bar 13, from which depend a plurality of arms 14, which enter the mold-cavities 10 and space the sections 2 apart, the width of the arms 14 being the

same as that of the mold-cavities. The arms 14, which may have their central portions twisted, as shown, are of less length than the mold-sections 2, and upon their lower ends are formed or secured agitator-heads 15, which are similar in shape to the shape of the cross-section of one of the mold-cavities 10. As shown, the agitator-heads 15 consist of longitudinally-curved metal strips or plates which are riveted, as at 16, upon the angularly-bent lower ends of the arms 14, the latter having their upper ends similarly riveted or secured, as at 17, to the connecting-bar 13. The heads 15 are formed with perforations or openings 18, so that the plastic material in the mold-cavities 10 may pass therethrough and will be agitated as the spacer and agitator is removed from the mold. As shown, one of these spacers and agitators is provided for each longitudinal row of mold-cavities; but, if desired, their longitudinal bars may be readily connected together. Instead of employing the spacing strips or blocks 5 between the mold-pieces 1 for the purpose of spacing them apart and closing the ends of the mold-cavities between the curved side sections 2 I may employ the construction shown in Figs. 5 and 6 of the drawings for this purpose. As shown in Fig. 5, a channel metal strip 20 has its central portion secured to or removably engaged with the flattened portion 3 of one of the mold-pieces 1, and its sides are bent angularly to form flanges 21, which close the ends of the mold-cavities, as shown. It will be understood that this channel metal strip 20 takes the place of one of the wooden blocks or strips 5 and that it may be either fixed upon or separate from the portion 3 of one of the mold-pieces.

In Fig. 6 of the drawings the mold-pieces are composed of separate curved side mold-sections 22, which are united by the channel metal strips 23 and which have their ends bent inwardly, as shown at 24, to close the ends of the mold-cavities. The channel metal strips 23 have their central portions apertured to receive the clamping-bolts 7, and their longitudinal edges are bent angularly and secured to the mold-sections 22, as clearly shown in the drawings.

The operation of the invention is as follows: The transverse mold-pieces 1 are assembled side by side with the spacing blocks or strips between them, and the clamping-rods 7 are then passed through the alining openings 4 and 7 to rigidly unite the parts of the mold. The spacers and agitators are then inserted in the mold-cavities 10, as clearly shown in Figs. 1 and 2 of the drawings, so that their longitudinal bars 13 rest upon the upper edges of the mold-pieces 1. The plastic material from which the tiles or other articles are to be formed is then poured into the mold-cavities, and before the same hardens the spacers and agitators are drawn upwardly out of the mold. By having the spacing-arms 14 of the device 12 between the mold-sections 2 while the latter are being filled it will be seen that they will be prevented from springing by reason of the weight or pressure on one side being greater than that on the other, and the molded tiles will hence all be of equal thickness. The upward movement of the agitator-heads 15 through the mold-cavities 10 agitates the plastic material therein and removes air-bubbles and the like, which would otherwise form defects in the molded tile. By making the mold of transverse pieces, each of which consists of a plurality of mold-sections, and by providing the spacing strips or blocks between the transverse pieces it will be seen that the mold will be composed of but comparatively few simple parts, which may be quickly and easily assembled and disconnected and between which a large number of mold-cavities will be formed.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined by the appended claims.

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

1. A mold of the class described comprising a plurality of mold-pieces, spacing-pieces between the mold-pieces coacting therewith to form mold-spaces and also forming the side edges of the molded articles, said mold-pieces and spacing-pieces having alining openings, and clamping bolts or rods extending through the said openings and detachably securing said mold-pieces and spacing-pieces together.

2. In combination with a mold having a plurality of mold-cavities, a spacer and agitator comprising a connecting-bar, arms depending therefrom to enter the mold-cavities, and agitating devices on said arms.

3. The combination with a mold having a plurality of mold-cavities, of a spacer and agitator comprising a connecting-bar, depending arms upon the latter to enter said mold-cavities and space the walls of the latter apart, and agitator-heads upon said arms.

4. A combined spacer and agitator for molds of the character described comprising a connecting-bar, depending spacing-arms thereon, and agitator-heads upon said arms.

5. A device of the character described.

comprising a connecting-bar, depending arms thereon, and agitator-heads upon said arms.

6. A device of the character described comprising a bar, arms secured at their upper ends to said bar and having their lower ends bent angularly, and apertured agitator-heads secured upon the bent lower ends of said arms, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FRANK McM. SAWYER.

Witnesses:
JAMES E. REILLEY,
EDGAR K. YOUNG.