Sept. 8, 1931. R. M. THOMPSON 1,821,951

TIE WIRE POCKET FORMING DEVICE

Filed Jan. 24, 1927

Fig 1

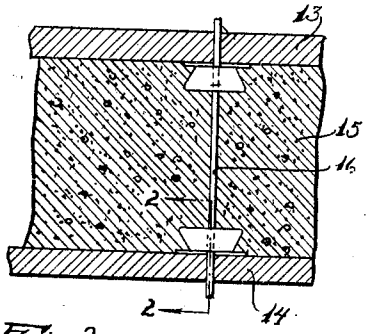


Fig 3

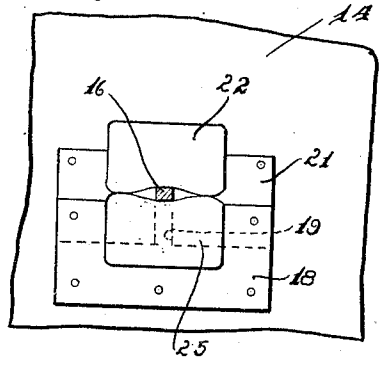


Fig 12

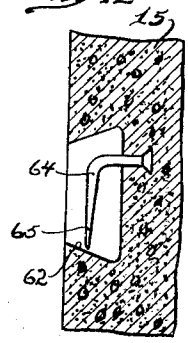


Fig 2

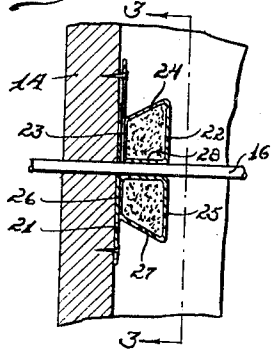


Fig 4

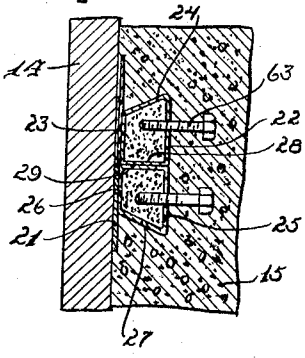


Fig 5

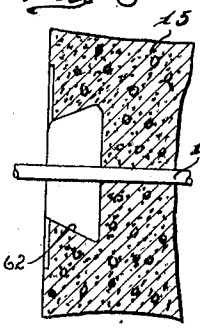


Fig 6

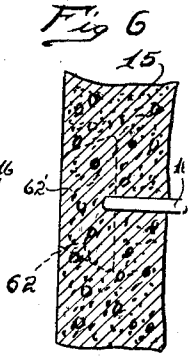


Fig 11

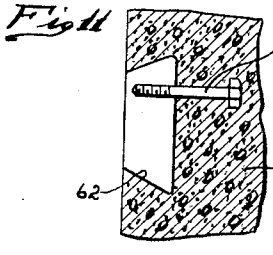


Fig 7

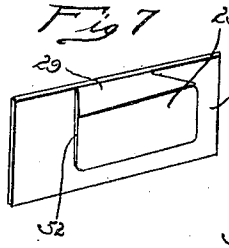
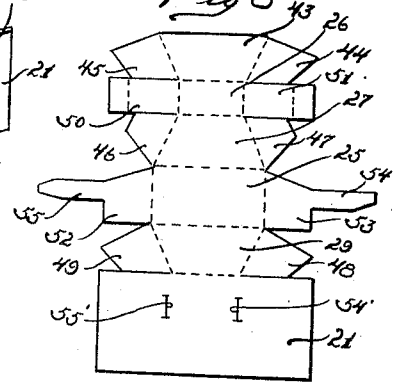


Fig 8



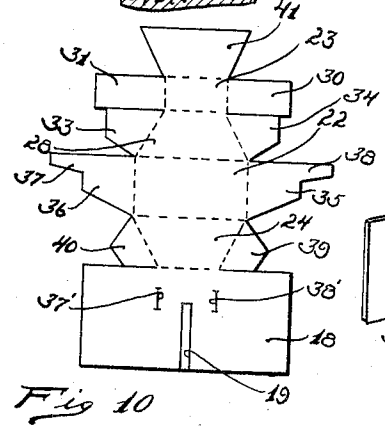
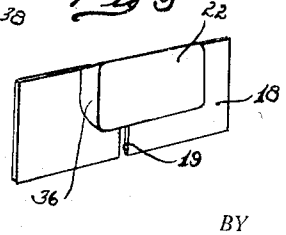


Fig 10

Fig 9



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UNITED STATES PATENT OFFICE

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TIE WIRE POCKET FORMING DEVICE

Application filed January 24, 1927. Serial No. 163,170.

My invention relates to a new and useful improvement in a tie wire pocket forming device adapted for use in connection with the tie wires which are used to retain concrete forms in proper position and prevent warping or bulging of the same while the concrete is poured therein. These wires are passed through the forms and fastened on the outer surface thereof, so that when the concrete is poured between the forms, the wire will resist the outward strain exerted on the forms. After the concrete has set, it is customary to clip the wires on the outer side of the forms removing the forms from the concrete structure formed, and then clipping the wires closely to the surface of the concrete structure or bending the wires over. Where the wires are clipped close to the concrete surface or bent over, a passage is thus formed through the concrete structure around the wire, permitting moisture to seep therethrough. Rust also is formed on the wall through oxidation of the wire and the dripping of water coming in contact with the rusted wire down the sides of the structure.

It is an object of the present invention to provide a structure whereby the wire may be clipped inwardly of the outer face of the concrete structure and the passage surrounding the wire sealed on the faces of the structure so that seepage of moisture therethrough is prevented.

It is another object of the present invention to provide an easily destroyed form adapted for mounting around the wire at the outer surface of the structure to be formed, so that after the concrete has set, the easily destroyed form may be removed, providing a pocket extending inwardly from the surface of the structure, so that the wire may be clipped considerably inwardly of the face of the structure.

It is another object of the present invention to provide a device whereby a pocket of this kind may be formed in which plastic material, such as concrete, or the like, may be inserted and permitted to set in a form to prevent its removal therefrom.

Another object of the invention is the provision of a method of embedding a retaining member in a concrete structure so that it may be accessible for attaching objects thereto, while at the same time, a passage through the structure is eliminated.

Other objects will appear hereinafter.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

The invention will be best understood by a reference to the accompanying drawings which form a part of this specification and in which,

Fig. 1 is a fragmentary view of a concrete structure showing the invention applied in top plan form.

Fig. 2 is a fragmentary sectional view taken on substantially line 2—2 of Fig. 1.

Fig. 3 is a fragmentary view taken on substantially line 3—3 of Fig. 2.

Fig. 4 is a view similar to Fig. 2 showing the invention applied to a sliding form.

Fig. 5 is a view similar to Fig. 2 showing the pocket forming forms removed.

Fig. 6 is a view similar to Fig. 5 showing the pocket sealed with concrete.

Fig. 7 is a perspective view of one of the pocket forming forms used in the invention.

Fig. 8 is a blank illustrating the formation of this form.

Fig. 9 is a perspective view of the other pocket forming form used in the invention.

Fig. 10 is a blank from which the form shown in Fig. 9 is constructed.

Fig. 11 is a view similar to Fig. 4 showing the pocket forming form removed.

Fig. 12 is a view similar to Fig. 4 showing a nail embedded in the structure.

As shown in the drawings, the invention is adapted for use in connection with forms 13 and 14 which are spaced apart and be-

tween which the concrete 15 is poured. Extending through these forms 13 and 14 and securing the same together so as to prevent bulging or sagging of the same when the concrete is poured therebetween, are wires 16. In order to form in the concrete 15 a pocket so that the wire 16 may be accessible for clipping inwardly from the outer surface of the concrete 15, I use an easily destructible form which is preferably nailed to the inner surface of the forms 13 and 14 surrounding the wire 16, so that when the plastic material 15 is poured between the forms, a pocket at each face of the concrete structure will be provided at that point where the wire 16 is projected therethrough. I prefer to construct this boxlike form from paper which may be of tough fibrous nature and oiled if desired, or otherwise treated, to prevent the moisture in the plastic concrete effecting it so as to endanger its practical operativeness. I use a pair of boxlike structures, both of which are formed from a single blank of paper, as shown in Fig. 7 and Fig. 9. The lower boxlike structure comprises a strip of paper having the part 18 which is provided, intermediate its ends, with the slot 19. As shown in Fig. 9, the blank comprises, in addition to the portion 18, a rear wall forming portion 22, a front wall forming portion 23, over which the portion 18 is folded, a top wall portion 24, and a bottom wall portion 28, the portion 41, when the blank is folded into position, lying in engagement with the inner surface of the top wall forming portion 24. Projecting outwardly from the portion 28 are tabs 33 and 34, and projecting outwardly from the portion 24 are tabs 39 and 40 which are of less length than the tabs 30 and 31 which project outwardly from the sides of the portion 23. Projecting outwardly from the portion 22 are tabs 35 and 36, each of which is provided with tongues 38 and 37 respectively. It will be noted that the front wall forming portion 23 is of less height than the rear wall forming portion 22, while the bottom wall portion 28 is folded at right angles to the portion 18, thus causing the top wall portion 24 to be inclined as shown clearly in Fig. 2. The tabs 33 and 34, as well as the tabs 39 and 40, are folded inwardly to provide flaps. The tabs 30 and 31 are also folded inwardly over the tabs 33 and 34 and 39 and 40, the outwardly projecting ends of the tabs 30 and 31 being again inwardly turned and lying behind the edges of the inwardly turned tabs so that a closed end is presented. The tabs 35 and 36 are then folded inwardly over the inwardly turned tabs, the tongues 38 and 37 being projected through the slits 38′ and 37′ which are formed in the portion 18, so that the device is locked in closed position by means of these tongues engaging in these slits.

I fill the boxlike structure with suitable material, such as sand, and the like, and this may be done just prior to the engaging of the tongues 38 and 37 in the slits 38′ and 37′. The boxlike structure, thus formed, has, as shown in Fig. 2, a tapered upper wall, and as shown in Fig. 1, the end walls are also tapered toward the front wall, so that a wedgelike pocket will be formed in the structure 15 when the concrete is poured around these boxlike structures. This boxlike structure is positioned over the wire 16, the wire engaging in the slot 19 and the boxlike structure lying with its bottom wall in engagement with the wire 16.

The other boxlike structure is similarly formed from a single blank having the portion 21 and provided with the upper wall 29 which is directed at right angles to the portion 21, as shown in Fig. 2. The rear wall 25 and a bottom wall 27 are provided. The portion 26 is folded into engagement with the portion 21 to provide a forward wall. The portion 43 lies in engagement with the inner surface of the portion 29 when the device is folded, the tabs 44 and 45 being turned inwardly. Projecting outwardly from the portion 27 are tabs 46 and 47 and the tabs 48 and 49 project outwardly from the portion 29. Tabs 50 and 51 project outwardly from the portion 25, these tabs being preferably of greater length than are the tabs 47 and 46 and 48 and 49. Tabs 52 and 53 project outwardly from the portion 25 and the tongues 54 and 55 are provided for inserting through the slits 54′ and 55′, the structure being much the same as the structure already described as shown in Fig. 9, with the exception that the top wall 29 extends parallel to the portion 21 and the bottom wall 27 is inclined.

It will also be noted that the slot 19 is not formed in the member 21.

This boxlike structure is positioned with its top wall 29 in engagement with the undersurface of the wire 16, nails being driven through the portion 21 and 18 to secure these structures in position.

After the concrete has set and the wire 16 clipped to permit the removal of the forms 13 and 14, the boxlike structure may be destroyed with a hammer or other suitable tool, and the sand or other loose material contained therein readily removed, leaving formed in the structure 15 a wedge shaped opening 62 so that the wire 16 may be clipped well inwardly from the outer surface of the structure 15. After this has been done, the concrete may be poured into the opening 62 and permitted to harden, the wedgelike form of the opening retaining the concrete in position and preventing its removal.

In this manner, the passage extending around the wire 16 is sealed, and the disadvantages encountered in having the wire pro-

jecting to the faces of the structure are eliminated.

In Fig. 4 I have illustrated bolts 63 embedded in the concrete structure 15, these bolts being projected into the boxlike structures which serve as pocket forming forms and serving as a means for attaching articles thereto. This is particularly adapted for use on sliding forms.

As shown in Fig. 11 the bolt 63 is embedded in the concrete 15 and projects, when the pocket forming form is removed, into the opening 62.

As shown clearly in Fig. 4, these bolts project into the boxlike structure prior to the pouring of the concrete.

It will be noted that in Fig. 4, the boxlike structures are not nailed to the form, as this would be unnecessary where a sliding form is used.

In Fig. 12 I have shown a nail 64 projecting into the opening 62, the end 65 thereof being angularly turned so as to securely hold the nail in position when the same is carried by the boxlike structure. After the concrete has set, this bent end may be straightened outwardly so as to project beyond the face of the structure to provide means for attaching objects, if desired.

In Fig. 6 I have shown a seal 62′ of concrete positioned in the pocket 62, this sealing the passage surrounding the wire 16 which projects through the concrete.

In addition to the invention being used on forms for vertically extending members, they can be used for floors and ceilings as well. If desired, the wedge may then be left in the floor and formed of such material that metal lath, furring, etc., may be attached thereto, or if desired, the pocket may be formed in the floor or ceiling for desired purposes.

While I have illustrated and described the preferred form of my invention, I do not wish to limit myself to the precise details of structure shown, but desire to avail myself of such variations and modifications as may come within the scope of the appended claims.

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

1. A device of the class described comprising: a pair of co-operating wedge shaped, boxlike structures, adapted for use in conjunction with a concrete form having a wire projected therethrough, one of said structures having a flap for staddling said wire, and the other of said structures engaging said wire, said structures together forming a form to provide a pocket in the concrete structure at its face surrounding said wire.

2. In combination with a concrete structure poured into forms connected by retaining members projected through said concrete, a pocket forming form adapted for mounting on the inner side of said form at one side of said retaining member; a co-operating pocket forming form adapted for mounting at the inner side of said concrete form at the opposite side of said retaining member to provide in the concrete structure poured between said concrete forms a pocket on the face of said structure surrounding said retaining member.

In testimony whereof I have signed the foregoing specification.

ROBERT M. THOMPSON.