

Feb. 27, 1923.

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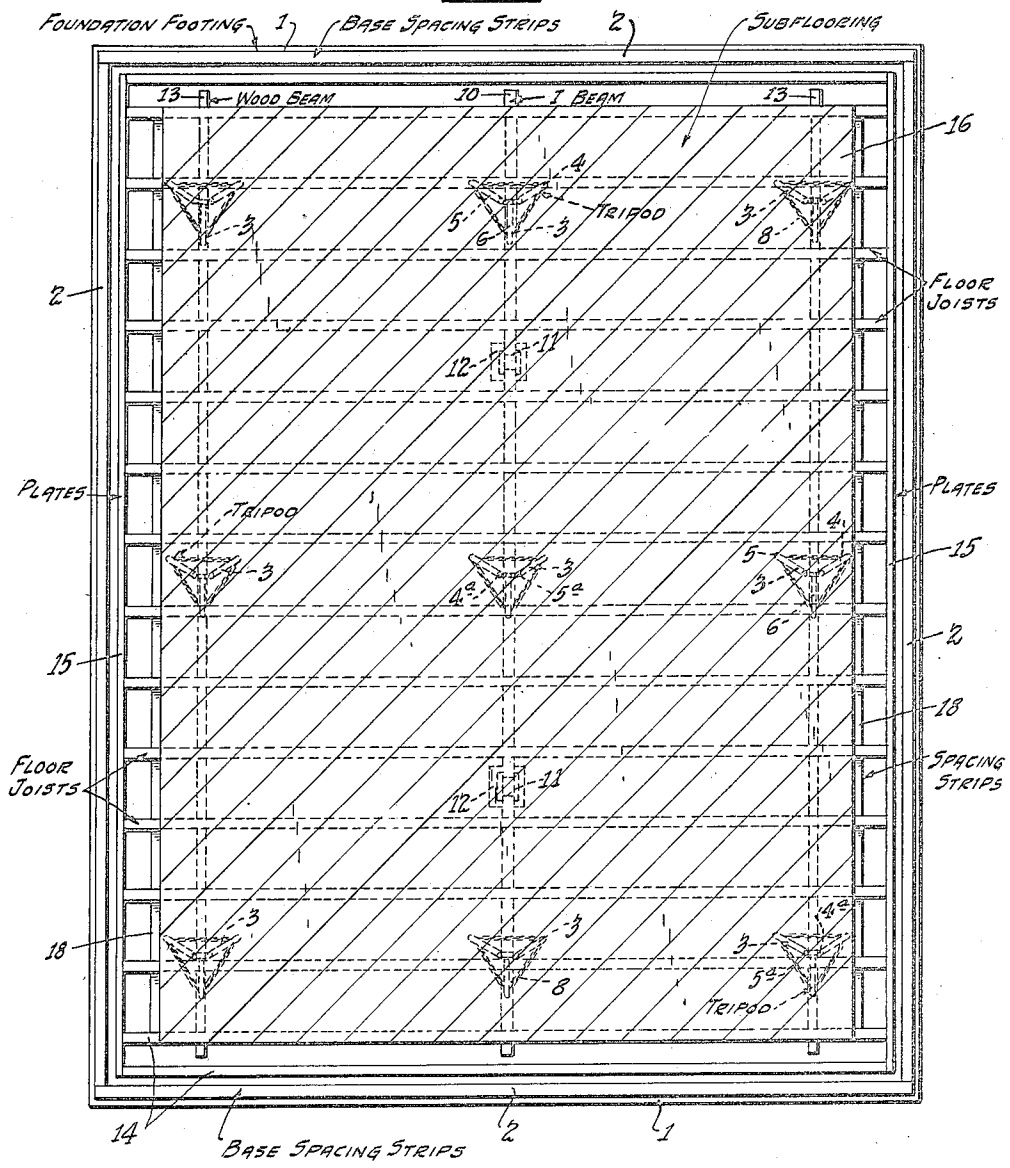
C. E. WIRE

METHOD OF FORMING FOUNDATION WALLS

Filed Oct. 11, 1922

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Fig. 1.



Inventor

Charles E. Wire

By *Frederick S. Smith*

Attorney

Feb. 27, 1923.

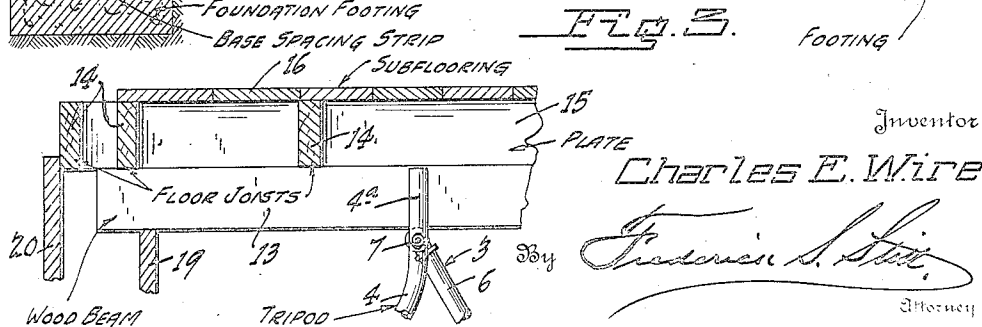
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FIG. 4.

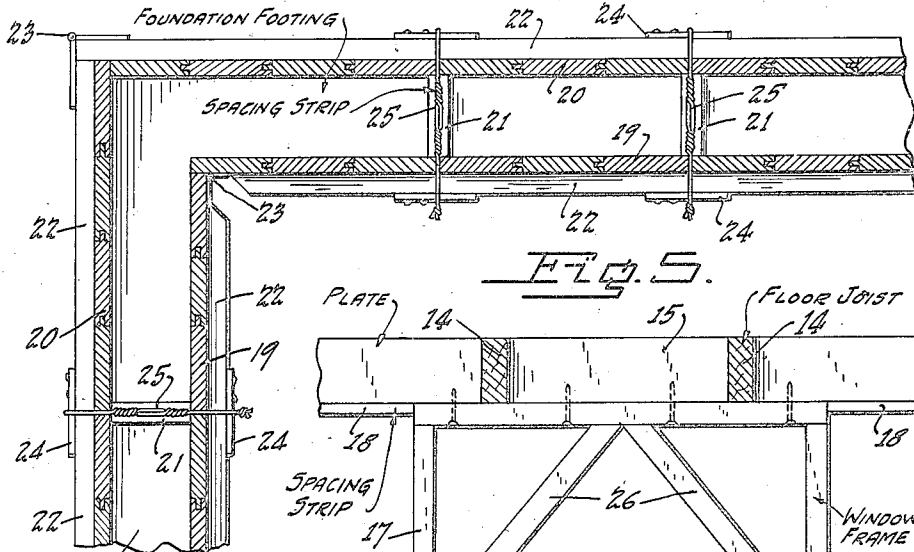


FIG. 5.

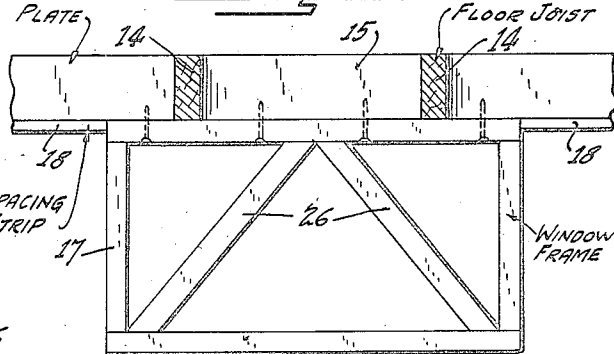


FIG. 6.

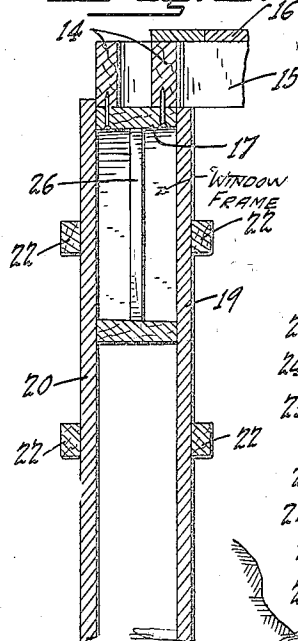
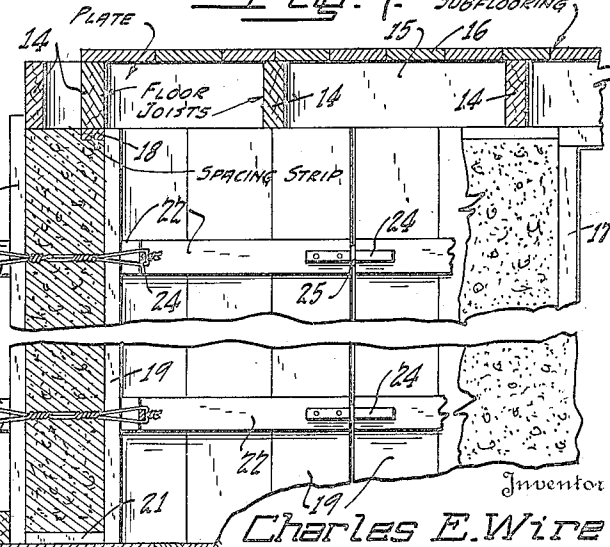


FIG. 7.



BASE SPACING STRIP 1
FOUNDATION FOOTING

Inventor
Charles E. Wire
Frederic S. Smith

Attorney

Patented Feb. 27, 1923.

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UNITED STATES PATENT OFFICE.

CHARLES E. WIRE, OF WASHINGTON, DISTRICT OF COLUMBIA.

METHOD OF FORMING FOUNDATION WALLS.

Application filed October 11, 1922. Serial No. 593,738.

To all whom it may concern:

Be it known that I, CHARLES E. WIRE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Methods of Forming Foundation Walls, of which the following is a specification.

This invention relates to the art of building and more particularly to foundation walls.

To those familiar with the construction of foundation walls, it is well known that by the accepted and heretofore practiced methods of construction, the foundation walls are laid or poured (if of concrete) from the footings or "ground up" so to speak, in successive steps. That is to say, if the foundation wall is made of hollow tile, bricks or stone, it is built up in courses and as the height increases it is necessary for the workmen to use scaffolding, which is subsequently torn down and of no further use so far as that particular building structure is concerned, wherefore not only is there waste in materials but there is a considerable outlay of expense in both labor and materials, which expense, especially so far as labor is concerned, is greatly minimized by the method comprehended in this present invention as will be hereinafter more fully pointed out.

Even if the foundation wall is made of concrete in accordance with the practices heretofore in vogue, the scaffolding or successive stages of scaffolding have to be employed, the same being thereafter useless so far as the particular structure in hand is concerned, and with a knowledge of these condition, my present invention comprehends a new method of building foundation walls of concrete, whereby the use of scaffolding with its incidental expense, is entirely obviated, and whereby also it may be possible to construct a complete foundation wall in very much quicker time than has heretofore been possible, a considerable saving being effected not only in materials but in labor costs.

For a more complete and thorough understanding of my invention, it is deemed advisable to describe the method step by step in connection with the accompanying drawing, in which—

Figure 1 is a plan view of the base or foundation portion of a building ready for the pouring of the concrete to form the foundation walls thereof, in accordance with my new method.

Fig. 2 is a vertical sectional view of the apparatus or devices employed in carrying out the method and at the same stage thereof as is illustrated in Fig. 1.

Fig. 3 is a detailed sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a horizontal sectional view through the mold forms.

Fig. 5 is a detail sectional view showing one of the cellar or basement window frames in position preparatory to the pouring of the concrete to form the foundation walls.

Fig. 6 is a detail vertical transverse sectional view through one of the window frames, and

Fig. 7 is a partial elevation and partial section with parts broken away.

Corresponding and like parts are referred to in the following description and designated in all of the views of the accompanying drawings by corresponding reference characters.

In carrying out my new method of forming foundation walls for dwellings or other building structures, I first proceed to lay or form the foundation footings 1, and after these are set, I lay thereon, corresponding to or coinciding approximately with the outline of the outer surface of the foundation walls to be subsequently formed, outer spacing strips 2 that are secured together temporarily in any desired way. These are shown complete in Fig. 1 and in section in Figs. 2 and 7. These outer base spacing strips 2 are, of course, laid accurate to line.

In the next step of the method I employ tripods designated generally 3, and preferably constructed of pipes or tubular portions or legs designated 4, 5 and 6 respectively. Preferably these legs are pivotally connected together by means of a horizontal pintle 7 and preferably the legs 4 and 5 extend upwardly beyond the pintle or hinge member 7, as indicated at 4^a and 5^a, to form a recess or socket between them for a purpose that I shall hereinafter describe. The three legs 4, 5, and 6 are connected together near their lower ends by means of chains 8 and a hook 9 whereby they may be securely held in predetermined adjusted relation to each other according to the desired height of the tripod and whereby also, as is manifest, when the tripod is not desired for immediate use the legs thereof can be collapsed or fold-

ed in upon each other to save space and to afford convenience in handling.

In setting up the tripods 3 above described I first position two or three tripods along the median line of the proposed building, two tripods being employed ordinarily if the building is not to be very large, or three or any other desired number being used according to the requirements of the case, three being shown (in dotted lines) in Fig. 1, and upon these middle tripods 3 and within the recesses formed by the upward extensions 4^a and 5^a of the legs 4 and 5 thereof, I lay the main or middle beam, preferably an I-beam 10, as best indicated in Figs. 1 and 2, and I then set up underneath the main or middle beam 10 any desired number of beam supporting columns or posts 11, the lower ends of which are, of course set upon individual footings 12, as clearly illustrated in Fig. 2.

Next, outside tripods 3 are set up, as indicated in dotted lines in Fig. 1, one row upon each side of the middle tripods and wood beams 13 are laid in and supported by the outer rows of tripods, after which floor joists 14 are all set in position and secured in place, the plates (so-called) 15 being nailed to the ends of the joists and the subflooring 16 being then laid and secured (nailed) to the joists.

The floor thus formed is then leveled and the tripods 3 removed, there being substituted therefor temporary vertical struts of 3 x 4's or the like (not shown).

The next step in the preferred manner of carrying out my new method is to attach the cellar or basement window and door frames in position, and these, such as the window frame 17 illustrated in Figs. 5 and 6, are nailed directly to the joists and thus suspended therefrom. After the window and door frames are thus positioned, inside spacing strips 18 are nailed along underneath and to the lower edges of the joists in line with the inner (rearmost) faces of the frames 17 to serve with said frames as guides or abutments for the inner mold sections 19 and these are laid against the spacing strips 18 at the top as well as against the inner sides of the frames, as clearly illustrated in Figs. 2 and 6, the complementary or outer mold sections 20 being held at their upper edges against the end joists 14 and plates 15 and inside of and against the strips 2 at their lowermost edges, and any desired number of spacing strips or bars 21 are interposed between the inner and outer mold sections 19 and 20 to hold them properly spaced apart at their lower edges.

The mold sections may be made of wood or metal and I wish it to be understood that I am not limited in carrying out by method, to any particular type, construction, or design of mold, but in the present embodiment

of the invention illustrated in the accompanying drawing, I have shown the mold sections as being formed of wood, composed of vertically extending tongued and grooved boards held together by battens 22. Preferably the corner forms or mold portions both inner and outer, are composed of hingedly connected or foldable sections, as best illustrated in Fig. 4, the hinges being designated 23, but here again it is to be understood that I do not desire to be limited to this construction or in fact to any specified construction of mold so far as this present invention is concerned. In setting up the mold sections they are positioned in pairs, inner and outer, and are laid or placed edge to edge, each section being provided with preferably metallic horizontally projecting bars 24, and complementary inner and outer bars being tied together as best illustrated in Figs. 4 and 7 by means of tie wires 25 that are caused to embrace the bars 24 and are then twisted tight so as to produce inward tension and thus hold the mold sections securely in place.

From as much of the description as has preceded in connection with the accompanying drawings, it will be seen that in carrying out my method I lay the subflooring in place before the concrete walls are poured, this subflooring being thereby susceptible of use as the scaffolding or platform but differing essentially from the ordinary scaffolding or platform in that it is permanent and does not have to be torn down or any portion of it wasted, my method therefore not only providing a great saving in materials, but considerable saving in time and in labor costs for I have found by actual trial or experience that by setting up this framework and then pouring the entire foundation wall subsequent to the formation of this framework, there is a very great saving in time as well as in labor and materials, as will be at once manifest.

Of course, after the parts are set up as hereinbefore described, all four walls are thereupon "poured" and as soon as they set, all that is necessary to do is to take down the mold sections, the binding wires 25 being clipped off at their ends and subsequently clipped off flush with the inner and outer surfaces of the wall.

Thus it will be seen that my method has, as its primary or outstanding feature, the laying of the floor beams, joists and subflooring before and not after the foundation walls are made, this feature alone effecting great economies in both material and labor as well as in time of operation.

It will also be noted that the window and door frames assist in holding the mold sections in properly spaced relation to each other and that they are set in the wall, or rather the wall set around them as it is

formed, and this in itself is another outstanding feature of advantage over the ordinary methods heretofore employed. Preferably the window frames 17 are temporarily braced, as at 26, to prevent them from collapsing or from deformation during the pouring operation of the walls.

While in the foregoing description and in the accompanying drawings I have described and shown what I consider to be the preferred manner of carrying out my invention, it is to be understood that my invention is not limited thereto and that various changes may be made without departing from the scope of the invention as defined in the appended claims.

I claim:

1. A method of forming foundation walls for buildings which consists in laying the subflooring, placing a mold contiguous to and below said subflooring, and then pouring concrete into the mold, utilizing the subflooring as the platform from which the molding operation is performed.

2. The herein-described method of forming foundation walls for buildings which consists in putting in the footings, then laying the floor joists and subflooring upon temporary supports to be subsequently removed, placing a mold upon the footings contiguous to the flooring and joists and directly underneath the latter, and pouring concrete into the mold through the joists.

3. The herein-described method of forming a concrete foundation wall for buildings which consists in laying the first floor joists and subflooring upon temporary supports to be later removed, then placing a mold below and contiguous to the subflooring and then filling the mold with concrete so that the ends of the joists rest upon the wall thereby formed.

4. The herein-described method of forming concrete foundation walls for buildings which consists in first forming footings, then setting up tripods to the approximate height of the first or ground floor, laying beams upon said tripods, laying joists upon said beams, securing subflooring to the joists, leveling the floor thus formed, setting up a mold upon the footings around and contiguous to the subflooring and underneath the ends of the joists, the subflooring terminating short of the ends of the joists, and pouring concrete into the mold down between the joists, utilizing the subflooring as the platform for the molding operation.

5. The herein-described method of forming concrete foundation walls for buildings which consists in forming the footings, setting up tripods within the limits defined by the footings, placing temporary supporting beams upon said tripods, laying joists upon said beams, connecting the joists together at the ends, and laying subflooring on the

joists, setting up molds below and contiguous to the subflooring and underneath the joists and upon said footings, and finally pouring concrete into the molds, utilizing the subflooring as the platform in the molding operation.

6. The herein-described method of forming concrete foundation walls for buildings which consists in forming footings, supporting the floor joists and subflooring in an elevated position relative to the footings by means of temporary supports, suspending the frames such as window frames from the joists, setting up a mold the walls of which closely embrace the front and rear sides of said frames, applying means for holding the mold walls tensioned against the outside faces of said frames and upon the footings, and finally pouring concrete in between the mold walls.

7. The herein-described method of forming concrete foundation walls for buildings which consists in forming footings, laying the floor joists and subflooring upon temporary supports in an elevated position relative to the footings, setting up mold walls, applying means for limiting the movement of the mold walls toward each other, applying means for exerting inward tension upon the mold walls, and finally pouring concrete in between the mold walls.

8. The herein-described method of forming concrete foundation walls for buildings which consists in forming footings, laying guide strips upon the footings, laying the floor joists and subflooring in an elevated position relative to the footings and upon temporary supports to be subsequently removed, setting up mold sections around but on the inner sides of the guide strips on the footings with the upper ends of the sections underneath the joists at the ends of the latter, tying the front and rear mold walls together in spaced relation to each other by means of tensioning wires, pouring concrete in between the mold walls through the ends of the joists, the subflooring serving as the foundation for the molding operation, and subsequently clipping off the ends of the tensioning wires to permit the mold sections to be removed but leaving the wires embedded in the concrete wall thus formed.

9. The herein-described method of forming walls for buildings which consists in setting up the permanent floor structure upon temporary supports before the wall is built, then placing a mold contiguous to and below the floor structure, and finally pouring concrete into the mold, utilizing the floor structure as the platform from which the molding operation is performed.

In testimony whereof I affix my signature.

CHARLES E. WIRE.