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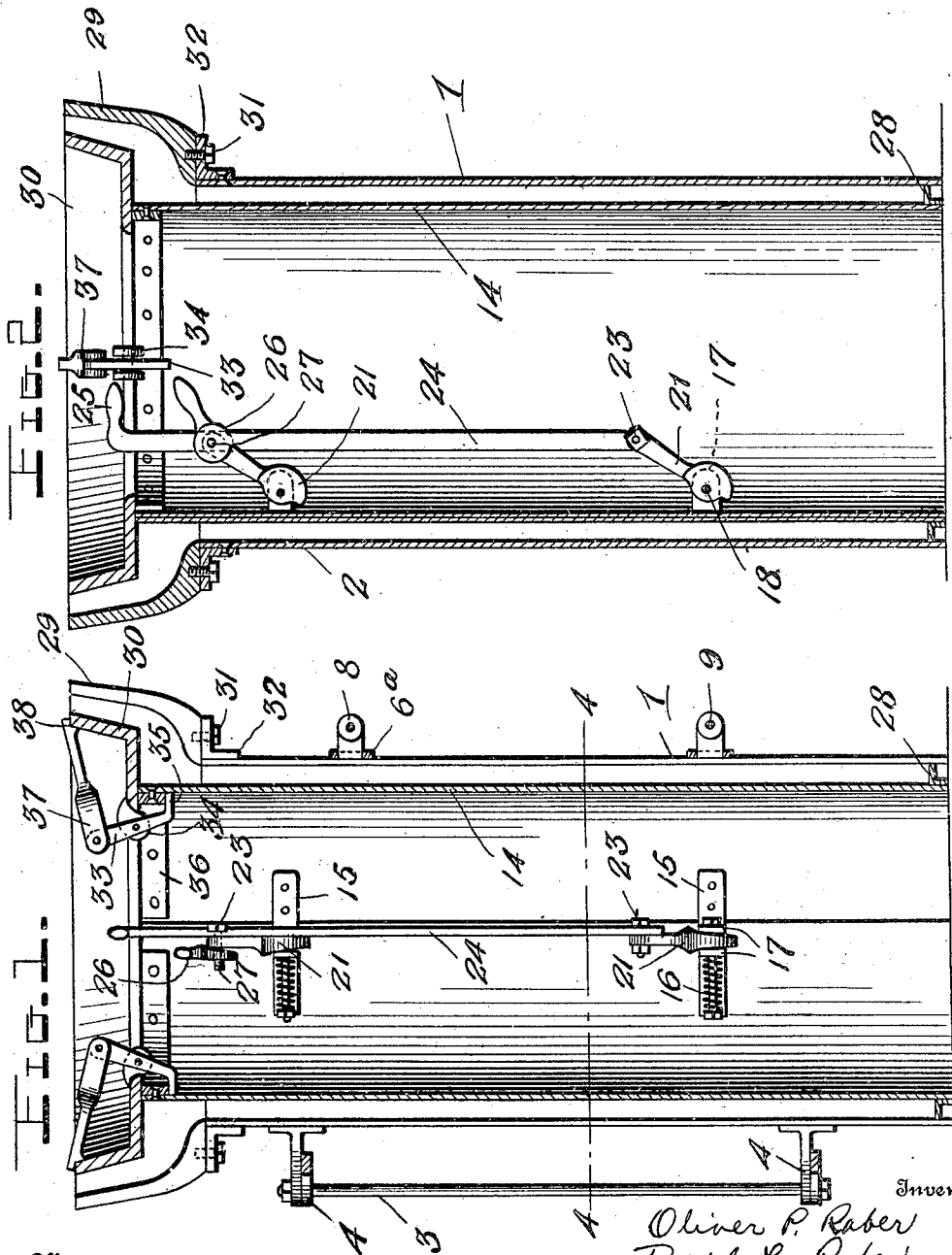
TILE MOLD.

APPLICATION FILED JAN. 25, 1909.

952,578.

Patented Mar. 22, 1910.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 3.

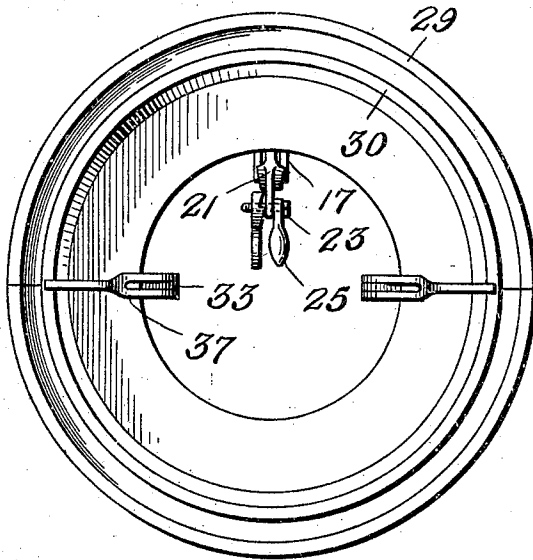


FIG. 5.

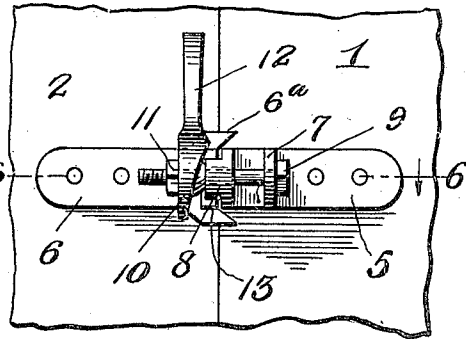


FIG. 7.

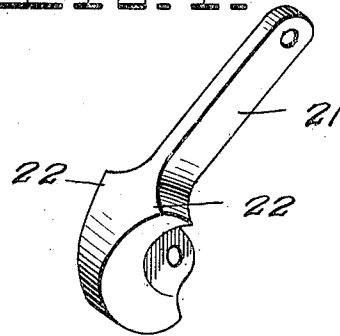


FIG. 4.

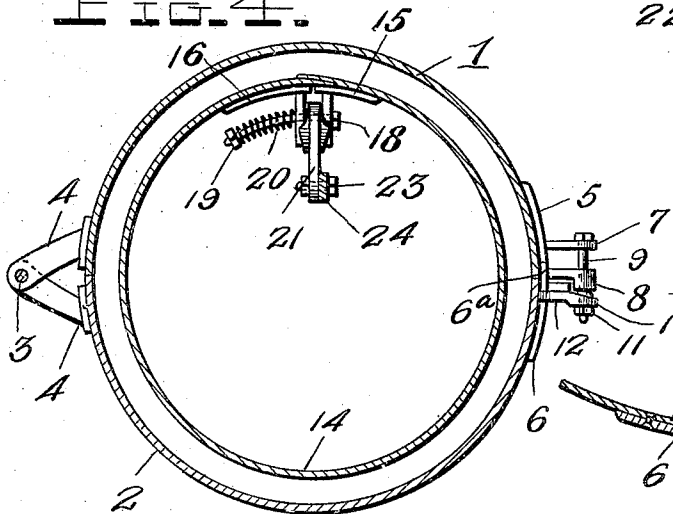
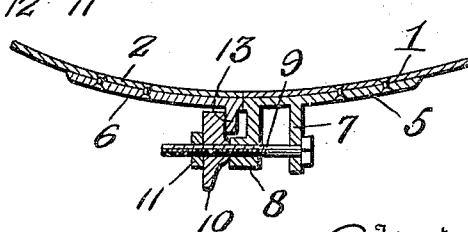


FIG. 6.



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TILE-MOLD.

952,578.

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To all whom it may concern:

Be it known that we, OLIVER P. RABER, RALPH L. RABER, and JOHN E. LANG, citizens of the United States, residing at Kendallville, in the county of Noble and State of Indiana, have invented certain new and useful Improvements in Tile-Molds, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in devices for molding tiles, pipes and the like of concrete or other plastic material.

The objects of the invention are to provide improved means for connecting and fastening the sections of the outer shell or mold, improved means for expanding and collapsing the core or inner mold and locking the same in expanded position and improved means for attachment to the mold sections or members for forming tiles with bell-ends.

With the above and other objects in view, the invention consists of the novel features of construction and the combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view through the improved pipe or tile molding device; Fig. 2 is a similar view taken in a plane at right angles to that of Fig. 1; Fig. 3 is a top plan view; Fig. 4 is a horizontal section taken on the plane indicated by the line 4—4 in Fig. 1; Fig. 5 is a detail side elevation of portions of the two mold sections at their meeting edges, showing one of the locking devices; Fig. 6 is a detail horizontal section taken on the plane indicated by the line 6—6 in Fig. 5; and Fig. 7 is a detail perspective of the cam lever for one of the expanding and locking devices of the core.

The embodiment of the invention illustrated in the drawings is especially adapted for making a cylindrical sewer tile or pipe and it comprises a cylindrical outer shell or mold body composed of two similar half-sections 1, 2. These mold sections are united along one of their vertical edges by a hinge consisting of a vertical pivot rod 3 which passes through upper and lower pairs of overlapping bracket arms 4 secured to the outer faces of the mold sections, as will be readily understood upon reference to Figs. 1 and 4 of the drawings. Owing to

this construction, the pivot or pintle 3 of the hinge is sufficiently distant from the meeting edges of the mold sections to enable them to be swung apart and away from the molded tile without injuring it.

The free edges of the mold sections 1, 2 are adapted to be held together while the mold is in use by means of one or more locking devices such as illustrated more clearly in Figs. 5 and 6 of the drawings. Each of these locking devices consists of two angular bracket plates 5, 6 riveted or otherwise secured to the outer faces of the mold sections 1, 2 at opposite points. To cause the half-sections to properly aline, the outer end of the bracket plate 6 is formed with diverging guide lugs 6^a to receive the bracket plate 5 between, as shown in Fig. 5. The plate or bracket 5 is formed with two spaced lugs 7, 8 in which is arranged a bolt 9 to form a pivot for a cam lever 10. A nut 11 upon the threaded end of the bolt adjustably retains the lever 10 upon it so that the cam enlargement 12 formed on one side of the lever may be swung into and out of engagement with a projection or lug 13 formed on the bracket or plate 6. It will be seen that when the lever 10 is thrown in one direction, its cam 12 will engage the lug 13 and thereby draw the two mold sections 1, 2 together and when thrown in the other direction said cam will disengage the lug 13 so that the two mold sections may be swung apart.

14 denotes the inner molding member or core which is preferably constructed of a single piece of sheet metal and has its vertical edges brought together in overlapping relation, as shown. This core is made self collapsing and adapted to be expanded and locked in an expanded position by means of one or more devices which are shown more clearly in Figs. 1, 2 and 4 of the drawings. Each of said devices consists of two angular bracket plates 15, 16 riveted or otherwise secured upon the inner faces of the core body or sheet adjacent to its overlapping edges and which are formed with inwardly projecting lugs 17 apertured for the reception of a pivot 18. The latter is in the form of a longitudinally curved or arc-shaped bolt, one end of which has a head to engage the outer face of one of the lugs 17 and is provided with an adjusting nut 19. Confined in the last mentioned end of the bolt is a coil spring 20 which tends

to draw the two lugs 17 together and thereby collapse the core. For the purpose of expanding the core, a cam lever 21 is arranged upon the pivot bolt 18 between the two lugs 17. This lever has upon its opposite sides, adjacent to its pivot, two cam projections 22, as shown more clearly in Fig. 7 of the drawings, which projections enter between and force the lugs 17 apart to expand the core, when the free end of the lever is swung downwardly. To permit all of the locking devices just described to be simultaneously actuated, the levers 21 are pivoted by bolts 23 to a single operating rod 24, which latter is disposed vertically and has an angular handle 25 upon its upper end. For the purpose of locking the expanding levers 21 against movement to hold or retain the core in an expanded position, a friction locking or cam lever 26 is arranged upon the threaded end 27 of the uppermost pivot bolt 23, as clearly shown in Figs. 1, 2 and 3 of the drawings. Said lever 26 has its free end shaped to form a handle and its other end formed with a threaded opening to receive the screw threads 27 and with one or more cams to engage the uppermost lever 21. By means of the construction just described, it will be seen that the core may be effectively locked in its expanded position and that when it is desired to collapse the same, it is only necessary to turn the lever 26 to relieve the frictional pressure between the uppermost lever 21 and the bar 24, and to then pull the bar 24 upwardly to cause the levers 21 to release the core locking devices.

The bottom of the mold may be closed by any suitable means but, as illustrated in Figs. 1 and 2, an annular pallet ring 28 is arranged between the mold sections and core. This ring is angular in cross section and its upper face is flat or horizontal so as to form a square end on the tile or pipe, but it will be understood that it may be of any other shape according to the shape it is desired to give the end of the tile or pipe. It will also be understood that a suitable tamping means may be used to pack the space between the mold sections and core and that a suitable end shaping device may be used between the said parts at their upper ends.

When it is desired to form a bell-end upon the tile or pipe, two rims 29, 30 are arranged upon the upper ends of the mold and core. The rim 29 for the mold or outer shell is composed of two similar half-sections united by screws 31 to angle metal bands 32 riveted or otherwise secured to the outer faces of the mold sections 1, 2, as clearly shown in Fig. 2 of the drawings. These angle metal bars 32 serve both as reinforcing means for the mold sections and also as attaching means for the bell-end

forming rim sections 29. The bell-end forming rim 30 for the core is preferably in the form of a one-piece annular member or ring of substantial angular shape in cross section and it is adapted to be detachably fastened to the upper end of the core 14 by the fastening devices shown in Figs. 1 and 2. Two of these devices are preferably employed and arranged at diametrically opposite points upon the rim 30, each consisting of a lever 33 pivoted intermediate its ends between spaced ears 34 formed upon the rim 30. The lower ends of the levers 33 are angular, as shown at 35, to take under a shoulder formed on the core by a reinforcing band or ring 36 riveted or otherwise secured on the inner face of the core body at its upper end, which end, it will be noted, projects above the upper edges of the mold sections 1, 2. Pivoted to the upper end of the lever 33 is a bracing or locking dog 37, the free end of which is formed with an angular notch 38 to receive the edge of the rim 30. By reason of this construction, it will be seen that the rim 30 may be readily applied to the core 14 after the latter has been expanded and may be as readily removed therefrom after the molded tile or pipe has set.

While the preferred embodiments of the invention have been shown and described in detail, it will be understood that various changes in the form, proportion, arrangement and details of construction may be resorted to without departing from the spirit and scope of the invention.

Having thus described the invention what is claimed is:

1. The combination of a tubular core having an internal shoulder adjacent to one of its ends, a bell-end forming rim arranged on said end of the core, and clamping devices carried by said rim and adapted to hook over said shoulder to detachably secure the rim on the core.

2. The combination of a tubular core having an internal shoulder adjacent to one of its ends, a bell-end forming rim arranged upon said end of the core and fastening devices consisting of levers pivoted intermediate their ends to the rim and having angular inner ends to engage a shoulder in the core and dogs pivoted to the outer ends of the levers and adapted to engage the rim to hold the levers in engagement with the shoulders and thereby retain the rim upon the core.

3. The combination of a core having a body composed of a flexible sheet with overlapping edges, lugs arranged on the inner face of the core sheet adjacent to its overlapping edges, a bolt arranged in said lugs, a coil spring upon one end of the bolt for drawing the lugs together to cause the core to collapse, a transversely extending cam le-

ver upon the bolt between the lugs for the purpose of expanding the core and a locking means for said lever.

4. The combination of a core having a body composed of a flexible sheet with overlapping edges, a plurality of spring devices for collapsing the core, a plurality of cam levers for expanding the core, an operating bar pivoted to all of said levers for simultaneously operating them, and a friction locking lever having a threaded engagement with one of the pivots uniting the operating bar to the cam levers.

5. The combination of a core formed from a flexible sheet bent into cylindrical shape, angle plates arranged in pairs and each having an attaching flange secured to the inner face of the core adjacent its longitudinal edge, said pairs of plates having spaced inwardly projecting lugs formed with transverse alining apertures, bolts arranged in said alining apertures of the pairs of lugs, coil springs arranged on said bolts between

certain of said lugs and the nuts or heads of said bolts, cam levers pivoted on the bolts and arranged between said pairs of lugs, said cam levers having on their opposite sides at their pivoted ends outwardly extending cam portions, a connecting bar engaged with the free ends of all of said levers and provided at its upper end with a handle, pivot bolts uniting said bar to said levers and a cam lever having a threaded opening to receive the screw threads of the pivot bolt uniting the uppermost cam lever to said bar, whereby said parts may be frictionally locked to retain them in adjusted position.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

OLIVER P. RABER.
RALPH L. RABER.
JNO. E. LANG.

Witnesses:

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