

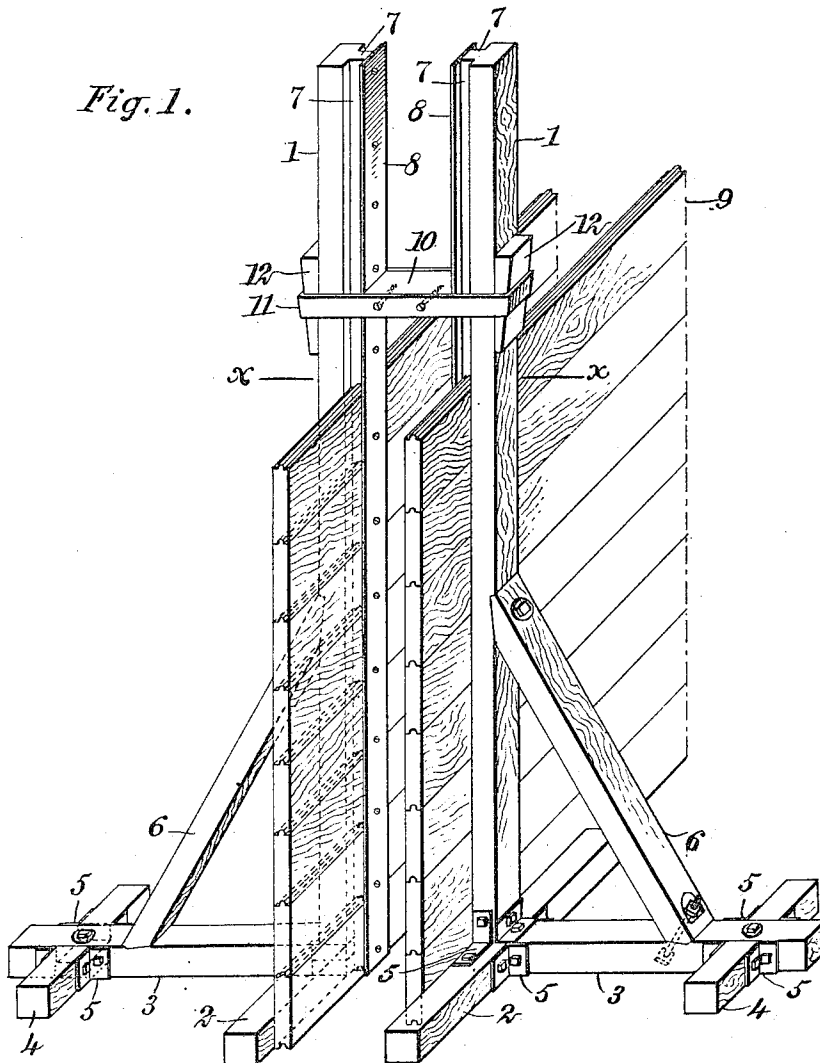
No. 830,893.

PATENTED SEPT. 11, 1906.

H. P. ENGELHARDT.
CONCRETE WALL FORMING APPARATUS.

APPLICATION FILED NOV. 20, 1905.

2 SHEETS—SHEET 1.



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Fig. 3.

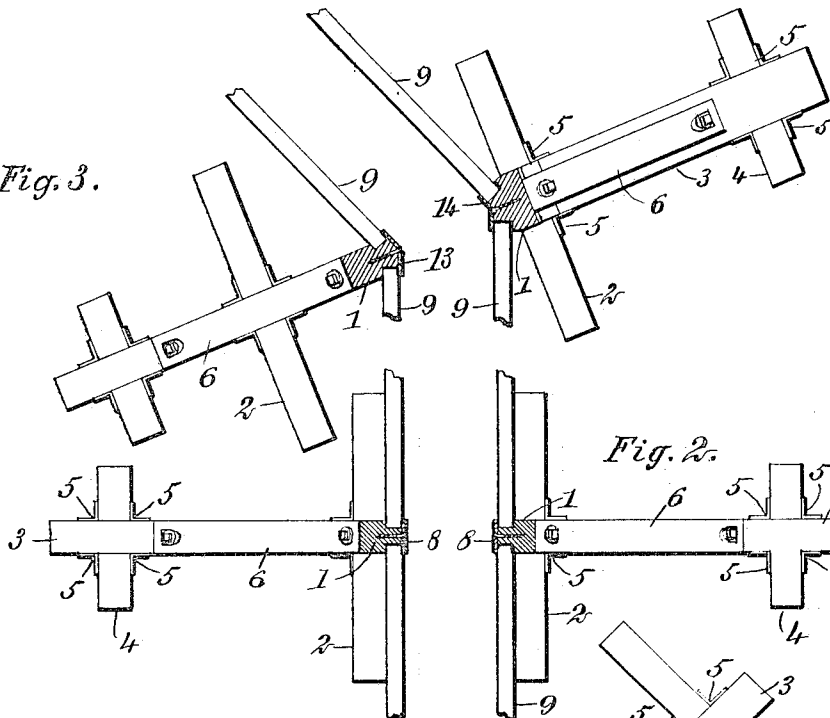


Fig. 2.

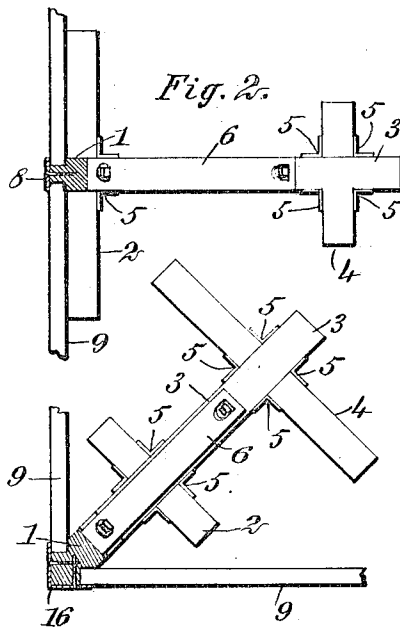
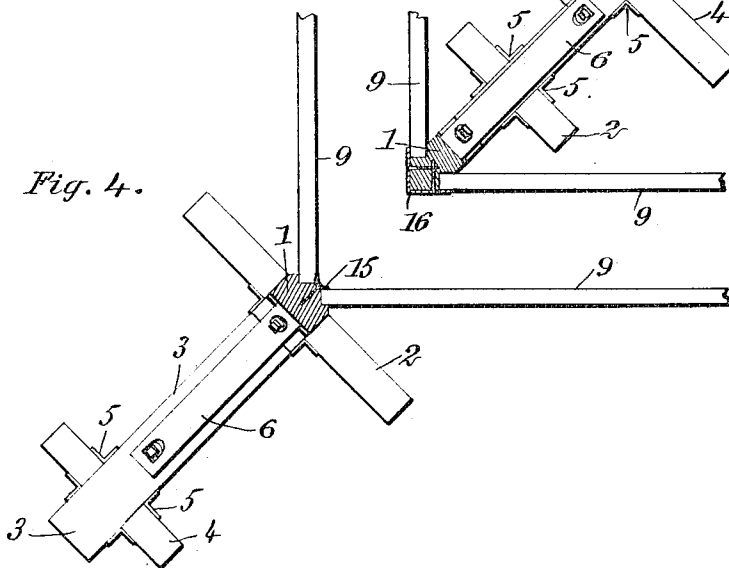


Fig. 4.



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CONCRETE-WALL-FORMING APPARATUS.

No. 830,893.

Specification of Letters Patent.

Patented Sept. 11, 1906.

Application filed November 20, 1905. Serial No. 288,235.

To all whom it may concern:

Be it known that I, HARRY P. ENGELHARDT, a citizen of the United States, and a resident of the city of New York, Woodhaven, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Concrete-Wall-Forming Apparatus, of which the following is a full, clear, and exact description.

This invention relates to improvements in apparatus employed in the construction of concrete walls of buildings and the like, the object being to provide a device for this purpose that will be portable and readily adjusted to the work to be done.

I will describe a concrete-wall-forming apparatus embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a concrete-wall-forming apparatus embodying my invention. Fig. 2 is a section on the line $x x$ of Fig. 1, and Figs. 3 and 4 are plans showing the standards employed as arranged for different angles.

The apparatus comprises standards or uprights 1, mounted on base portions consisting of bars 2, which extend parallel with the wall or the like to be built, and center bars 3, arranged at right angles to the bars 2, while on the outer ends of the center bars 3 are cross-bars 4. The several bars and standards are suitably connected together. As here shown they are connected by means of angle-plates 5, of iron, through which bolts pass, the said bolts of course passing through the standards and base-bars. From the bars 3 brace-bars 6 extend upward to connection with the standards or uprights 1. At the sides of the standards or uprights are channels 7, the outer walls of which are formed by metal plates 8. These channels are designed to receive the ends of mold plates or boards 9.

In use the standards and mold plates or boards will be arranged at the inner and outer sides of the wall. In other words, they will be spaced apart so that the concrete may be filled in between them, and to hold the inner and outer standards rigidly in parallelism I

employ spacing-blocks 10, to which a metal band 11 is secured, the standards passing between the outer portions of the metal band and the spacing-block 10, and between said outer ends of the band and the standards are tightening-wedges 12. In Figs. 1 and 2 I have shown the standards having the channels formed for the straight sides of a wall. In Fig. 3 the channels are arranged at an angle adapting the device for building an angular wall—such, for instance, as a bow-window of a house. In this instance the inner standards have the outer walls of their channels formed by angle-plates 13—that is, the plates are turned inward from the center. The plates 14 on the outer standards are curved from their center outward. In Fig. 4 the device is arranged for the corner of a building, and in this instance the plates 15 on the outer standards are similar to the plates 14, while the plates 16 for the inner standards have their sides at right angles to each other, as clearly indicated in said Fig. 4.

In the building of a wall the inner and outer standards will be arranged at desired intervals and spaced at various distances apart, as may be required for the building. As the wall progresses from the foundation the mold plates or boards 9 will be added, and after the finishing of the wall it is obvious that the boards may be readily removed and also the standards or uprights.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an apparatus for the purpose described, standards provided with channels, base-bars on which the standards are mounted, mold plates or boards adapted to engage their ends in said channels and a spacing-block removably engaging with said standards.

2. In an apparatus for the purpose described, standards or uprights having channels, mold-plates forming the outer walls of said channels, base-bars on which the standards are mounted, braces extended from the base-bars to said standards, a spacing-block adapted to engage between the inner and outer standards, a metal strap attached to said block, and wedges for engaging between the strap and standards.

3. An apparatus for the purpose described,

comprising standards having channels, angle-plates forming the outer walls of said channels, base-bars on which the standards are mounted, and mold plates or boards adapted
5 to engage with their ends in said channels.

4. In an apparatus for the purpose described, inner and outer portable standards having channels, base-bars to which the standards are connected, and mold plates or

boards having their ends detachably engaged 10
in the channels.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY P. ENGELHARDT.

Witnesses:

JOHN L. YOUNG.

W. P. BEACH.