March 3, 1931. E. B. DOWD 1,794,759

FABRICATED PROP OR SHORING

Filed June 29, 1927 2 Sheets-Sheet 1

Fig. 1

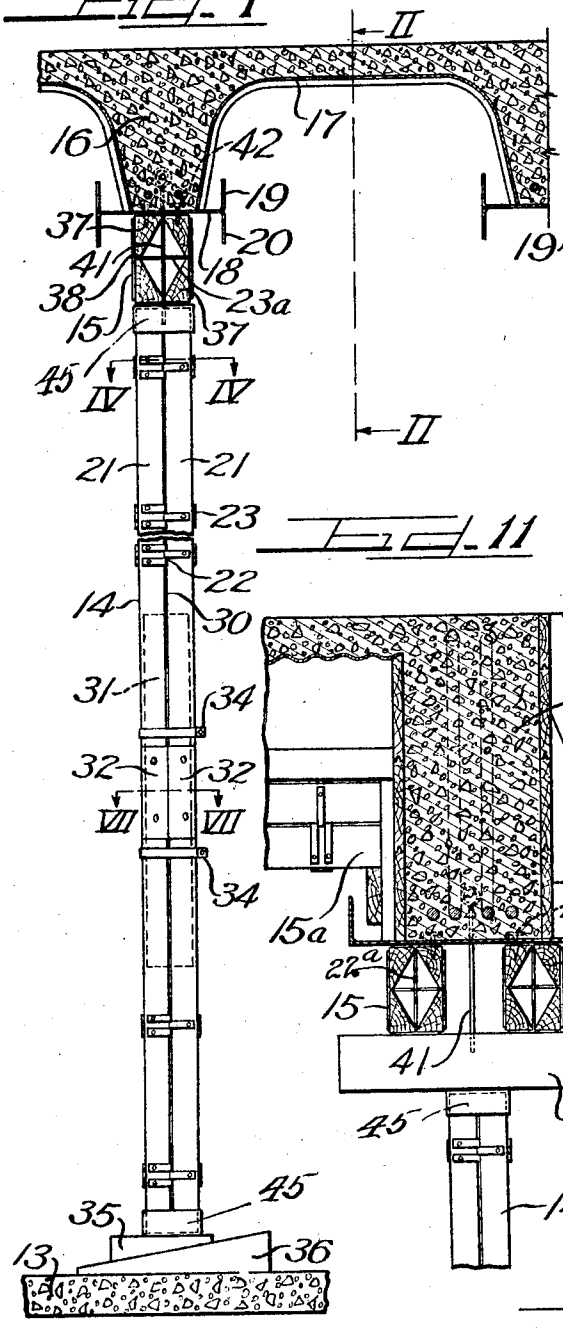


Fig. 2

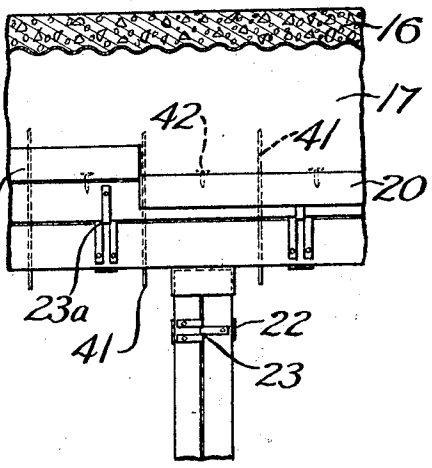
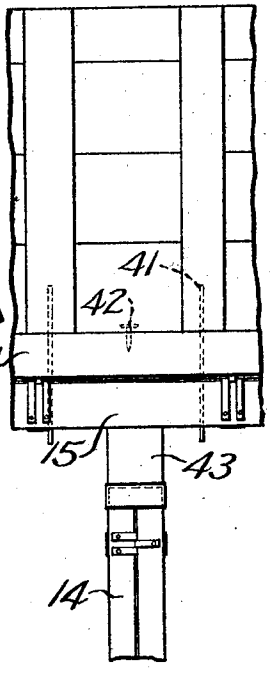


Fig. 11

Fig. 12



Inventor

Edmund Bernard Dowd

by Parker, Reese & Kirk Attys.

March 3, 1931. E. B. DOWD 1,794,759

FABRICATED PROP OR SHORING

Filed June 29, 1927 2 Sheets-Sheet 2

Fig. 3

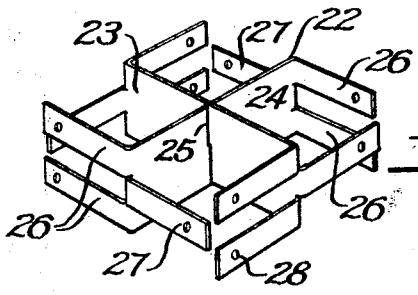


Fig. 4

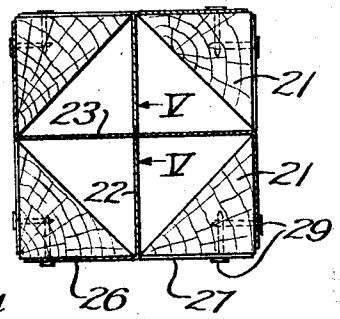


Fig. 5

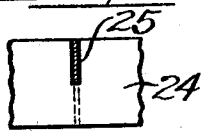


Fig. 9

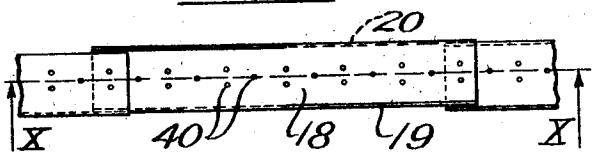


Fig. 6

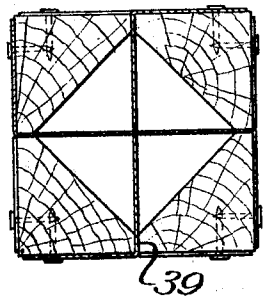


Fig. 10

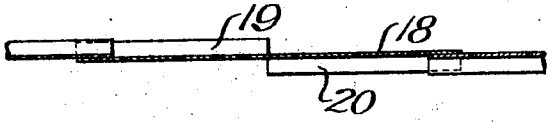


Fig. 7

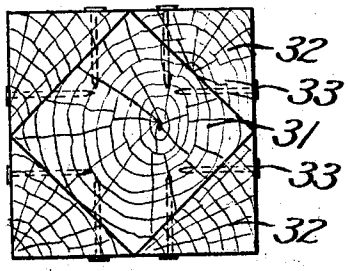
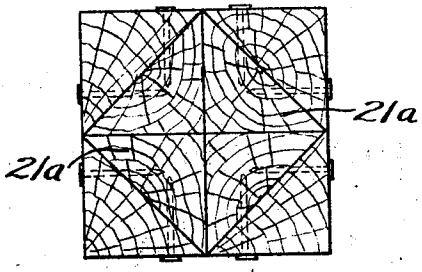


Fig. 8



INVENTOR

Edmund Bernard Dowd

BY Charles W. Reed

ATTYS.

Patented Mar. 3, 1931 1,794,759

UNITED STATES PATENT OFFICE

EDMUND BERNARD DOWD, OF CHICAGO, ILLINOIS

FABRICATED PROP OR SHORING

Application filed June 29, 1927. Serial No. 202,275.

The purpose of this invention is to provide certain improvements in fabricated props or shoring for elevated structures. The present invention relates to fabricated shoring or temporary supporting means for plastically formed elevated structures, said shoring being readily formed or assembled from relatively inexpensive and extremely light material and adapted to support an equal or greater weight than solid shoring having a far greater volume of similar material therein.

In the past, shoring of this general character has been unwieldy and difficult to handle due to its weight and size. Also, such cumbersome shoring necessitated the expenditure of much undesirable labor by an objectionably large number of workers, and, in many cases, if made of wood, was partially or wholly destroyed upon removal.

This invention is designed to overcome the above noted as well as other defects and objections in the provision of fabricated shoring requiring comparatively less labor to cut to the desired size and assemble in the desired location and manner.

The invention also seeks to provide shoring or supports which are lighter in weight than the previously used wooden or steel shoring, and in which a far less volume of material will support an equal or greater weight than the same material used in former types or styles of temporary supports.

It is also an important object of this invention to provide simple and easy means for assembling and adjusting the elements of the fabricated shoring.

While some of the more salient features and characteristics of structures embodying this invention have been set forth above, others will become apparent from the following disclosures.

The invention includes these and other features of construction and combinations of parts hereinafter described and shown in a preferred form in the drawings as more particularly indicated by the claims.

In the drawings:

Figure 1 is a view in elevation, with parts in section of a shore or support, embodying features of this invention, fully assembled and in operative position.

Figure 2 is a fragmentary side elevation, with parts in section, taken substantially along line II—II of Figure 1.

Figure 3 is a perspective view of a pair of inter-engaged elements forming an assembly unit of the present invention.

Figure 4 is a plan sectional view taken substantially along line IV—IV of Figure 1.

Figure 5 is a fragmentary view in elevation, with parts in section, taken substantially along line V—V of Figure 4.

Figure 6 is a view similar to Figure 5 showing another form of vertical elements in use.

Figure 7 is a plan sectional view taken substantially along line VII—VII of Figure 1.

Figure 8 is a view similar to Figure 7 showing a modified form of core.

Figure 9 is a fragmentary plan view of a portion of a structure embodying features of this invention, namely, the portion abutting the structure to be supported.

Figure 10 is a fragmentary sectional view taken substantially along line X—X of Figure 9.

Figure 11 is a fragmentary elevational view, with parts in section, showing the use of the present invention in supporting a different type of overhead structure.

Figure 12 is a fragmentary side view of the structure shown in Figure 11.

As shown on the drawings:

In the illustrated embodiment of this invention a T-shore is shown standing upon a floor or base 13 and comprising a vertical portion 14 of novel construction as will hereinafter more fully appear and a similarly constructed beam or horizontal member 15 positioned transversely to the upright 14 and resting thereupon. As shown more clearly in Figure 1, the T-shore supports, in this instance, an overhead structure 16 formed of plastic material. The usual steel arch 17, together with a plate 18 having oppositely disposed wings 19 and 20 thereon, supports the plastic material 16 until the same becomes set.

The upright 14 is formed with a plurality,

in this instance four, of corner bars 21 preferably of substantially triangular cross-section. As shown more clearly in Figure 4, these bars or supports 21 are preferably, though not necessarily, of wood, and are positioned with the long side or hypothenuse of the triangle towards the interior of the upright. When positioned thusly it will be noted that the supports 21 form an upright of square or rectangular cross-section having a hollow center, and so are adapted to support an equal or greater weight than a solid upright having the same outer dimensions. For example, if four such supports 21 are cut from a piece of lumber commonly termed a 2″ x 4″ and positioned as shown in the drawings, they will form an upright of substantially the same dimensions and capable of withstanding at least the same pressure as a 4″ x 4″. Obviously, in most instances an upright so formed will withstand greater pressure than a solid 4″ x 4″ and, of course, since there is far less material in such construction the upright is easier to handle and to cut to a desired size than a solid support of the same exterior dimensions.

Of course, the bars or supports 21 must be rigidly held in their operative position and to accomplish this, interengageable clips 22 and 23 are provided. The clips 22 and 23 are substantially alike except that the central portions are split in opposite directions, which renders the clips interengageable to form substantially a single connecting unit for the bars 21. These connecting units, of course, are spaced at various intervals along the upright 14 whenever necessary to adequately maintain the members 21 in their useful form.

Each of the clips comprises a body portion 24 which is slit substantially halfway through as at 25 so that when the second clip similarly but oppositely slit is engaged therewith, a connecting unit will be formed of substantially the same thickness or height throughout. The ends of the body portion 24 are doubly slit to provide triple tongues thereon. It is apparent that if so desired the adjacent edges of the tongues when the same are cut may be shaven or a thin strip removed to facilitate the bending and handling of the tongues. The outer tongues 26 are bent at right angles to the body portion 24 and the central tongue 27 is also bent at right angles to the body portion but oppositely to the tongues 26. These tongues are so bent that the outer tongues 26 on one end of the body portion will be in alignment with an inner tongue 27 on the other end of the body portion, thereby equalizing the stress to which the clip is subjected. Obviously the clips are of resilient material and, if so desired, may be substantially straightened when removed from a support, and the tongues rebent when a new support is formed.

All of the tongues are apertured as at 28, to permit the easy tacking of the same to the supporting bars 21 by the nails 29. When the bars 21 are secured by the inner engaged clips 22 and 23 to form an upright, the edges of the bars 21 will be substantially in abutting position but will be separated, due to the thickness of the sheet metal from which the clips are preferably stamped, leaving a space therebetween as shown at 30 in Figure 1.

Suitable and simple adjusting means are provided for the upright 14 so that the same may be used to support overhead structures of varying heights. In the case of an unusually high elevated structure, upright sections formed in the manner hereinabove described may be joined together and adjusted to correspond with the extra high structure. To join the sections of an upright 14, a core 31 is inserted in the central hollow of the upright sections, which core substantially fills the hollow as clearly shown in Figure 7. As shown in Figure 8 this core 31, if so desired, may be made up of short pieces 21*a* of the supporting bars 21 positioned with their longer sides outwardly so as to fill the central opening. Of course, the sections of the upright 14 are slidable over the core 31 and when so adjusted to their desired height, they are held in spaced relationship by a plurality of short members 32 tacked to the core by nails 33. These short members 32 are merely cut-off portions of the bars 21 and are similarly positioned about the core 31. Since the core projecting within the upright sections adjacent the members 32 prohibits the use of clips 22 and 23, the supporting bars 21 are secured in this region by bands at 34 or equivalent means.

The connecting or coupling means just above described act substantially as a coarse adjustment for the length of the upright 14, but due to the quickness with which the upright is formed there is danger of a slight variation from the desired length. To compensate for this slight variation a fine adjustment is provided which consists of a pair of oppositely disposed wedge-shaped blocks 35 and 36 in juxtaposed relationship and disposed between the base of the upright and the floor 13. The height of the upright 14 may be slightly varied by blows upon the block 35 and 36 to insure the tighter abutment of the upright with the overhead structure to be supported.

The cross beam 15 is formed in substantially the same manner as the upright 14, although in most cases it is preferably to have the cross-section of the beam 15 rectangular instead of square. This is accomplished by a slight change of the corner bars 37, namely, so that they have a relatively elongated triangular cross-section as clearly shown in Figure 1 and the use of relatively elongated clips

22*a* and 23*a*. It is desirable that the inner corners of the bars 37 used for a cross beam 15, are cut-off as shown at 38 in Figure 1, thereby providing a better abutment surface if the bars are pressed into contact with each other in regions between the clips 22*a* and 23*a*. Of course, if so desired, the corners of the triangular bars 21 may be cut-off in the same manner as shown at 39 in Figure 6, and it is obvious too that the uprights or beams may be of square or rectangular cross-section in accordance with convenience and suitability.

The plates 19 with their oppositely disposed wings are usually provided in short sections which are slidably interengageable as shown in Figure 9. These plates are apertured as at 40. The usual wires or ring-bolts 41 are imbedded in the plastic material 16 and project downwardly therefrom through certain of the apertures 40 and through the spaces (corresponding to the space 30 of Figure 1) between the bars 37 of the beam 15 and extend slightly into the interior of the upright 14. Nails 42 are similarly imbedded in the material 16 and extend through other of the apertures 40. The upper corner bars 37 of the beam 15 are secured to these nails 42. After the plastic material 16 is set or hardened and the uprights 14 and beams 15 have been removed the wires 41 and nails 42 act as furring for lathing, ceiling or the like.

Figures 11 and 12 illustrate the manner in which the present invention is used for supporting the overhead structures having a relatively wide projection of plastic material 16*a* thereon, necessitating the use of two beams 15 thereunder. In this case, a suitable cross beam 43 of any desired kind, is interposed between the beams 15 and upright 14, whereby only one upright is necessary to support the two cross beams 15 at a given point. As shown in Figures 11 and 12 a Z-iron 44 may be used instead of the plates 19. These Z-irons also come in short sections which are slidably interengageable and they too are apertured for the projection of furring means therethrough. As shown in Figure 11 the overhead structure may be supported between the projections 16*a*, by cross beams 15*a* similar to cross beams 15 but disposed upon a higher plane.

It is to be noted that in the use of this invention it is preferable to use a cap 45 or its equivalent to embrace the ends of the upright 14 and cross beams 15 to further insure the stability of the same.

From the foregoing it is apparent that I have provided fabricated shoring which is light in weight, easy to handle, readily assembled, and formed of inexpensive parts that may be ordered and delivered to the desired location ready for use and necessitating only the work of cutting them to the desired length. It is easy and simple to adjust and may be removed intact and used repeatedly in different places. The shoring hereinabove described is very light in weight and effectively supports an equal or greater pressure than solid means of the same external dimensions and similar material having a far greater volume. It is to be further noted that this invention may be used in various ways besides those illustrated in the drawings for example a prop for fabricated walls and the like.

I am aware that many changes may be made, and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted hereon, otherwise than necessitated by the prior art.

I claim as my invention:

1. In supporting means of the class described, a hollow member comprising corner members, interengageable clips to maintain said corner members in operative position, said clips engaging each other within said hollow member, and integral tongues on said clips extending between said corner members and embracing the same on their outer surfaces.

2. In a support, a plurality of hollow sections, each section comprising corner members positioned to define a hollow member, means for maintaining said members in operative position, a core extending a suitable distance into each hollow member, and relatively short members secured to said core and abutting the corner members of said sections to hold the same in spaced relationship.

3. A sectional support comprising a plurality of hollow sections defined by corner members, means for maintaining said corner members in operative position, a core interconnecting said sections and extending within adjacent extremities of said sections, said core substantially filling the hollow in said sections, and means for holding the extremities of said sections in tight embracement with said core.

4. A sectional support comprising a plurality of tubular sections, means for maintaining said support in a desired degree of longitudinal adjustment, said means comprising a core slidable within said sections near their adjacent extremities, and exterior means secured to said core and abutting the ends of said sections to maintain the same in spaced relationship.

5. In combination with a hollow support outlined by longitudinally extending corner members, clips for maintaining said members in operative position, said clips being formed of resilient material and each comprising a slitted body portion to engage with a similar portion on another clip, and a plurality of tongues extending from the ends of said body portion, said tongues being angularly related to said body portion.

6. In combination with corner members forming a hollow member, interengageable clips for maintaining said corner members in operative position, each of said clips comprising a body portion slit substantially halfway through, and a plurality of tongues on each end of said body portion for engagement with said corner members, said tongues being angularly bent relative to said body portion, certain of said tongues being bent oppositely to the remainder of said tongues.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

EDMUND BERNARD DOWD.