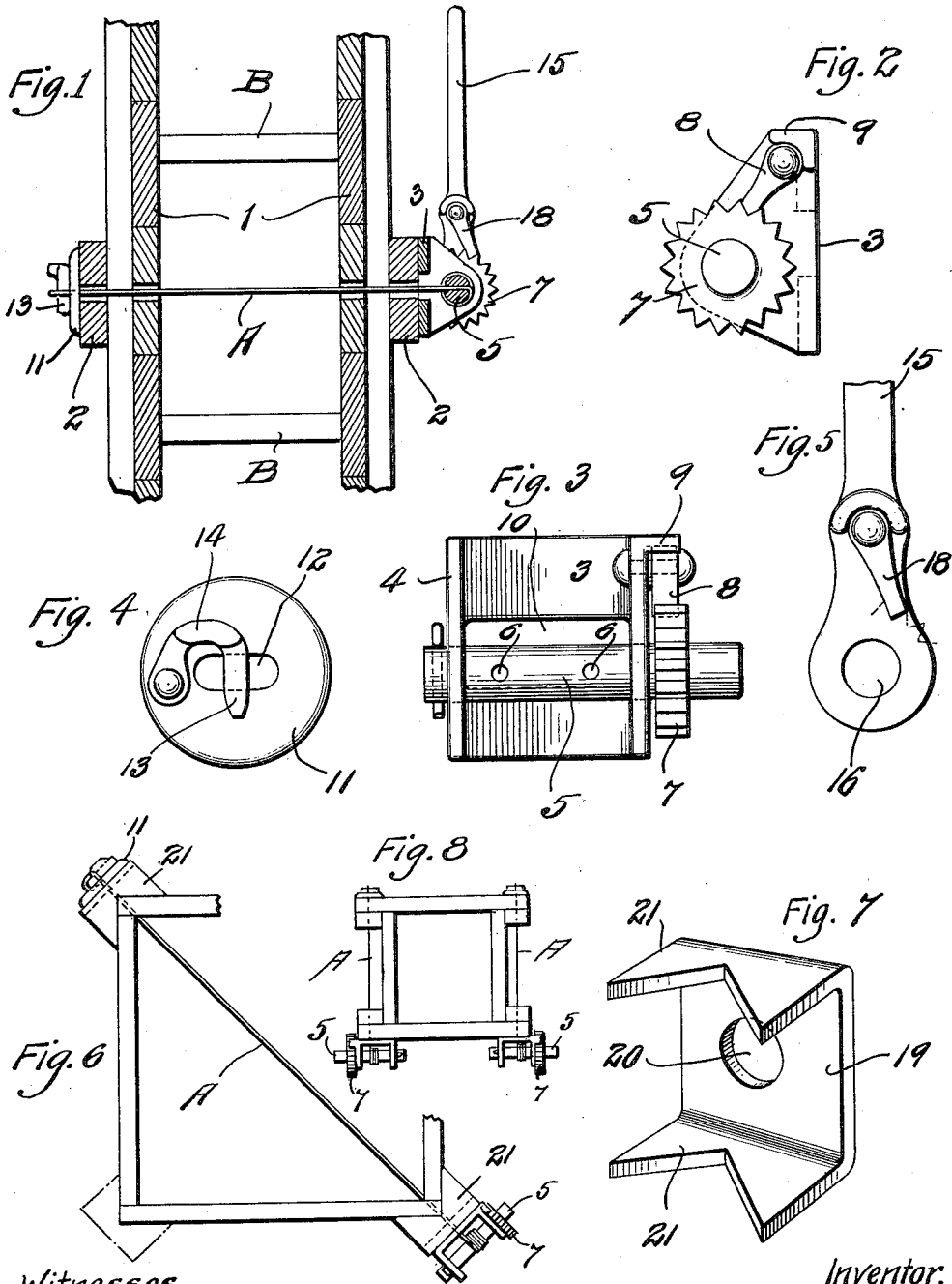


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CLAMP FOR CONCRETE FORMS.
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1,144,778.

Patented June 29, 1915.



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UNITED STATES PATENT OFFICE.

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CLAMP FOR CONCRETE-FORMS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE W. PARISHO, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Clamps for Concrete-Forms, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a sectional view of a pair of walls constituting a form or mold utilized in concrete construction and showing my improved clamping means applied to said walls. Fig. 2 is a side elevational view of the windlass portion of my improved clamp. Fig. 3 is a front elevational view of the windlass. Fig. 4 is an elevational view of the wire anchoring device forming a portion of my improved clamp. Fig. 5 is an elevational view of the lower end of the hand lever utilized for operating the windlass portion of the clamp. Fig. 6 is a plan view of a mold or form such as is utilized in the formation of a column and showing my improved clamp applied to an oppositely disposed pair of the corners thereof. Fig. 7 is a perspective view of a saddle casting which is utilized in connection with my improved clamp when the same is applied to the corner of a form or mold. Fig. 8 is a plan view of a square mold or form and showing my improved clamp applied thereto.

My invention relates generally to molds or forms utilized in connection with concrete construction and more particularly to clamping means for the removable walls which constitute the mold or form.

In concrete construction it is common practice to employ forms or molds constructed of lumber or other material, and it is essential that the walls forming the molds or forms be properly spaced apart and held rigidly in position while the concrete is poured into the form, and during the time said concrete is becoming set or hardened, and to this end I have devised simple clamping means including a suitable windlass or winding device which is adapted to tie the two walls of a form or mold together by means of a wire or the like, and which latter can be readily removed from the finished wall or column.

The principal object of my invention is to provide a comparatively simple inexpensive clamp which can be readily used in connection with various types of concrete forms or molds and the use of which clamp effects a considerable saving of time and labor in the assembling and the taking apart of the walls or sections of a concrete form or mold.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed.

The concrete mold or form shown in Fig. 1 comprises a pair of walls 1, the same being formed of suitable lumber and being provided on their outer faces with horizontally disposed rails 2.

The windless portion of my improved clamp is in the form of a bracket which is preferably cast and comprises a base plate 3 with the ends of which are formed outwardly projecting ears 4. Journaled in these ears is a shaft 5 which is perforated as designated by 6 in order to receive the wires. One end of this shaft projects beyond one of the ears 4 and formed on or fixed to said projecting end is a ratchet wheel 7. Pivotaly mounted on the corresponding ear 4 is a pawl 8, the end of which is adapted to engage between the teeth of the ratchet wheel 7. Formed integral with the ear on which the pawl is pivotaly mounted is a lug 9 which serves as a bearing for the rear end of the pawl 8 and takes the shearing strain off the rivet or pin on which the pawl is mounted while said pawl and ratchet wheel are under strain resulting from the tension imparted to the tie wire, one end of which latter winds upon the shaft 5.

The plate 3 is provided with a centrally arranged opening 10 to admit the end portion of the wire or wires which are wound upon the shaft 5.

The anchoring portion of the clamp comprises a plate 11 provided with a centrally arranged aperture 12, and pivotaly mounted on the outer face of said plate to one side of said aperture is a hook 13, the free end of which is adapted to overlie or extend across the aperture 12 and serve as a support for one end of the tie wire. This hook 13 is provided with an outwardly projecting ear 14 which is adapted to receive the blows of a hammer or like tool when the hook is to be

disengaged from the looped end of the tie wire.

The means for imparting rotary movement to the shaft 5 comprises a handle 15 provided at one end with an aperture 16 which is adapted to receive the projecting end of the shaft 5, and pivotally mounted on said handle above this aperture is a pawl 18, the free end of which is adapted to engage between the teeth of the ratchet wheel 7.

When my improved clamp is applied to the corners of a mold or form utilized in the construction of a post or column, a pair of saddle blocks are employed as supports for the two parts of the clamp. Each of these saddle blocks comprises a plate 19 having an opening 20 to receive the tie wire, and projecting at right angles from the ends of this plate are ears 21 which are notched so as to engage the corners of a form or mold.

When my improved clamp is used in connection with parallel walls of a mold or form, the plate 21 is applied to one of the rails 2 and the looped end of a tie wire A is engaged by the hook 13. The tie wire is then threaded through suitable apertures in the rail on which the plate 11 is positioned and through the corresponding wall 1 and also through apertures formed in the opposite wall and rail. The free end of the tie wire is threaded through one of the apertures 6 in the shaft 5. Suitable spacing members B, preferably of concrete, are positioned between the rails 2 to maintain the same in proper spaced relation and the shaft 5 is now rotated by means of the handle 15 to wind said tie wire onto said shaft and draw the walls against the spacing members.

In using the handle 15, the projecting end of the shaft 5 is positioned in the opening 16 and the free end of the pawl 18 engages the teeth of the ratchet wheel 7. During the forward movement of the handle, rotary motion is imparted to the shaft 5 by the engagement of the pawl 18 with the teeth of ratchet wheel 7, and during the reverse movement of the handle, the shaft is held against reverse movement by the engagement of the pawl 8 with the teeth of said ratchet wheel. In this manner a portion of the tie wire is wound onto the shaft 5 and as a result the walls 1 are brought into proper spaced relation and they are firmly held in proper position while the concrete is poured or delivered into the space between them. After the concrete has become set and hardened the hook 14 is disengaged from the looped end of the tie wire by forcing said hook upward with a hammer or like tool and after the looped end of the

wire has been severed, that portion of the wire which is embedded in the concrete can be readily withdrawn with the winding portion of the clamp.

A device of my improved construction is very simple, can be cheaply produced and is applicable for practically all types of removable walls which serve as forms or molds for concrete construction.

I do not desire to be limited to the exact details of construction herein shown and described, as the same can be varied in size and in certain minor details without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In a clamp for concrete molds or forms, the combination with an anchoring device comprising a perforated plate, a hook pivotally mounted on said plate to the side of the opening therein, a portion of which hook is adapted to extend across the perforation in the plate, an ear projecting outwardly from the central portion of the hook, a tie wire provided at one end with a loop which is engaged by the hook, and a windlass comprising a bracket, a shaft journaled therein, on which shaft the tie wire is adapted to wind, a ratchet wheel on said shaft, a pawl on the bracket, the point of which pawl engages the teeth of the ratchet wheel, a bearing lug on the plate to the rear of the pawl, and means for rotating said shaft.

2. The combination with the mold boards of concrete forms, of a windlass comprising a plate provided with an opening, ears thereon to the sides of the opening therein, a shaft journaled in said ears, which shaft is perforated to receive a tie wire, a ratchet wheel on said shaft, a pawl pivotally mounted on one of the ears, the point of which pawl engages the teeth of said ratchet wheel, a bearing lug integral with the ear to the rear of the pawl, a pawl carrying handle adapted to be applied to said shaft for imparting rotary movement thereto, said plate being adapted to be applied to one of the mold boards of the form, and means adapted to be applied to the opposite mold board of the form for anchoring the end of the wire opposite the end which is connected to the shaft.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this 28th day of May, 1914.

GEORGE W. PARISHO.

Witnesses:

M. P. SMITH,
M. A. HARDEL.