Nov. 8, 1932. C. F. WERTZ 1,887,385

CONCRETE FORM CONSTRUCTIONS

Filed June 22, 1929

Fig. 1

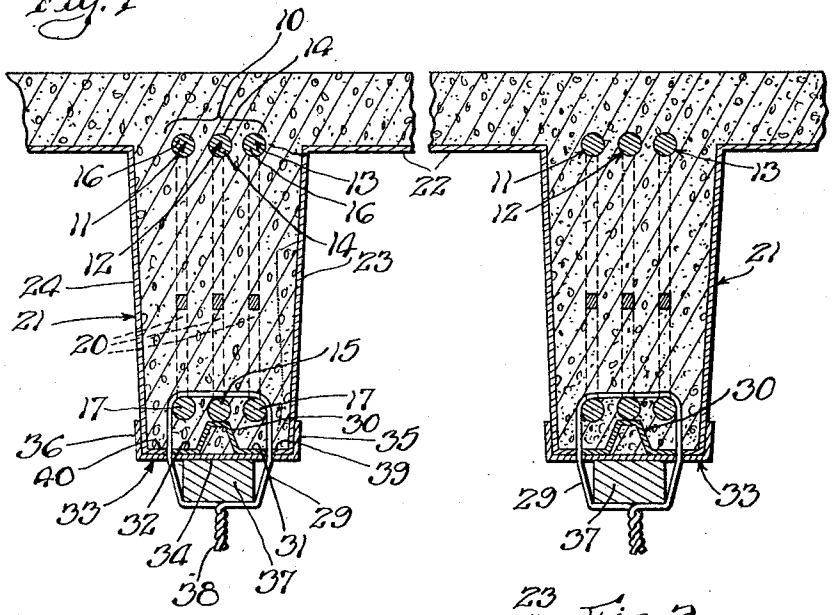


Fig. 2

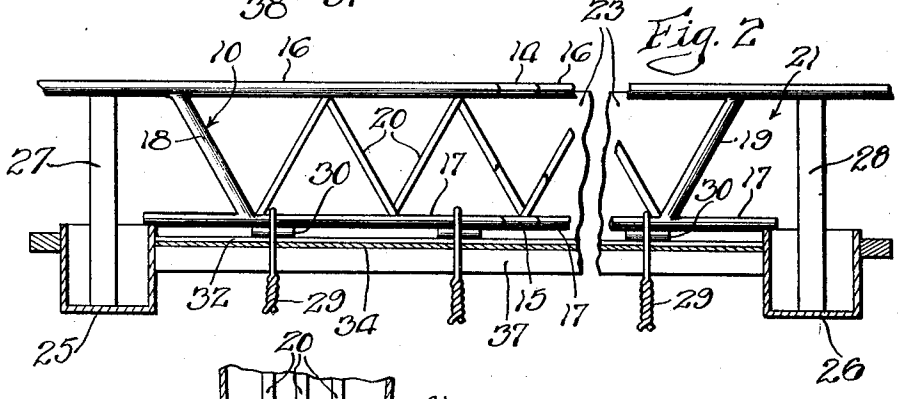
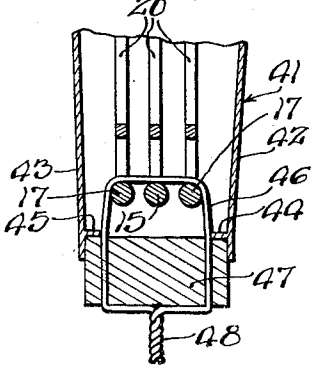


Fig. 3



Chance F. Wertz INVENTOR

BY Victor J. Evans

HIS ATTORNEY.

Patented Nov. 8, 1932

1,887,385

UNITED STATES PATENT OFFICE

CHANCE F. WERTZ, OF OAK PARK, ILLINOIS

CONCRETE FORM CONSTRUCTIONS

Application filed June 22, 1929. Serial No. 373,008.

This invention relates to certain novel improvements in concrete form constructions and has for its principal object the provision of an improved construction of this character which will be highly efficient and economical in use and manufacture.

It is among the objects of my invention to provide a concrete form construction which will be particularly adapted for use in the formation of one floor and the supporting beams therefor above another and consists in providing a construction which will not require the usual shore constructions to support the forms. Inasmuch as I am enabled to eliminate these shore constructions I am enabled to bring about a great saving in the material employed in the construction of concrete forms.

Another object of the invention is to provide a construction which will employ rigid reenforcing members which will be used to support the forms in which the concrete is to be poured and supported during hardening.

Another object of the invention is to provide a construction which will embody parts that may be supported from the reenforcing members and consists in arranging these parts so that they may be secured to the reenforcing members through the medium of supporting wires or the like.

A still further object of the invention is to provide a construction which will be arranged so as to provide securing members for the metal lath usually employed in connection with reenforcing concrete constructions.

Other objects will appear hereinafter.

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

The invention will be best understood by reference to the accompanying drawing, showing the preferred form of construction and in which:

Fig. 1 is a transverse sectional view of a preferred form of construction for my invention showing the concrete poured into my form construction;

Fig. 2 is a longitudinal sectional view depicting my invention prior to the time the concrete is poured thereinto; and

Fig. 3 is a fragmental view looking in the same direction as Fig. 1 depicting a modified form of construction.

In the accompanying drawing wherein I have illustrated a preferred form of construction for my invention 10 generically indicates a so called rigid reenforcing member which is preferably formed from three sections 11, 12, and 13, the section 12 being arranged intermediate the sections 11 and 13. The section 12 embodies an upper rail 14 and a lower rail 15 which extend substantially parallel to each other. The section 11 embodies an upper rail 16 and a lower rail 17. The lower rail 17 includes an upwardly extending portion 18 at one end thereof which extends upwardly from the rail 17 in spaced relation with the end of the rail 15 and includes a foot portion which is arranged parallel to the rail 16. A similar section 19 extends upwardly at the opposite end of the rail 17 and also includes a foot portion which is disposed parallel to the adjacent end of the rail 16. The section 13 is formed similar to the section 11 and it is, therefore, manifest that the ends of the rail 15 extend beyond the ends of the rails of the outwardly disposed sections.

While I have set forth the above described construction for the reenforcing members it is to be understood that other arrangements of reenforcing members might be provided without departing from the purview of my invention. The reenforcing members have extending therebetween reenforcing strips generically indicated by 20 and these reenforcing strips 20 extend between the upper and lower rails of each of the sections 11, 12, and 13.

As is well understood in the art metal pans are usually employed to provide the forms into which the concrete may be poured and in which the concrete may harden. Such metal pans are generically indicated by 21 in the drawing and are usually formed so as to be substantially U-shaped in transverse section and comprise bight portions 22 and limb portions 23 and 24 which extend from

the bight portion 22 and provide adjacent sides for juxtaposed beams; that is, the side 24 of one pan co-operates with the side 23 of an adjacent pan so as to provide side walls for a given beam.

It is manifest that my invention is intended to be used in connection with the construction of so called reenforced concrete buildings. In the construction of such buildings vertically extending columns are provided and extended between these uprights are longitudinally extending beams which provide the supports for the floors. Certain of these longitudinal supports extend between the columns which define the outer walls while other of these beams extend between the supporting columns arranged interiorly of the walls and the beams which are to be formed. The metal pans 21 are intended to extend between such beams, it being obvious that these beams will extend parallel to certain of the beams in the walls. However, the beams I intend to form are employed in my construction as the supports rather than the shores usually provided. In the drawing I depict the forms in which such beams are molded and these forms are indicated by 25 and 26. Extending up from these forms are supporting members 27 and 28 which support the bars 14 and 16 of my reenforcing members and the end portions of these bars extend beyond the supporting members 27 and 28. It is manifest that if the beams 25 and 26 have been previously formed the supporting members 27 and 28 will be arranged to extend upwardly from these beams. I also preferably extend the lower rail 15 of the section 12 toward and if possible into the beams to be formed in the forms 25 and 26 which manifestly rigidly supports the reenforcing members 10.

At suitable intervals along the reenforcing member 10 I provide connecting members which are indicated by 29 and which are, in the present instance, in the form of wires. These wires are passed over the lower rails of the sections 11, 12, and 13 and are bent so that portions thereof will extend downwardly. I then provide the substantially U-shaped spacing members 30 which include foot portions 31 and 32 at the outer ends of the arms thereof. The bight portions of the spacing members 30 are disposed in abutment with the rail 15 and, therefore, the foot portions 31 and 32 are disposed outwardly and preferably extend outwardly a distance sufficient to engage the downwardly extending portions of the wires 29. I then provide supporting members or troughs generically indicated by 33 which are formed so as to be substantially U-shaped and which include bight portions 34 and limb portions 35 and 36. Openings are provided in the bight portion 34 through which the depending portions of the wires 29 are extended. I then provide a supporting plank 37 which is disposed in abutment with the outer side of the bight portion 34 and the ends of the wire member 29 are extended around this plank 37 and these ends are twisted together as indicated at 38. The side portions 23 and 24 have foot portions 39 and 40 at the outer ends thereof which extend in a direction opposite to the bight portions 22 and the pans 21 comprising the sections 23 and 24. The sides 23 and 24 are arranged in abutment with the arms 35 and 36 of the troughs 33 and the foot portions 39 and 40 thereof extend inwardly and abut the wires 29. Such a construction is associated with each of the reenforcing members 10 as clearly illustrated in Fig. 1 and it is, therefore, manifest that the pans 21 will be effectively supported in position from the reenforcing members. In this manner I am enabled to dispense with the shore construction usually employed which are extended upwardly from the floor below the one to be formed. Since I eliminate these shore constructions it is manifest that free passage may be had over the floor below the one being formed which is manifestly an advantage.

After the pans 21 have been arranged in position in the manner set forth the concrete is poured into the pans and permitted to harden. After hardening the twisted portions 38 of the wires 29 are cut away which leaves portions of the wires depending from below the lower end of the beam formed by the hardening of the concrete. After the twisted portions 38 have been cut away it is manifest that the plank 37 may be removed and the trough 33 also removed and, therefore, the pans 21. The ends of the wires 29 depending below the beam may then be employed for securing the metal lath for the ceiling which will be arranged below the beams thus formed and, therefore, it is not necessary to provide additional wires to support these laths as is the custom at the present time.

It is manifest from the foregoing description that I have provided a construction in which the metal pans for supporting the concrete during hardening will be effectively supported from the reenforcing members and I am, therefore, enabled to eliminate the usual shore constructions employed. Inasmuch as these shore constructions have usually been formed from wood considerable of this wood or lumber was wasted by reason of the fact that it was impossible to use it more than once. It is, therefore, readily apparent that a great saving is brought about through the employment of a construction such as that set forth.

In addition to the foregoing arrangement I have shown in Fig. 3 a modified form of construction which may be employed when so desired. In this modified form of con-

struction metal pans generically indicated by 41 are provided which are shaped substantially similar to the metal pans 21 and which include limb portions 42 and 43 which cooperate in a manner similar to the co-operation between the limb portions 23 and 24 to form a beam. In this instance the limb portions 42 and 43 have lug portions 44 and 45 extending inwardly therefrom in spaced relation with the lower ends of the limb portions 42 and 43. In this construction I employ wire members 46 that are substantially similar to the wire members 29 and these wire members 46 are passed over the lower rails of the sections of the reenforcing members in a manner substantially similar to that in which the wire members 29 were passed over these rails. In this instance I employ a plank 47 which abuts against the lower surfaces of the lugs 44 and 45 and the inner surfaces of the limbs 42 and 43 which depend below these lugs. The ends of the wire members 29 are passed through openings in the plank 47 and are intertwisted as at 48. It is, therefore, manifest that the plank 47 not only effectively supports the metal pans 41 but also provides the lower wall for the beam. In this construction after the concrete has been poured and hardened the intertwisted portions 48 are cut away and the plank 47 is removed as well as the pans 41 and in this construction the ends of the wire 46 will also depend so that metal lath may be secured thereto.

It is manifest from the foregoing description that I have provided a construction for concrete forms which will be very economical in use and one which may be expeditiously installed. It is also apparent that the construction provides fastening elements for metal lath so that additional members need not be provided for this purpose.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification, without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claim.

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

Means for supporting a concrete beam form from reenforcing members adapted to be embedded in concrete molded in said form, said form including spaced portions extended toward each other at the lower end of the form, comprising a trough member adapted to receive said spaced portions, a member including limb portions disposed in said trough member and abutting said spaced portions, said last-mentioned member including a substantially U-shaped portion and said U-shaped portion including a bight portion projecting upwardly from the trough member and abutting one of the reenforcing members, a plank below the trough member, and a flexible member wrapped about the reenforcing members, said flexible member extending between said spaced portions and said limb portions, and through said trough member, and having free end portions intertwisted about said plank, whereupon by severing said intertwisted portions said plank, trough and beam form may be removed and the severed ends of said flexible member may be employed to secure ceiling lath thereto.

In testimony whereof I affix my signature.

CHANCE F. WERTZ.