W. BURK.

MOLD.

APPLICATION FILED MAY 17, 1910.

982,241.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 1.

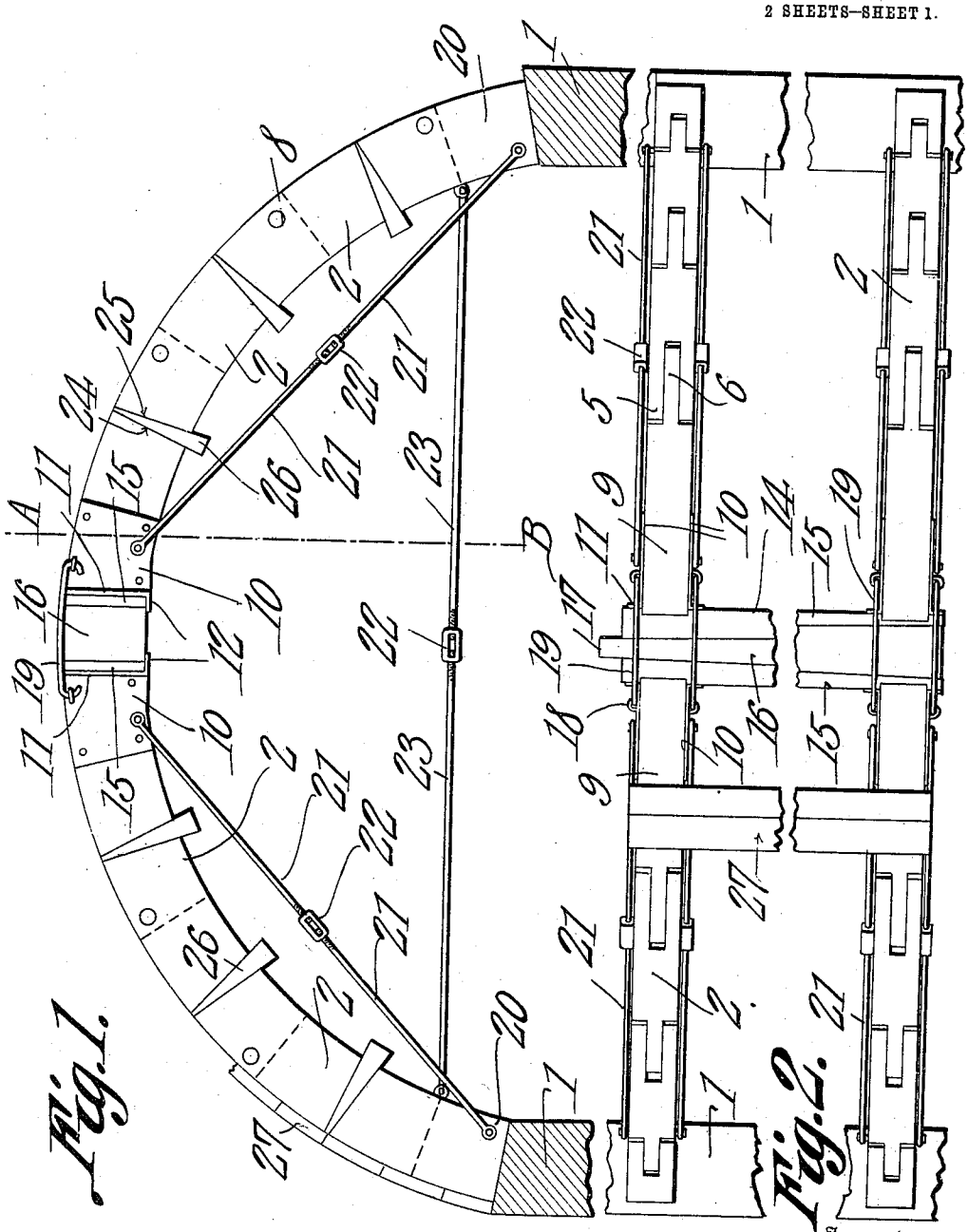


Fig. 1.

Fig. 2.

Witnesses

E. F. Clement

Mason B. Lawton

Inventor

Wilford Burk.

By C. C. Shroeder & Co.

Attorney

W. BURK.

MOLD.

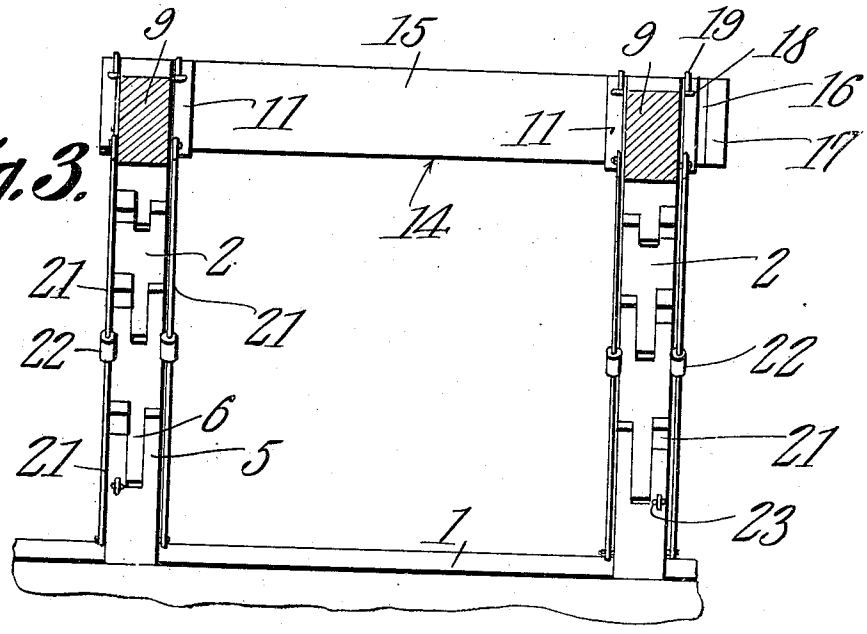
APPLICATION FILED MAY 17, 1910.

982,241.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 2.

Fig. 3.



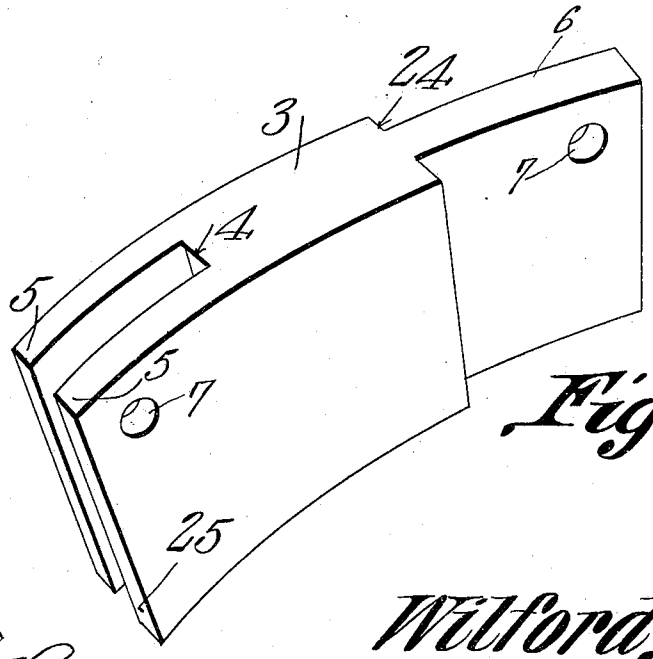


Fig. 4.

Witnesses

E. J. Stewart.

Mason B. Lawton

Inventor

Wilford Burk.

By Church & Co.

Attorney

UNITED STATES PATENT OFFICE.

WILFORD BURK, OF CLERMONT, IOWA.

MOLD.

982,241. Specification of Letters Patent. **Patented Jan. 24, 1911.**

Application filed May 17, 1910. Serial No. 561,834.

To all whom it may concern:

Be it known that I, WILFORD BURK, a citizen of the United States, residing at Clermont, in the county of Fayette and State of Iowa, have invented a new and useful Mold, of which the following is a specification.

The device forming the subject matter of this application, is a mold, adapted to be used in forming concrete arches; the construction being such that a single mold may be employed for fashioning arches having different spans, and different rises.

It is the object of this invention to provide a flexible arch of novel and improved form, adapted to be employed in molding concrete structures, to provide voussoirs adapted to be connected pivotally in a novel and improved manner to form the arch; and to provide novel means for adjusting the curvature of the mold.

With the above and other objects in view, the invention consists in the novel construction and arrangement of parts hereinafter described, delineated in the drawings, and specifically claimed, it being understood that changes, properly falling within the scope of what is claimed, may be made, without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Similar numerals of reference are employed to denote corresponding parts throughout the several figures of the drawings.

In the accompanying drawings,—Figure 1 shows the invention in side elevation; Fig. 2 is a top plan; Fig. 3 is a transverse section upon the line A—B of Fig. 1; and Fig. 4 is a detail perspective of one of the voussoirs.

Upon suitable skew-backs 1, the flexible arch of my invention is adapted to be rested. This arch consists of a plurality of pivotally connected voussoirs, one of which is shown in detail in Fig. 4 of the drawings. The voussoir comprises a body portion 3, which, at one end, is slotted as denoted by the numeral 4, to form spaced arms 5. At the other end, the body 1 terminates in an outstanding tongue 6. Each tongue 6 is adapted to be received between the spaced arms 5 of the adjoining block; and in the arms 5 and in the tongue 6, there are openings 7, adapted to receive bolts 8, or like elements, whereby each voussoir in the structure may be connected with the other voussoirs adjacent to it.

The uppermost voussoirs of the arch, which are denoted by the numeral 9, are provided upon their remote faces, with plates 10, having transversely extended heads 11, provided at their lower edges, with outstanding flanges 12 or lugs, upon which the keystone 14 is adapted to rest.

When the arch is in position, and properly stiffened, it will be seen that the flanges 12 serve to maintain the keystone 14 in a fixed horizontal plane. The keystone comprises outer members 15 and an inner member 16, which latter member is wedge shaped; the adjacent faces of the outer members 15 being beveled to receive the wedge shaped inner member. The smaller end 17 of the inner member 16 protrudes beyond the ends of the outer members 15, and by this construction, the inner, wedge shaped member 16 is made readily accessible when it is desired to drive the same back to loosen the hold of the keystone upon the voussoirs of the arch.

In the plates 10, there are eyes 18, adapted to receive hooks 19, whereby the uppermost voussoirs 9 of the arch may be connected together, across the top of the keystone 14.

Pivotally connected to the lowermost voussoirs 20 of the arch, are rods 21, other rods denoted by like numerals being pivotally connected with the plates 10 which are carried upon the uppermost voussoirs 9 of the arch. The adjacent ends of these rods 21 are united by turn buckles 22. The remote ends of rods 23 are pivotally connected with the lowermost voussoirs, the adjacent ends of the rods 23 being connected by turn buckles 22.

By referring to Fig. 4 of the drawings, it will be seen that the outstanding tongue 6 at the end of each voussoir, results in the formation of a shoulder 24 therein. Between this shoulder 24 and the end face 25 of the adjoining arm 5 of the next voussoir, a wedge 26 may be introduced, into the intrados of the arch.

By manipulating the several turn buckles 22, the contour of the arch may be altered to suit the exigencies of the particular case. Likewise, when desired, the several wedges 26 may be introduced into the intrados of the arch, stiffening the same, and altering its contour to the desired degree. Moreover, by driving the wedge shaped inner member 16 of the keystone transversely of the arch, the arch may be stiffened, and altered in its

contour. Thus it will be seen that three separate and distinct means are provided for stiffening the arch and for altering its contour; namely, the several rods and their turn buckles; the adjustable keystone; and the several wedges which are introduced into the intrados of the arch.

The lagging 27 may be mounted upon adjacent arches; and the concrete placed about the lagging in the usual manner.

In Fig. 3 of the drawings, and in Fig. 2, I have shown the keystone 14 of sufficient length to connect a pair of arch shaped molds, and this construction may be employed with profit. However, it is perfectly obvious that each arch may be employed separately and provided with its individual keystone.

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

1. A flexible arch for molding concrete structures, consisting of pivotally connected voussoirs; and a multipart transversely expansible keystone one part of which constitutes a means for expanding the keystone.

2. A flexible arch for molding concrete structures, consisting of pivotally connected voussoirs; and a keystone supported by the uppermost voussoirs, the keystone comprising separable parts, one of which is wedge shaped and supported in a fixed horizontal plane for movement transversely of the arch to exercise its wedging function.

3. A flexible arch for molding concrete structures, consisting of pivotally connected voussoirs terminally united by tongue and groove connections and having portions of their end faces spaced apart to form wedge-shaped openings in the intrados of the arch upon both sides of the tongue portions of said connections.

4. A flexible arch for molding concrete structures, consisting of voussoirs, each of which is bifurcated at one end to form spaced arms, and at the other end provided with a tongue; means for pivotally mounting the tongue of each voussoir between the arms of the adjacent voussoir; and wedges adapted to be inserted in the intrados of the arch, between the body of each voussoir and the end of an arm of an adjacent voussoir.

5. A flexible arch for molding concrete structures, consisting of voussoirs, each of which is bifurcated at one end to form spaced arms, and at the other end provided with a tongue; means for pivotally mounting the tongue of each voussoir between the arms of the adjacent voussoir; an adjustable tie connecting the lowermost voussoirs; and adjustable ties connecting the uppermost voussoirs with the lowermost voussoirs.

6. A flexible arch for molding concrete structures, consisting of voussoirs, each of which is bifurcated at one end to form spaced arms, and at the other end provided with a tongue; means for pivotally mounting the tongue of each voussoir between the arms of the adjacent voussoir; wedges adapted to be inserted in the intrados of the arch between the body portion of each voussoir and the end of one arm of an adjacent voussoir; an adjustable tie connecting the lowermost voussoirs; and adjustable ties connecting the uppermost voussoirs with the lowermost voussoirs.

7. A flexible arch for molding concrete structures, consisting of pivotally connected voussoirs; the uppermost of which are provided with outwardly extended lugs; and a transversely expansible keystone slidably supported upon the lugs for movement transversely of the arch.

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

WILFORD BURK.

Witnesses:
W. LARRABEE, Jr.,
J. A. ERICKSON.