

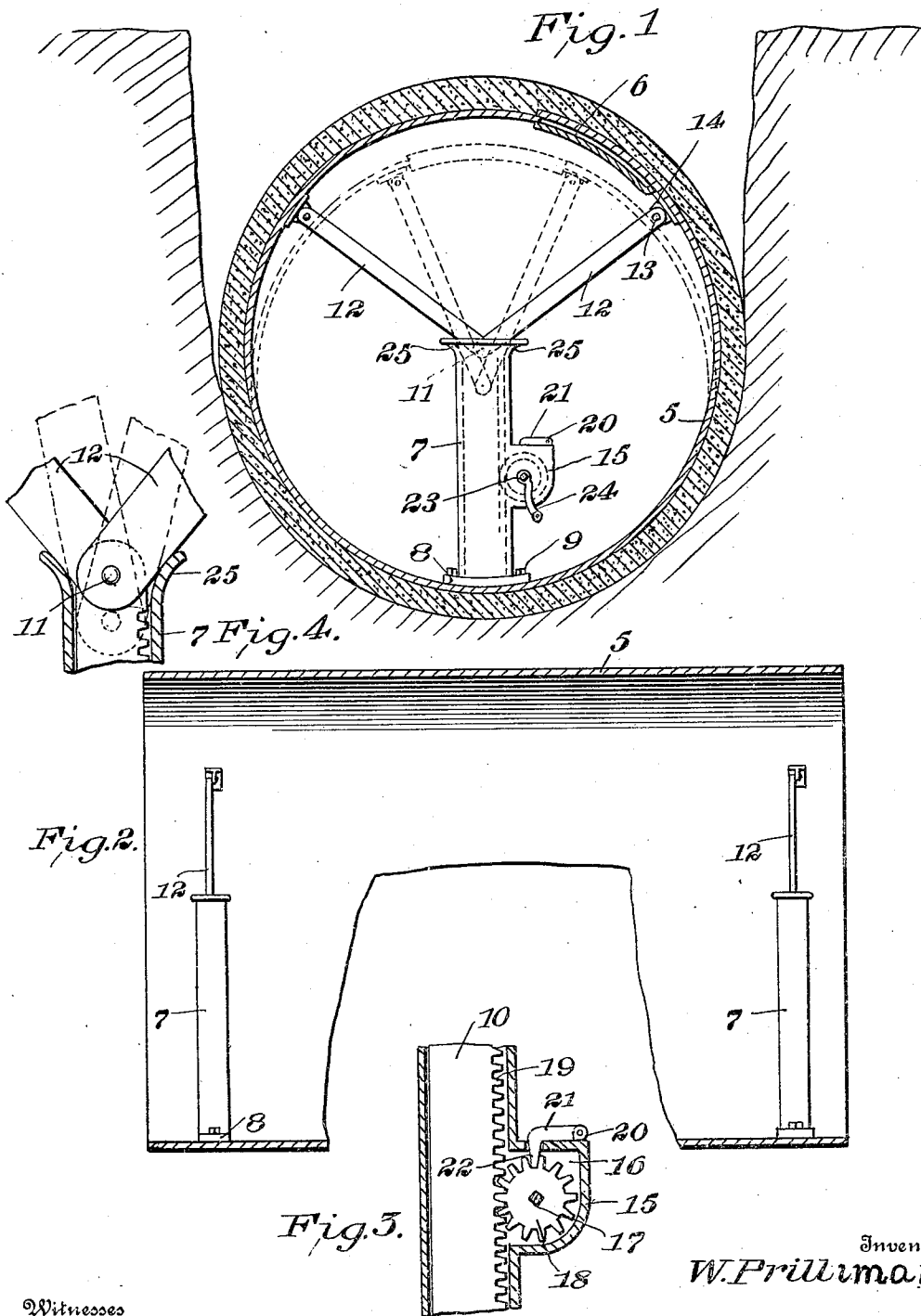
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ADJUSTABLE FRAME FOR BUILDING CONCRETE CULVERTS, CISTERNS, AND THE LIKE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM PRILLIMAN, citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Adjustable Frames for Building Concrete Culverts, Cisterns, and the Like, of which the following is a specification.

10 This invention relates to collapsible molds or forms for making concrete culverts, cisterns, pipes and similar artificial stone structures and has for its object to provide a strong, durable and thoroughly efficient mold of this character 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 laying the same in the ditch or trench.

20 A further object is to provide improved means for expanding and contracting the cylindrical body portion or shell, and means for securing the expansible shell in different positions of adjustment.

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

30 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.

35 For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

40 Figure 1 is a transverse sectional view of a culvert form or mold constructed in accordance with my invention, showing the same positioned in a trench or ditch; Fig. 2 is a longitudinal sectional view of the culvert form removed from the ditch, a portion thereof being broken away; Fig. 3 is a vertical sectional view showing the intermeshing engagement of the rack and pinion; Fig. 4 is a detail sectional view showing the upper or flared end of the casing.

45 Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved mold forming the subject matter of the present invention comprises a tubular body portion or shell 5 preferably constructed from a single length of sheet metal bent into cylindrical form as shown, and having one longitudinal edge thereof formed with a pocket 6 adapted to receive the adjacent longitudinal edge thereof, thereby to assist in guiding the overlapping edges of the body portion when the shell is expanded or contracted.

Disposed within the body portion 5 at the opposite ends thereof, are tubular casings 7 having laterally extending flanges 8, curved to conform to and adapted to bear against the interior wall of the mold or shell and to which they are secured by bolts, rivets, or similar fastening devices 9.

Slidably mounted in each casing 7 is a plunger 10 to the upper end of which is pivotally connected at 11, a pair of diverging links 12, and the outer ends of which are pivotally connected at 13 with suitable lugs or brackets 14 fastening to the shell near the overlapping longitudinal edges thereof.

One side of each casing 7 is provided with a lateral enlargement 15 to form a pocket 16 in which is mounted for rotation on a stub shaft 17, a pinion 18, the teeth of said pinion being adapted to engage a series of teeth 19 formed in the plunger 10, for the purpose of raising and lowering the plunger, thereby to expand and contract the shell. The upper flat portion of the enlargement 15 is provided with spaced upstanding lugs 20 between which is pivotally mounted a locking pawl or catch 21, the angular lip 22 of which is adapted to engage the teeth on the pinion 18 for the purpose of locking the plunger against sliding movement within the casing, thereby to secure the overlapping edges of the shell in adjusted position. One end of the stub shaft 17 is projected laterally beyond the adjacent side of the casing 7 and is provided with a squared portion 23 for engagement with a correspondingly squared socket of an operating handle 24.

Attention is here called to the fact that the upper or open end of each casing 7, is flared laterally at 25 for engagement with the adjacent longitudinal edges of the links 12, thus to assist in guiding the same when the plunger 10 is actuated to expand or contract the shell.

In constructing a culvert, sewer, or similar structure, the mold or shell is positioned

in the trench or ditch where the culvert is to be laid and the operating handle 24 rotated to expand the shell to the desired size, said shell being locked in adjusted position
 5 by allowing the lip 22 of the locking member or catch 21, to engage the teeth on the pinion 18. The cement, concrete, or other plastic material, is then shoveled or otherwise introduced into the trench around the
 10 mold or shell and trolled off in any suitable manner to conform to the curvature of said shell. After the cement or concrete has sufficiently set, the catch 21 is released and the crank or handle 24 rotated to lower the
 15 plunger 10 thus exerting a pull on the links 12 and contracting the shell so as to disengage said shell from the interior of the molded product and permit the mold or shell to be readily removed from within the
 20 pipe or culvert.

It will of course, be understood that any number of casings and plungers may be employed as is found necessary or desirable to effect the proper expansion and contraction
 25 of the shell without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A mold including a longitudinally split
 30 expansible shell, a casing secured to the interior walls of the shell opposite the split portion thereof, a plunger operating within the casing and provided with a rack, links forming a pivotal connection between the upper
 35 end of the plunger and the interior walls of the casing, a pinion engaging the rack for raising and lowering the plunger to expand and contract the shell, and means for locking the plunger in different positions of adjustment.

40 2. A mold including an expansible shell, a casing disposed within the shell and provided with a pocket, a plunger operating within the casing and having a rack, links forming a pivotal connection between the
 45 upper end of the plunger and shell, a pinion mounted for rotation in the pocket of the casing and adapted to engage the rack of

the plunger for raising and lowering the latter to expand and contract the shell, and a locking member pivotally mounted on the
 50 casing and adapted to engage the teeth of the pinion for locking said pinion against rotation.

3. A mold including a longitudinally split expansible shell, a casing disposed within the
 55 shell and having its upper end flared laterally, a plunger operating within the casing, links forming a pivotal connection between the interior walls of the shell and the upper end of the plunger and adapted to bear
 60 against the flared portion of the casing, means for raising and lowering the plunger to effect the expansion and contraction of the shell, and means for locking the plunger in
 65 adjusted position.

4. A mold including a longitudinally split expansible shell, one longitudinal edge of which is provided with a pocket adapted to receive the adjacent longitudinal edge thereof, spaced brackets secured to the interior
 70 walls of the shell at the opposite ends thereof, casings disposed within the shell and each provided with a pocket, plungers operating within the casings and provided with racks, the upper ends of the casings
 75 being flared laterally, links forming a pivotal connection between the plungers and the adjacent brackets and bearing against the flared portions of the casings, pinions journaled in the pockets of said casings and en-
 80 gaging the racks of the adjacent plungers, and pawls pivotally mounted on the casings and provided with terminal lips adapted to extend through openings in the casings for
 85 engagement with the adjacent pinions thereby to lock the plungers against vertical movement.

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

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Witnesses:

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