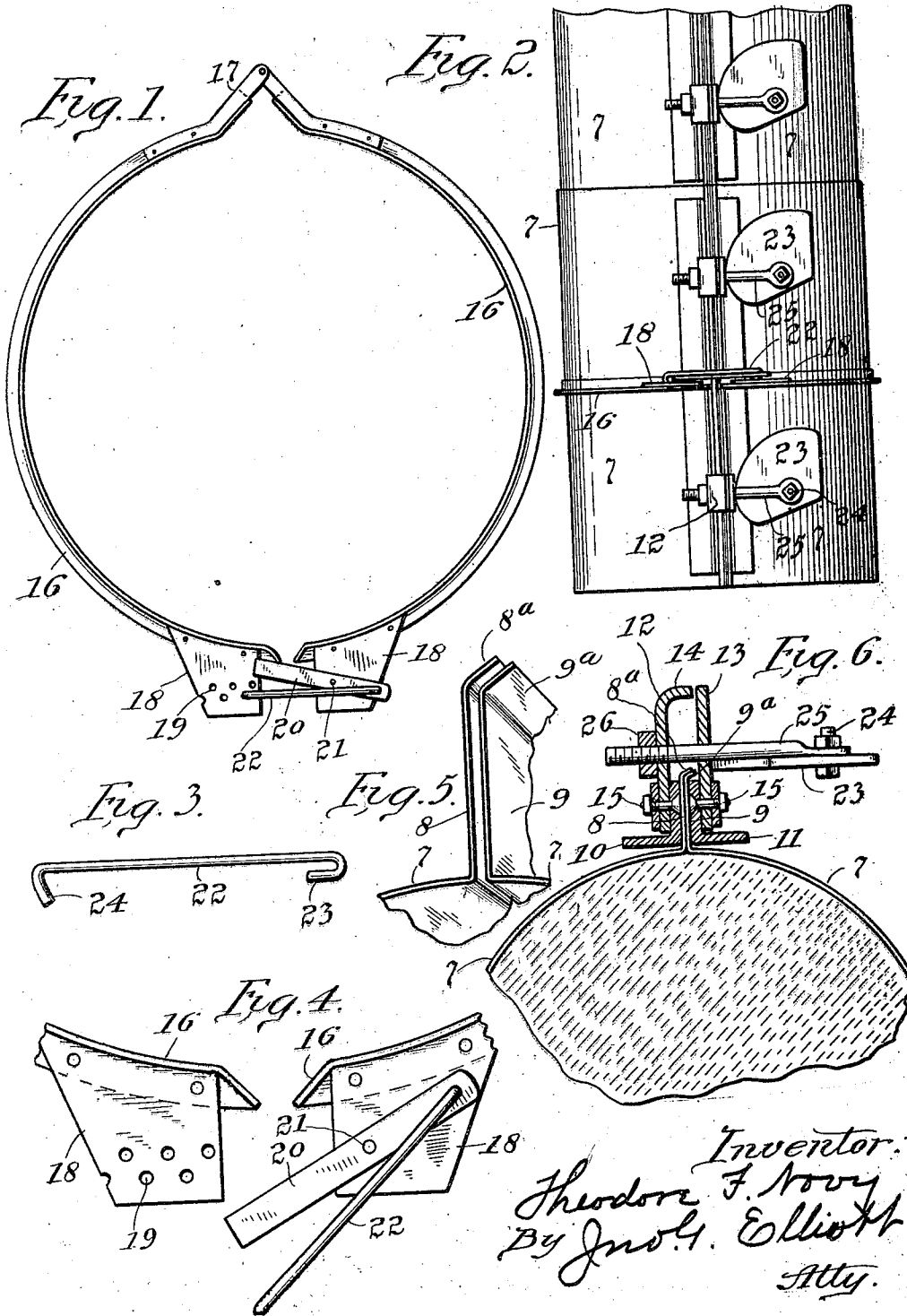


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T. F. NOVY.
COLUMN MOLD.
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UNITED STATES PATENT OFFICE.

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COLUMN MOLD.

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To all whom it may concern:

Be it known that I, THEODORE F. NOVY, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Column Molds, of which the following is a full, clear, and exact specification.

This invention relates to improvements in molds for columns formed from any plastic material, but preferably from reinforced concrete or cement formed in sections from sheet metal reinforced by adjustable surrounding iron rings at intervals of the length thereof, the opposing outwardly projecting flanges for securing together the longitudinal edges of the mold having been heretofore formed by first bending the metal back upon itself and thence radially outwardly therefrom, and followed by bending the outer extremity of one of the flanges at a right angle to and across the edge of the other flange, and adjustably tightening the reinforcing ring through the medium of a link, the opposite ends of which are respectively pivoted to the ring and to a curved lever manually operated for tightening the ring on the mold.

It is, however, found in practice that when the longitudinal flanges of the mold are formed as above described, it is impossible to prevent the entrance of the cement between the irregular joint formed from bending the metal back upon itself, and that, as a result of this leakage, a fin of cement is formed for the length of the mold, which, for preserving the sightliness of the column, must be removed at an objectionable expense of time and money and with great care in order to prevent marring the appearance of the column, following the removal of the fin.

Again, it is found in practice that the employment of a link respectively pivoted at its extremities to the ring and to the curved lever above referred to, is objectionable for the reason that there are no means for locking the lever in its operative position other than by perforations in both the ring and the end of the lever and passing a nail or pin therethrough, which can only be when the hole in the lever is in registry with a hole in the ring and while the lever is opposed by the resistance of the mold, which not only makes the insertion of the pin diffi-

cult, which difficulty increases with the resistance of the mold to the compression of the ring.

The object of this invention broadly stated, is to have the flanges for the opposing edges of the mold so formed that cement is effectively prevented from entering the joints between the edges of the mold; that the ring for the mold shall have a greater range of adjustment than heretofore, and that the lever for adjusting its tightness shall automatically lock the ring in its adjusted position.

More specifically stated, the object of my invention is to have the longitudinal flanges for the meeting edges of a mold so constructed as to exclude the possibility of cement entering between them; that the angle bars commonly used for strengthening their joints are prevented from lateral movement when once locked in their operative position against embracing the flanges forming the joint; whereby it is possible and practicable to exclude any cement in the mold from entering the joint; and to provide the strengthening ring of a mold with a simple, effective and quickly operative tightening device therefor and having a range of adjustment commensurate with the greatest requirements for a column mold.

With these ends in view, my invention finds embodiment in certain features of novelty in the construction, combination and arrangement of parts by which the said objects are attained, all as hereinafter fully described with reference to the accompanying drawings and more particularly pointed out in the claims.

In said drawings,—

Fig. 1 is a top plan view of a reinforcing ring for a column mold in which my invention finds its embodiment.

Fig. 2 is a side elevation of a column mold with the reinforcing ring in its operative position thereon.

Fig. 3 is a side elevation of the bent rod for connecting the detached ends of the ring.

Fig. 4 is a detail perspective view of the locking device for the ring as a whole.

Fig. 5 is an enlarged detail in perspective of the end of the mold and the flanges therefor.

Fig. 6 is an end view of the mold, showing the reinforcing angle bars and the

flanges of the mold, together with the tightening device therefor in their operative positions.

Similar characters of reference indicate the same parts in the several figures of the drawings.

The mold members 7-7, and of which there may be any number, are, as shown, formed of sheet iron more or less thin, preferably in sections telescoping one within the other, each of which sections may be bent from a single sheet or formed of two sections, the meeting edges of which, in either event, are bent outwardly and radially in opposite directions to form flanges 8 and 9, which flanges, adjacent their outer ends, are bent obliquely thereto in the same direction, to form stops 8^a and 9^a and so that both the flanges and the bends for their stops will fit closely, one against the other.

The bends for the flanges 8 and 9 are quite sharp, so that the angle iron bars 10 and 11 for longitudinally stiffening the flanges 8 and 9 may be projected as closely to the circumferential surface of a mold member as possible, with the use of angle irons opposed to the curved surface of the mold and at the same time have one of the angle irons project against the stop formed by the flanges 8^a and 9^a for maintaining both angle irons moving laterally on the flanges, following the practice of respectively securing to the angle irons the jaws 12 and 13 of a clamp 14 by means of rivets 15, preferably of the construction shown in Letters Patent No. 1,290,496, granted me January 7, 1919, but which, for the purposes of my invention, may be of any other construction and which, instead of being tightened by the clamp shown therein, may be by any other means adapted for the purposes of clamping the flanges at one or both sides of the mold members, as may be.

For the lateral expansion, bulging, and thereby distortion of the thin circular walls of the column mold from the weight, the force of impact of gravity feed and the ramming down of the concrete, the column mold of my invention is provided, at intervals of its length, with reinforcing rings one of which, 16, is as usual constructed of angle iron in two sections, connected at one side by an outwardly projecting hinge 17, and disconnected at their oppositely meeting ends, the diameter of which ring is such as to provide for tightening it upon the mold members.

The tightening devices for these rings have heretofore comprised an arm riveted at a point somewhat removed from one of the free ends of the ring, a link pivoted at its extremities respectively to the arm and to a curved lever pivoted to the end of the other ring section, the curved lever being provided

at its extremity with a perforation which, with the tightening of the ring, must be concurrently moved to register with one of a series of perforations in the ring, followed by projecting a nail or pin therethrough, and which is subject to the objection, however, that it is not only difficult to move the perforations to registry, but to maintain them in registry against the constant resistance of the force of expansion of the tightened mold, but because of the loss of time for retaining their registration until the pin can be inserted therethrough, and that such registration and insertion of the pin require the use of both of the hands of the operator.

In order to obviate these objections, my present invention includes an adjustable locking device for such rings, which is of a simple, cheap and durable construction, and which provides a means by which it is possible and practicable to operate with one hand for tightening the ring and locking it in its adjusted position.

For securing these results, there are riveted to one of the flanges of the ring, adjacent the open ends thereof, sheet metal plates 18-18, one of which is provided transversely with a series of perforations 19, preferably in staggered arrangement for imparting a wider range of adjustment for tightening the ring on the column member, without unduly weakening the walls between the perforations. On the other member 18, is mounted a lever 20 by means of a pivot 21 located at a point removed from the ends of the lever, the extremity of one end of the lever being perforated for securing thereto and preferably against accidental detachment, the stem of a hook or link 22, provided with a U-shaped bend 23, passing through and pivoting the hook in the lever and terminating at its opposite end in a hook 24 adapted to be passed through any of the perforations 19.

The pivotal or fulcrum point of the lever 20 is so located with reference to the pivotal point of the hook and its engagement with any one of the perforations is such that when the lever is moved against a resisting force to the position shown in Fig. 1, it will remain in that position until the same force is applied for moving it in the opposite direction.

The operation for removing the mold consists in first tightly clamping the flanges 8 and 9 thereof upon one or both sides of the mold, as may be, between the angle irons 10 and 11 and locking them in their tightened position, preferably by means of the clamp 23 (see Fig. 6) pivoted at 24^a to a rod 25, passing through the jaws 12 and 13 screw-threaded in the jaw 12 and adjustably, by means of a nut 26 or some other suitable clamping device adapted for tightening the

flanges 8 and 9 sufficiently to prevent cement leaking from the mold at any point between the opposing faces of the flanges.

Having once tightened and locked the flanges in their operative position, one or more rings 16 are locked in their operative position surrounding the members of the mold and which may be conveniently done after disengaging the hook 24 from the perforations 19, followed by reengaging the hook and then tightening the ring by moving the lever from its outward position shown in Fig. 4, past the stem of the hook to its locking position shown in Fig. 1, as may be done with one hand while supporting the ring with the other hand, sometimes necessary when the ring is adjusted to an outstanding mold.

When it is found that the ring is not sufficiently tight, the lever is moved outwardly to the position shown in Fig. 4, and whereupon the hook of the link is moved forward to engagement with such one of the perforations 19 in the plate 18 as may be determined will be sufficient for tightening the ring upon the mold to the degree of tightness desired, and whereupon the lever is then pushed to its locking position indicated in Fig. 1.

The locking device, for this reason, it will be observed, is not only constructed of the fewest possible number of parts consistent with its successful operation and locking with one hand; is very strong and durable; of minimum cheapness in cost of construction, but at the same time may be quickly, conveniently and successfully operated with the use of but one hand of the operator and without the expenditure of an objectionable amount of force, owing to the degree required for applying the force necessary for tightening the ring.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination with a column mold of a reinforcing ring, and a tightening de-

vice therefor comprising a hand lever pivotally connected with one of the opposing longitudinal edges of the ring at a point intermediate its end, a plate secured to and adjacent the other edge of the ring, having perforations adapted to be separately engaged by the link for adjusting the link in its operative position against the mold.

2. The combination with a column mold of a reinforcing ring hinged at one side and open at its diametrically opposite side, and a tightening device therefor consisting of a lever pivotally connected intermediate its ends with one longitudinal side edge of the ring, a perforated plate secured to and projecting from the other longitudinal edge of the ring, and a link pivoted adjacent one end of the lever adapted to adjustably engage said perforations whereby on swinging the lever inwardly past the link, the link is automatically locked by the lever in its adjusted position.

3. The combination with a column mold of a reinforcing ring hinged at one side and provided at its diametrically opposite side with a tightening device consisting of a plate secured adjacent one of its free ends, a lever of the first class pivoted thereon, a laterally projecting plate secured adjacent the other end of said ring, provided with a series of perforations, a link pivoted to the short arm of the lever adjacent its end, provided at its free end with a hook adapted to selectively engage said perforations for adjusting the ring to molds varying in diameter and whereby following the tightening of the ring the lever may be swung inwardly toward the ring to a position automatically locking the link in its operatively tightened position.

In witness whereof, I have hereunto set my hand and affixed my seal, this 17th day of May, A. D. 1920.

THEODORE F. NOVY. [L. S.]

Witnesses:

JNO. G. ELLIOTT,
H. SLACK.