April 22 , 1924. 1,491,205

J. FORD

BUILDING FORM

Filed Nov. 15 , 1922

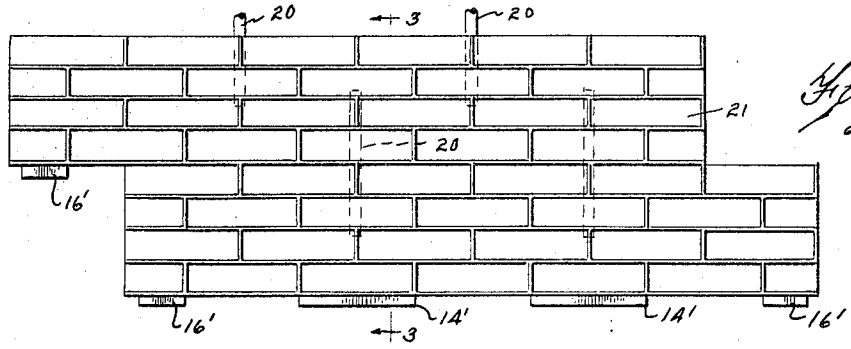


Fig. 1

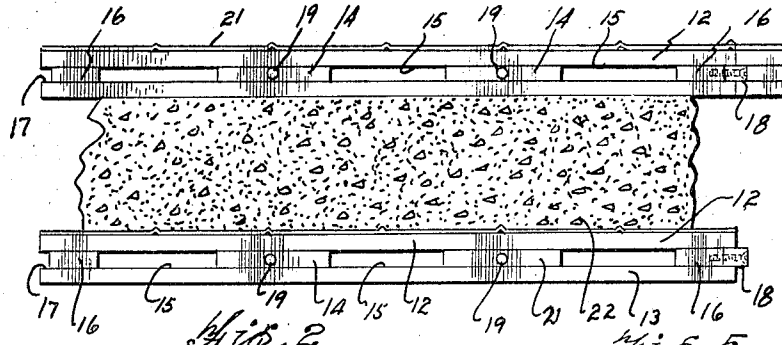


Fig. 2

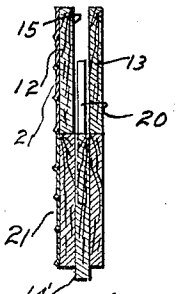


Fig. 3

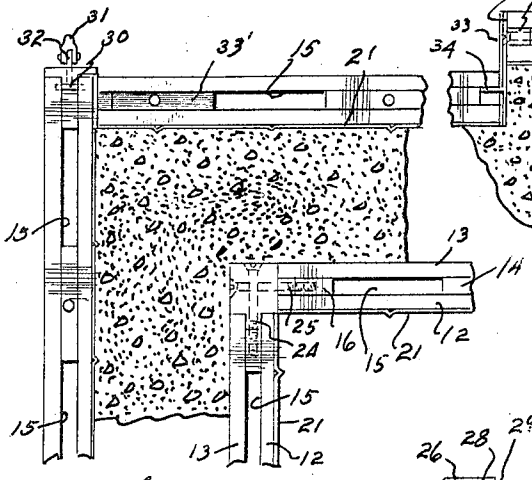


Fig. 4

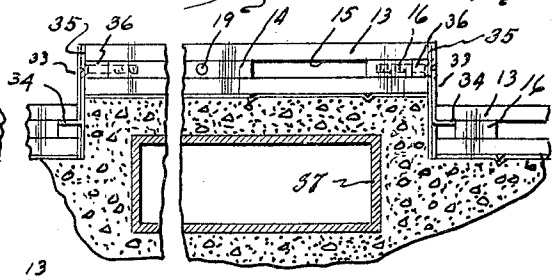


Fig. 5.

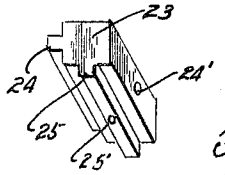


Fig. 6

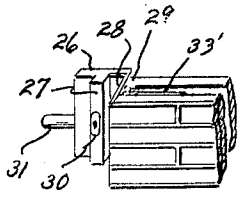


Fig. 7.

Inventor

John Ford

By Thos. J. Donnelly Attorney

Patented Apr. 22, 1924. 1,491,205

UNITED STATES PATENT OFFICE.

JOHN FORD, OF DETROIT, MICHIGAN, ASSIGNOR OF TWO-FIFTHS TO HECTOR V. PANNECOUCKE, OF DETROIT, MICHIGAN.

BUILDING FORM.

Application filed November 15, 1922. Serial No. 601,055.

To all whom it may concern:

Be it known that I, JOHN FORD, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Improvement in a Building Form, of which the following is a specification.

My invention relates to a new and useful improvement in a building form and has for its object the provision of a building form which will be simple in structure, economical of manufacture and highly efficient in use.

Another object of the invention is the provision in a building form adapted for use in sections of a structure which will permit the ready assembling of said sections in operative relation so that the facing mounted thereon shall always present the proper joining and joints thereof to the surface or material poured into said forms.

Another object of the invention is the provision of a face bearing form which comprises sections which are reversible for use either as a facing section or as a backing section.

Another object of the invention is the provision in a building form of means for maintaining the sections thereof in assembled relation during the assembling thereof and after the same are assembled.

Another object of the invention is the provision in a building form of means for forming the corners of the structure upon which said forms are used and for locking the said forms in assembled relation at their corners.

Another object of the invention is the provision in a building form of improved means for forming an off-set in the wall formed.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

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

Fig. 1 is a side elevational view of a pair of the forming portions of the invention,

Fig. 2 is a top plan view of the invention, showing the filler between the form walls,

Fig. 3 is a sectional view taken on substantially line 3—3 of Fig. 1,

Fig. 4 is a fragmentary top plan view showing the corner construction,

Fig. 5 is a top plan view showing the off-set construction,

Fig. 6 is a perspective view of the inside corner forming or connecting member, and

Fig. 7 is a perspective view of the outside corner connecting member.

The present invention is adapted for use in the construction of forms used to contain plastic material and mold the same to the shape desired while the same is moist so that when it has set or hardened the material will be of the desired shape in the structure. The usual material employed in the construction of buildings where a form is used is concrete and the invention herein set out is adapted for use with this material and similar kinds.

In structures formed from concrete and the like, where a form is used for holding the material while in its plastic state, it is customary to form only the foundation of concrete, or where the walls are also formed of concrete to veneer the same with some sort of facing, such as bricks or other kinds of building blocks.

The invention herein embodies means whereby the desired facing may be given the concrete by the forms, and although I am aware that other devices have been constructed which are adapted to impart the facing to the concrete there are many objections to such devices which the present invention is designed to overcome and eliminate. Among these is the manner of forming the corners and of fastening the corners of the forms together.

In the present invention the form wall-forming members ars so constructed as to overcome any possibility of the workman erecting the same so as to bring the joints between the blocks of the facing into registration or alignment with each other instead of in staggered relation, as is the case with structures made from blocks which are laid singly. There is also provided means whereby the various sections may be quickly and easily assembled in operative relation.

The invention in its preferred form comprises a pair of boards 12 and 13 which are secured together by rivets or other suitable means projected through spacers 14 and 16 which are positioned between the boards

and serve to maintain the boards in spaced relation, thereby forming passages 15 between the boards at either side of the members 14. The grain of the members 12 and 13 extends lengthwise thereof and the grain of the spacers 14 and 16 extends transversely of the grain of the boards, thus preventing a warping of these members after the same have been removed from the concrete after it has set, the boards having become wet while embracing the moist concrete. The members 14 lie flush with the edge of the boards 12 and 13, at one side, and project, at the other side beyond the edges of the boards 12 and 13, to form tongues 14′. Similarly the spacers 16 are provided with tongues 16′, at one end, and lie flush with the edges of the boards 12 and 13 at the other end. It will be noted that the spacers 16 do not extend to the outer end edge of the members 12 and 13 but terminate within sufficient distance to provide a space 17 between said boards. When these wall-forming members are positioned end to end the adjoining spaces 17 register to form a pocket in which may be deposited a key or locking member 18 which serves to keep adjacent aligned sections in assembled relation. If desired the locking member or key may be secured to one end of the member, in the opening 17, by means of a screw or other fastening means projected into the member 16. Provided in the upper surface, that is the surface opposite the tongue forming portion, of the members 14 is a socket 19 in which may be positioned a pin 20, said pin of approximately the same length as the width of the member 12, the socket extending into said member to a depth of one-half its width so that one-half of the pin 20 projects from said socket. In assembling these members one is placed upon the other in the manner shown in Fig. 1, so as to stagger the joints, the tongues 14′ and 16′ engaging in the openings 15. The pins 20 also engage in the openings or passages 15 so as to steady the members upon each other until they are bound together. The members which are positioned as shown in Fig. 2 are bound together by means of thin wire 12′ passed around the members, a suitable spacing block being interposed between the members to hold them apart while being bound and until the mixture is poured between the same. Clamps may also be used to hold the members together, although it is preferred to use the thin wire as this may be easily and quickly removed by cutting the same close to the formed wall after the side members have been removed.

Mounted upon the outside surface of the member 12 is a form bearing or face forming member 21 which is made preferably from metal and has impressed in it the form of building block which it is desired to give to the concrete wall, the member 21 being secured to the member 12 by means of rivets or other suitable means. In constructing buildings or other structures from building blocks it is customary to have the joints of the blocks in staggered relation and this effect is maintained in the member 21. When it is desired to place some of the sections end to end or on top of each other, as shown in Fig. 1, it is desired that the joints of said section shall so meet as not to interrupt the sequence of the joints in the blocks. This is also the effect desired when the sections are joined together at the corners. The sections of the invention are so constructed that they cannot be improperly mounted relative to each other when placed end to end or when mounted one on the other. In Fig. 1 it is shown that the width of the spacer 14 is exactly the width of the building block impressed on the member 12. The length of the space 15 is also the width of the building block it is desired to impress upon the plastic material. From the inner edge of the member 16 to the end of the members 12 and 13 is one half the width of the imitated block. The sections are all made on this principle and the lower row of impressions formed in the member 21 is the reverse of the upper row. If the end block impression in the upper row is a full brick the end block of the lower row, at the same end will be a half brick, etc., so that when mounted one on the other, the staggered effect of the joints shall continue throughout. This facilitates the assembling of the forms and permits of the use of less skillful labor on jobs of this kind.

The members 12 and 13, when bound together in the manner described, constitute the wall members of the form and are used together, as shown in Fig. 2, the plastic material being deposited between the walls. By making the wall members all in the same manner they may be used to form either the front or the rear walls as desired, the side bearing the member 21 being faced toward the material on the outside wall member and the opposite side of the wall member being faced to the material at the rear, so as to afford a smooth wall on the inside of the building and a faced wall on the outside, the interchangeability of the members reducing to a minimum the numbers of members required in a building and avoiding the manufacture of two kinds of wall members.

To form the corner of the inside wall member a corner piece 23 is provided which carries a tongue 24 and a tongue 25, said tongue being adapted for engagement in the spaces 17 of two members which extend at right angles to each other, as shown in Fig. 4, thus presenting a smooth surface to the building material and affording a sharp and clearly defined corner. The member 23 is

provided with openings 24′ and 25′ through which screws may be projected to fasten the member to one end of one of the wall members if it is desired.

To form the corner of the outside wall member a member 26 is provided which carries a tongue 27 adapted for engagement in one of the openings 17, the tongue 27 forming with the member 26 a T-shaped member. Secured to one of the arms of this T-shaped member is the base of an L-shaped member 28, the leg thereof being provided with a suitable tongue adapted for engagement in the space 17 of one of the wall members, said tongue being secured to said leg by means of a screw or other suitable means, said screw being projected into the spacer 33 which maintains the members 12 and 13 in spaced relation. The wall member to which the member 28 is secured may be made of any desired length, the end spacer thereof, being terminated slightly below the edges of the members 12 and 13, to allow sufficient space for the accommodation of the tongues 14′ and 16′, the section in this respect differing from the construction of the side or wall members. A locking member 30 is carried on a bolt 32 which is projected through the member 26, said bolt being provided at its outer end with a suitable handle for turning the same. The members 12 and 13 are each provided at their ends on the inner surface thereof with a suitable groove or pocket for accommodating the locking member 30. When the tongue 27 is inserted into the passage 17 the member 30 is in the position shown in Fig. 7. After insertion it is turned to the position shown in Fig. 4, so as to lock the members together until the handle is again turned. The member to which the member 26 is secured is provided with a face bearing member, but the impressions made thereon are the reverse of the impressions which terminate the member to which it is joined, so that the proper effect of a building block corner is maintained and the imitation thus properly carried out.

In order to make an off-set in the wall to accommodate or form a pier or to provide for a chimney and the like, there is provided a plate 33 which is provided with an angularly extending portion 34 of less thickness than the openings or passages 17. This member 33 is mounted on a plate 35 which bears the facing impressions and carries a tongue 36. Projected through the members 33, 35 and the tongue 36 is a screw which serves to mount these members to a section of a wall member. By forming the member 34 of less thickness than the width of the space 17 easy removal of the forms is provided for about the off-set.

When it is desired to form a chimney the improved method of building the wall, as herein set out, allows the tiling 37 to be embedded in the concrete, thus presenting a flue in which the fire hazard is reduced to a minimum.

Where it is desired to build a building having solid walls with an imitation facing the facing may be as desired, the member 21 being provided with the desired form and the spacers and spaces being constructed in accordance therewith. A facing of colored mortar or other material may be poured into or otherwise deposited in the form adjacent the facing member 21, leaving a space to the rear thereof in the form, and this space behind this material may then be filled with concrete or with a mixture of cement and refuse such as broken bricks and the like, thus presenting a neat appearance from the outside and a strong wall constructed from cheap materials. If it is desired to form a veneer building having the solid walls, but using real building blocks, the forms may be set up as usual, and the building blocks may be positioned within the form as the same is being filled, the block being set into the impression formed in the member 21, the said member 21 in this case serving as a guide and as a form wall, thus eliminating the necessity of maintaining a plumb line while laying the bricks or blocks. The depositing of mortar around the individual blocks is also reduced to a minimum and the employment of unskilled labor in jobs of this kind made possible.

While I have illustrated and described the preferred form of structure I do not wish to limit myself to the precise form of structure shown but desire to avail myself of such variations and modifications as 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 form comprising side members, secured together and spaced apart; and spacers positioned between said side members, said spacers being positioned spaced from each other a distance equal to their width.

2. A form section comprising side members, spaced apart; spacers positioned between said side members and spaced apart a distance equal to their width, the distance from the inner side of the spacer adjacent the end of said side members to the outer edge of said side members being one-half the width of the inner spacers.

3. A form section comprising side members spaced apart; a facing member mounted on one of said side members and provided with facing impressions; and spacers interposed between said side members, the position of said spacers and the width thereof being arranged in coordination with said impressions.

4. A form section comprising side mem-

bers spaced apart; a facing member mounted on one of said side members and provided with facing impressions of building blocks, the adjacent impressions being in staggered relation; and spacers interposed between said side members, the position and the width of said spacers being arranged in coordination with said impressions to maintain the staggered relation thereof when said sections are assembled in cooperative relation.

5. A form section comprising side members spaced apart; a facing member mounted on one of said side members and provided with facing impressions of a building block, the adjacent impressions being staggered relatively to the impressions immediately above; and means for mounting said section on another of similar structure said means being adapted to maintain the staggered relation of said impressions when said sections are assembled in cooperative relation.

6. A form section comprising side members spaced apart; spacers mounted between said side members; a facing member mounted on said side member and provided with facing impressions, in staggered relation to each other; and means for joining a pair of said sections at right angles to each other, said means being adapted to maintain the staggered relation of the impressions of said joined sections at the corner formed thereby.

7. A device of the class described comprising side members; means for spacing said side members apart; tongues projecting from said side members at predetermined intervals; and means for engagement between the end spaces of said side members for maintaining the same in alignment.

8. A device of the class described comprising side members spaced apart, one face of said side members carrying facing impressions; and means for joining a pair of said side members for forming a corner without interrupting the sequence of said facing impressions.

9. A device of the class described comprising side members spaced apart; and means engageable in the end spaces of said members for joining a pair of the same together adjacent their ends for forming a corner presenting a smooth and uninterrupted surface at the said corner.

10. A device of the class described comprising side members spaced apart, one of said side members carrying facing impressions in regular sequence; means for joining a pair of said members together adjacent their ends for forming a corner without interrupting the sequence of said impressions; and means for locking said members in said joined relation.

In testimony whereof I have signed the foregoing specification at Detroit, in the county of Wayne and State of Michigan.

JOHN FORD.