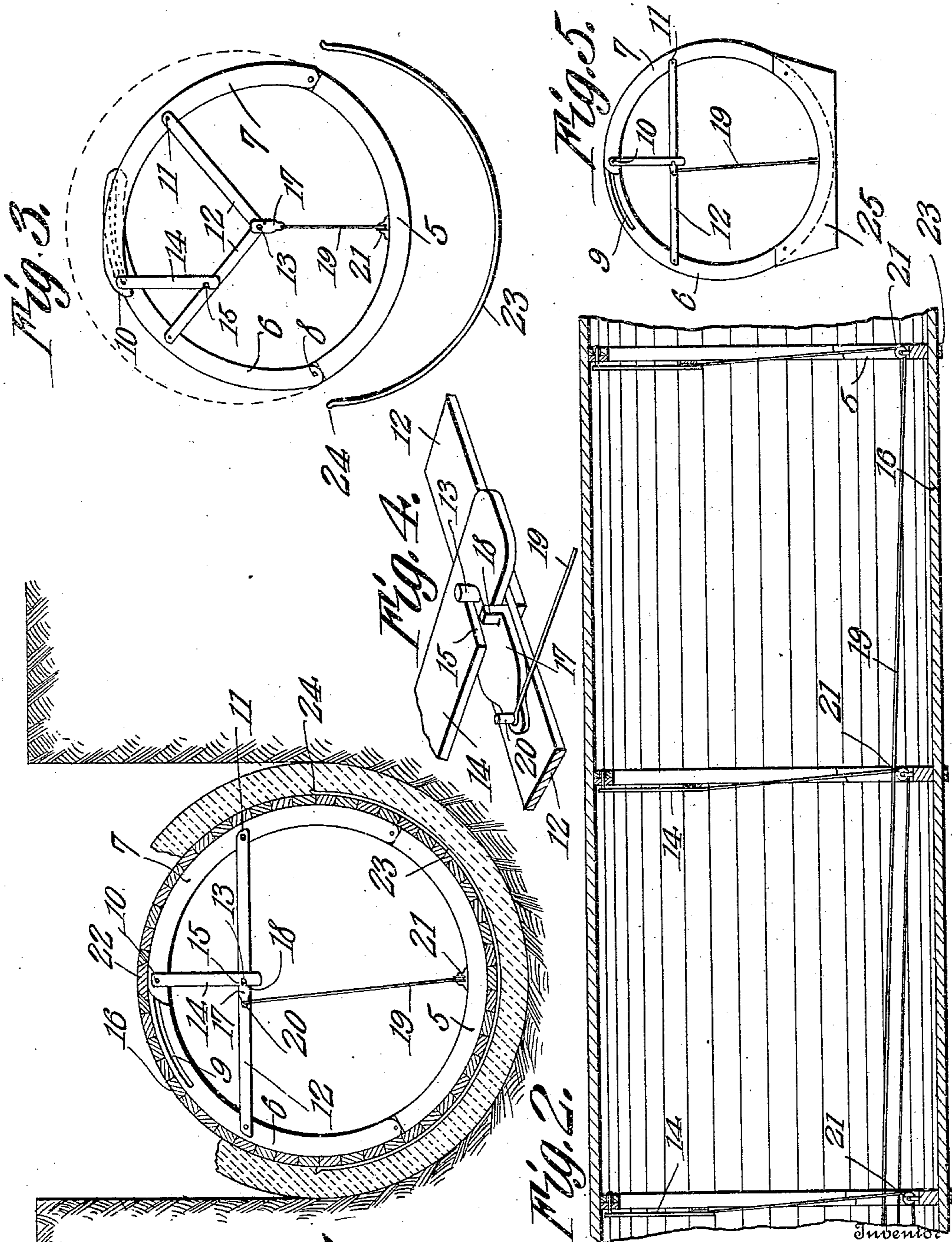


C. R. JACKMAN.  
CONCRETE MOLD.  
APPLICATION FILED JAN. 15, 1909.

958,402.

Patented May 17, 1910.



Witnesses  
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Fig. 1.

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# UNITED STATES PATENT OFFICE.

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CONCRETE-MOLD.

958,402.

Specification of Letters Patent.

Patented May 17, 1910.

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*To all whom it may concern:*

Be it known that I, CHARLES R. JACKMAN, a citizen of the United States, residing at New London, in the county of Henry and State of Iowa, have invented a new and useful Concrete-Mold, of which the following is a specification.

This invention relates to molds for making artificial stone sewer pipes, drains, culverts and the like and has for its object to provide a strong, durable and thoroughly efficient device of this character capable of being quickly set up for use, and by means of which culverts of different lengths may be constructed in a ditch or trench without the necessity of forming the culvert sections separately and subsequently assembling the same in said ditch.

A further object of the invention is to provide a mold or form including a plurality of supporting members or rings, each provided with pivoted sections adapted to be swung inwardly, thereby to contract or reduce the size of the mold and thus permit the same to be readily withdrawn from engagement with the molded pipe or culvert.

A further object is to provide means for locking the pivoted sections of the supporting members in extended or operative position, and means for releasing the locking means to permit contraction of said mold.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification:—Figure 1 is a transverse sectional view of a mold or form for making culverts constructed in accordance with my invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is an end elevation showing the pivoted section of the supporting members swung inwardly to inoperative position to permit the removal of the mold from the pipe or culvert. Fig. 4 is an enlarged detail perspective view of a portion of the locking member. Fig. 5 is an end elevation illustrating a modified form of the invention.

Similar numerals of reference indicate

corresponding parts in all of the figures of the drawings.

The improved mold forming the subject matter of the present invention includes a plurality of spaced supporting members or rings each comprising a stationary section 5 having movable sections 6 and 7 pivotally connected therewith at 8 and adapted, in conjunction with the stationary section 5, to form a complete circle when the mold is set up for use, as best shown in Fig. 1 of the drawings.

The section 6 of each supporting member is formed with a segmental slot 9 which receives a laterally extending pin 10 carried by the adjacent end of the mating section 7 so that when the supporting members are collapsed to permit removal of the device from the molded product, the pin 10 will ride in the slot 9 and move the pivoted sections 6 and 7 to the position shown in Fig. 3 of the drawings.

Extending transversely across each supporting ring or member and pivotally connected at 11 with the intermediate portions of the sections 6 and 7 are toggle levers 12 having their inner ends overlapped and pivotally connected at 13. The pin 13 is projected laterally beyond the adjacent longitudinal faces of the toggle levers 12 to form a locking stud for engagement with a locking lever 14, one end of said locking lever being pivotally mounted on the pin 10 and the other end thereof formed with a transverse slot 15 arranged to receive the stud or pin 13 of the toggle levers.

Attention is here called to the fact that the pivot pin 13 is arranged in a plane slightly above the pivots 11 so that when the toggle levers are in the position shown in Fig. 1 of the drawings with the lever 14 in engagement with the pin 13 the sections 6 and 7 will be locked against inward movement, thereby to form a firm support for the covering or jacket 16.

Pivotally mounted on the stud 13 at the rear of the locking member or link 14 is a releasing member 17 having a laterally extending lip 18 which bears against and engages the link 14 from the pin 13 when the member 17 is tilted so as to permit the pivoted sections 6 and 7 to be swung inwardly toward the center of the supporting member and thus permit the supporting member to be withdrawn from the interior of the molded pipe or culvert.

As a means for operating the releasing member 17 there is provided a cord or cable 19, one end of which is connected at 20 with the free end of the releasing member, while  
 5 the opposite end thereof extends over a sheave or pulley 21 secured to the stationary section 5 and is thence extended laterally so that by exerting a longitudinal pull on the free end of the cable 19 the member 17  
 10 may be tilted to release the locking member 14 so that the sections 6 and 7 may be drawn inwardly. The covering 16 is preferably formed of a plurality of longitudinally disposed strips which rest on the peripheries  
 15 of the supporting members or rings and are held in position by a key-board or member 22, the strips or boards constituting the covering 16 being held in engagement with the stationary sections 5 of the supporting mem-  
 20 bers by a clamping device 23. The clamping device 23 is substantially segmental in shape, as shown and formed of sheet metal, the opposite ends of the clamping member being deflected laterally at 24 so as to assist  
 25 in guiding the longitudinal strips to their proper positions on the bottom of the stationary sections 5 when the mold is set up for use.

In using the device a trench or ditch is  
 30 first formed in the ground after which a quantity of cement or other suitable material is placed in the bottom of the ditch and tamped in the usual manner. The supporting rings or members are then placed  
 35 in the ditch on the concrete filling with the clamping member 23 embracing the stationary sections 5 and the strips 6 constituting the covering positioned around the supporting members and between the clamps 23 and  
 40 the peripheral edges of said clamping members.

After the strips 16 have been passed around the lower portion of the mold the same are positioned on the upper portion of  
 45 said supporting members and locked in position by the key-board 22. Additional cement or concrete is then shoveled into the trench around the mold or form and the surface of the cement troweled off to the proper  
 50 shape, as best shown in Fig. 1 of the drawing.

When the cement or concrete has become thoroughly set the form or mold is removed from the interior of the pipe or culvert by  
 55 exerting an initial longitudinal pull on the cord or cable 19 which tilts the member 17 so as to release the locking link 14 from engagement with the pin or stud 13, a further longitudinal movement imparted to the cable  
 60 19 serving to draw the toggle levers 12 downwardly to the position shown in Fig. 3 of the drawings and in doing so will move the pivoted sections 6 and 7 inwardly, thereby to contract the supporting members  
 65 and thus permit the removal of the same

from the interior of the pipe or culvert without danger of cracking, breaking or otherwise injuring the same. Attention is here called to the fact that when the toggle  
 70 levers 12 are moved downwardly to retracted position, the pivoted sections 6 and 7 will form a temporary support for the adjacent longitudinal strips of the covering 16, thereby to prevent the same from falling  
 75 within the culvert and indenting or otherwise mutilating the same.

In Fig. 5 of the drawings there is illustrated a modified form of the invention particularly designed for forming culverts with  
 80 a flat base or foundation, this being rendered possible by securing auxiliary plates 25 to the outer face of each supporting member or ring so that when the concrete or cement is positioned in the ditch, the latter will assume the shape of the auxiliary plate 25 and  
 85 thus form a reinforced base for the pipe and prevent tilting or wobbling of the same in the ditch prior to filling the latter with earth in the usual manner.

It will of course be understood that as  
 90 many reinforcing members or rings may be employed in making a culvert as are found necessary or desirable, the number of supporting members employed depending  
 95 largely upon the length of the culvert sections to be built.

From the foregoing description it will be seen that there is provided an extremely simple, inexpensive and efficient device admirably adapted for the attainment of the  
 100 ends in view.

Having thus described the invention what is claimed is:—

1. A mold including a supporting member comprising a stationary section having movable sections pivotally connected therewith,  
 105 a covering resting on the supporting member, toggle levers connecting the movable sections of the supporting member, a locking link pivotally connected with one of the  
 110 movable sections and having a slot formed therein and adapted to receive the pivot pin of the toggle levers, a releasing device pivotally mounted on said pivot pin and arranged when tilted to release the locking  
 115 link and permit inward movement of the movable sections.

2. A mold including a supporting member comprising a stationary section having movable sections pivotally connected therewith,  
 120 one of said movable sections being provided with a pin arranged to enter a segmental slot formed in the other movable section, toggle levers pivotally connected with said  
 125 movable sections and pivotally connected with each other, a locking link mounted on the pivot pin of one of the movable sections and having its opposite end provided with a transverse slot arranged to engage the pivot pin  
 130 of the toggle levers at the over-lapped ends

thereof, and a releasing member pivotally mounted on the toggle levers and provided with a laterally extending lip adapted to engage the locking link and disengage the latter from the pivot pin of said toggle levers, thereby to permit the movable sections to be swung inwardly.

3. A mold including a supporting member comprising a stationary section having movable sections pivotally connected therewith, one of said movable sections being provided with a pin arranged to enter a segmental slot formed in the mating movable section, a covering surrounding the supporting member, a clamping device engaging the covering, toggle levers pivotally connected with the movable sections and pivotally connected with each other, a locking member pivotally mounted on the pin of one of the movable sections and having a transverse slot formed

in the opposite end thereof and arranged to receive the pivot pin of the toggle levers at the over-lapped ends thereof, a releasing member pivotally mounted on the central pin of the toggle levers and having a laterally extending lip arranged to bear against and disengage the locking link, a pulley secured to the stationary section of the supporting member, and a flexible operating element having one end thereof secured to the releasing member and its opposite end extended over said pulley.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES R. JACKMAN.

Witnesses:

J. C. JACKMAN,  
JNO. M. MERCER.