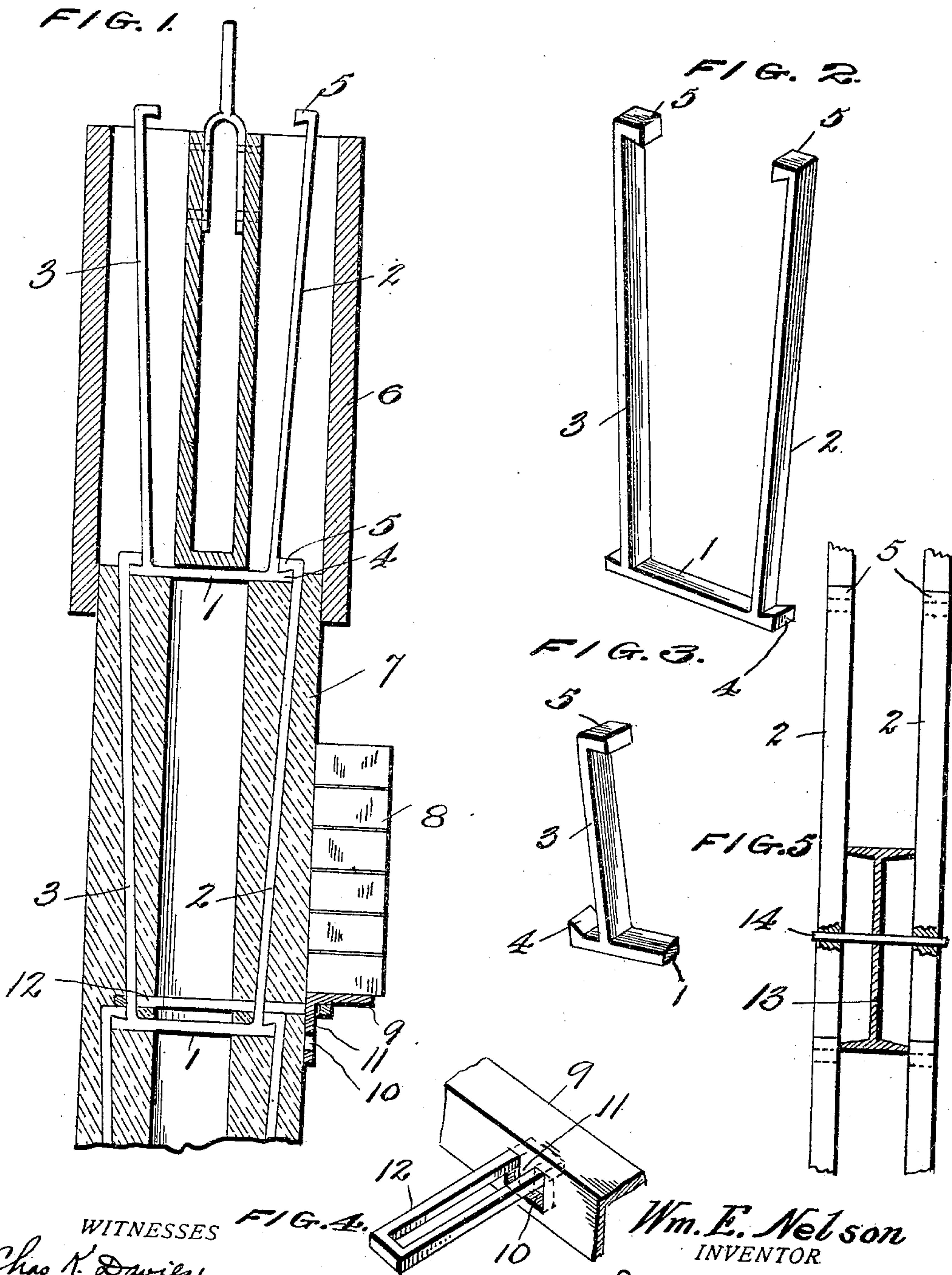


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 APPLICATION FILED JUNE 17, 1909.

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Patented Apr. 12, 1910.  
 2 SHEETS—SHEET 1.



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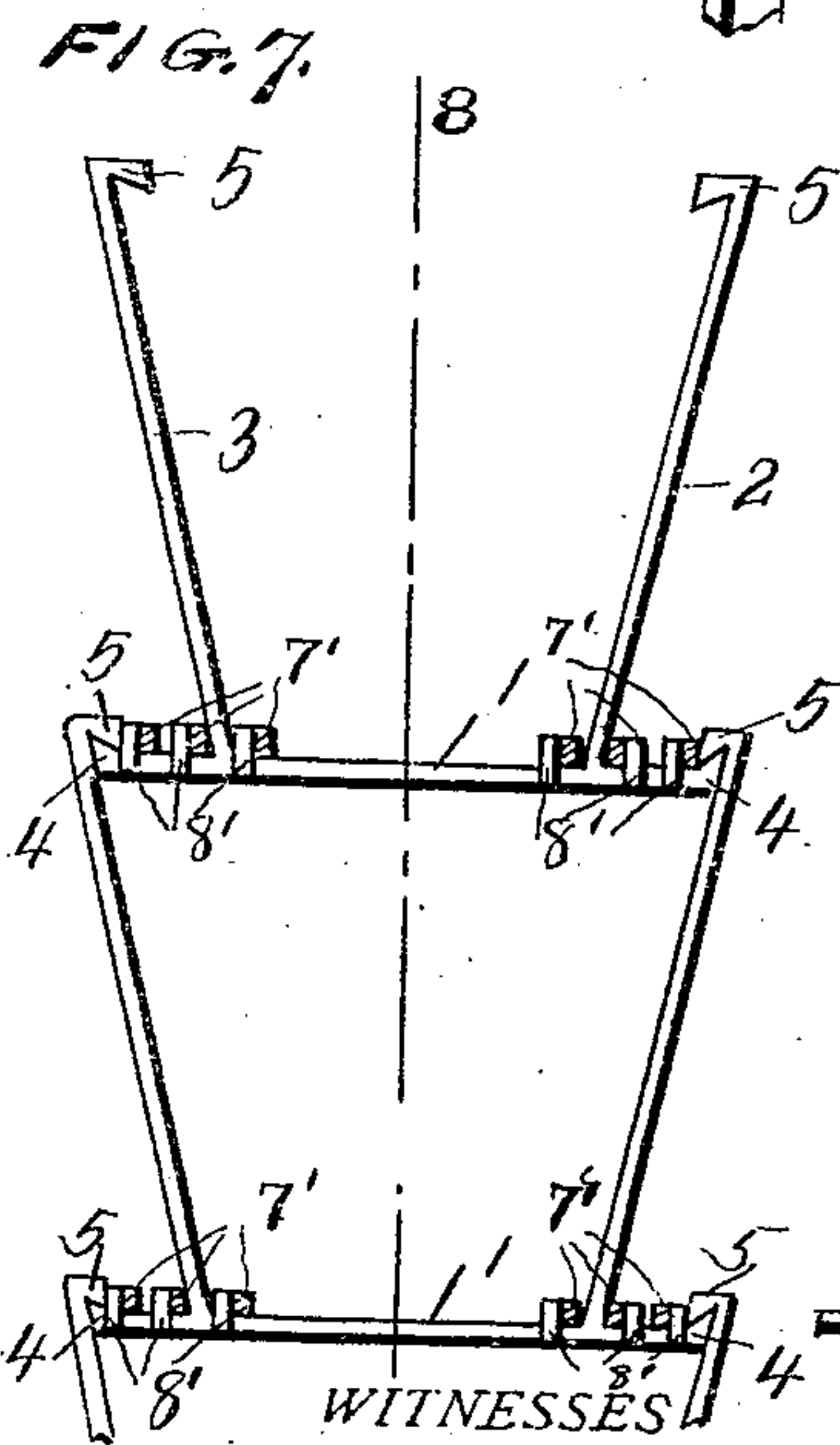
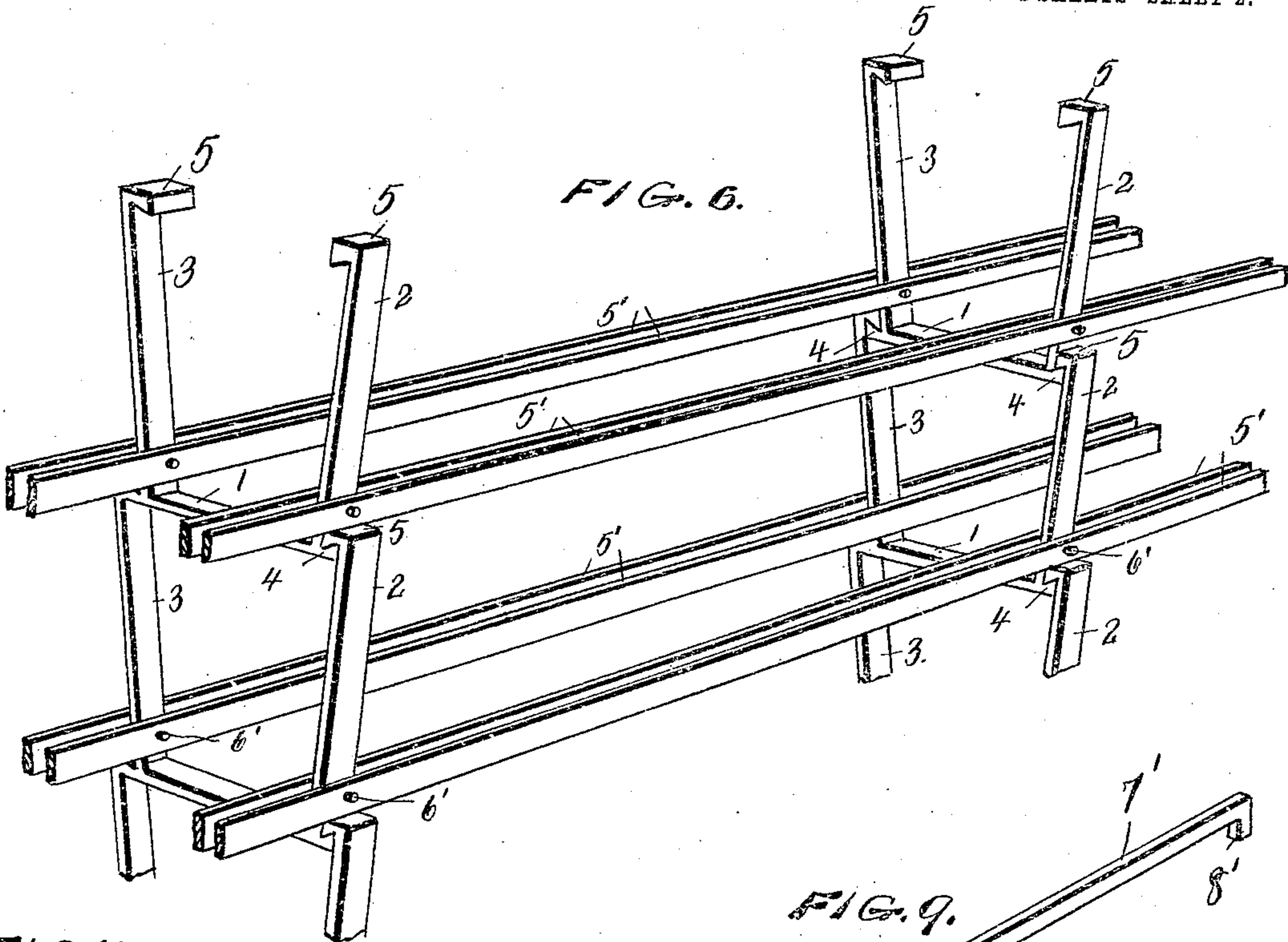


FIG. 8.

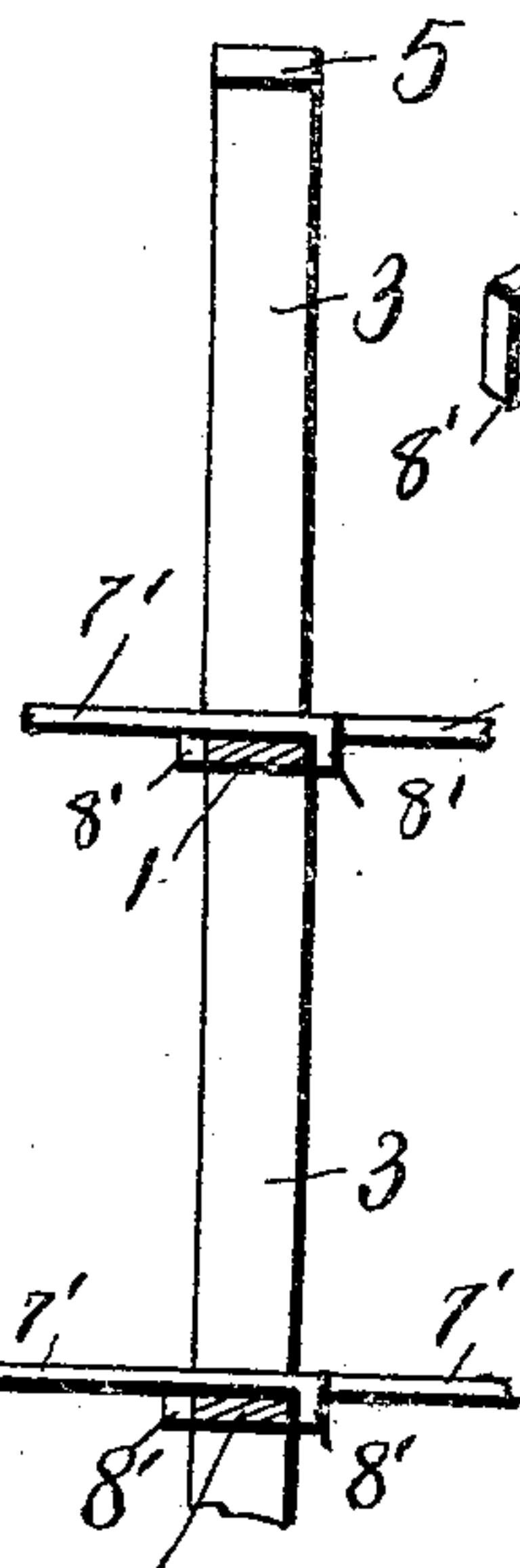


FIG. 9.

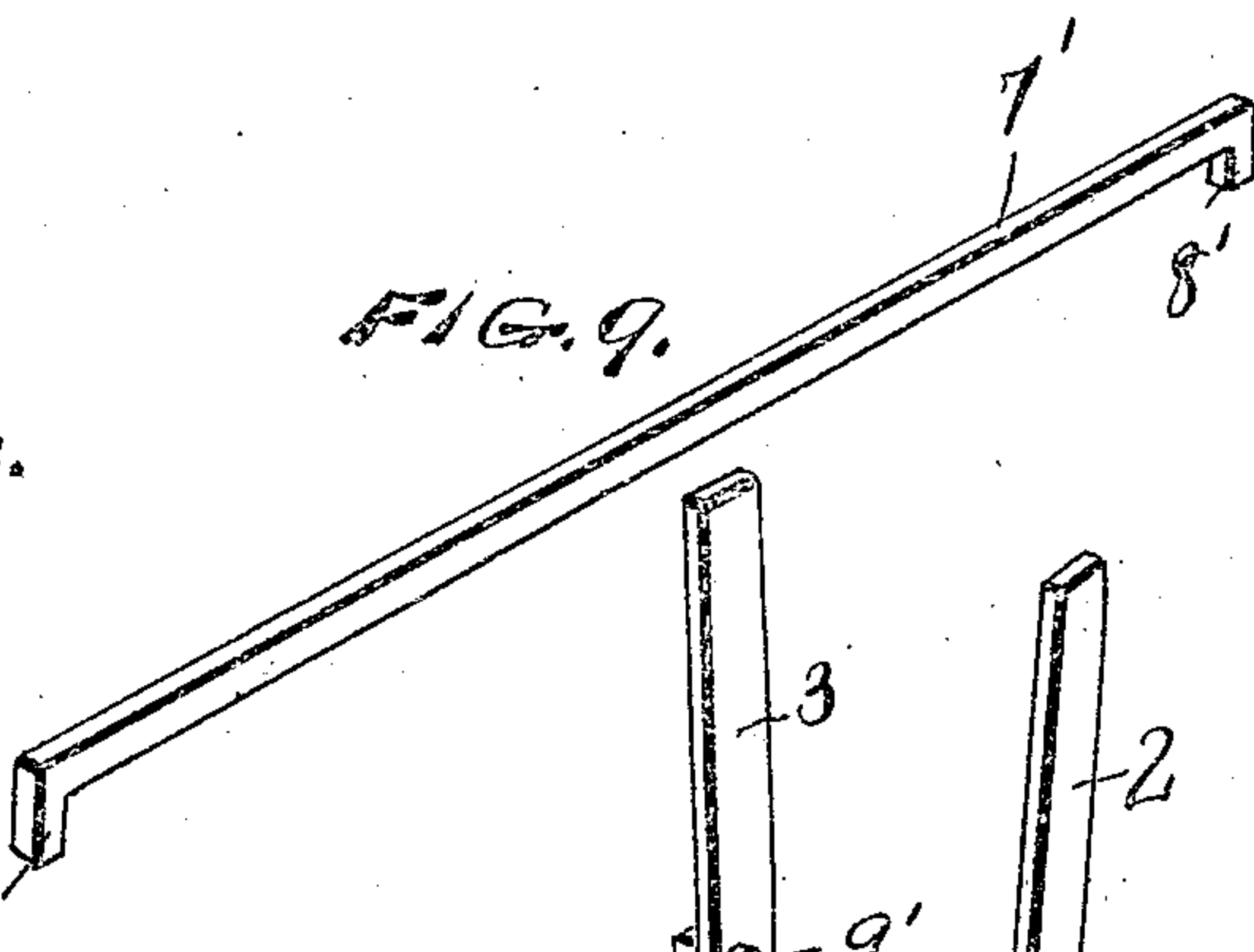
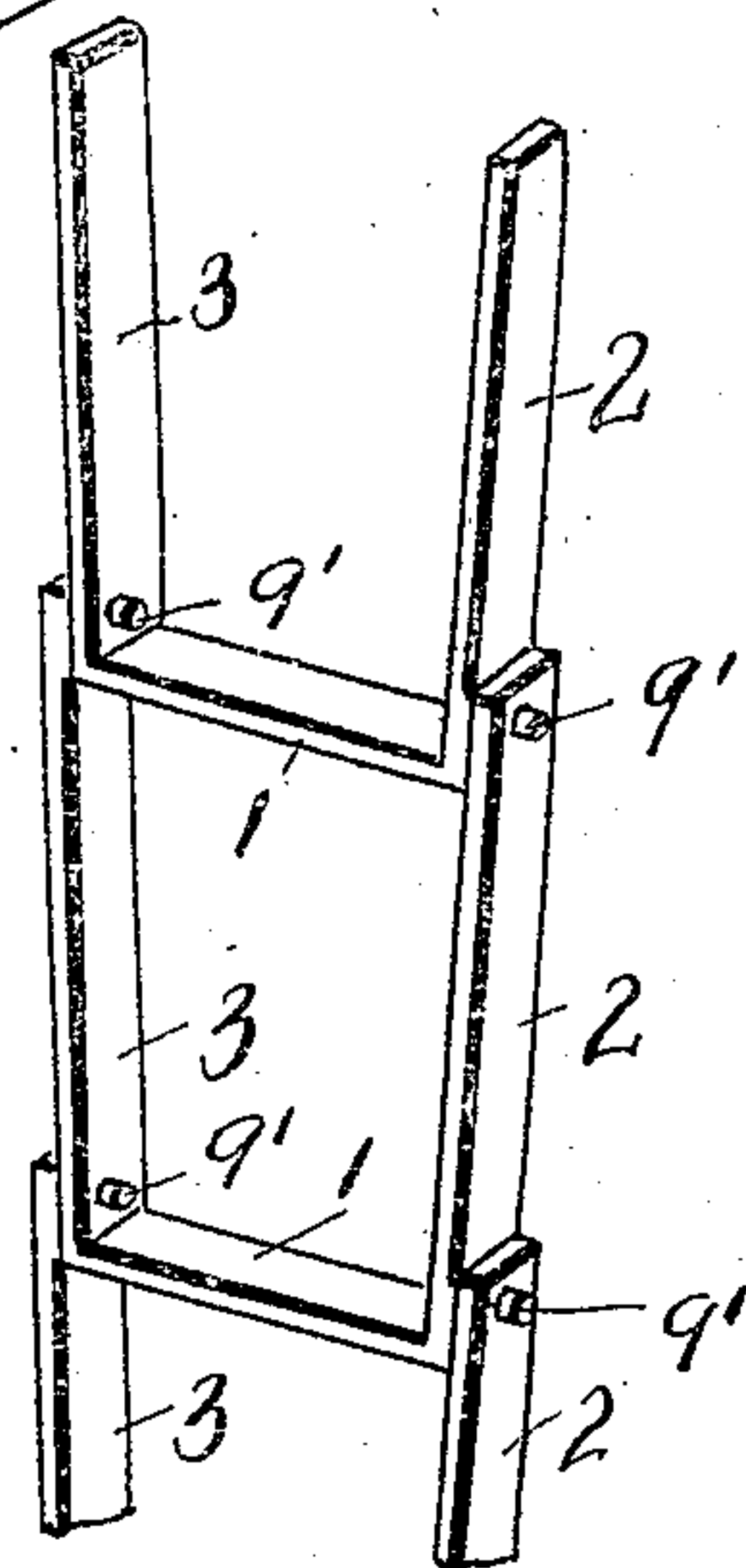


FIG. 10.



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# UNITED STATES PATENT OFFICE.

WILLIAM E. NELSON, OF SAN ANGELO, TEXAS.

REINFORCING METAL YOKE FOR HOLLOW CONCRETE WALLS.

954,877.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed June 17, 1909. Serial No. 502,644.

*To all whom it may concern:*

Be it known that I, WILLIAM E. NELSON, a citizen of the United States, residing at San Angelo, in the county of Tom Green and State of Texas, have invented certain new and useful Improvements in Reinforcing Metal Yokes for Hollow Concrete Walls, of which the following is a specification.

My invention relates to reinforcing means for walls formed of plastic composition, and which are molded in successive vertical sections.

An object of my invention is to provide reinforcing means for hollow plastic walls, which are adapted to unite transversely the two sides of the hollow walls and to vertically support the same.

A further object of my invention is to provide reinforcing means for hollow plastic walls, which consist of frames embedded within the same, connecting transversely the two sides and supporting the downward pressure of the same and reinforcing said wall longitudinally.

A further object of my invention is to provide reinforcing means of the character described, by the use of which the housing generally employed in the building of plastic walls may be done away with.

In the accompanying drawings illustrating the preferred embodiment of my invention and in which like numeral references designate like parts throughout the same, Figure 1 is a cross sectional view of a hollow concrete wall, and mold therefor, showing my reinforcing means arranged therein. Fig. 2 is a perspective view of one of my yokes. Fig. 3 is a fragmentary perspective view of a modified form of the yoke shown in Fig. 2. Fig. 4 is a fragmentary perspective view of a bracket for supporting a brick wall upon the side of the concrete wall and showing means adapted to embrace one of the yokes and support the bracket. Fig. 5 is a fragmentary view of a plurality of my yokes and showing a sectional view of an I-beam arranged between and secured to the same. Fig. 6 is a perspective view of my reinforcing frame consisting of yokes connected by strips. Fig. 7 is a side view partly in section of a slightly modified form of my yokes shown in Figs. 1 and 6, and showing the horizontal bars arranged thereon. Fig. 8 is a cross sectional view taken on the line 8—8 of Fig. 7. Fig. 9 is a perspective view of one of the hori-

zontal rods shown in Figs. 7 and 8. Fig. 10 is a perspective view of a plurality of my yokes of a modified form different from the yokes shown in Figs. 1, 2, 3, 6, 7 and 8.

In the drawings, 1 designates the base of a yoke having the upwardly extending and outwardly spreading arms 2 and 3, and said yoke may be made of either cast, wrought iron or steel. As shown in the drawings, the arms 2 and 3 join the base 1 within its outer extremities, except in the modified form shown in Fig. 10, wherein the sides 2 and 3 join the base 1 at its extremities. The upstanding sides 2 and 3 spread outwardly for a purpose hereinafter described.

The extremities of the upper face of the base of my yokes, except in the case of the form shown in Fig. 10, are beveled inwardly as shown at 4, to provide a catch for the inwardly turned and upwardly beveled ends 5 carried by the arms 2 and 3.

It will be apparent that when the base 1 of a yoke, except in the case of the form shown in Fig. 10, is placed transversely between the arms 2 and 3 and in engagement with the extremities 5, the said base 1 cannot be forced downwardly unless the said sides 2 and 3 spread and this is prevented by the upwardly beveled extremities of the base 1 and sides 2 and 3 in engagement with each other. Thus a chain may be formed of the yokes capable of supporting vertical pressure. It is often desirable to sustain the downward pressure of the wall between the chains of yokes, and to accomplish this end I secure the strips 5' upon the arms 2 and 3 of the yokes as shown in Fig. 6, by bolts 6' or the like. By this construction a frame-work is obtained which will sustain the downward pressure of the sides of the wall and connect the same transversely. Instead of the strips 5', I may employ rods 7' provided with the hooked ends 8'. The rods 7' are especially adapted to be applied to the form of my yokes shown in Fig. 7. In this figure the hooked ends 8' are shown fitting over the base 1 of the yoke. In Fig. 8 the application of the rods 7' is very clear, the hooked ends 8' of the rods 7' extending in opposite directions engaging opposite sides of the base of the yoke. Thus chains composed of the yokes shown in Fig. 7 may be united to form a frame similar to the frame shown in Fig. 6.

The yokes shown in Fig. 10 are intended to be used in walls which are not subjected



to very great pressure. These yokes are secured to each other as shown in Fig. 10, by the bolts 8' which pass through the upper and lower extremities of the sides 2 and 3 of each yoke and which secure the upper extremity of one yoke to the lower extremity of a corresponding yoke. These yokes may thus be made into chains, which are adapted to vertically support the sides of a hollow wall and connect the said sides transversely.

When constructing a concrete wall, the yokes are set transversely within a mold form 6, resting upon the foundation or as illustrated in Fig. 1 upon a previously finished section of the wall 7, the said yokes being locked to the corresponding yokes embedded within the finished section and extending upwardly therebeyond. The plastic composition is then filled in the mold between its inner and outer walls, thus embedding the yokes and the strips secured thereto within the same.

If it should be desired to transfer directly the support of the floor or ceiling to the reinforcing means of the walls, the chains composed of the yokes before described, may be suitably spaced apart, and the I-beam 13 arranged between the same and secured to the arms 2 and 3 by means of the bolts 14 as shown in Fig. 5.

If it should be desired to build a brick wall 8 or other facing along the side of the concrete wall and have the said brick wall supported by the concrete wall, I provide a bracket 9 having the opening 10 and the depending tongue 11 therein. I further provide a link 12, which may be slipped over the base of the yoke before the same is interlocked with the yoke below it. The link 12 is adapted to embrace the said yoke and rest upon the intumed hooked extremities of the yoke below it, and extend beyond the wall, through the opening 10 in said bracket 9 and contain the tongue 11.

Having fully described my invention, I claim:

1. Reinforcing means for hollow plastic walls comprising a chain formed of a plurality of U-shaped members, adapted to support said wall during its construction, each of said U-shaped members being vertically disposed and arranged transversely of said wall, uniting the two sides thereof and reinforcing said wall vertically.

2. The combination with a plastic wall composed of spaced sides and built in successive vertical layers, of means joining said sides each to the other and reinforcing said sides vertically, said means comprising chains formed of yokes, means for locking said yokes each to the other and means for locking said chains each to the other.

3. The combination with a plastic wall composed of spaced sides and built in successive vertical layers, of means joining said

sides each to the other and reinforcing said sides vertically and longitudinally, said means comprising chains formed of similar interlocking yokes, each of said yokes comprising outwardly spreading sides provided with beveled hooked ends and a portion joining said sides and provided with beveled extremities, strips connecting said chains, and means securing said strips upon said chains.

4. The combination with a plastic wall composed of spaced sides and built in successive vertical layers, of means joining said sides each to the other and reinforcing said sides vertically, said means comprising chains formed of interlocking similar yokes, a bracket supporting a facing upon one of said sides of said wall and a member embracing one of said yokes of each of said chains and engaging said bracket for supporting the same.

5. The combination with a plastic wall composed of spaced sides and built in successive vertical layers, of means joining said sides each to the other and reinforcing said sides vertically and longitudinally, said means comprising chains formed of interlocking similar yokes, each of said yokes comprising outwardly spreading sides provided with beveled hooked ends and a portion joining said sides and extending laterally therebeyond, said connecting portion being provided with upwardly beveled extremities, strips having hooked ends connecting said chains and engaging said connecting portions of said yokes composing the same.

6. Reinforcing means for hollow plastic walls, comprising a yoke having spaced upstanding outwardly spreading sides connected at the bottom thereof by a section of material, the upper ends of said sides being bent inwardly and beveled, said section of material extending laterally beyond said sides and being provided with a beveled upper surface.

7. Reinforcing means for hollow plastic walls, comprising a chain formed of a plurality of substantially U-shaped members arranged in end to end relation to each other, means for securing said substantially U-shaped members each to the other, said chain being adapted to support said wall during its construction, each of said substantially U-shaped members being vertically disposed and transversely arranged within said wall, uniting the two sides of said wall and reinforcing the same vertically.

8. Reinforcing means for hollow plastic walls, comprising a chain formed of a plurality of interlocking substantially U-shaped members, said chain being adapted to support said wall during its construction, each of said substantially U-shaped members being vertically disposed and arranged trans-



versely of said wall, for uniting the sides thereof at spaced intervals and reinforcing each of said sides vertically.

5 9. Reinforcing means for hollow plastic walls, comprising a substantially U-shaped member adapted to support a section of said wall during its construction, said substantially U-shaped member being vertically disposed and arranged transversely of said  
10 wall, for uniting the two sides thereof and reinforcing the same vertically.

10 10. Reinforcing means for hollow plastic walls, comprising a substantially U-shaped member, vertically disposed and arranged  
15 transversely of said wall, as and for the purpose set forth.

11. Reinforcing means for hollow plastic

walls comprising a substantially U-shaped member having projections formed upon its lower end for interlocking with the upper  
20 end of a corresponding yoke, substantially as described.

12. Reinforcing means for hollow plastic walls, comprising a substantially U-shaped member having portions formed upon its  
25 lower end for interlocking with the upper end of a corresponding member, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM E. NELSON.

Witnesses:

W. T. BARTHOLOMEW,  
W. V. CONGER.