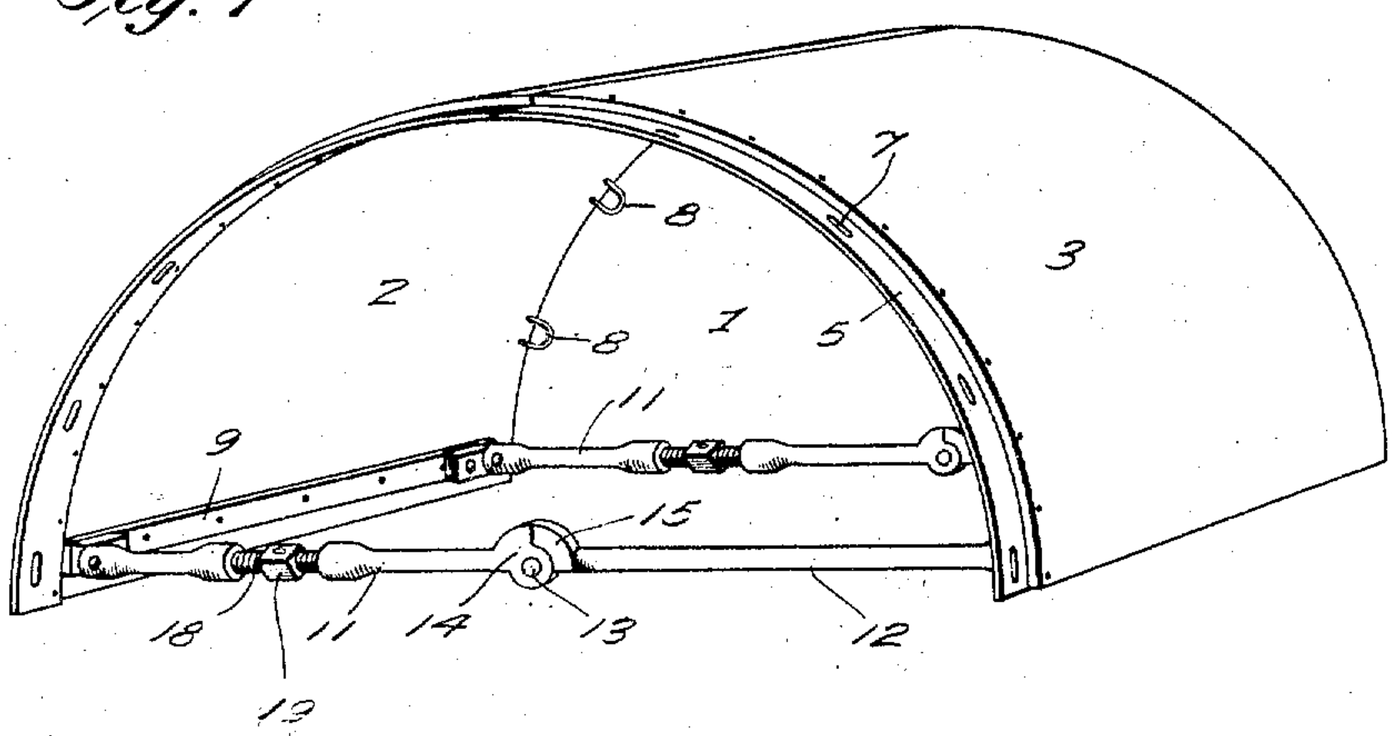
No. 875,551. PATENTED DEC. 31, 1907.

C. W. McDONALD.

COLLAPSIBLE ARCH OR CENTER.

APPLICATION FILED MAR. 21, 1907.

Fig. 1



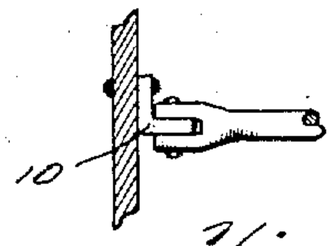
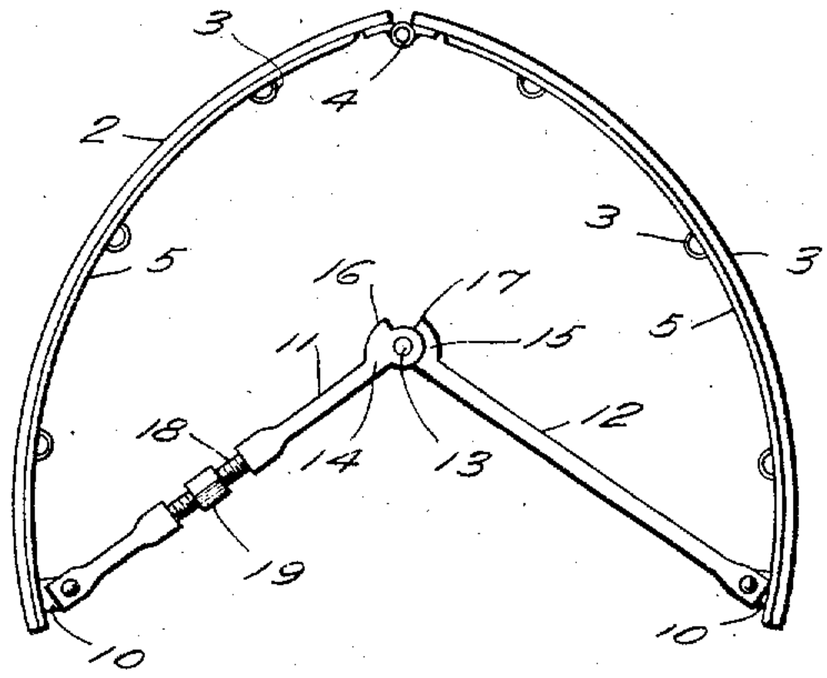


Fig. 3

Fig. 2



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COLLAPSIBLE ARCH OR CENTER.

No. 875,551. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed March 21, 1907. Serial No. 363,683.

To all whom it may concern:

Be it known that I, CHARLES W. McDONALD, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Collapsible Arches or Centers, of which the following is a specification.

This invention relates to improvements in molds or centerings especially designed for use in the construction of arches and the like of concrete, artificial stone, etc., the object of the invention being to provide a sectional mold which may be conveniently folded or collapsed for storage or transportation and adjusted to form surfaces varying in contour, and in which provision is made for readily connecting a plurality of molds to form an arch or other structure of any desired length.

The preferred form of the invention is illustrated in the accompanying drawing, in which:—

Figure 1 is a perspective view of the mold or centering as set up for use. Fig. 2 is an elevation of the same in partly collapsed condition. Fig. 3 is a detail, showing the mode of pivotally mounting the bracing arms.

Referring to the drawing, the numeral 1 designates the mold as a whole, which comprises a pair of sections 2 and 3, of segmental shape or proper form to form an arch or similar structure of the desired curvature.

The meeting or approximating edges of the mold sections at the crown of the mold are united at suitable intervals by hinges or pivots 4, thus adapting the free bottom edges of the section to swing toward or from each other in collapsing the mold for storage or transportation or extending the same for use. The sections are each provided at one of their side edges with a projecting strip 5 riveted thereto or formed integral therewith, as desired, and providing a coupling flange for engagement with the reverse edges of the sections of an adjacent mold, whereby a series of molds of the character described may be coupled together. The flanges 5 have their outer surfaces lying flush with the inner surfaces of the sections 2 and 3, so that the adjacent sections of another mold may overlap said flanges and lie flush and in direct abutting contact with said sections. The flanges are formed with slots 7 to receive staples or other coupling devices on the other mold, and the sections 2 and 3 are provided at their side edges opposite the flanges 5 with staples 8 to engage slots in the flanges of a similarly constructed mold. It will thus be understood that each mold will be provided at one side with coupling flanges and at the opposite side with a set of staples for respective connection with the staples and flanges of coöperating molds. Pins or keys, or other fastening devices, may be passed through the staples when they are in coupling engagement with the flanges of an adjacent mold, to hold the parts in locking engagement.

Secured to the inner face of each mold section adjacent its lower edge is a longitudinal reinforcing strip 9 upon the ends of which are arranged angle brackets 10. To the angle brackets of the two mold sections are hingedly or pivotally connected arms 11 and 12. As shown, each arm 11 is pivoted at its outer end to the angle bracket section 2 and is pivotally connected at its inner end, as indicated at 13, to the inner end of the arm 12, which is in turn pivotally connected at its outer end to an angle bracket on the section 3. The hinge 13 comprises a pin or pintle passing through knuckles 14 and 15 formed on the arms, which knuckles have curved contact surfaces to permit the arms to swing inward to adapt the mold to freely collapse and are provided with contact shoulders 16 and 17 adapted to abut when the arms are spread out to their fullest extent in longitudinal alinement to hold the arms rigidly braced when the mold sections are in operative position.

One of the arms of each section, as the arm 11, is composed of two sections adjustably united to enable the arm to be adjusted as to length to compensate for expansion and contraction, or to adjust the parts so that a proper length of the arms will be insured to adapt the abutting shoulders 16 and 17 to come in contact when the arms 11 and 12 are outspread to their fullest extent and lie in longitudinal alinement in a true horizontal plane. In the present instance the adjustable connection consists of a right and left threaded stem or coupling section 18 engaging correspondingly threaded sockets in the sections of the arm 11 and provided with an angular head 19 for the application of a wrench or other suitable tool to conveniently effect the adjustment.

The mode of use of the device will be readily understood by those conversant with devices of this character, and it will be seen that the construction is such as to provide a mold

which when opened will be staunch and rigid and is adapted to be collapsed in close compass to permit of its convenient storage and transportation. The pivotal connection of the arms 11 and 12 also permits the mold to be folded to a greater or less extent to vary the contour of the forming surface or the shape of the mold as a whole, thus providing for the ready formation of arches or structures varying from a true semicircular form. The mold sections may be made of sheet metal or any other suitable material.

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

1. An arch-mold comprising sections hingedly united at their upper edges, brackets upon the lower edges of the sections, inextensible arms pivotally connected to the brackets of one section, extensible arms pivotally connected to the brackets of the other section, said sets of arms being pivotally connected with each other for an inward collapsing movement and for toggle-extension, each of said extensible arms comprising sections and an adjusting screw connecting said sections, and stops upon the pivotally-connected ends of the sets of arms to abut and limit their toggle-extension.

2. An arch-mold comprising partially circular sections hinged or pivoted at their meeting edges, each section being provided at one side with inwardly projecting staples and at the other side with slotted coupling flanges adapted for engagement with corresponding staples on another mold, and folding braces pivotally connecting the lower edges of the sections.

3. A mold comprising segmental sections pivotally connected at their meeting edges, inextensible arms pivotally connected with the free edge of one section, extensible arms pivotally connected with the free edge of the other section, said arms being pivotally connected with each other for an inward collapsing movement and for toggle-extension, each of said adjustable arms comprising spaced sections having threaded sockets, and a reversely threaded section engaging said sockets and adjustably connecting said sections.

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

CHARLES W. McDONALD.

Witnesses:
PHILIP J. BARRY,
DUNCAN A. MACDONALD.