No. 742,873. PATENTED NOV. 3, 1903.

J. A. JAMIESON.

STORAGE BIN.

APPLICATION FILED MAY 29, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

FIG. 1.

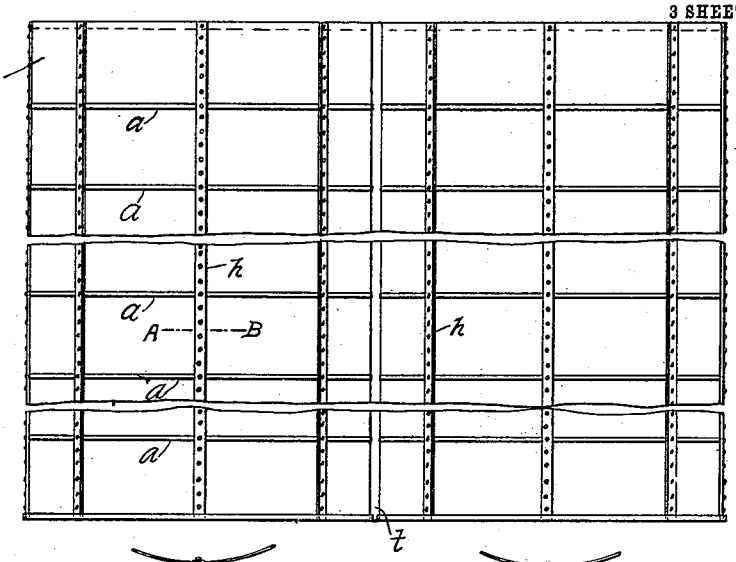
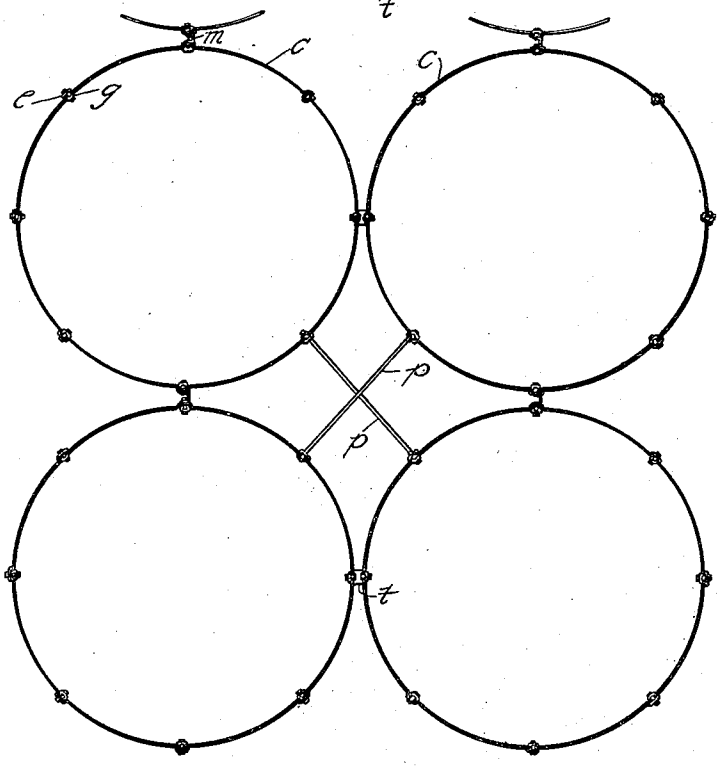


FIG. 2.



Witnesses

William P. McEwan

Fred. J. Sears

Inventor

James A. Jamieson

By his Attorney

John N. Evans

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 742,873. PATENTED NOV. 3, 1903.

J. A. JAMIESON.

STORAGE BIN.

APPLICATION FILED MAY 29, 1902.

NO MODEL. 3 SHEETS—SHEET 2.

FIG. 4.

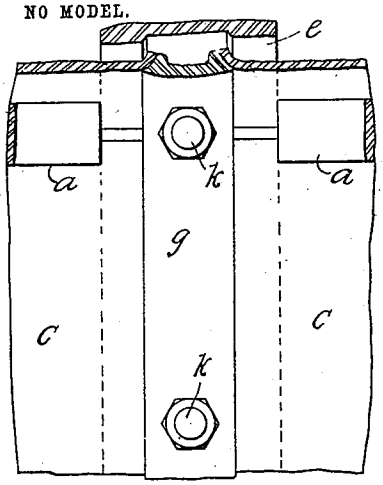


FIG. 3.

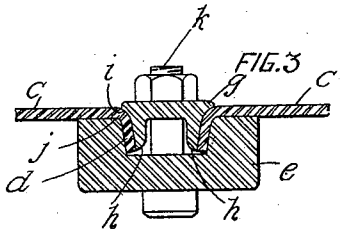
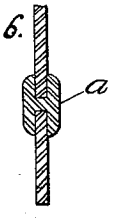


FIG. 6.



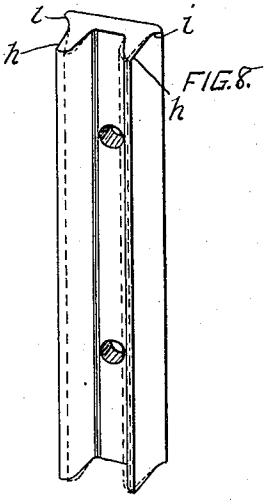


FIG. 8.

FIG. 5.

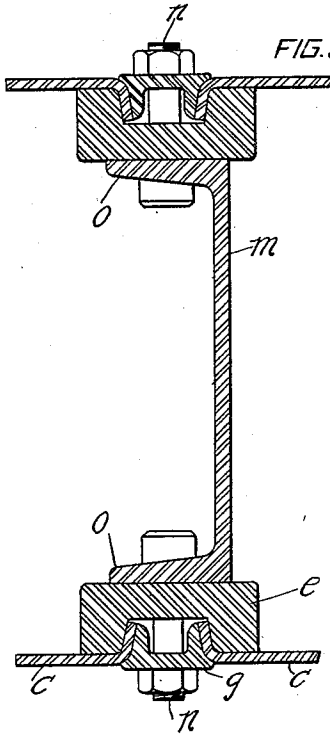
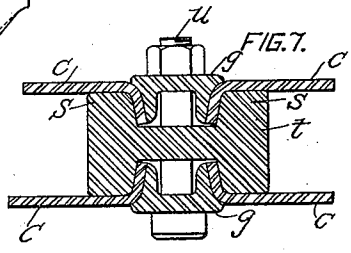


FIG. 7.



Witnesses

William M. Peet

Wolf & Sears

Inventor

James A. Jamieson

By his Attorney

Wm. N. Swan

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 742,873. PATENTED NOV. 3, 1903.

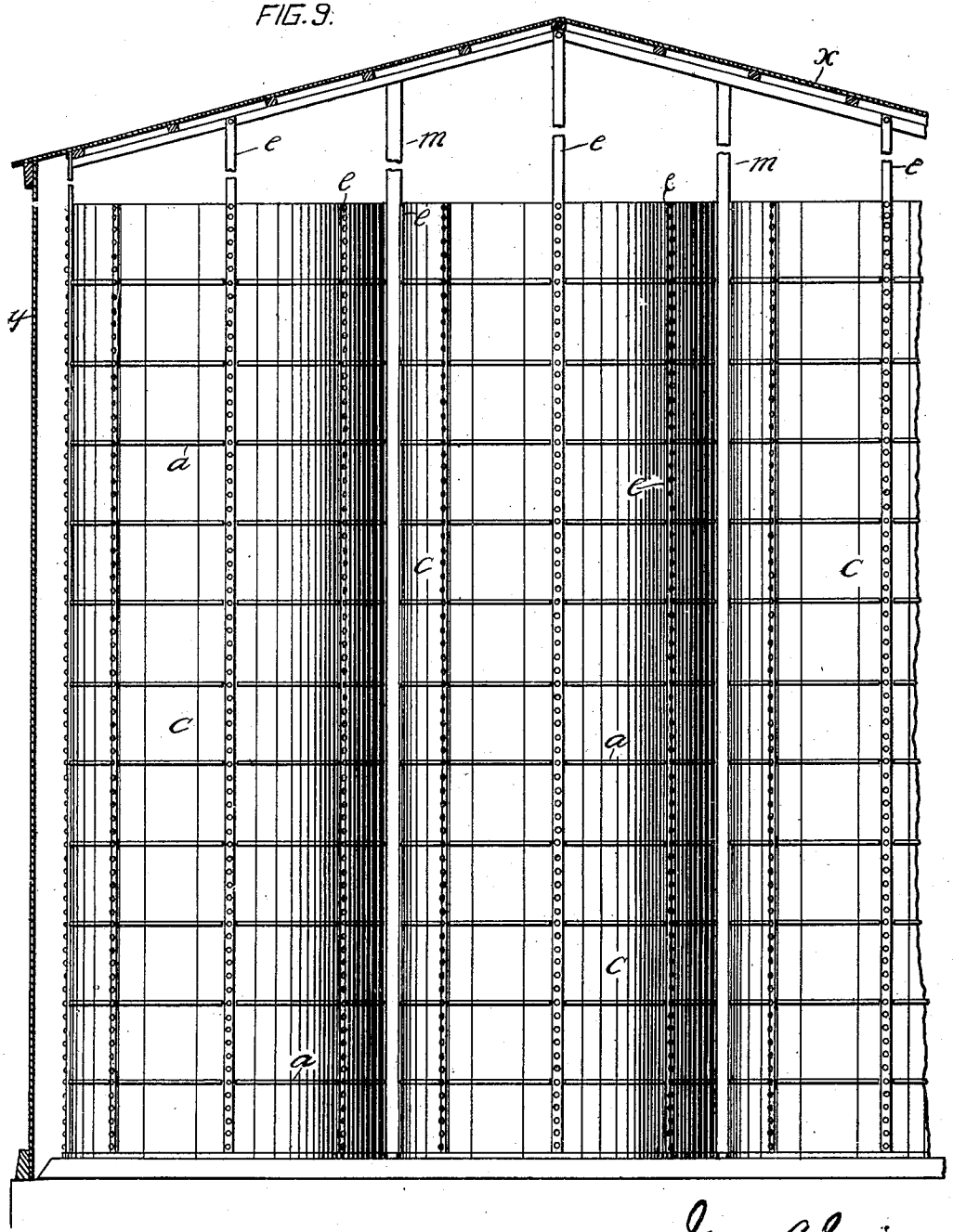
J. A. JAMIESON.

STORAGE BIN.

APPLICATION FILED MAY 29, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

FIG. 9.



Witnesses

James A. Jamieson

Inventor

By Attorney

John P. Wade

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 742,873. Patented November 3, 1903.

UNITED STATES PATENT OFFICE.

JAMES ALEXANDER JAMIESON, OF MONTREAL, CANADA.

STORAGE-BIN.

SPECIFICATION forming part of Letters Patent No. 742,873, dated November 3, 1903.

Application filed May 29, 1902. Serial No. 109,573. (No model.)

To all whom it may concern:

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

My invention relates particularly to cylindrical bins for the storage of grain and the like; and it has for its object to provide a cylindrical bin which will be more easily constructed and of greater strength with a given amount of metal than storage-bins heretofore constructed.

The invention may be said, briefly, to consist in constructing a bin of a series of sheet-metal wall members, each constituting a complete inclosing section. A series of standards extend from the bottom to the top of the bin and support these complete inclosing sections one above the other, the spaces between them being closed by fillers, while the wall members are preferably made up of a series of sheet-metal arciform submembers.

An essential feature of this invention is the means for joining the submembers of each wall member to one another and to the standards, such means providing for the tying together of a series of grouped bins.

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

Figure 1 is a side elevation of a series of grouped bins constructed and tied together according to my invention. Fig. 2 is a plan view thereof. Fig. 3 is a detail enlarged transverse horizontal sectional view taken on line A B, Fig. 1, and illustrating my improved means for joining the submembers. Fig. 4 is a side elevation thereof. Fig. 5 is a similar view to Fig. 3, but illustrating my improved means for tying adjacent bins together. Fig. 6 is a transverse vertical sectional view illustrating one of the fillers between the horizontal edges of the wall members. Fig. 7 illustrates in transverse horizontal sectional view my invention applied to the connection together of adjoining bins. Fig. 8 is a detail perspective view of one of my improved keys removed, the flanges thereof being shown in their normal position in full lines and in their sprung position in dotted lines; and Fig. 9 a side view of a pair of adjoining bins with a portion of a third and illustrating particularly the method of supporting the roof.

The bases upon which my improved bins may be supported and the inclosing building, excepting in so far as the support of the roof is concerned, form no part of the present invention and are therefore not illustrated.

Each bin comprises a series of complete sheet-metal annular wall members supported partially upon rigid columns and partially one upon the other through the medium of fillers in the form of a part *a* of H cross-section adapted to receive the upper and lower edges of contiguous annular members in the recesses between their flanges. The wall members comprise sheet-metal arciform submembers *c*, having their vertical edges flanged, as at *d*, to project into a rigid steel section *e* of channel cross-section, a wedge-like key *g*, also of channel cross-section, being adapted to be forced into the recess of the channel *e*, thereby wedging the flanges *d* of the submembers tightly in place. The legs *h* of the keys are normally spread apart to a slightly-greater width than that of the space between the flanges *d* of the submembers to cause them when the keys are drawn into place by their securing-bolts to be sprung upon said flanges, while the heads of these keys are flared, as at *i*, to grip the shoulders *j*, formed by the flanges of the submembers. A series of different connections are used in conjunction with these keys and channel-castings for in some cases securing individual keys or keys of contiguous bins in place and in other cases the keys and tying devices to the steel channel-sections *e*. To secure the submembers together and to their channel-sections, which constitute a stiffening-column, independently of the other bins of the series, short bolts *k* are used, which are passed through holes punched in both column and keys, Fig. 3. To connect the submembers of one bin together and at the same time connect said bin to the bin contiguous thereto and adapt said connection to constitute an auxiliary wall-section to close the space between said bins, I secure a vertical

channel-iron m to said bins by bolts n, taking through the flanges o thereof and through the keys and columns, Fig. 5, of the said contiguous bins, which are arranged in proper relative positions for the purpose, these channel-irons m extending from the bases of the bins upwardly past the tops thereof to support or form part of the roof p of the inclosing building and any other superstructure, such as a cupola or the like. The spaces inclosed by the portions of the bins of a series between said auxiliary wall-sections m and by said wall-sections themselves are also used for storage; but as I have discovered that when so used the side load upon the arched portions of the bins is liable to cause them to crush I brace them by tying the portions of one bin to that of the other by tension-rods p, having their ends screw-threaded and projected through the registering holes punched in the keys and columns in the centers of said bin-wall portions, Fig. 2, thus providing for the connection of the braces to the strongest portions of the bins.

When tying connections of exceptional strength is required between nested bins, I turn the flanges d of the submembers c toward one another and fit them into the recesses between the flanges s of the stiffening-columns t of I cross-section, where they are secured by pairs of keys g, such as before described, secured in place by bolts u, Fig. 7, these columns t, as well as some of the columns constituted by the auxiliary wall-sections e, like the columns m, extending above the tops of the bins to support any superstructure.

From the foregoing it will be observed that according to my invention cylindrical bins can be constructed without rivets, and it is ovious that any submembers can be readily removed and replaced by doing no more than loosening several bolts.

Owing to the fact that the complete annular bin members are intact with the stiffening-columns, a large proportion of the vertical load will be transmitted to the latter, while the rigid wedged joint connection between said bin members and their stiffening-columns and the tying of the bins of the series together cause the vertical load and lateral pressure to be uniformly distributed throughout the complete structure, which may consequently be constructed of material of a minimum weight commensurated with a given capacity.

What I claim is as follows:

1. A cylindrical bin, a series of vertical columns extending from the bottom of said bin above the top thereof, a superstructure supported by the portion of said columns projecting above the top of said bin, and means for securing said bin to said columns.

2. A bin comprising a series of wall members having flanged vertical edges; vertical stiffening-columns having recesses longitudinally thereof and receiving the flanged edges of said members; wedge-like keys of channel cross-section sprung into said recesses between said flanges and securing the said members to the stiffening-columns; and means for securing said keys in place, substantially as described and for the purpose set forth.

3. A bin comprising a series of wall members having flanged vertical edges; vertical stiffening-columns having recesses longitudinally thereof and receiving the flanged edges of said members; wedge-like keys of channel cross-section sprung into said recesses between said flanges and securing the said members to the stiffening-columns, said keys having flared heads; and means for securing said keys in place, substantially as described and for the purpose set forth.

4. A bin comprising a series of wall members having flanged vertical edges; vertical stiffening-columns having recesses longitudinally thereof and receiving the flanged edges of said members; wedge-like keys of channel cross-section sprung into said recesses between said flanges and securing the said members to the stiffening-columns, said keys having flared beads; and bolts passing through said keys and columns and securing same together, substantially as described and for the purpose set forth.

5. The combination with a series of grouped cylindrical bins, of a series of auxiliary walls extending between the contiguous bins of the group and throughout the height thereof; means for securing said auxiliary walls to said contiguous bins; and a series of tying-rods secured at their ends to the walls of said bins between said auxiliary walls and extending across the space inclosed by said auxiliary walls and the portions of the bin-walls between said auxiliary walls, substantially as described and for the purpose set forth.

6. The combination with a series of grouped bins having stiffening-columns, of a series of auxiliary walls having flanged vertical edges and extending between the contiguous bins of the group and throughout the height thereof; means for securing the flanges of said auxiliary walls to certain of the stiffening-columns of said contiguous bins; and a series of tying-rods secured at their ends to the stiffening-columns of said bins between those to which said auxiliary walls are connected and extending across the space inclosed by said auxiliary walls and the portions of the bin-walls between said auxiliary walls, 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. MCFECT,

FRED. J. SEARS.