

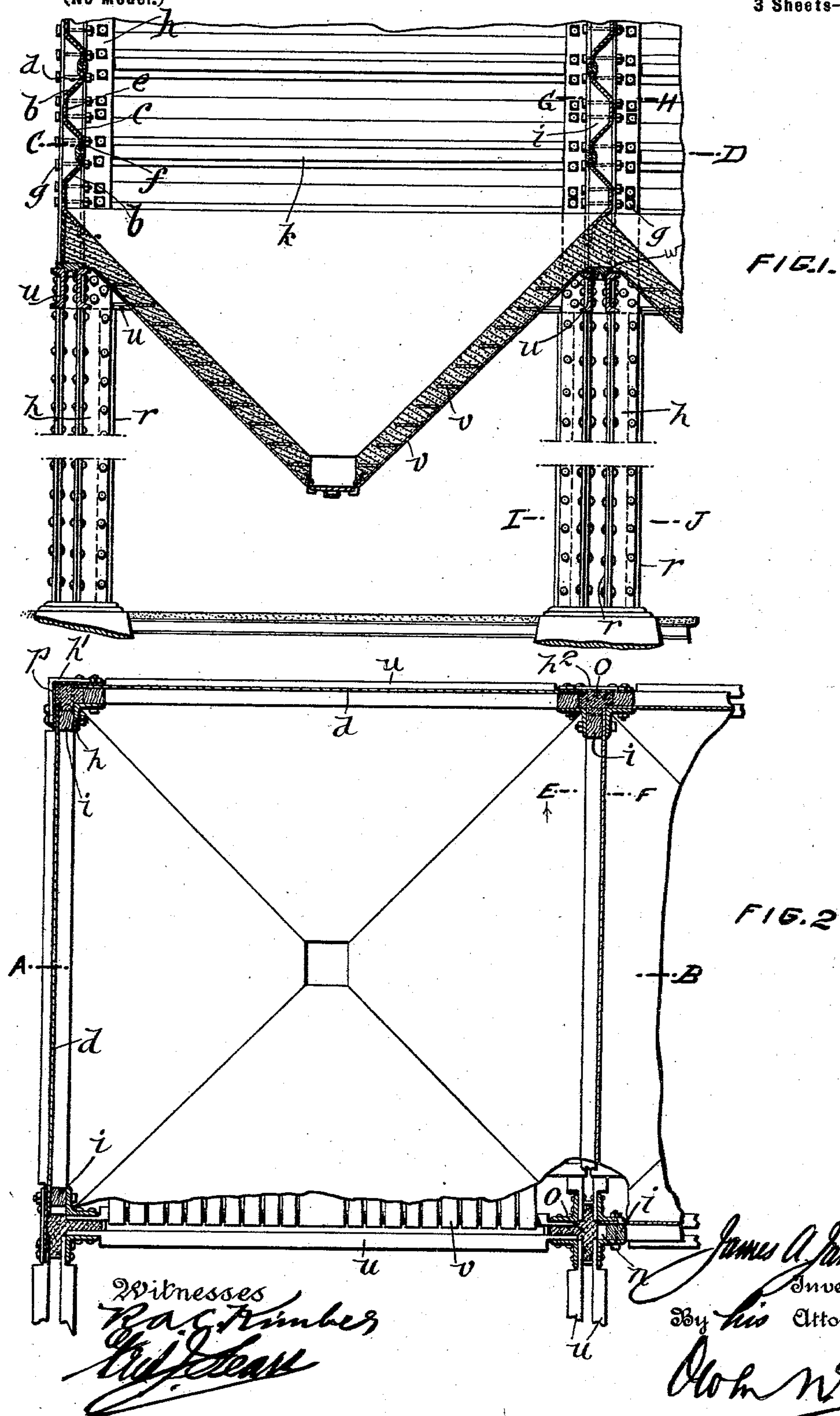
**J. A. JAMIESON.**

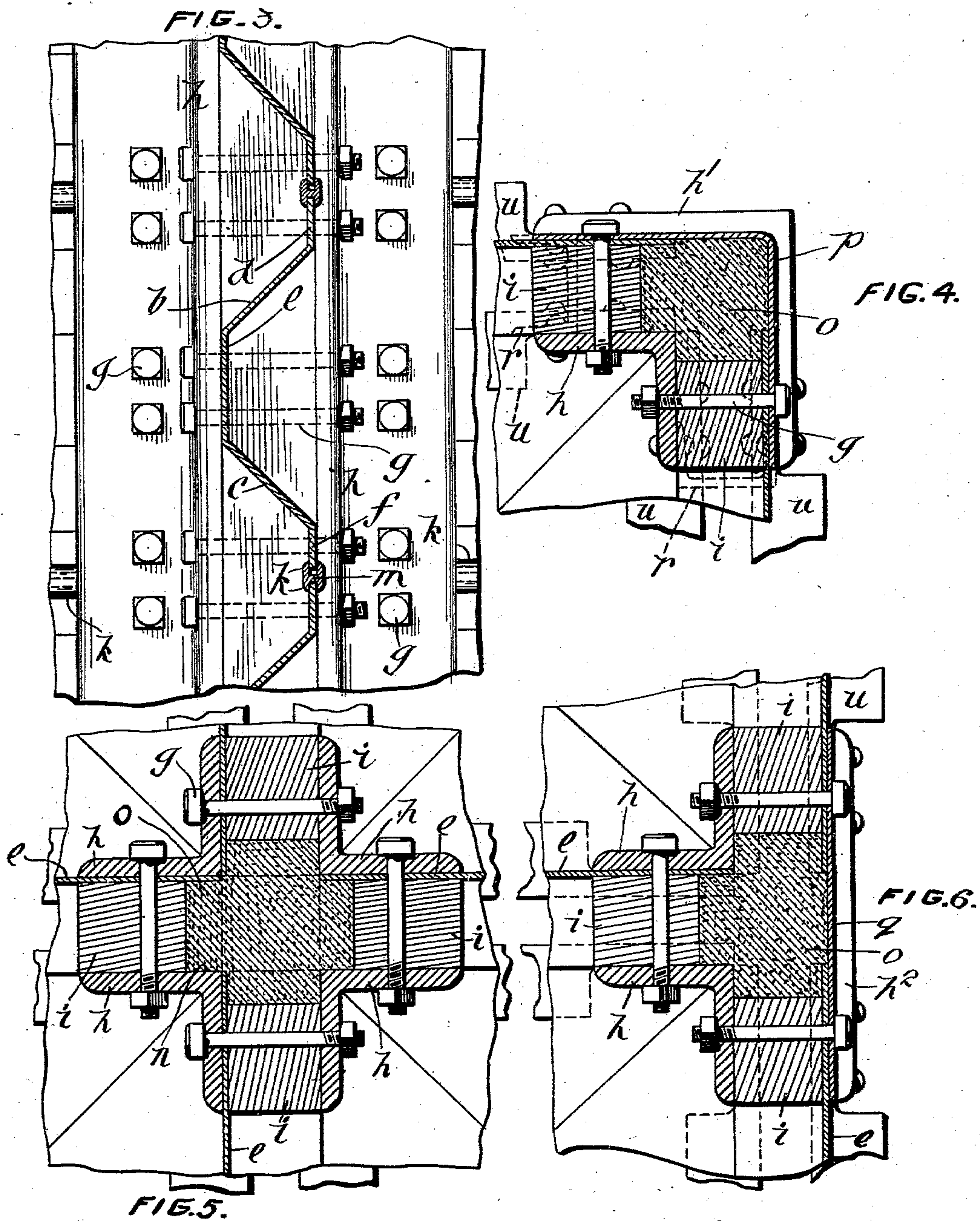
**BIN.**

(Application filed Nov. 6, 1901.)

**3 Sheets—Sheet 1.**

(No Model.)





Witnesses  
*Rac Kimber*  
*W. J. [unclear]*

*James A. Jamieson*  
 Inventor  
 By *Wm. [unclear]* Attorney  
*Wm. [unclear]*



No. 704,806.

Patented July 15, 1902.

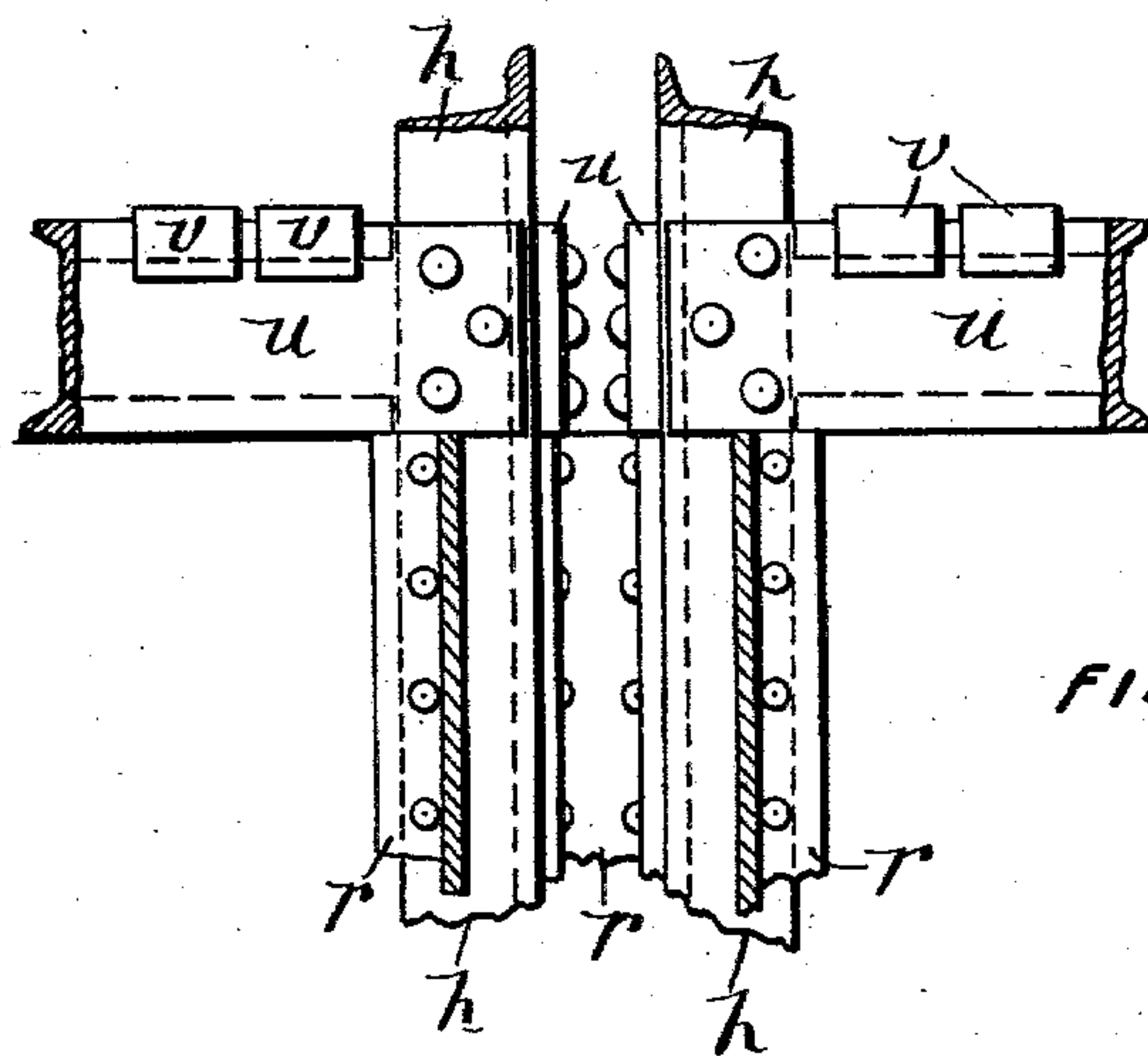
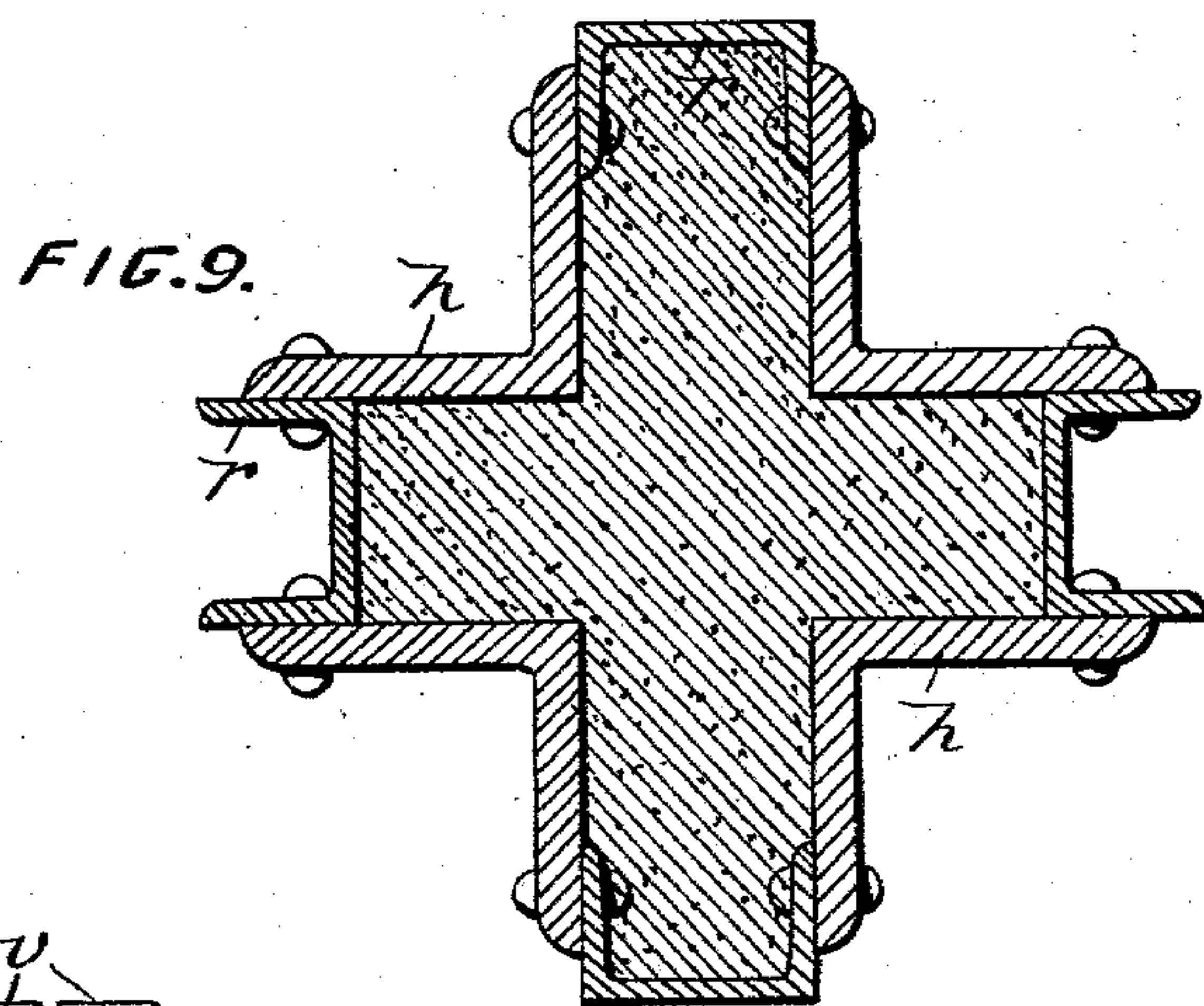
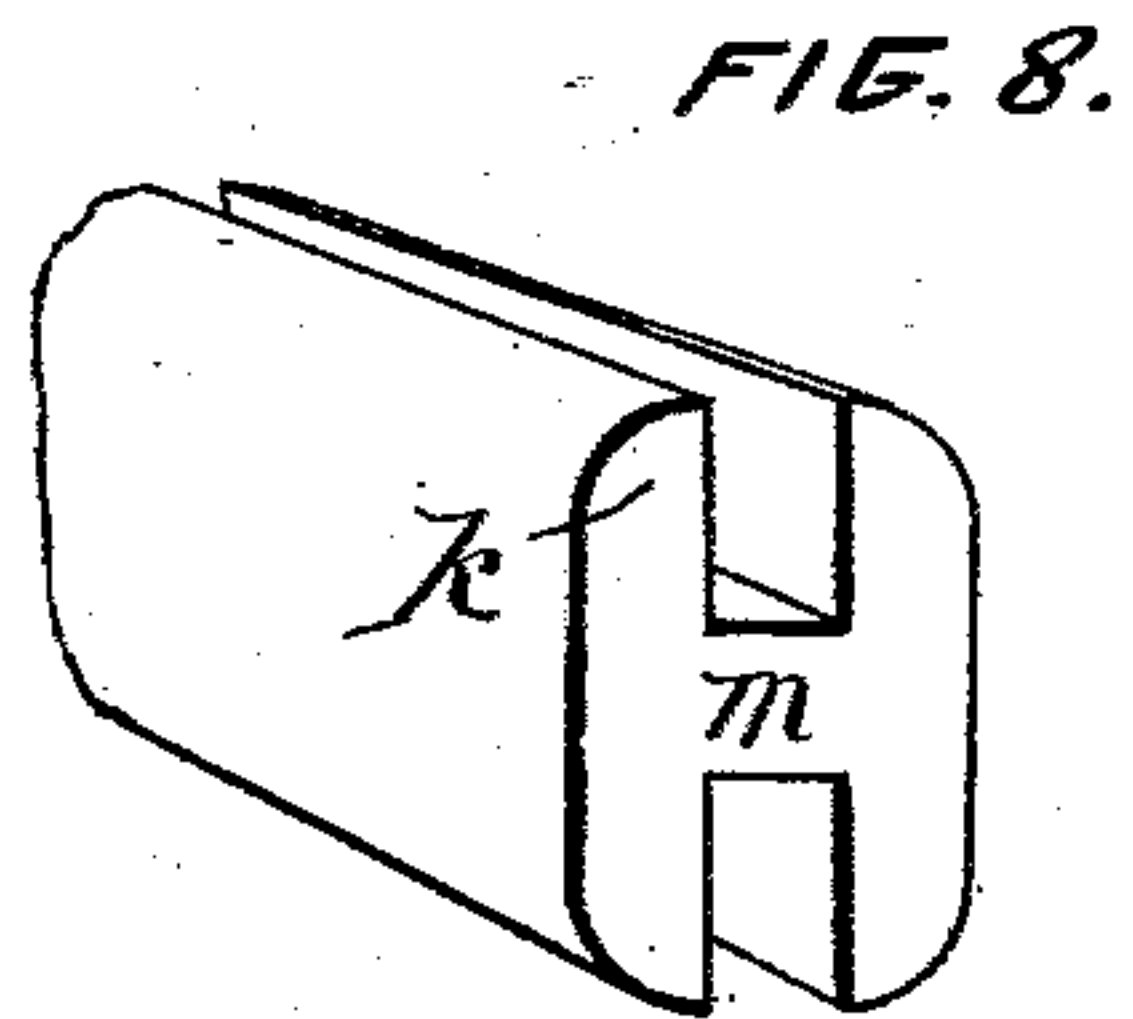
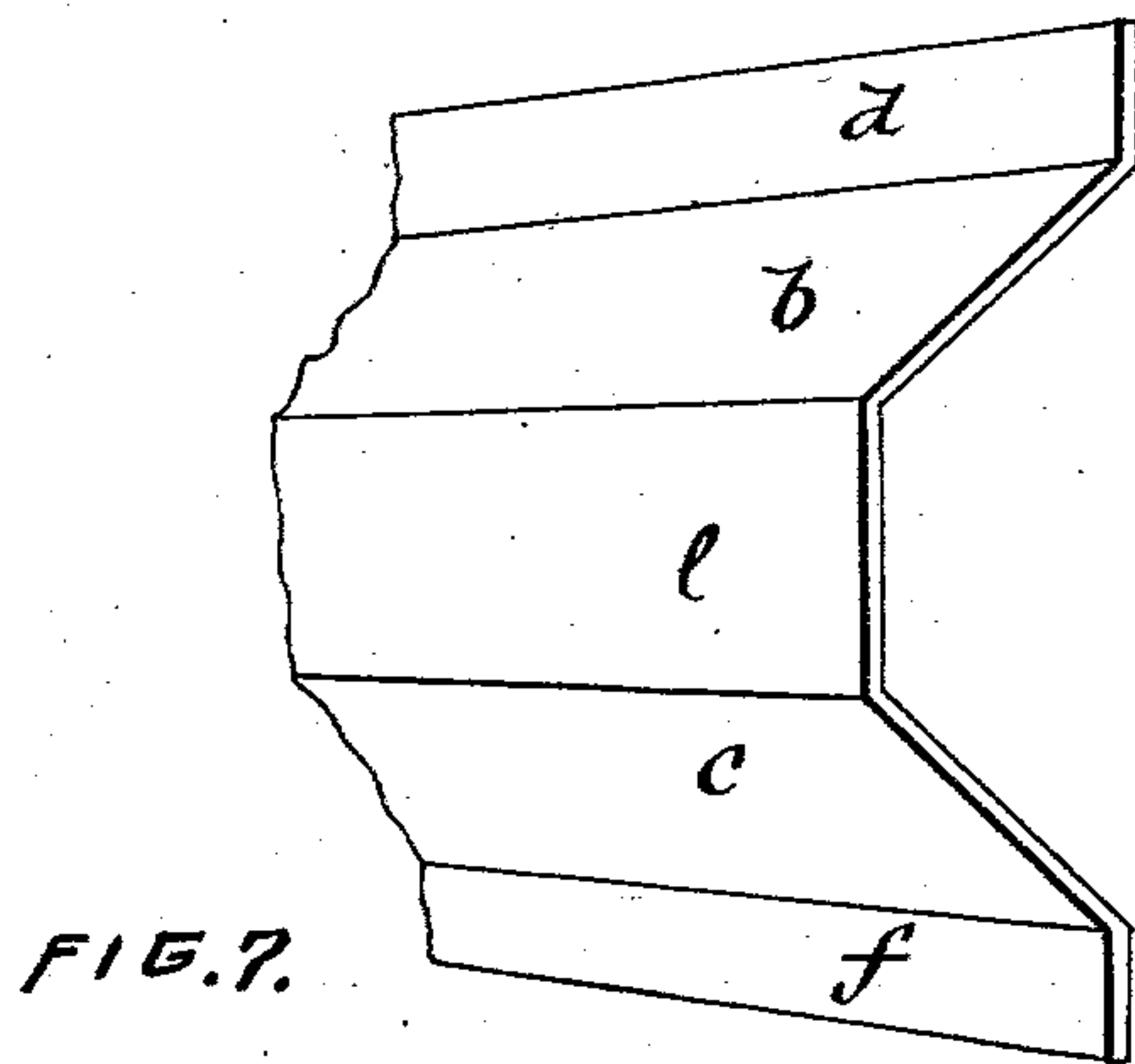
J. A. JAMIESON.

BIN.

(Application filed Nov. 6, 1901.)

(No Model.)

3 Sheets—Sheet 3.



Witnesses  
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# UNITED STATES PATENT OFFICE.

JAMES ALEXANDER JAMIESON, OF MONTREAL, CANADA.

## BIN.

SPECIFICATION forming part of Letters Patent No. 704,806, dated July 15, 1902.

Application filed November 6, 1901. Serial No. 81,348. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES ALEXANDER JAMIESON, engineer, of the city of Montreal, district of Montreal, and Province of Quebec, Canada, have invented certain new and useful Improvements in Bins; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to the construction of elevator-bins for use in the storage of grain, although it can be put to other uses to advantage.

The invention has for its object to provide a bin capable of carrying in its walls a large percentage of the load of the bin's contents and transmit said load to the corner-columns and thence to the base upon which the bin is supported. To this end I construct each wall to comprise a series of horizontal sections disposed a short distance apart one above the other and connected at their ends to the corner-standards, which preferably extend to and are supported directly upon the foundation.

The invention further consists in the peculiar construction and assembling and connection together of the component parts of my improved bin.

For full comprehension, however, of my invention reference must be had to the accompanying drawings, forming a part of this specification, in which like symbols indicate the same parts and wherein—

Figure 1 is a vertical sectional view of a grain-elevator bin and a portion of an adjoining bin constructed according to my invention, taken on line A B, Fig. 2. Fig. 2 is a horizontal sectional view thereof, taken on line C D, Fig. 1. Fig. 3 is a detail vertical sectional view taken on line E F, Fig. 2. Figs. 4, 5, and 6 are detail horizontal sectional views taken on line G H, Fig. 1. Fig. 7 is a detail perspective view of one of the independent wall-sections. Fig. 8 is a similar view of a joint-strip for closing the open spaces between the wall-sections without being joined thereto; Fig. 9, a horizontal sectional view of the pedestal, taken on line I J, Fig. 1; and Fig. 10 is a detail vertical sectional view of one of the standards, the view being taken through the middle of a standard at the

point where the contiguous bin-bottoms are supported thereon.

Each longitudinal wall-section of my improved bin is in the form of a trough, in that it comprises two inclined portions *b* and *c* and three flat portions *d*, *e*, and *f*. These wall-sections are bolted, as at *g*, at their ends or otherwise secured to a series of vertical angle-irons *h*, extending from the top of the bin down through the bottom thereof at each corner to the base, a series of filler-blocks *i*, of metal, wood, or concrete, filling and solidifying the ends of the wall-sections to provide a firm hold for the bolts *g*, rivets, or other fasteners. The wall-sections are arranged a short distance apart in order to prevent them bearing one upon the other between their ends, and the substance within the bins is prevented from running between said wall-sections by a series of lap-joint devices of *H* cross-section, the flanges *k* whereof overlap the edges of the wall-sections, while the web *m* serves only as a means for tying said flanges together and is of less thickness than the space between the wall-sections.

In the construction of elevators a series of bins usually adjoin one another, and my construction of bin is particularly adapted to this arrangement for the reason that four adjoining corners of as many bins form with their angle-irons and filler-blocks a vertical receptacle *n*, which I fill with concrete *o*, thereby further rigidifying such corner-columns and rendering them of exceptional strength. These corner-columns are particularly adapted to receive the frictional load of the substance within the bin and transmitted thereto through the wall-sections by forming the filler-blocks of less thickness between the bolts and the adjacent ends of the wall-sections than the space between said points, which spaces are filled by the spreading of the concrete of which the corner-columns are formed thereinto, thereby in a measure keying the wall-sections to said corner-columns. (See Fig. 4.) The corner-columns of outside corner-bins of a series or the corner-columns of individual bins consist of a single angle-iron *h*, a pair of filler-blocks *i*, an angle-plate *p*, and a concrete filling *o*, (see Fig. 4,) while the columns joining the corners of



the outside bins of a series (between said corners of the series) consist of two angle-irons  $h$ , three filler-blocks  $i$ , a flat plate  $q$ , and a concrete filling  $o$ , (see Fig. 6,) the angle-plates  $p$  and flat plates  $q$  corresponding in height to the bin.

In bins of my improved construction each wall-section constitutes in itself a complete and independent girder, the inwardly-facing trough shape thereof supporting a comparatively large proportion of the frictional load, and the separation thereof from the sections above and below it and its integral connection with the corner-columns transmitting said frictional load to the corner-columns, which in turn transmit it to the bases upon which the said corner-columns are supported. This, what may be termed "collection" or "accumulation" of the vertical and horizontal pressures, causes at least seventy-five per cent. of the total load of the contents of each bin to be carried by its corner-columns, and in order to transmit this load to the supporting base or foundation I extend the angle-irons  $h$  of the inside corner-columns, where a series of bins are used, downward thereto and stay same with bracing channel-irons  $r$ , bolted or otherwise secured between the said angle-irons  $h$ , while additional angle-irons  $h'$  are added to the angle-irons  $h$  of the outside corner-columns and are stayed by channel-irons  $r$ , as just described, these bracing channel-irons extending between the bases or foundation and a series of horizontal bin-bottom-supporting channel-irons  $u$ , which latter are supported thereon, the outside columns other than the corner-columns being furnished with plates  $h^2$ . The bottoms of my improved bins are hung from said series of channel-irons  $u$ , which are bolted at their ends to the angle-irons  $h$  on a level with the bottom of the bin-walls and, as just mentioned, rest upon said bracing channel-irons  $r$ . The bin-bottoms may be of any approved type; but I prefer to utilize the construction disclosed and claimed in my pending application filed on August 27, 1900, under Serial No. 28,254. The strap or metallic lengths  $v$  which suspend this form of bin-bottom are bent over the channel-irons  $u$ , as shown in Fig. 1, and are secured rigidly in place by keys in the form of blocks  $w$  of wood, metal, or concrete.

What I claim is as follows:

1. A bin comprising corner-standards, a series of horizontal sections with recessed inner sides, said sections constituting the walls of said bin, and means for rigidly connecting said horizontal sections to said corner-standards for the purpose set forth.

2. A bin comprising corner-standards, a series of horizontal sections with recessed inner sides, said sections being independent of one another and constituting the walls of said bin, and means for rigidly connecting said horizontal sections to said corner-standards, for the purpose set forth.

3. A bin comprising composite corner-standards consisting of a concrete column and a metal stay, a series of horizontal sections independent of one another and constituting the walls of said bin, and means for rigidly connecting said horizontal sections to said corner-standards, for the purpose set forth.

4. A bin comprising composite corner-standards consisting of a concrete column and a metal stay, a series of horizontal sections with recessed inner sides, said sections being independent of one another and constituting the walls of said bin, and means for rigidly connecting said horizontal sections to said corner-standards, for the purpose set forth.

5. A bin comprising composite corner-standards consisting of a concrete column and a metal stay, a series of sections of greater horizontal length than height and extending from corner-standard to corner-standard and constituting the walls of said bin, and means for rigidly connecting said horizontal sections to said corner-standards, substantially as described and for the purpose set forth.

6. A bin comprising corner-standards consisting of one or more vertical angle-irons, a filler and means for binding said angle iron or irons and said filler together; a series of horizontal wall-sections; and means for connecting the ends of said wall-sections to said standards, substantially as described and for the purpose set forth.

7. A bin comprising corner-standards consisting of one or more vertical angle-irons, a filler and means for binding said angle iron or irons and said filler together; a series of horizontal wall-sections arranged a short distance apart; means for connecting the ends of said wall-sections to said standards; and means for closing the space between said wall-sections, substantially as described and for the purpose set forth.

8. A bin comprising corner-standards consisting of one or more vertical angle-irons, a concrete column, and means for binding said angle iron or irons and said concrete column together; a series of horizontal wall-sections arranged a short distance apart; means for connecting the ends of said wall-sections to said standards; and means for closing the space between said wall-sections, substantially as described and for the purpose set forth.

9. A bin comprising corner-standards consisting of one or more vertical angle-irons, a concrete column, and means for binding said angle iron or irons and said concrete column together; a series of horizontal wall-sections of trough form arranged a short distance apart and with their recesses facing inwardly; means for connecting the ends of said wall-sections to said standards; and means for closing the space between said wall-sections, substantially as described and for the purpose set forth.



10. A bin comprising corner-standards consisting of one or more vertical angle-irons, a filler, and means for binding said angle iron or irons and said filler together; a series of horizontal wall-sections arranged a short distance apart; means for connecting the ends of said wall-sections to said standards; and a series of strips of H cross-section disposed with the spaces between their flanges receiving the adjacent edges of said horizontal wall-sections for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

11. A bin comprising corner-standards consisting of a series of vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column partially filling the space between said angle-irons; a series of horizontally-recessed wall-sections located with their opposite ends between the angle-irons of a pair of standards; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

12. A bin comprising corner-standards consisting of a series of four vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column filling the spaces between the apices of said angle-irons and partially filling the spaces between the adjacent angle-irons; a series of horizontally-recessed wall-sections located with their opposite ends between the angle-irons of a pair of standards; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

13. A bin comprising corner-standards consisting of a series of vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column partially filling the space between said angle-irons; a series of horizontal wall-sections in the form of troughed plates located with their opposite ends between the angle-irons of a pair of standards; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

14. A bin comprising corner-standards consisting of a series of vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column partially filling the space between said angle-irons; a series of horizontally-re-

cessed wall-sections located with their opposite ends between the angle-irons of a pair of standards and with said ends embedded in said concrete; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

15. A bin comprising corner-standards consisting of a series of four vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column filling the spaces between the apices of said angle-irons and partially filling the spaces between the adjacent angle-irons; a series of horizontal wall-sections in the form of troughed plates located with their opposite ends between the angle-irons of a pair of standards; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

16. A bin comprising corner-standards consisting of a series of four vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column filling the spaces between the apices of said angle-irons and partially filling the spaces between the adjacent angle-irons; a series of horizontally-recessed wall-sections located with their opposite ends between the angle-irons of a pair of standards and with said ends embedded in said concrete; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

17. A bin comprising corner-standards consisting of a series of vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column partially filling the space between said angle-irons; a series of horizontal wall-sections in the form of troughed plates located with their opposite ends between the angle-irons of a pair of standards and with said ends embedded in said concrete; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

18. A bin comprising corner-standards, consisting of a series of four vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column filling the spaces between the apices



of said angle-irons and partially filling the spaces between the adjacent angle-irons; a series of horizontal wall-sections in the form of troughed plates located with their opposite ends between the angle-irons of a pair of standards and with said ends embedded in said concrete; filler-blocks filling the recesses at the ends of said wall-sections between said angle-irons; means for fastening said wall-sections, and filler-blocks to said angle-irons, and means for closing the spaces between said wall-sections, substantially as described and for the purpose set forth.

19. A wall-bracing standard consisting of a series of four vertical angle-irons arranged a short distance apart with their apices toward a common center; a concrete column filling the spaces between the apices of said angle-irons and partially filling the spaces between the adjacent angle-irons; filler-blocks between said angle-irons, and means securing said angle-irons and filler-blocks together.

20. A corner-standard consisting of an angle-iron; an angle-plate arranged with its sides parallel to said angle-iron; filler-blocks partially filling the spaces between the corresponding sides of the angle-iron and angle-plate, a concrete filling for the space between said angle-iron, angle-plate and filler-blocks, and means for securing said angle-iron angle-plate and filler-blocks together, substantially as described and for the purpose set forth.

21. A bin structure comprising a series of standards, a bin supported at the upper ends of said standards a series of channel-irons set on edge at the bottom of the walls of said bin, a bin-bottom, and means for supporting said bin-bottom upon said channel-irons, substantially as described and for the purpose set forth.

22. A bin structure supported upon a base or foundation and comprising a series of standards each consisting of a series of supporting-irons of different lengths, and means for securing said supporting-irons together; a bin; the longer of said supporting-irons extend-

ing from said base or foundation to the top of the bin, and the shorter of said supporting-irons extending from the said base or foundation to the under side of the bin; and means for securing said bin to said longer supporting-irons, substantially as described and for the purpose set forth.

23. A bin structure supported upon a base or foundation and comprising a series of standards each consisting of a series of vertical angle-irons; a series of vertical channel-irons of less length than said angle-irons; and means for securing said angle and channel-irons together; a bin; said angle-irons extending from said base or foundation to the top of the bin, and said channel-irons extending from the said base or foundation to the under side of the bin; and means for securing said bin to said angle-irons, substantially as described and for the purpose set forth.

24. A bin structure supported upon a base and comprising a series of standards each consisting of a series of vertical angle-irons, a series of vertical channel-irons of less height than said angle-irons, and means securing said angle and channel-irons together; a bin consisting of walls and a hopper-shaped bottom; said angle-iron extending from said base or foundation to the top of the walls of said bins; means securing said bin-walls to the portions of said angle-irons above said channel-irons; a series of horizontal channel-irons resting upon the top of said vertical channel-irons; means securing the ends of said horizontal channel-irons to said vertical angle-irons; and means securing said bin-bottom to said horizontal channel-iron, substantially as described and for the purpose set forth.

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

JAMES ALEXANDER JAMIESON.

Witnesses:

WILLIAM P. McFEAT,  
FRED. J. SEARS.