

C. J. SULLIVAN.  
CEMENT WALK CONSTRUCTING FRAME.

(Application filed Jan. 25, 1901.)

(No Model.)

3 Sheets—Sheet 1.

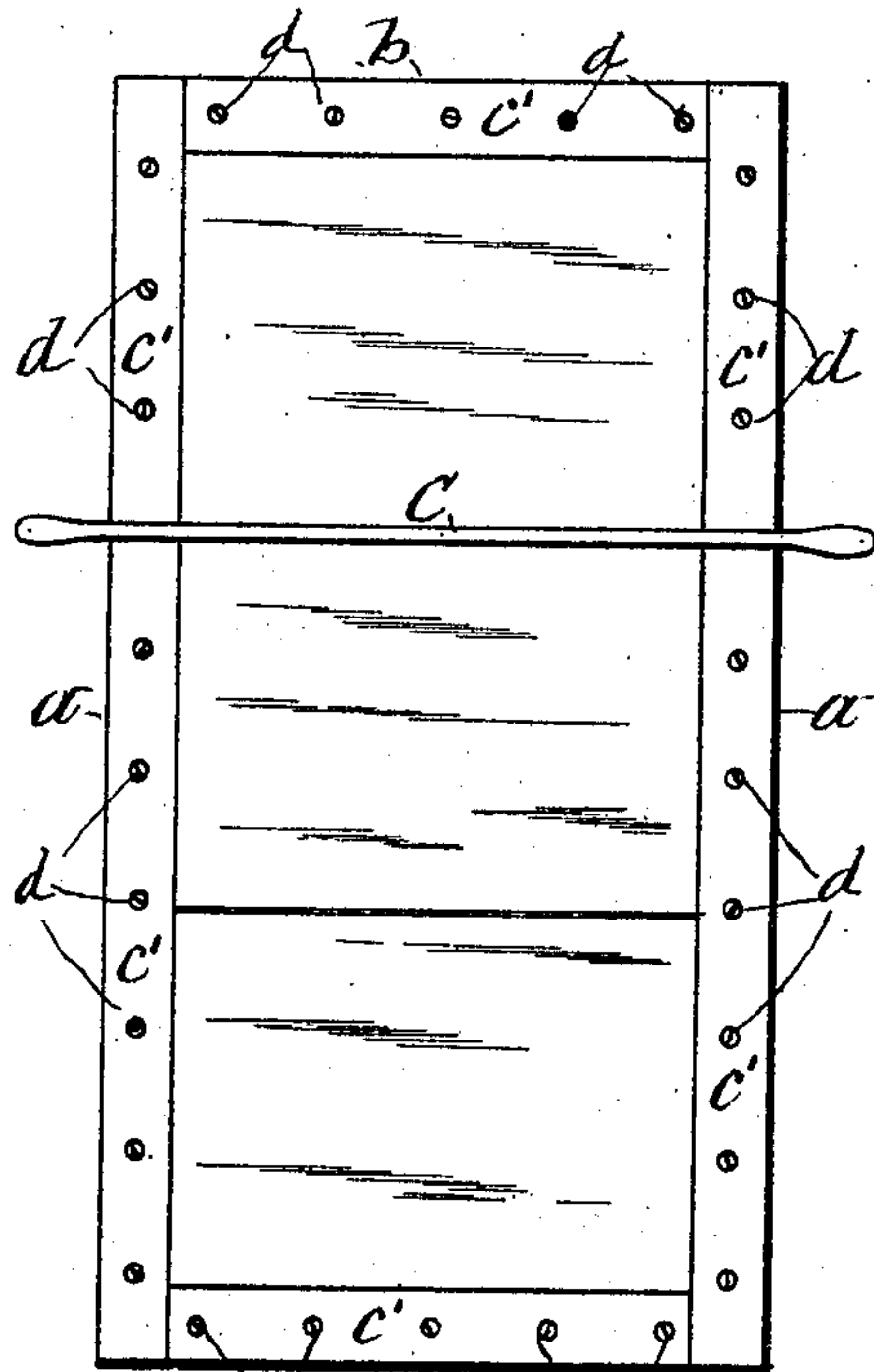


Fig. 2

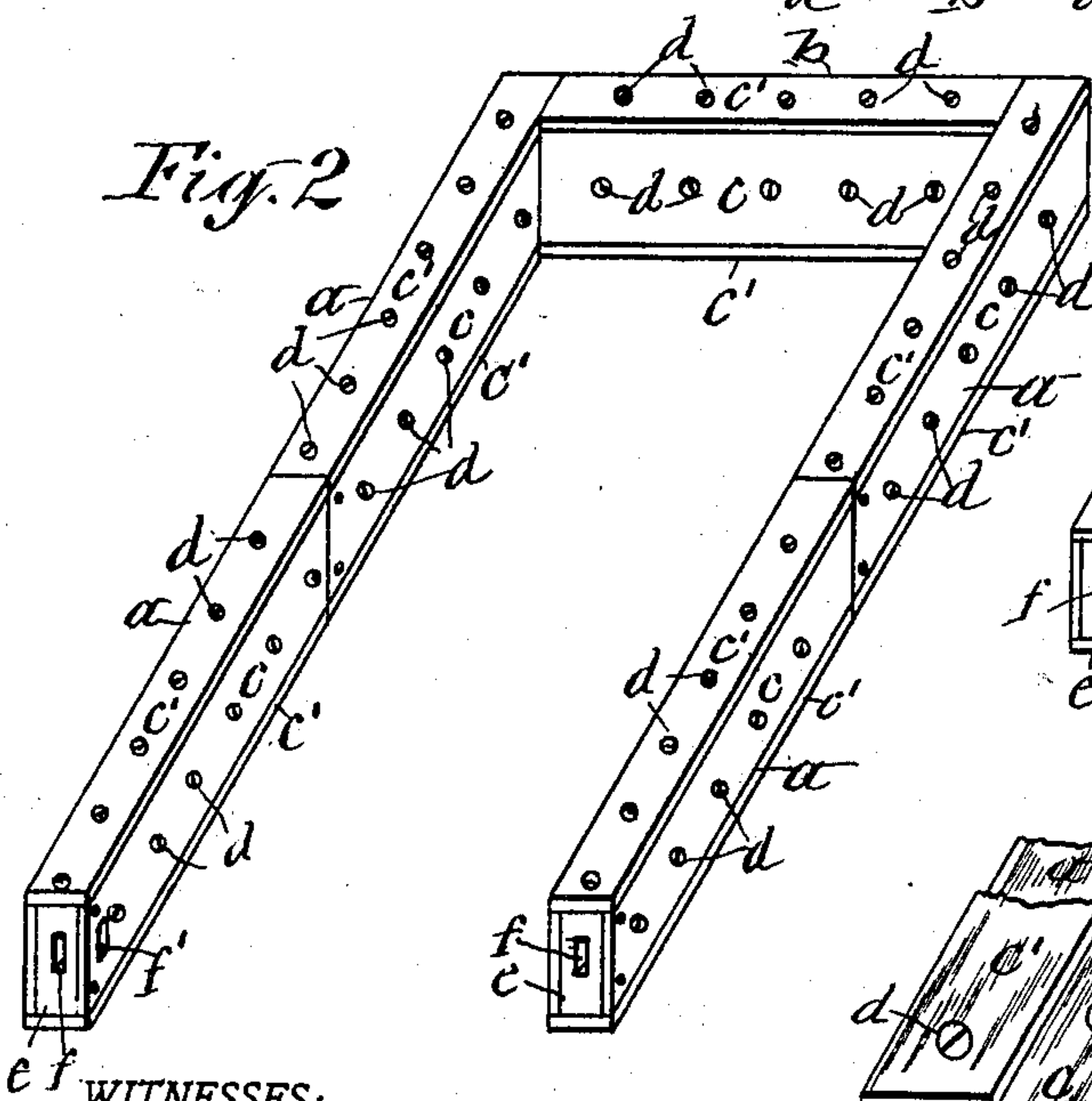


Fig. 3

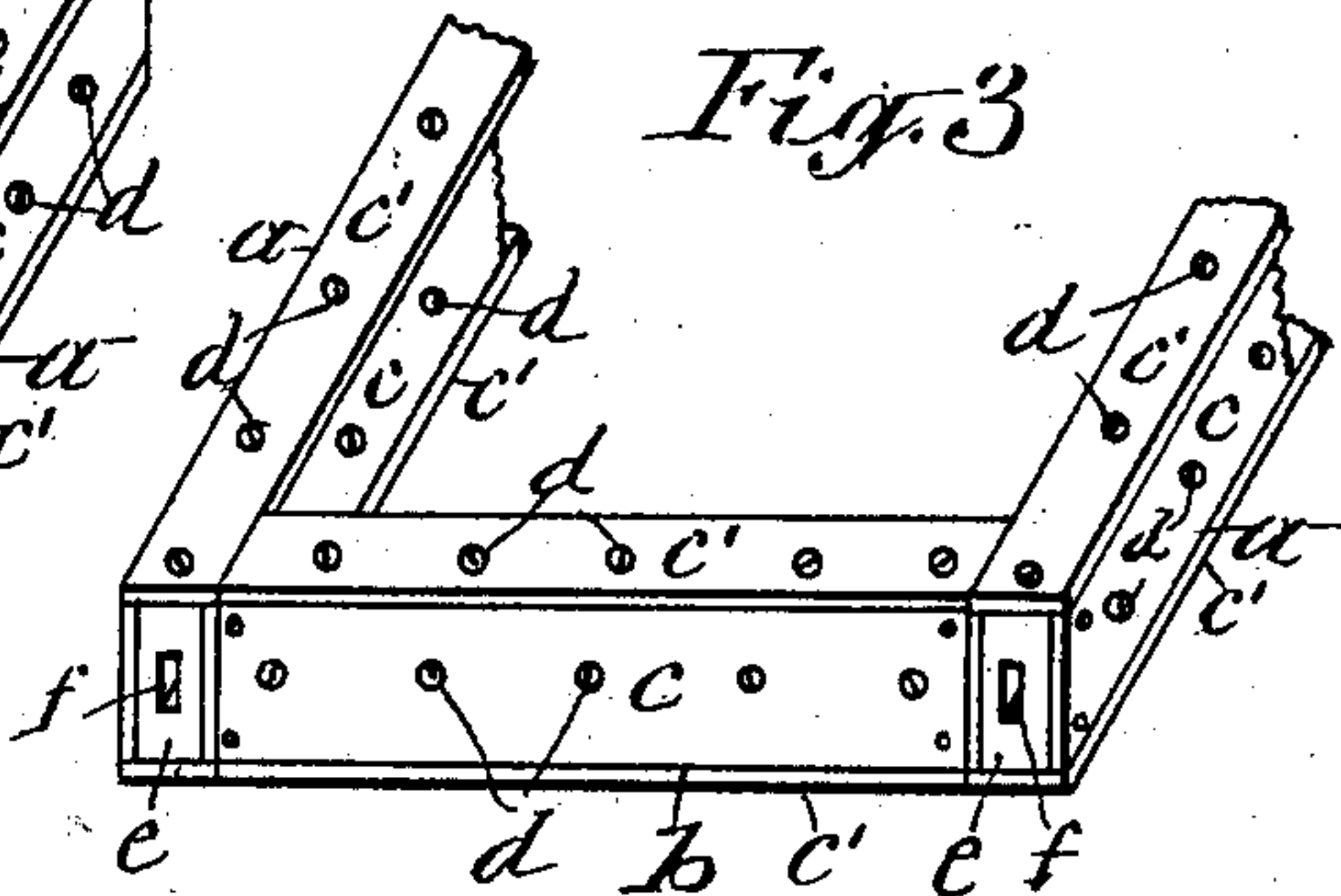
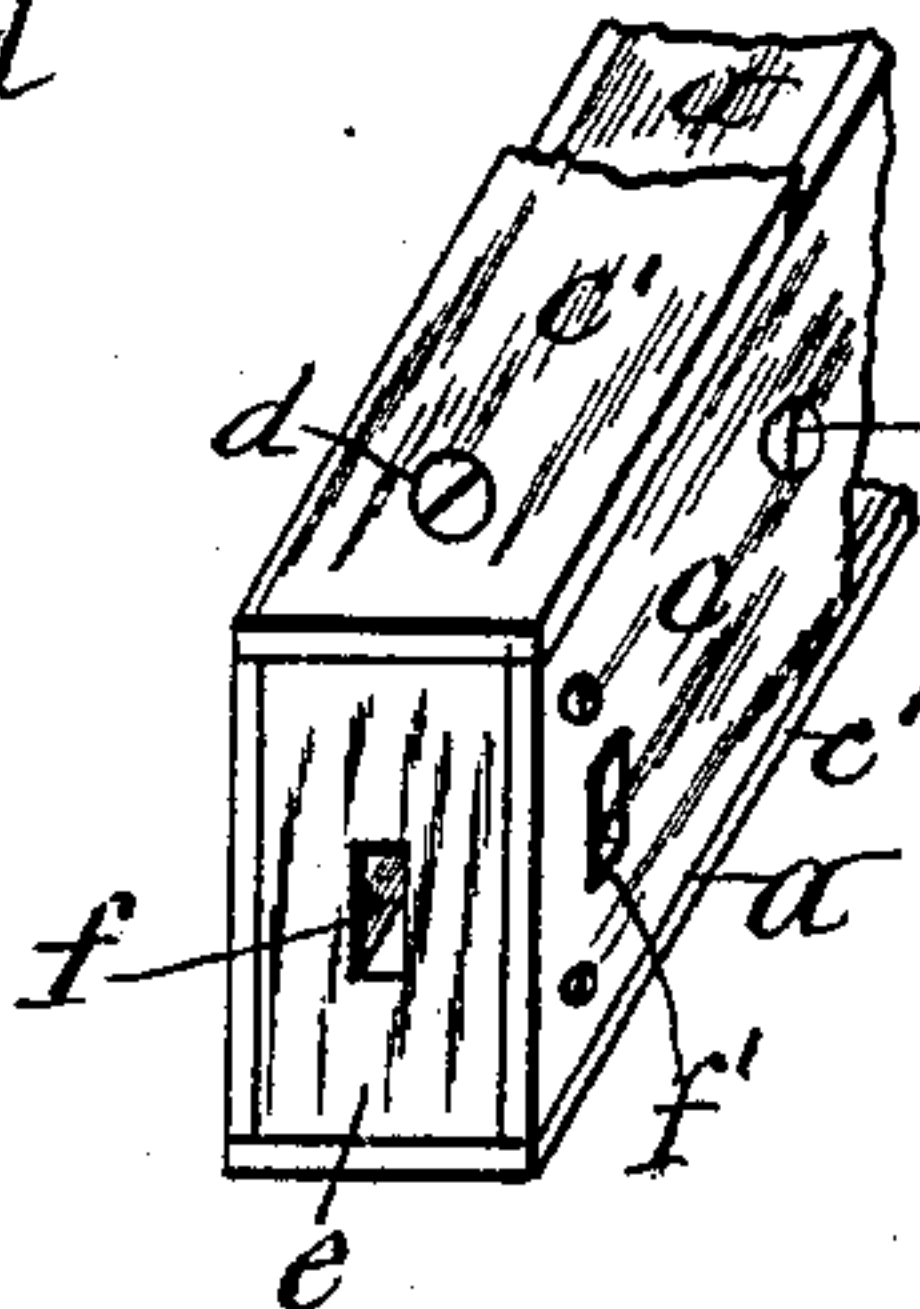


Fig. 4



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Fig. 5

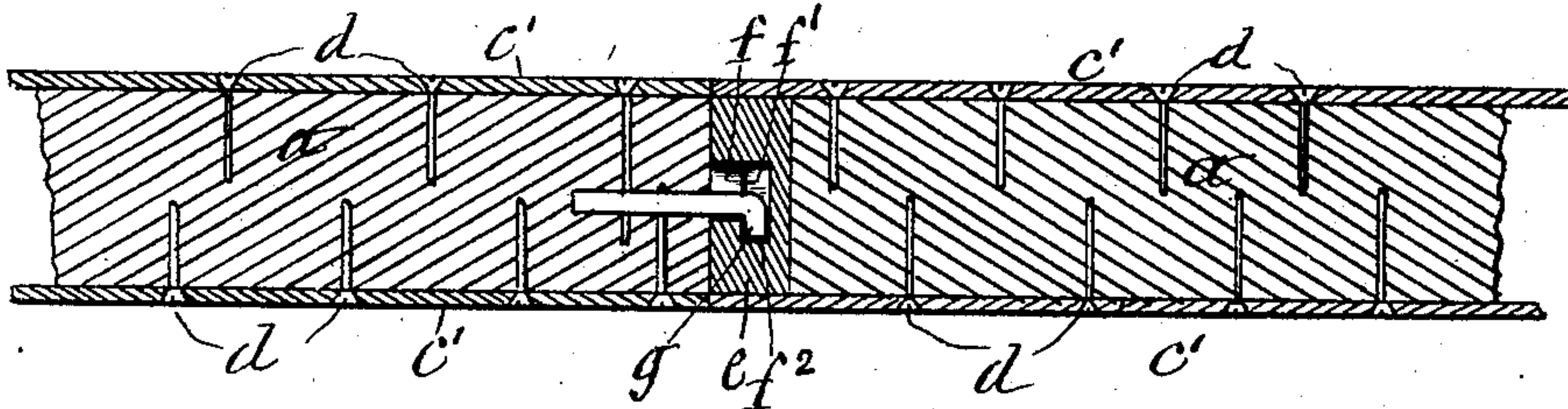


Fig. 6

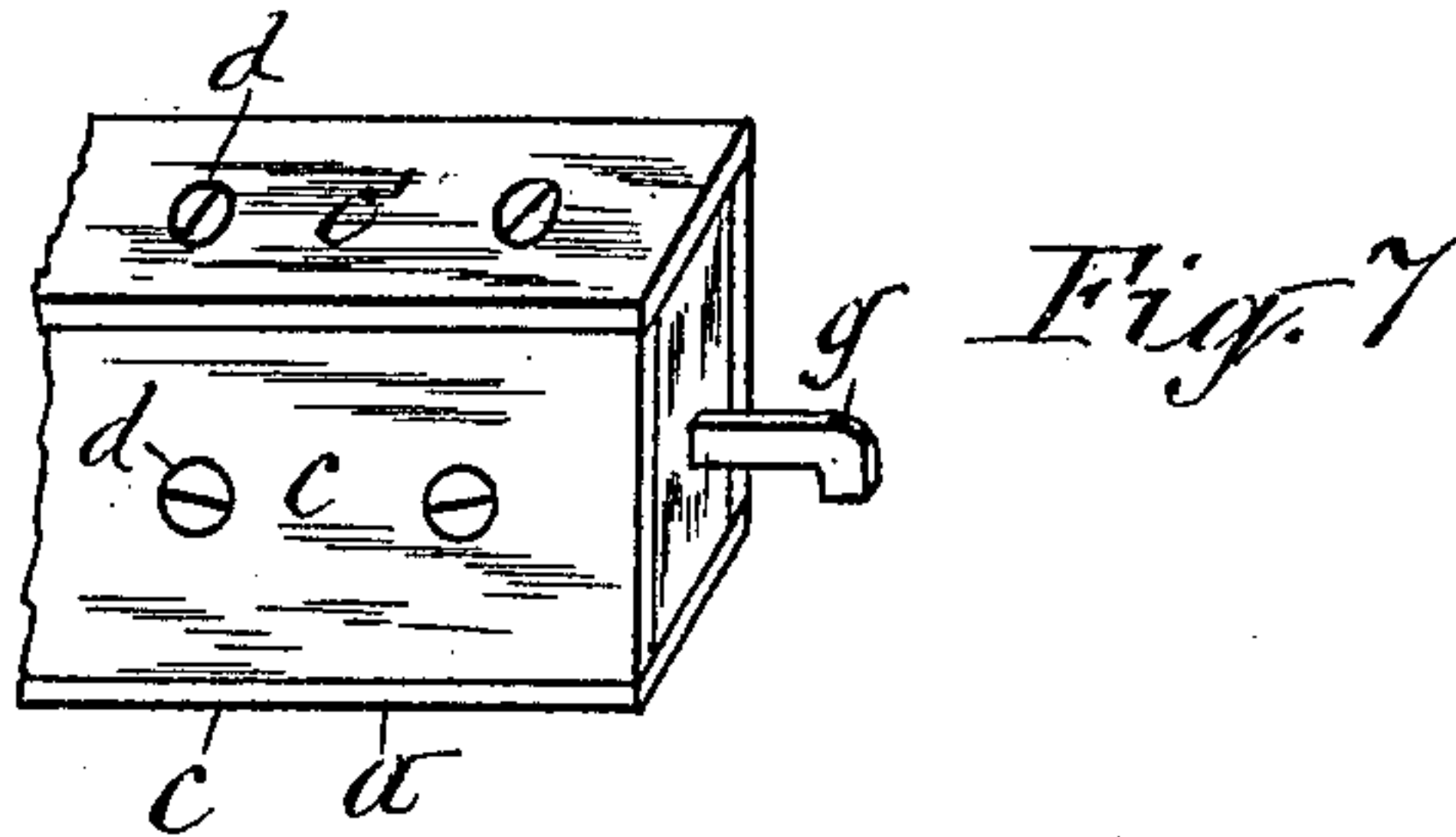
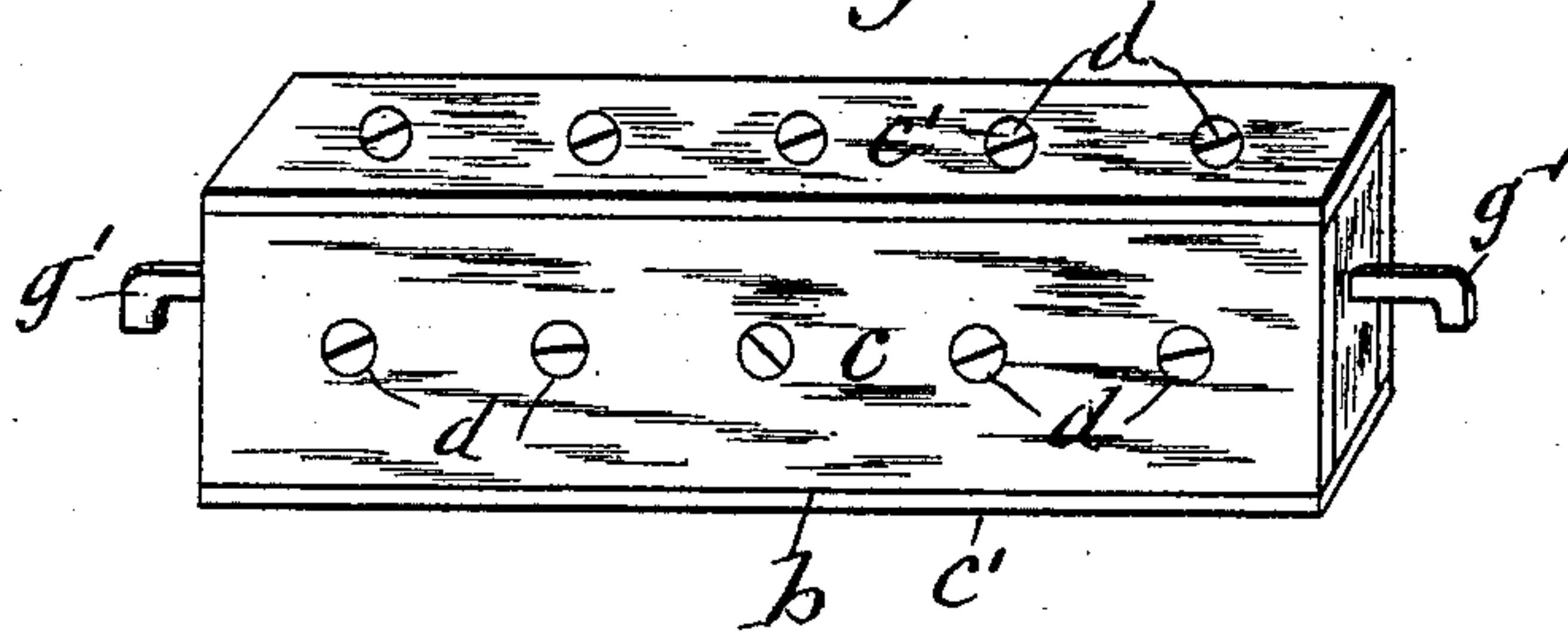


Fig. 8

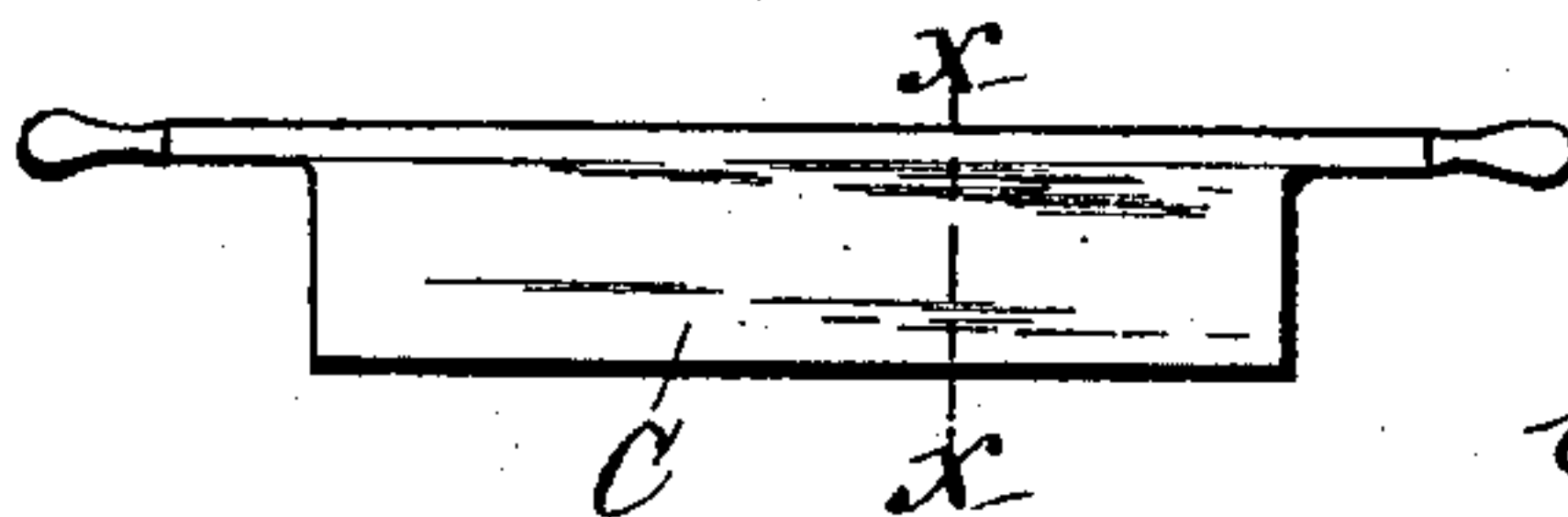


Fig. 9

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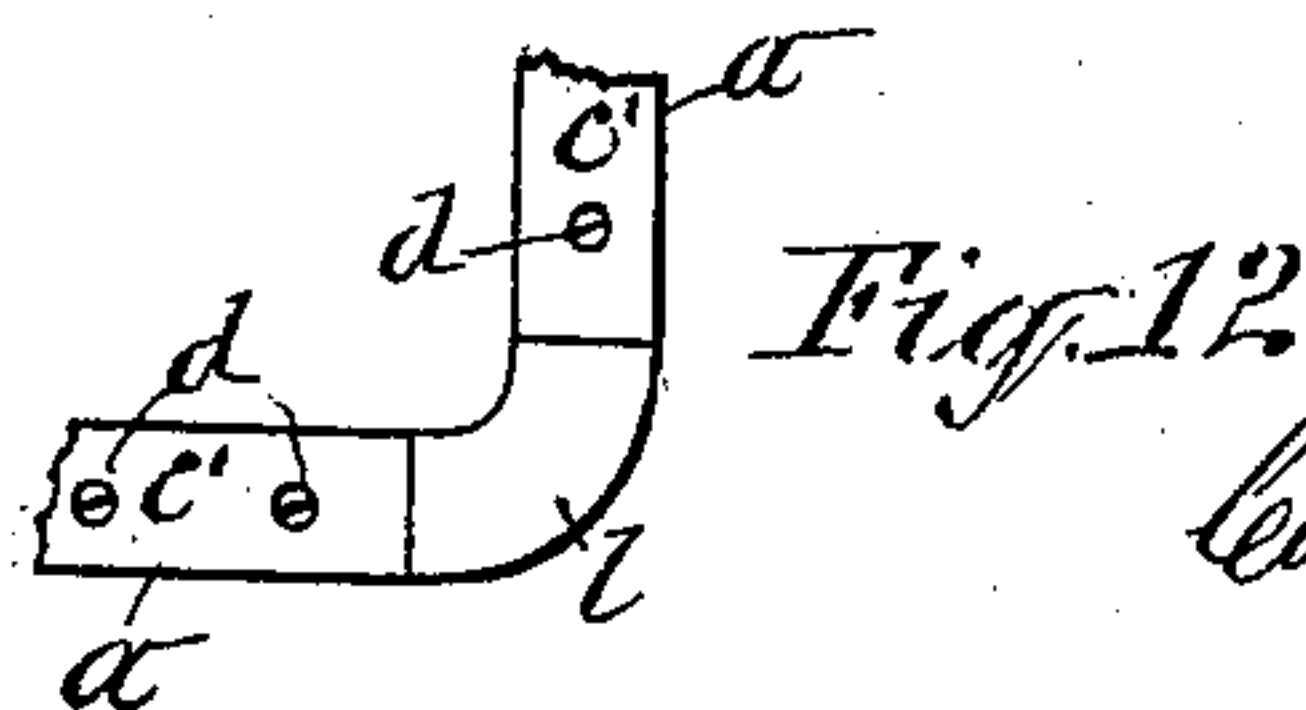
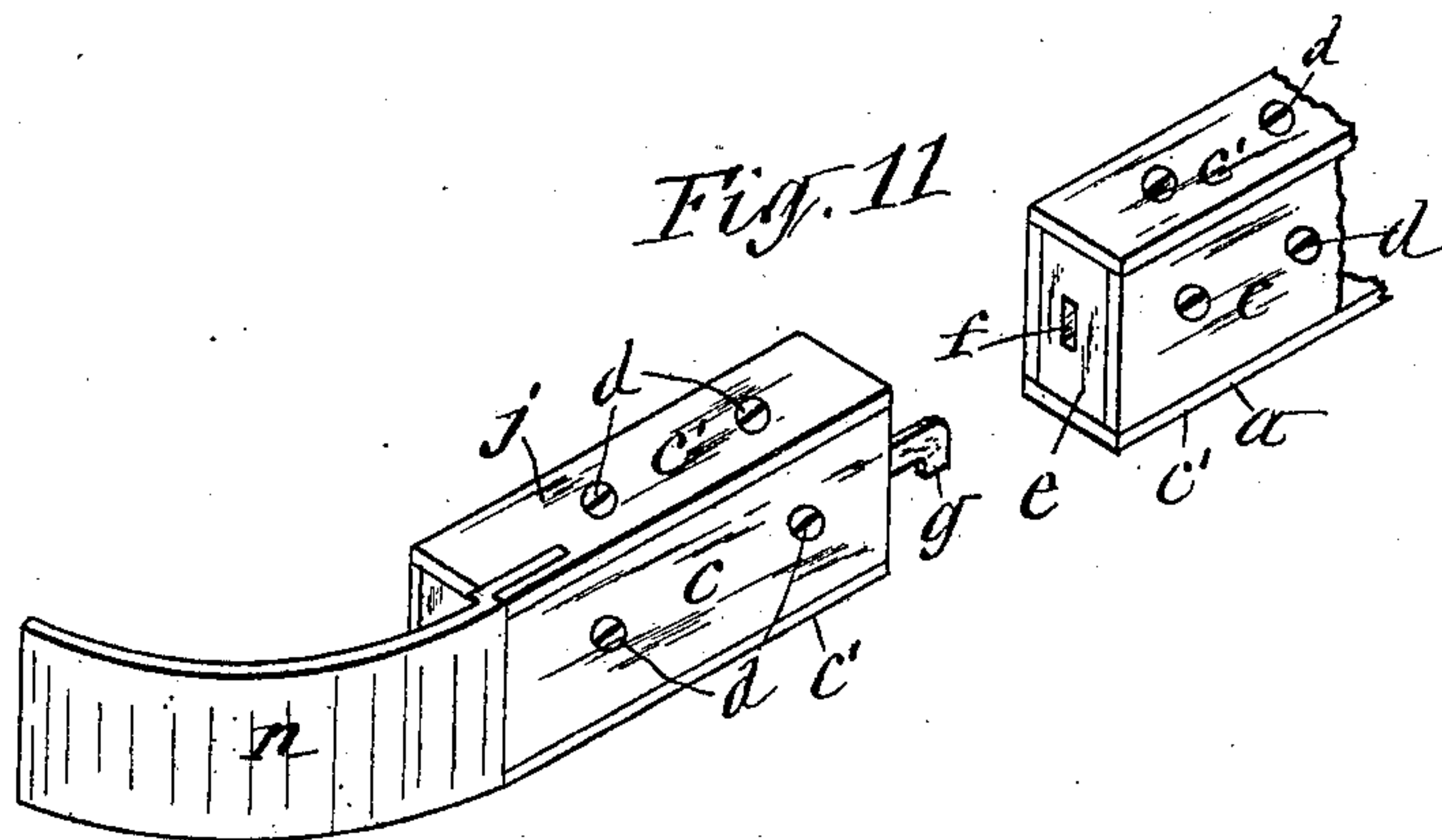
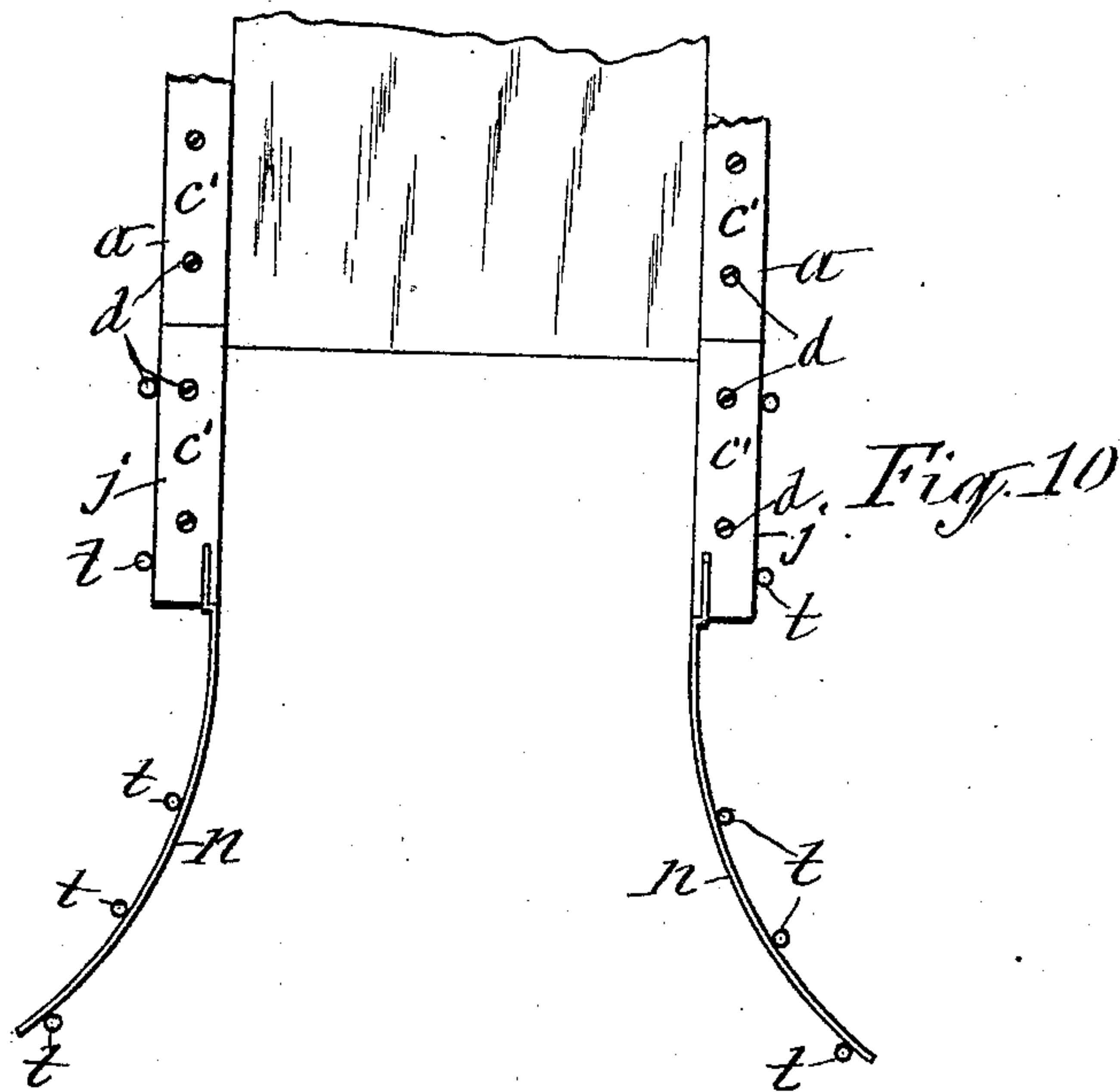
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# UNITED STATES PATENT OFFICE.

CORNELIUS J. SULLIVAN, OF SYRACUSE, NEW YORK.

## CEMENT-WALK-CONSTRUCTING FRAME.

SPECIFICATION forming part of Letters Patent No. 683,081, dated September 24, 1901.

Application filed January 25, 1901. Serial No. 44,684. (No model.)

*To all whom it may concern:*

Be it known that I, CORNELIUS J. SULLIVAN, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Cement-Walk-Constructing Frames, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a frame designed to be used in constructing walks from plastic cement packed directly upon the ground to be covered by the walk.

The object of the invention is to furnish a frame which shall be conveniently adjusted for constructing walks of different widths and different alinements and shall also be strong and durable for repeated use; and to that end the invention consists in the novel construction and combination of the component parts of the frame hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a plan view of a frame embodying my invention and showing the same with a walk formed therein. Figs. 2 and 3 are perspective views of opposite end portions of the frame. Fig. 4 is an enlarged perspective view of one end of one of the longitudinal rails. Fig. 5 is an enlarged vertical longitudinal section of the coupled end portions of two longitudinal rails. Fig. 6 is a perspective view of one of the transverse bars. Fig. 7 is a perspective view of one end of one of the longitudinal rails provided with the coupling-hook. Fig. 8 is a face view of the jointing-knife. Fig. 9 is a cross-section on line X X in Fig. 8. Fig. 10 is a plan view of my invention arranged for constructing a curved walk. Fig. 11 is a detached perspective view of one of the sides of the frame arranged as aforesaid, and Fig. 12 is a detached plan view of a section of the frame designed for the construction of abrupt turns in the walk.

*a a* represent the longitudinal rails, and *b b* the transverse end bars, forming the frame in which the cement walk is to be constructed. These rails and bars I preferably form of scantlings of suitable dimensions and embraced by longitudinal metal plates *c c'*, applied to the sides and to the tops and bot-

toms thereof and firmly secured thereto by countersunk screws *d* or other suitable means, leaving the surfaces of said rails and bars smooth and without any projections. The purpose of said metallic plates is to prevent the scantlings from warping and to render them strong and durable for repeated use. For firmly uniting said rails and bars when required for use I rigidly attach to one end of each longitudinal rail *a a* a metallic block *e*, which is provided with a longitudinal channel *f* and a lateral channel *f'*, both terminating in a socket *f<sup>2</sup>*, formed in the block. To the adjacent end of the companion rail is rigidly attached a projecting hook *g*, which is inserted into the channel *f* and interlocked with one of the walls of the socket *f<sup>2</sup>*. For connecting the transverse bar *b* to the rails *a a* I attach to the ends of said bar hooks *g'*, similar to the hooks *g* and passing through the lateral channels *f'* in the blocks *e* of the two rails and interlocking with the side walls of the sockets *f<sup>2</sup>*. The described coupling of the rails and bars by means of the coupling-hooks allows the frame to be readily removed from the completed walk and to be compactly stored for subsequent use in the construction of cement walks.

For forming abruptly-curved turns in the walk I employ correspondingly-curved sections *l* of the side rails coupled to the rails *a a* by means of coupling-hooks interlocking with sockets in metallic blocks attached to the adjacent ends of the parts to be united. For forming in the walk curves of greater radii than those formed by the sections *l* I employ rail-sections *j*, coupled to the rails *a a* in the manner hereinbefore described and having on their free ends longitudinally-extending flexible steel plates *n*, which are firmly secured at one end to the sections *j* and have their free ends adapted to be bent to the desired curvature. Said curvature may be determined by means of stakes *t t*, driven into the ground at opposite sides of each plate.

In constructing a walk the rails *a a* and bars *b b* are to be placed in position and proper alinement with the walk to be constructed. Then the plastic cement is packed in the frame in the usual manner and leveled even with the top of the frame by means of



a straight-edge placed across the frame and drawn along the top thereof. After this a knife C is placed edgewise transversely upon the surface of the packed cement and forced  
5 vertically into said cement to form a joint in the walk. The knife is thus used at regular intervals in the length of the walk and removed therefrom. The walk is subsequently smoothed by means of a trowel, and in this  
10 operation the tops of the knife-cuts become filled with the cement, and thus the aforesaid intended joints are concealed. These joints, however, are subsequently marked and partly reopened by means of a suitable edge-tool  
15 drawn along a straight-edge placed to coincide with the aforesaid knife-cut.

What I claim as my invention is—

1. A cement-walk-constructing frame consisting of longitudinal rails spliced detach-  
20 ably end to end and each of said rails formed with reinforcing vertical and horizontal stay-plates as set forth.

2. A cement-walk-constructing frame consisting of longitudinal rails spliced detach-  
25 ably end to end and each of said rails formed with reinforcing vertical and horizontal stay-plates disposed in line with corresponding plates on the adjacent rail as set forth.

3. A cement-walk-constructing frame con-  
30 sisting of scantlings disposed end to end and braced by longitudinal metal plates secured to the exterior of the scantling, and couplings detachably uniting said scantlings as set forth.

35 4. A cement-walk-constructing frame, consisting of scantlings disposed end to end, lon-

gitudinal metal plates embracing said scantlings, and couplings detachably uniting said scantlings as set forth.

5. A cement-walk-constructing frame con- 40  
sisting of scantlings disposed end to end, a metallic block attached to the end of one of said scantlings and formed with a longitudinal channel extending from the exterior of the block and terminating in a socket at the 45  
interior of said block, and a hook projecting from the end of the adjacent scantling and interlocking with the aforesaid socket as set forth.

6. A cement-walk-constructing frame con- 50  
sisting of rails and flexible plates extending longitudinally from the ends of said rails as and for the purpose set forth.

7. A cement-walk-constructing frame consisting of scantlings, metal plates embracing 55  
said scantlings, and flexible plates extending longitudinally from the ends of the scantlings as set forth.

8. A cement-walk-constructing frame consisting of longitudinal rails and transverse 60  
bars disposed between said rails, metallic blocks secured to the ends of the longitudinal rails and provided with lateral channels terminating in sockets in the interiors of the blocks, and coupling-hooks projecting from 65  
the ends of the transverse bars and interlocked with the aforesaid sockets as set forth.

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