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M. J. HANEY.

DOUBLE INTERLOCKING CONCRETE SLAB CRIB.

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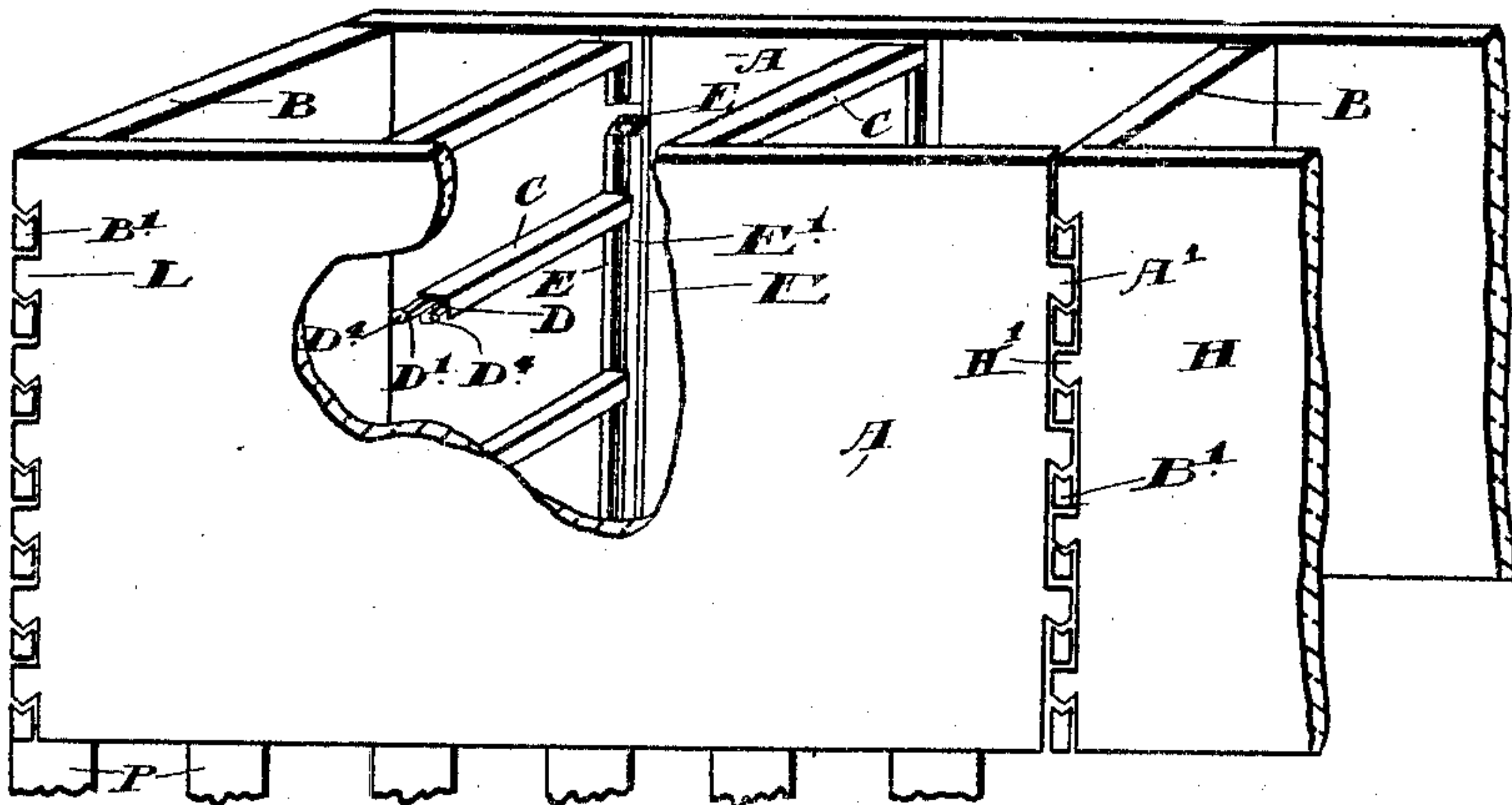


Fig. 1.

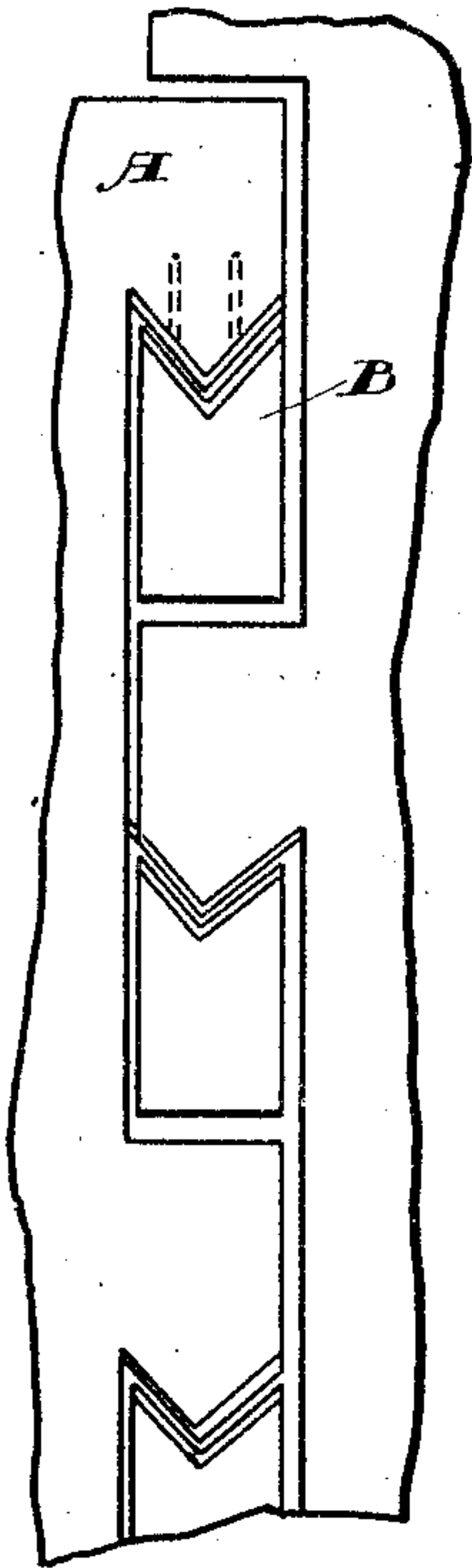


Fig. 2.

Fig. 3.

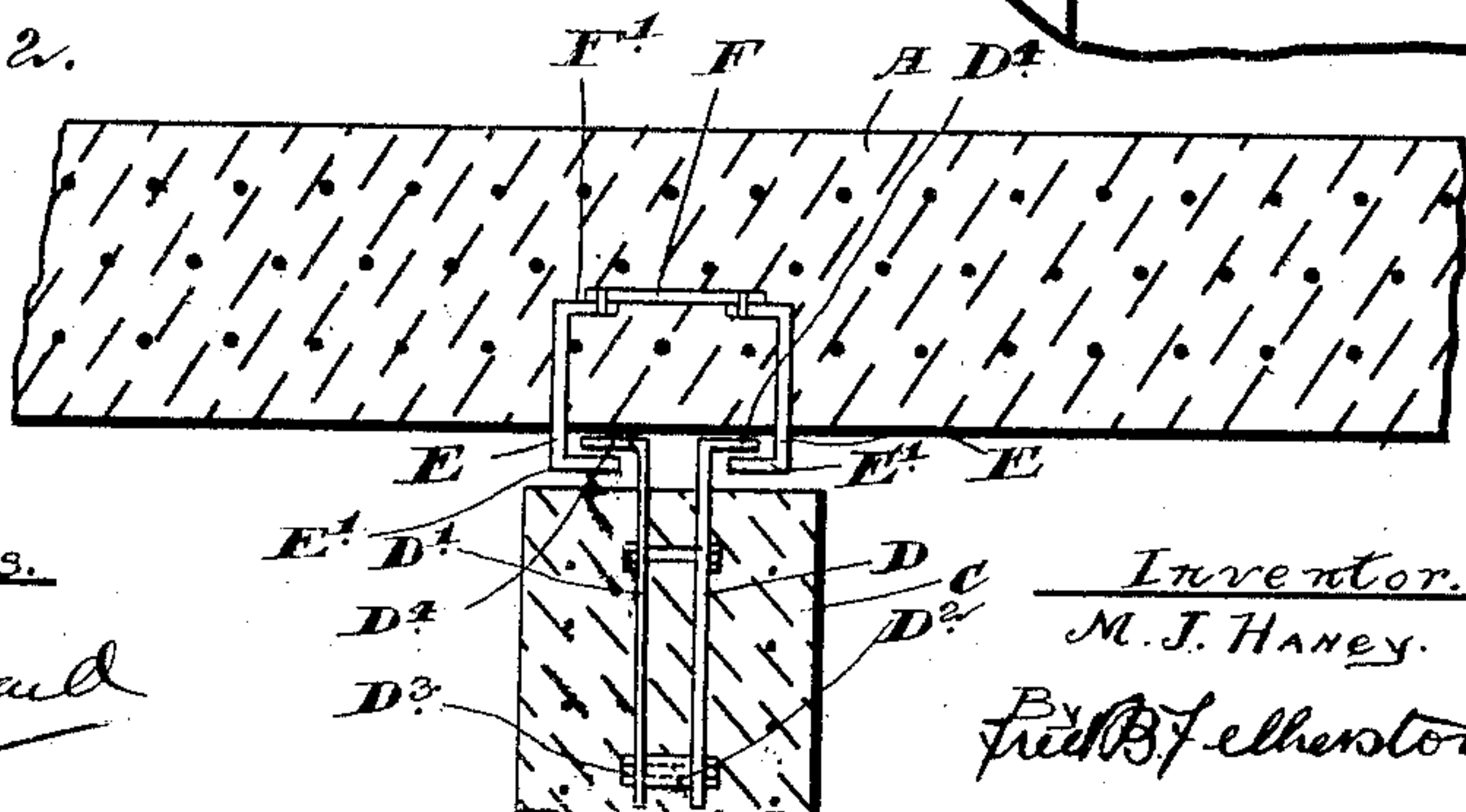
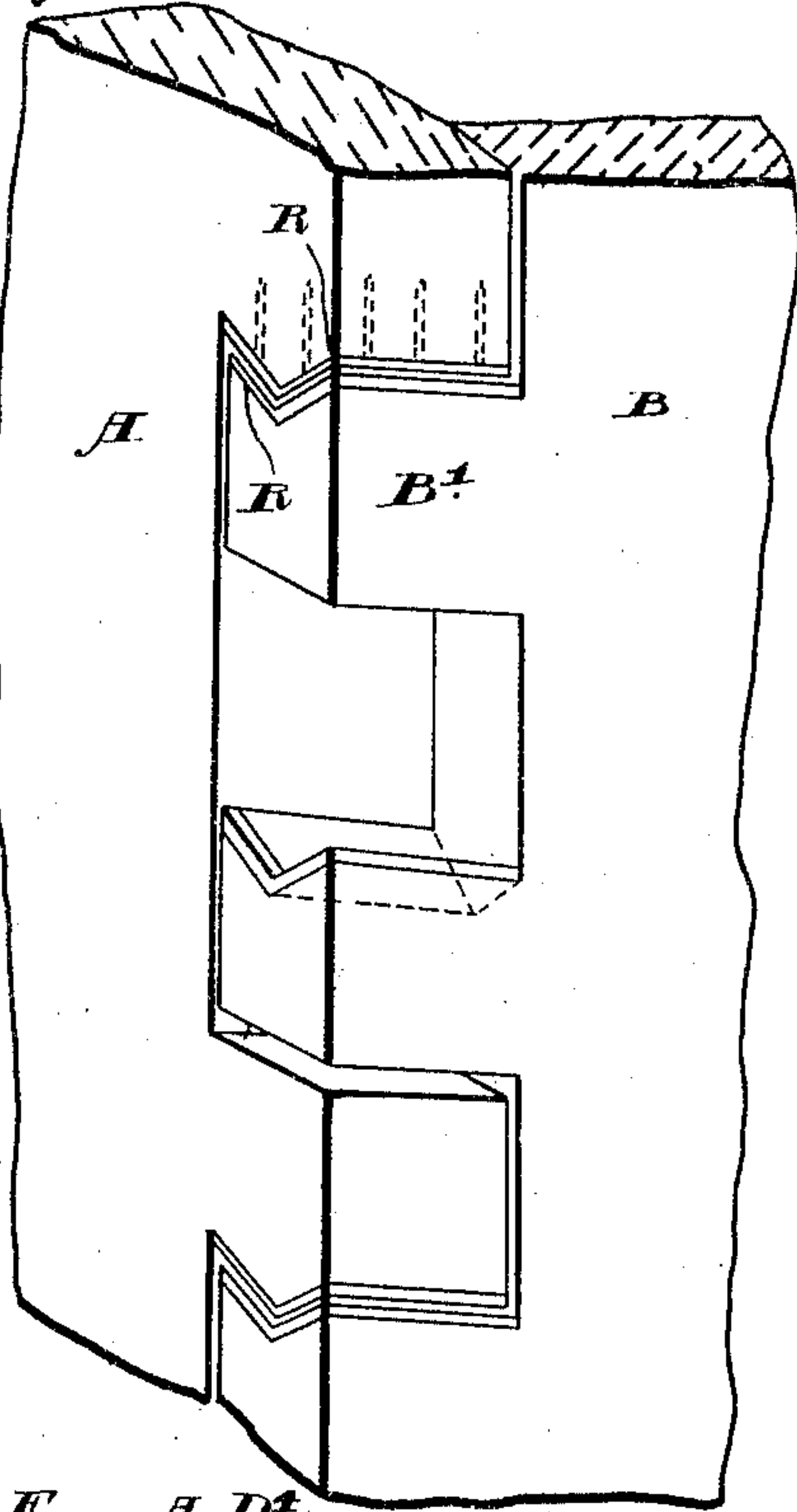


Fig. 4.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## DOUBLE-INTERLOCKING CONCRETE SLAB-CRIB.

No. 827,013.

Specification of Letters Patent.

Patented July 24, 1908.

Application filed August 28, 1905. Serial No. 276,128.

*To all whom it may concern:*

Be it known that I, MICHAEL JOHN HANEY, civil engineer, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Double-Interlocking Concrete Slab-Cribs, of which the following is a specification.

My invention relates to improvements in double-interlocking concrete slab-cribs; and the object of the invention is to devise a quickly-assembled, inexpensive, strong, and durable form of cribwork in which the concrete portions forming parts thereof may be simply and securely adjusted; and it consists, essentially, of face-slabs with suitable projecting portions at the ends thereof, cross-tie slabs with supplementary projecting portions extending therefrom and designed to receive the extending portions from the face-slabs, and cross-ties extending from face-slab to face-slab, suitably and movably attached thereto, and designed to take tensile strain, all arranged and constructed as hereinafter more particularly explained.

Figure 1 is a perspective view of my cribwork, showing the continuous method of interlocking adjoining slabs. Fig. 2 is an enlarged side view of my double-interlocking joint, showing the method of securing the face-slabs and cross-ties together. Fig. 3 is an enlarged perspective view of my double-interlocking joint with one of the face-slabs removed. Fig. 4 is a plan detail of the method of fastening the cross-ties to the face-slab.

In the drawings like letters of reference indicate corresponding parts in each figure.

A A are the two face-slabs of a single crib with substantial projecting portions A' extending from the ends thereof, the upper face of said portions being flat and the lower of a V-shaped cross-section sloping inwardly from the outer to the inner face of said slabs, as shown clearly in Fig. 3.

B B are the end cross-tie slabs of the cribbing with substantial projecting portions B' extending therefrom, having a V-shaped groove upon the upper face thereof, the contour of said groove being designed to fit the V-shaped face of the extending portions A', as shown in Figs. 2 and 3.

C C are reinforced concrete cross-ties having angle-irons D and D' extending therein, symmetrically designed and placed, the flanged portions D<sup>4</sup> or arms of said angles ex-

tending away from each other and slightly beyond the end of said cross-tie, as shown in Fig. 4. A tubing or the like D<sup>2</sup> is provided between the angle-irons, through which a bolt D<sup>3</sup> extends and holds the aforesaid irons relatively rigid when the concrete is green.

E E are channel-bars symmetrically placed, extending into and running the width of the face-slab, having the flanged portions E' E' extending toward each other and beyond the face-slab, forming, with the face-slab, a channel or groove in which the flanged portions D<sup>4</sup> are designed to be securely and movably held, as shown in Figs. 1 and 4.

F is a lattice-work bolted to the flanges F' of the channel-bars and designed to hold them in place when the concrete is green.

H represents the face-slabs of the adjoining crib, which are provided with portions H', extending from the ends thereof and of a form identical with that of the projections from the aforesaid face-slabs.

P P are suitable piles upon which the said cribwork rests.

The V-shaped grooves and the supplementary portions extending therein are faced with a suitable plating R, bolted or otherwise secured to the concrete backing of the slabs, as shown in Figs. 2 and 3.

In forming a continuous cribbing the cross-tie slabs B B are placed upright on suitable pile foundation having the V-shaped faces of the projecting portions facing upwardly. The face-slabs A A are then lowered, and when the V-shaped face of the extending portion becomes adjacent to the projecting portion of the cross-tie slabs the face-slabs are given a lateral motion and, coming in contact with the cross-tie slabs, slide into position, as most clearly shown in Fig. 3. The face-slabs H of the adjoining crib are placed in position in an identical manner on the cross-tie slabs, forming when in position a doubly-interlocking joint. The interlocking portions follow consecutively, the portions from the cross-tie slabs extending between the extending portions from the face-slabs. When no adjoining cribs are to be added, the joint is formed by doubling the number of extending V-formed projecting portions on the face-slab, thus filling the position theretofore occupied by the exempted extending portions of the adjoining face-slab, as shown in Fig. 1, and strengthening the joint at the same time.

It will be noticed that no other clamping or fastening means is required when once the



plates or face-slabs are in place, since their tendency is to slide always inwardly and downwardly and accordingly, owing to their extreme heaviness, are not easily displaced.

5 There is a clearance-space allowed between the projecting portions of the cross-tie slabs to allow for sufficient downward inclination of the V-shaped faces of the face-slabs. This clearance-space is afterward filled with com-  
10 position.

It will be seen that with such an invention as I have described a complete, cheap, and substantial cribbing is provided and should  
15 prove itself capable of withstanding the exposure and usage for which it is devised.

What I claim as my invention is—

1. In a cribbing of the class described, the combination with the supporting material, of opposing face-slabs, cross-tie slabs, and pro-  
20 jections on the adjacent edges thereof, the projections on one part having two inclined faces contacting with two inclined faces on the projections of the other part for fastening the cross-tie and face slabs together, as and  
25 for the purpose specified.

2. In a reinforced concrete cribbing, the combination with the supporting material, of opposing face-slabs, cross-tie slabs and inter-  
30 locking projections on the adjacent edges thereof, the projections on one part having two inclined faces contacting with two inclined faces on the projections of the other part for fastening the cross-tie and face slabs to-  
35 gether, as and for the purpose specified.

3. In a reinforced concrete cribbing, the combination with the supporting material, of face-slabs, cross-tie slabs, concrete cross-ties  
40 extending from face-slab to face-slab and means carried by said cross-ties for securing the same to said face-slabs, and means for fastening the face-slabs and cross-tie slabs together, as and for the purpose specified.

4. In a reinforced concrete cribbing, the combination with the supporting material, of  
45 two opposing face-slabs having projecting portions therefrom, such portions having their lower surfaces each formed of two inclined faces, and cross-tie slabs extending between the ends of said face-slabs and having  
50 supplemental projecting portions extending from the ends thereof with a surface designed to receive the aforesaid face-slab-projecting portions, as and for the purpose specified.

5. In a reinforced concrete cribbing, the combination with the supporting material, of  
55 two opposing face-slabs having projecting portions therefrom, such portions having their lower faces of a V-shaped cross-section in the plane of the slab and inclined down-  
60 wardly toward the inner surface of the said slab, cross-tie slabs extending between the ends of said face-slabs and having supplemental projecting portions extending from the ends thereof with a surface designed to  
65 receive the aforesaid face-slab, and cross-ties

extending from face-slab to face-slab, and having projecting portions thereon designed to engage with the projections on the face-slab, as and for the purpose specified.

6. In a reinforced concrete cribbing, the combination with the supporting material, of  
70 two opposing face-slabs having projecting portions therefrom, such portions having their lower faces of a V-shaped cross-section in the plane of the slab and inclined down-  
75 wardly toward the inner surface of the said slab, cross-tie slabs extending between the ends of said face-slabs and having supplemental projecting portions extending from the ends thereof with a surface designed to  
80 receive the aforesaid face-slab, and cross-ties having oppositely-placed angle-bars embedded in the ends thereof, the flanged portions extending outwardly beyond the end of the  
85 cross-ties and oppositely-placed angle-bars extending from and secured to the face-slabs and designed to form with the face-slabs, channels to receive the projecting portions from the cross-ties, as and for the purpose  
90 specified.

7. In a reinforced concrete cribbing, the combination with the supporting material, of  
95 two opposing face-slabs having projecting portions therefrom, such portions having their lower faces of a V-shaped cross-section in the plane of the slab and inclined down-  
wardly toward the inner surface of the said slab, cross-tie slabs extending between the ends of said face-slabs and having supplemental projecting portions extending from  
100 the ends thereof with a surface designed to receive the aforesaid face-slab, and cross-ties having oppositely-placed angle-bars embedded in the ends thereof, the flanged portions extending outwardly beyond the end of the  
105 cross-ties, oppositely-placed angle-bars extending from and secured to the face-slabs and designed to form with the face-slabs, channels to receive the projecting portions from the cross-ties, and means for holding  
110 the said angle-bars rigidly at a predetermined distance apart, as and for the purpose specified.

8. In a reinforced concrete cribbing, the combination with the supporting material,  
115 of two opposing face-slabs having projecting portions therefrom, such portion having their lower faces of a V-shaped cross-section in the plane of the slab and inclined down-  
wardly toward the inner surface of the said  
120 slab, cross-tie slabs extending between the ends of said face-slabs and having supplemental projecting portions extending from the ends thereof with a surface designed to receive the aforesaid face-slab, and cross-ties  
125 having angle-bars symmetrically placed, extending from the face-slabs and designed to form with the face-slabs, channels to receive the projecting portions from the cross-ties and means for holding said channel-bars  
130



rigidly, a predetermined distance apart, as and for the purpose specified.

9. In a reinforced concrete cribbing, the combination with the supporting material of two opposing face-slabs having projecting portions therefrom, such portions having their lower surfaces each formed of two inclined faces, cross-tie slabs extending between the ends of said face-slabs and having supplemental projecting portions extending from the ends thereof with a surface designed to receive the aforesaid face-slab-projecting portions, and metallic facings for the said inclined faces of the projecting portions, secured thereto and designed to give a smooth and hard surface, as and for the purpose specified.

10. In a continuous reinforced concrete cribbing, the combination with the supporting material, of opposing face-slabs, having projecting portions from the several ends thereof, such portions having their lower surfaces each formed of two inclined faces, and the upper faces flat, and cross-tie slabs extending between the ends of the said face-slabs, and having supplemental projecting portions extending from the ends thereof with the contour of the upper surface designed to receive the alternately-projecting portions of the adjoining face-slabs, as and for the purpose specified.

11. In a continuous reinforced concrete cribbing, the combination with the supporting material, of opposing face-slabs having projecting portions from the several ends thereof, such portions having their lower faces of a V-shaped cross-section in the plane of the slab, and inclined downwardly to the inner face of each respective slab, and the upper faces flat, cross-tie slabs extending between the ends of the said face-slabs, and having supplemental projecting portions ex-

tending from the ends thereof with the contour of the upper surface designed to receive the alternately-projecting portions of the adjoining face-slabs, and cross-ties extending from face-slab to face-slab, and fastened thereto and designed to take tensile strain, as and for the purpose specified.

12. In a continuous reinforced concrete cribbing, the combination with the supporting material, of opposing face-slabs having projecting portions from the several ends thereof, such portions having their lower faces of a V-shaped cross-section in the plane of the slab, and inclined downwardly to the inner face of each respective slab, and the upper faces flat, cross-tie slabs extending between the ends of the said face-slabs, and having supplemental projecting portions extending from the ends thereof with the contour of the upper surface designed to receive the alternately-projecting portions of the adjoining face-slabs, cross-ties extending from face-slab to face-slab, having symmetrically-placed angle-bars embedded in the ends thereof, the flanged portions extending outwardly beyond the end of the cross-ties, and symmetrically-placed angle-bars extending from and secured to the inner face of the said face-slab and designed to form with the face-slabs, channels to receive the projecting portions from the cross-tie slabs, as and for the purpose specified.

13. The combination with the face-slabs and cross-tie slabs suitably connected together, of the reinforced concrete tie members located intermediate of the length of the face members and serving to reinforce them as and for the purpose specified.

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Witnesses:

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E. McEACHERN.