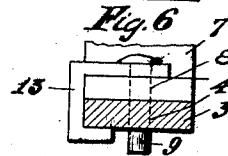
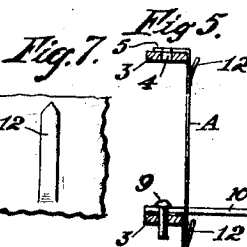
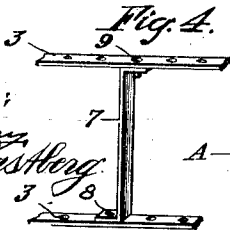
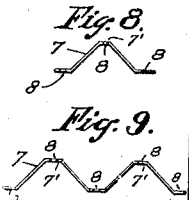
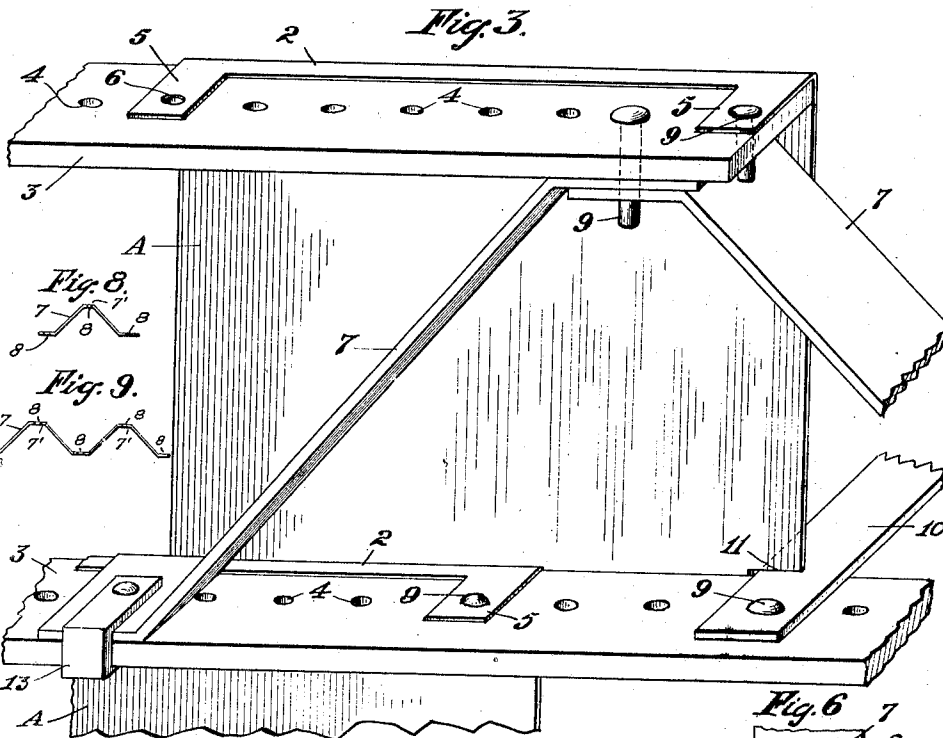
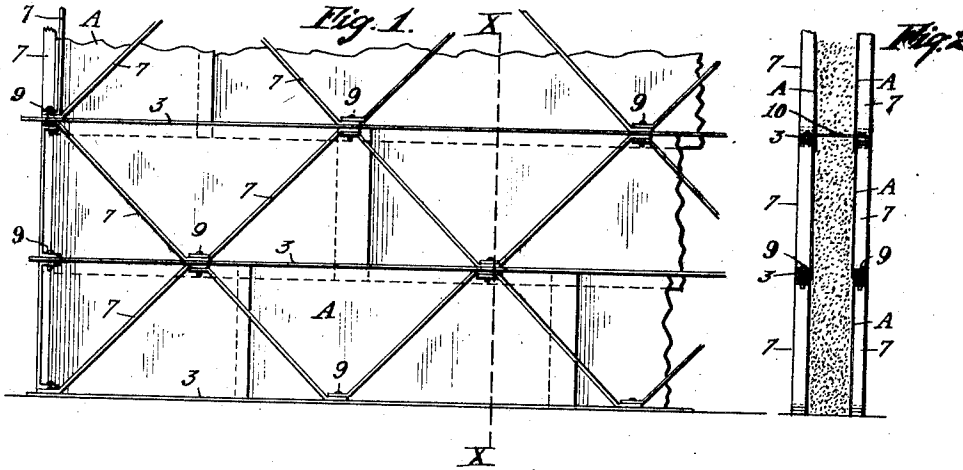


J. V. WESTERLUND.
FORM FOR CONCRETE,
APPLICATION FILED OCT. 28, 1911.

1,040,075.

Patented Oct. 1, 1912.



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UNITED STATES PATENT OFFICE.

JOHN V. WESTERLUND, OF SAN FRANCISCO, CALIFORNIA.

FORM FOR CONCRETE.

1,040,075.

Specification of Letters Patent.

Patented Oct. 1, 1912.

Application filed October 28, 1911. Serial No. 657,304.

To all whom it may concern:

Be it known that I, JOHN V. WESTERLUND, citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Forms for Concrete, of which the following is a specification.

This invention relates to a form for concrete construction and particularly pertains to an adjustable mold for walls, floors and the like.

It is the object of this invention to provide a form for molding concrete or other plastic materials which is adapted for use in forming outside walls, partition walls, floors, columns and other portions of buildings.

Another object is to provide a concrete form which is adjustable, and which can be assembled, taken down and re-assembled, as desired, and be compactly stored when not in use.

A further object is to provide a substitute for the wooden forms now commonly employed in concrete construction which is simple in construction, and economical in manufacture, and which can be easily and quickly set up and taken down.

Other objects will appear in the following specification.

The invention consists of the parts and the combination and construction of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a front elevation of a series of the mold elements in an assembled position. Fig. 2 is a section on the line X—X of Fig. 1. Fig. 3 is a detail in perspective showing the manner of assembling the mold. Fig. 4 is a detail of a modified form of the mold bracing. Fig. 5 is a detail in section showing the manner of locking superposed mold plates together. Fig. 6 is a detail of a hook employed in tying the rail and brace members together. Fig. 7 is detail of the tang as struck from a plate for engaging the lower edge of a plate arranged thereabove. Figs. 8 and 9 show modified forms of the supporting brace members.

In the drawings A represents a flat plate which is preferably formed of sheet metal and rectangular in form. The plate A has its upper edge bent at right angles to form a flange 2 which is adapted to rest on a horizontal bar 3 so as to support the plate A in

a vertical position. The bar 3 is provided with a series of perforations 4, which are spaced approximately an inch apart and extensions 5 are formed on the flange 2 which are perforated at 6 to register with the perforations 4 in the bar 3. The bar 3 is designed to be arranged horizontally; a series of these bars being arranged in parallel rows one above the other, when a wall or partition of considerable height is to be erected, they are supported upon and spaced apart by means of struts or braces 7 which are preferably disposed at an angle, though they may be arranged vertically as shown in Fig. 4 where space will not admit of their being positioned at an angle. The supports 7 have their ends bent to parallel the bars 3, the bent portions being perforated at 8 which perforations are adapted to register with the perforations 4 in the bars 3. The plates A and the bars 3 and the supports 7 are secured together by means of loose pins 9 which are passed through the perforations 8—6 and 4, as shown in Fig. 6.

In the application of this invention, a series of the bars 3 are arranged on the line of the wall or partition to be built with their ends overlapping and connected together by the pins 9. A number of the supports 7 are then placed thereon in alternate arrangement, as shown in Fig. 1 with their bent ends overlapping. A second row of the bars 3 is then placed on the upper ends of the supports 7 and secured thereto by means of the pins 9. The plates A are then suspended from the top of the bars 3 as shown in Fig. 3, the flanges 2 resting on the bars 3, and a second row of supports 7 with the bars 3 is then placed thereabove, as shown in Fig. 1, and the whole is connected together by means of the pins 9, as before described. This operation is repeated until the wall of the desired height is constructed; a parallel wall of the plates being built up in the manner just described and spaced from the first wall a distance equal the thickness of the wall to be cast therebetween. These parallel walls of plates A, together with their supporting bars 3, are tied together to prevent spreading, by means of tie bars 10 which are adapted to extend across the space between the parallel walls of plates A and are connected with the bars 3 at each end by means of the pins 9; the bars 3 on each side being disposed on ap-

proximately the same plane, as shown in Fig. 2.

The plates A on one row of the bars 3 overlap the plates suspended from the row of bars therebeneath and are notched at 11, so as to pass around the tie bars 10, as shown in Fig. 3. As a means for preventing the lower edge of the plates A from moving away from the plate therebeneath, tangs 12 are struck from the plates near their upper edge, which tangs are adapted to engage the lower edge of the plate thereabove, so as to connect the plates together, as shown in Fig. 5. It is obvious that the plates A may be of various lengths and that when they are arranged on the bars 3 their ends may overlap any desired or suitable distance. This arrangement admits of a wall of any desired length being constructed with a series of plates A of fixed lengths so that special plates do not have to be provided.

As a means for preventing the supports 7 becoming displaced, a hook 13 is employed as shown in Fig. 6, which hook is formed of flat bar metal and bent so as to pass over the end of a support and under a bar 3 as shown in Fig. 3, in which position it is retained by means of a pin 9, and acts to tie the supports 7 to the bars 3. This construction obviates the use of nuts on the pins 9 and facilitates the setting up or taking down of the structure.

From the foregoing it will be seen that my invention comprises a mold unit consisting of a perforated bar, a plate adapted to be suspended from the bars, a support for the bar, and means for connecting the bar, plate and support together; a plurality of these mold units being adapted to be set up and temporarily tied together to form a mold of the desired shape into which the plastic materials to form the structure to be made, is poured in the usual manner; the bars 3 and the supports 7 forming a framework on which the plates A are carried.

It will be noted that in the set up mold, the plates A are on the inside of the framework, so as to present a smooth, unbroken surface to face up the cast materials. In forming intersecting walls or partitions, the bars 3 of one mold are connected to the bars of the other mold by means of the pins 9, the end of one bar resting on the bar to which it is attached, and the plates A of one mold are butted against the adjacent plates.

Various arrangements and applications of this invention are possible by reason of the plates, bars and supporting members being adapted to be set up in many positions, so that almost every form of mold employed in concrete construction may be built from the sections or parts herein described. The supporting members 7 may be formed in single units of the diagonal portions, as shown in Figs. 1 and 2, with their ends terminating

against the adjacent bars 3, or they may be formed of a number of the diagonal portions connected together; or integral, as shown in Figs. 8 and 9, with perforated flat portions 7' joining the alternately arranged diagonal portions together; this truss-like form of the supports 7 insuring a rigid construction.

It will be understood that I am not to be limited to the exact construction and arrangement of parts as here shown, and to which the foregoing description has been mainly confined, as it is evident that slight changes might be made in the form of the several parts described, without departing from the spirit and scope of my invention.

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

1. A knock-down concrete form consisting of a series of superposed horizontally disposed bars, plates suspended from said bars, diagonal supporting members extending between the bars having opposite ends bent and arranged flatwise upon the bars, and removable means for connecting the bars, plates and supporting members together.

2. A knock-down concrete form consisting of a series of superposed horizontally disposed bars provided with perforations, plates suspended from said bars, diagonal supporting members arranged between the bars and across the plates from bar to bar, and removable means for connecting the bars, plates and supporting members together, including perforated flanges on the plates, perforated sections on the supporting members and pins insertible in the perforations in the bars, flanges and plates when the perforations are in register.

3. A knock-down concrete form consisting of a series of superposed horizontally disposed bars provided with perforations, plates suspended from said bars, diagonal supporting members arranged between the bars and across the plates from bar to bar, and removable means for connecting the bars, plates and supporting members together, including perforated flanges on the plates, perforated sections on the supporting members, hooks arranged to engage the bars and supporting members, and provided with perforations, and pins insertible in the perforations in said plates, bars, supports and hooks, substantially as described.

4. A knock-down concrete form consisting of a series of superposed horizontally disposed bars provided with perforations, plates suspended from said bars, diagonal supporting members arranged between the bars and across the plates from bar to bar, and removable means for connecting the bars, plates and supporting members together, including perforated flanges on the plates, perforated sections on the supporting members, hooks arranged to engage the bar

and supporting members, and provided with perforations, and pins insertible in the perforations in said plates, bars, supports and hooks, tie members attachable to said bars, and notches formed in said plates to admit
5 of the tie members passing therethrough.

In testimony whereof I have hereunto set

my hand in the presence of two subscribing witnesses.

JOHN V. WESTERLUND.

Witnesses:

E. T. JOHNSON,

CHARLES PETERSON.