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J. S. THOMPSON

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INSERT HOLDING DEVICE FOR CASTING MOLDS

Original Filed April 9, 1926

Fig. 1

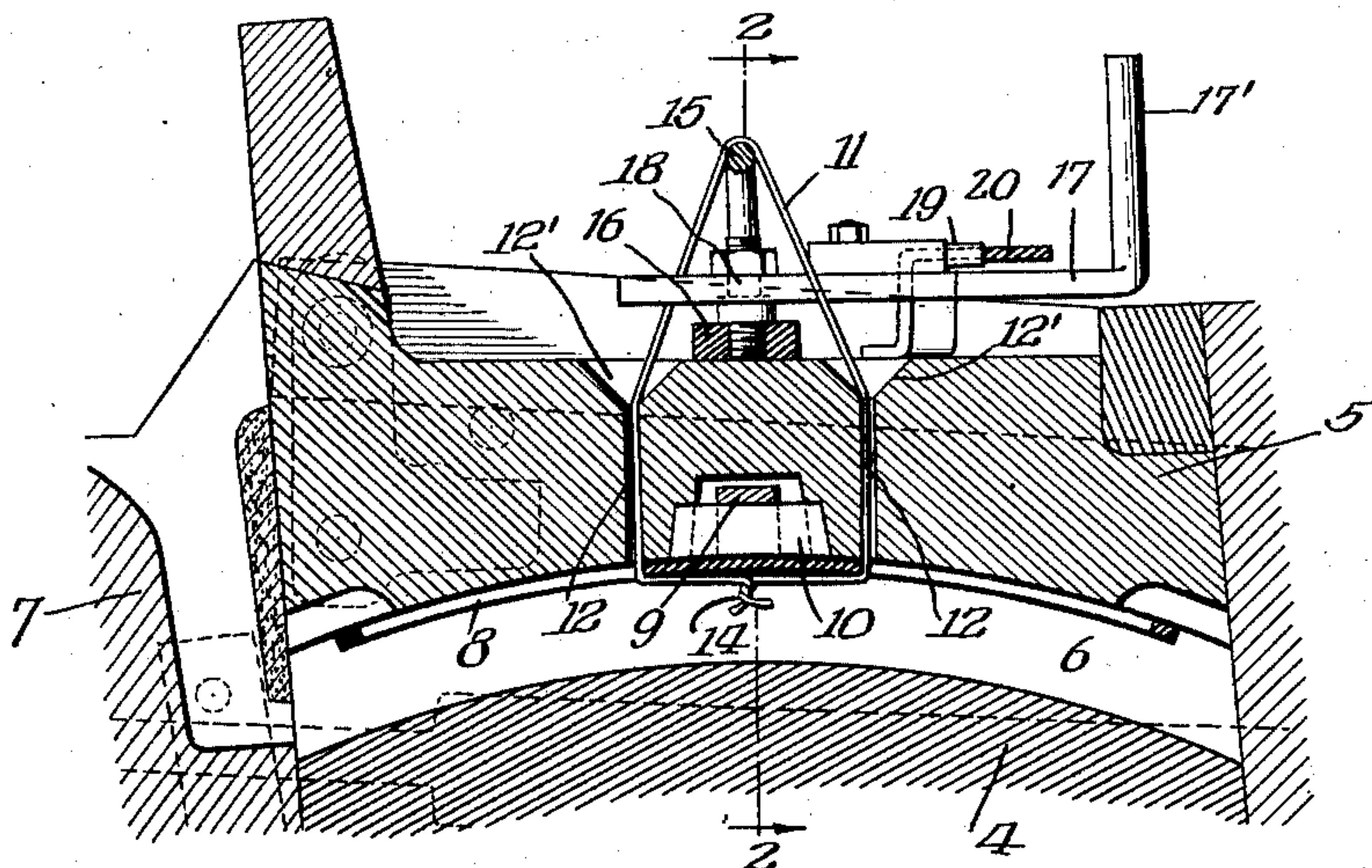


Fig. 2

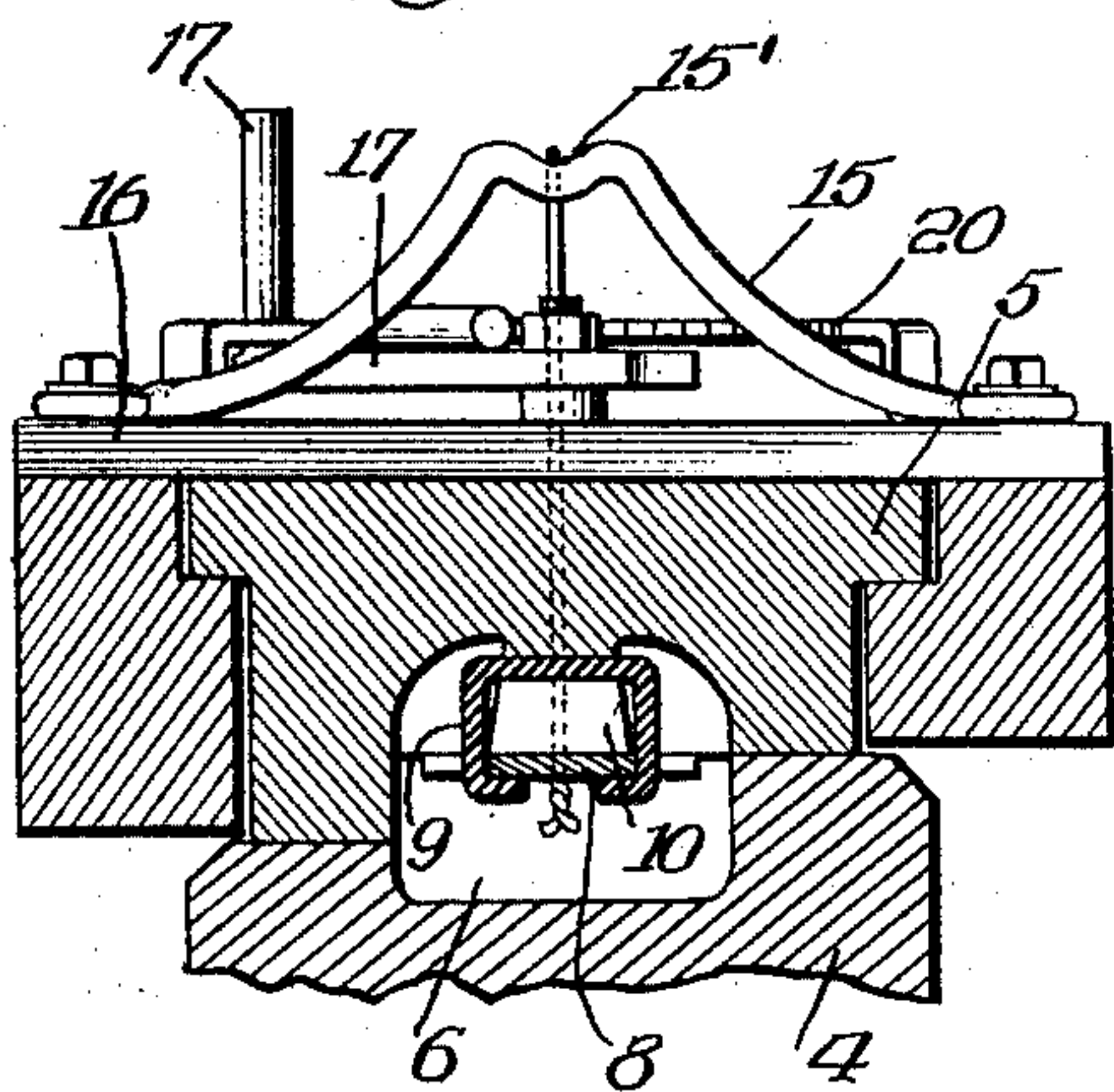


Fig. 3

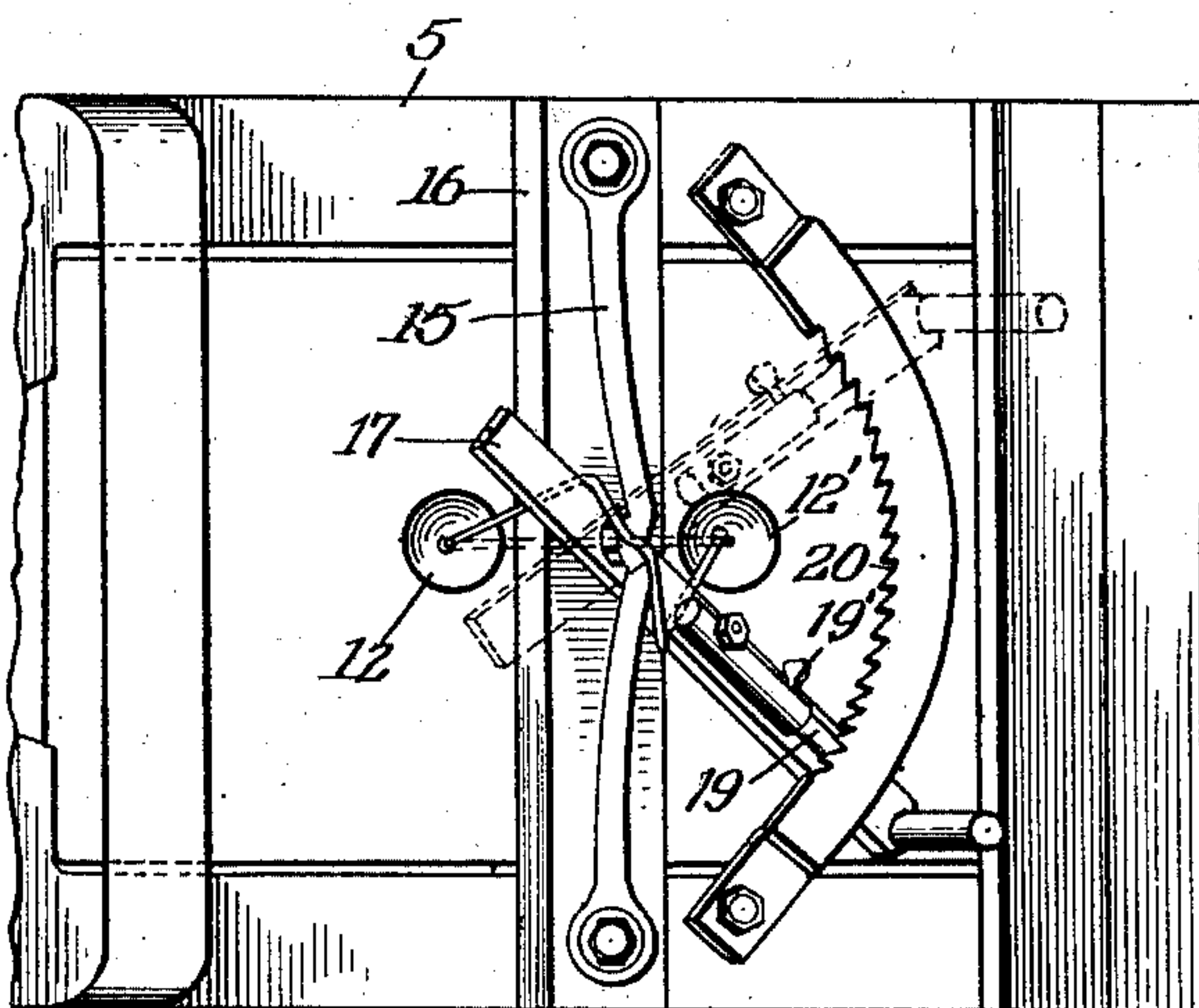
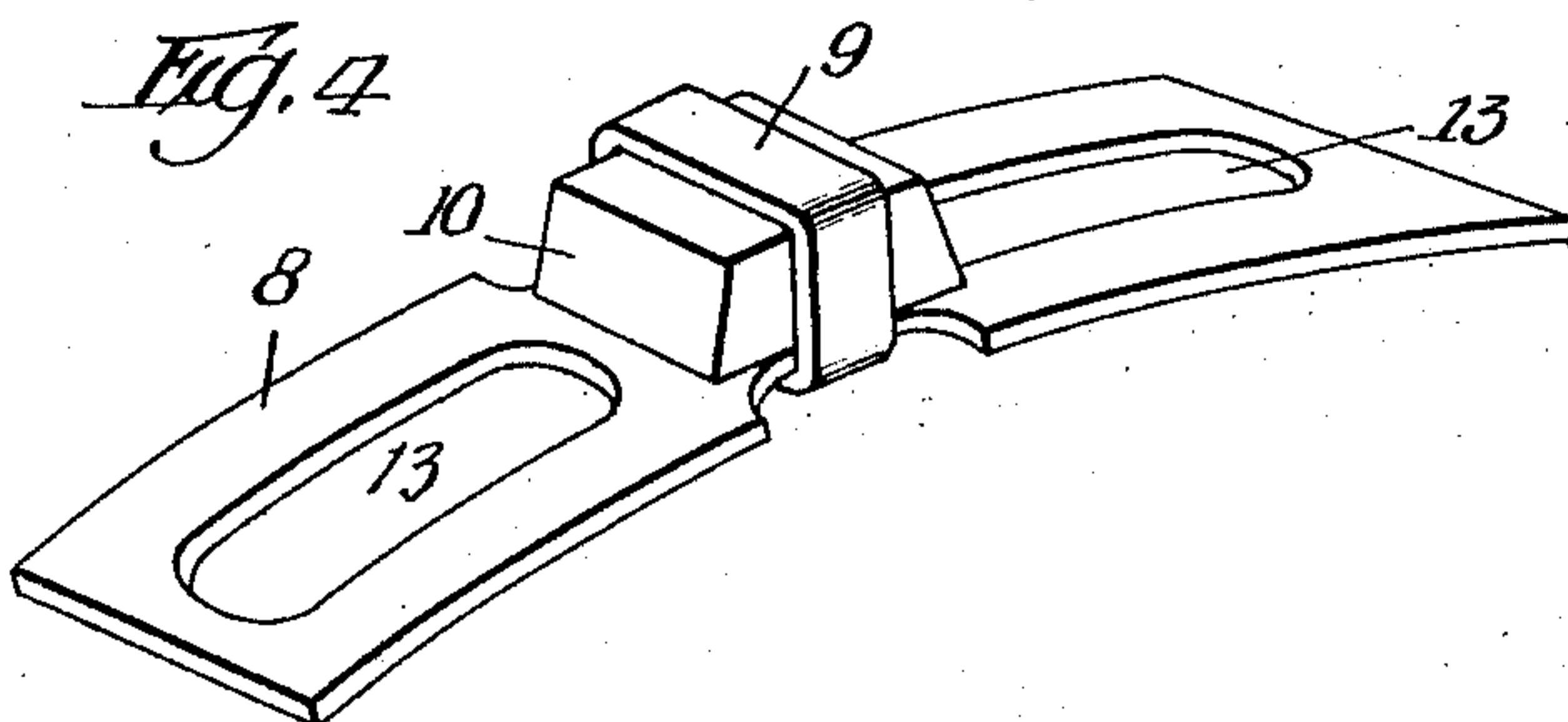


Fig. 4



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UNITED STATES PATENT OFFICE

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INSERT-HOLDING DEVICE FOR CASTING MOLDS

Original application filed April 9, 1926, Serial No. 100,821. Divided and this application filed June 28, 1928. Serial No. 288,913.

This application is a division of my application Serial No. 100,821 filed April 9, 1926.

The invention relates to permanent molds for making castings, and particularly brake shoes, and its object is to provide novel means of simple construction for securing the parts to be embedded in the casting in fixed position in the mold cavity so that they will not be displaced in closing the mold or in pouring the metal.

In the accompanying drawings illustrating a selected embodiment of the invention, Fig. 1 is a longitudinal sectional view.

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a top plan view of Fig. 1.

Fig. 4 is a perspective view of the insert.

Referring to the drawings the mold comprises a drag member 4 and a cope member 5 having a mold cavity 6 formed therein and a pouring gate 7 associated therewith. The invention may be embodied in molds of different kinds and constructions and therefore it will not be necessary to describe the mold in further detail.

In the manufacture of brake shoes it is the general practice to embed a steel back 8 in the back of the shoe and a steel lug 9 in the lug of the shoe and these parts are generally assembled with a lug core 10 as a unit insert and suitably supported in the mold cavity preliminary to the casting operation. The object of this invention is to provide a simple and improved means for easily and quickly securing the insert in the mold and in fixed position so that none of the parts thereof will be displaced during the operation of the mold and the pouring of the metal. The ends of a looped wire 11 are passed down through openings 12 in the cope and through openings 13 in the steel back and are twisted together at 14 beneath the steel back. The outer ends 12' of the openings 12 are enlarged to facilitate insertion of the ends of the looped wire. The loop is passed over a transverse support 15 mounted on a cross bar 16 fastened to the cope and this support is provided with a recess or indentation 15' to receive the looped wire, Fig. 2. The ends of the wire may be passed in a reverse direction

through the openings 12 with the looped part thereof engaging the back and with its ends twisted above the support, if desired, but for a mold like that disclosed in my original application it is more convenient to twist the ends of the wire adjacent the steel back when the cope is in tilted or upright open position. A tensioning device is arranged to engage the legs of the loop for tightening the loop and clamping the insert tightly in place on the cope, and this device comprises a lever 17 pivoted at 18 on the cross bar 16 having an operating handle 17'. A detent 19 of any suitable construction is mounted on the lever 17 to engage a toothed segment 20 mounted on the cope. The openings 12 are conveniently and preferably located in alignment with the longitudinal axis of the mold cavity of a brake shoe and the pivot of the tensioning lever 17 is located between the openings and preferably in alignment therewith. Preparatory to inserting the loop in the openings 12 the tensioning lever should be swung to initial position as shown in broken lines in Fig. 3, so that when the loop is inserted it will straddle the lever. After the ends of the loop have been twisted the lever is advanced to twist and tension the wire, as shown in full lines in Fig. 3, thereby tightly securing the insert in place against the cope so that it will remain in fixed position during the operation of the mold and the pouring of the molten metal in the mold cavity, and become embedded in desired position in the casting. In advancing the lever as aforesaid, the detent will ride over the teeth of the segment 20, and after the casting operation is completed the handle 19' may be operated to release the detent from the segment to permit the tensioning lever to be returned to initial position.

My invention provides a simple means which can be easily operated for securing an insert in relatively fixed position in the cope of a mold so that it will not become displaced during the operation of the mold or the pouring of the metal and will be embedded in its predetermined position in the casting. Unless the insert is held tightly and securely in the mold cavity it may become displaced

during the operation of the mold or during the pouring of the metal so that the back and the lug will be crookedly and unevenly embedded in the brake shoe casting. This is overcome by the use of my invention which enables the operator to tie the insert fixedly in its proper position in the mold cavity so that the steel back and lug will be uniformly positioned in the shoe casting.

I have described the invention in a form which has been found satisfactory in actual practice in connection with a mold as described in my parent application, but the invention is capable of being embodied in other forms and for use on other molds and I reserve the right to make all such changes in the form, construction and arrangement of parts as come within the scope of the following claims.

I claim:

1. A mold for making castings and comprising a cope, means for holding in the cope an insert to be embedded in the casting, and adjustable means operatively engaged with said holding means for tightening the holding means to securely hold the insert rigidly in position.

2. A mold for making castings and comprising a cope, means for holding in the cope an insert to be embedded in the casting, said means passing through the cope, and means pivotally mounted on the cope and operatively engaged with said holding means for causing the holding means to securely hold the insert rigidly in position in the cope.

3. A mold for making castings and comprising a cope, means for holding in the cope an insert to be embedded in the casting, and lever means on the cope for applying tension to said holding means.

4. A mold for making castings and comprising a cope, means for holding in the cope an insert to be embedded in the casting, said means passing through the cope, and lever means mounted on the cope and operatively engaged with said holding means for causing the holding means to securely hold the insert rigidly in position in the cope.

5. A mold for making castings and comprising a cope, means for holding in the cope an insert to be embedded in the casting, a lever mounted on the cope and operatively engaging said holding means for causing the holding means to securely hold the insert rigidly in position in the cope, and means for holding said lever in adjusted position.

6. A mold for making castings and comprising a cope having an opening therein, a wire passing through said opening and holding in the cope an insert to be embedded in the casting, and means on the cope for applying tension to said wire.

7. A mold for making castings and comprising a cope having openings therein, a looped wire in said openings and holding in

the cope an insert to be embedded in the casting, and means on the cope for tensioning said looped wire.

8. A mold for making castings and comprising a cope having openings therein, a looped wire passed through said openings and holding in the cope an insert to be embedded in the casting, the ends of said wire being fastened together, and tension means engaging said looped wire outside of the cope for applying tension to the wire.

9. A mold for making castings comprising a cope, a looped wire having its legs passed through the cope and its ends fastened together, said looped wire holding in the cope an insert to be embedded in the casting, and a lever passed through the looped wire outside of the cope and adapted to be operated for tensioning the wire to securely hold the insert rigidly in position in the cope.

10. A mold for making castings and comprising a cope, a support on the cope, a lever mounted on the cope, a looped wire straddling the support and lever and passing through the cope and holding in the cope an insert to be embedded in the casting, the ends of said wire being fastened together, said lever being adapted to be operated to twist and tension the wire, and means for holding the lever in adjusted position.

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