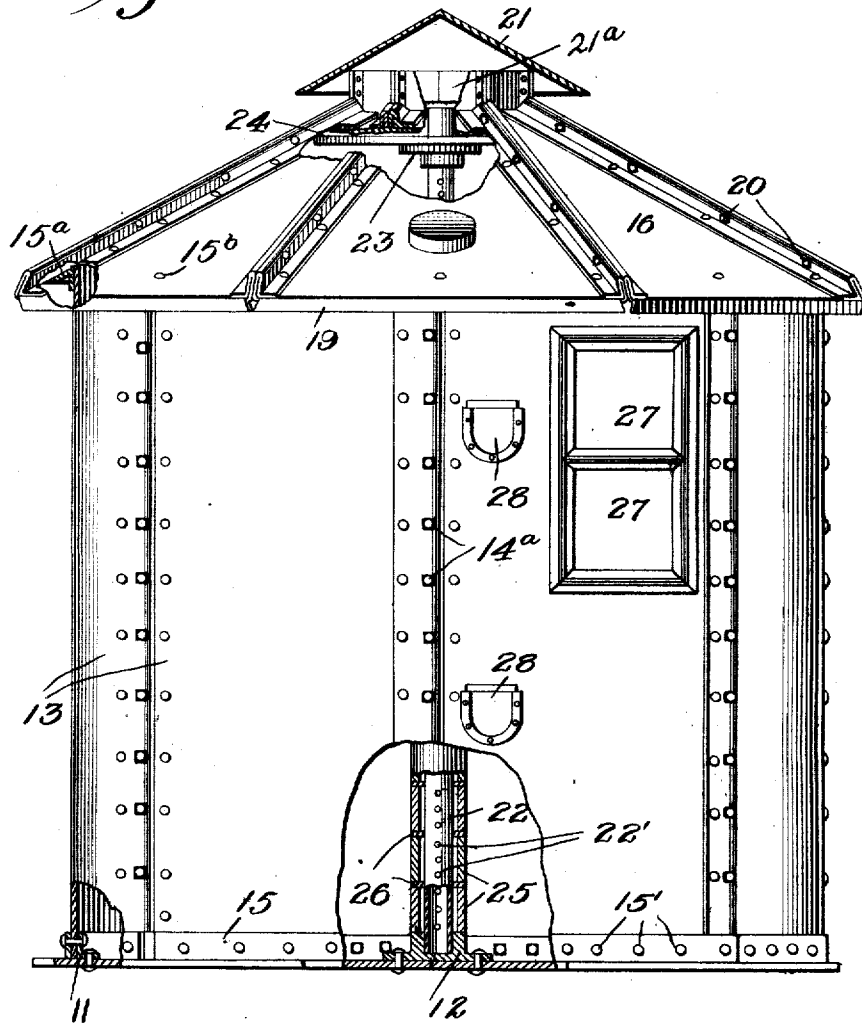


C. M. PORTER.
METAL GRAIN TANK.
APPLICATION FILED JAN. 21, 1909.

922,329.

Patented May 18, 1909.
2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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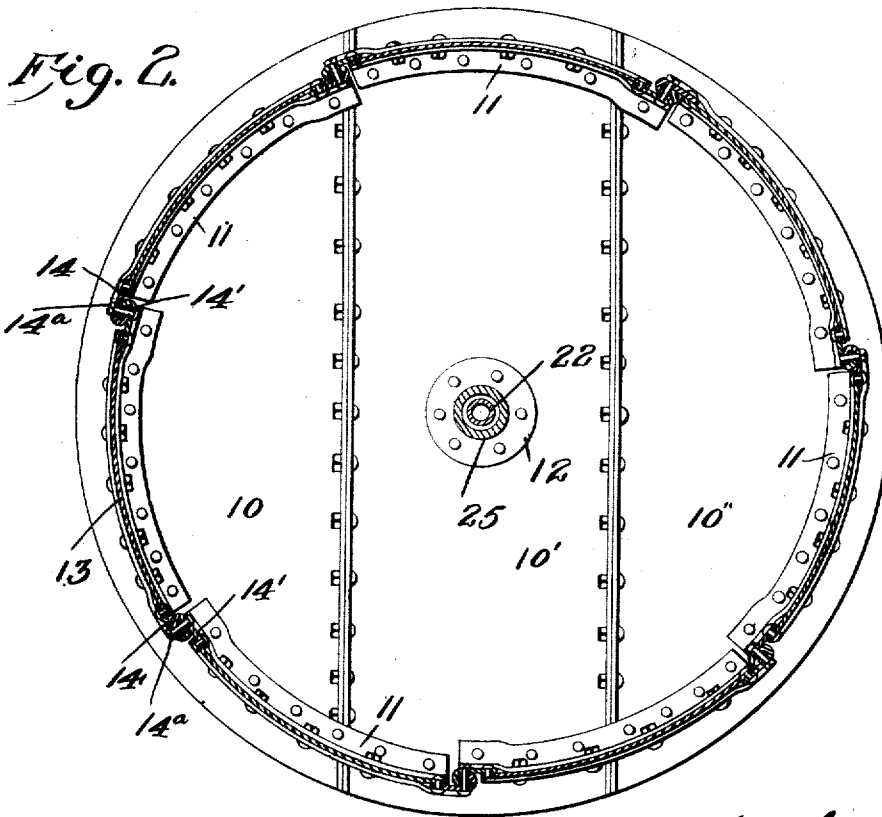
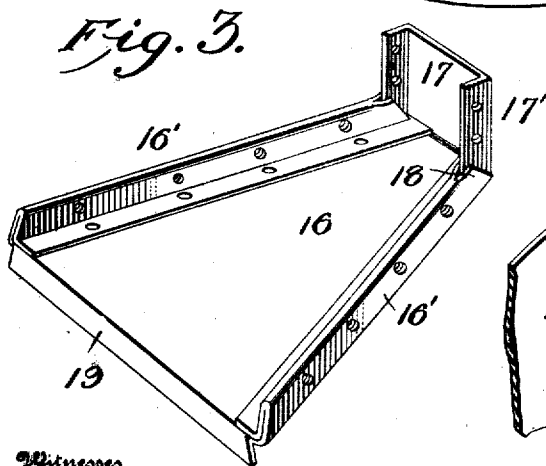
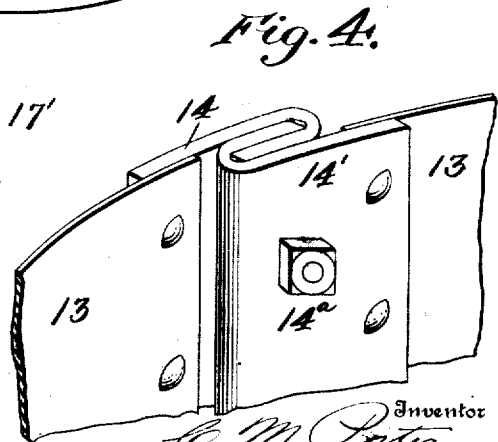
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UNITED STATES PATENT OFFICE.

CHARLES M. PORTER, OF CARRINGTON, NORTH DAKOTA.

METAL GRAIN-TANK.

No. 922,329.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed January 21, 1909. Serial No. 473,408.

To all whom it may concern:

Be it known that I, CHARLES M. PORTER, a citizen of the United States, residing at Carrington, in the county of Foster and State of North Dakota, have invented certain new and useful Improvements in Metal Grain-Tanks, of which the following is a specification.

This invention relates to metallic buildings, and has particular reference to knock-down structures adapted especially for the storage of grain or the like.

The invention comprises certain specific details of construction hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which -

Figure 1 is a side elevation, partly broken away, of a grain bin constructed in accordance with the preferred embodiment of this invention; Fig. 2 is a transverse section; Fig. 3 is a detail of one of the roof sections, and Fig. 4 is a like view of the joint connecting two of the vertical side members.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

This structure embodies a plurality of floor sections 10, 10', and 10'', joined together separably each to each, the general outline of the assembled parts being of any suitable form, indicated herein as being circular. Connected to the bottom members are a plurality of angle pieces 11, one flange of which is secured to the said bottom and the other flange of which projects vertically therefrom. A socket piece 12 is secured in any suitable manner substantially centrally of the bottom.

The side or vertical walls of the structure are composed of any suitable number of cylindrical segments 13, joined together each to each by a peculiar locking means. As indicated said locking means for the side members comprises hooks 14 and 14' connected respectively to the adjacent edges of the main portions of the wall members 13, the hook 14 extending inwardly and the other extending outwardly for interengagement with the inwardly projecting hook. The members 14 and 14' are preferably coextensive vertically with the side walls 13 and are permanently connected thereto. A series of removable bolts 14'' cooperate at any suitable points with the interlocking members 14 and 14'. As indicated herein said bolts 14''

pass through the overlapping portions of the hook members, although it is to be understood that any other location desired may be employed. The bottoms of the wall members 13 are reinforced by bands 15 secured thereto on the outer surface thereof. The bottoms aforesaid rest upon the floor of the structure and against the vertical flanges of the members 11. Removable fastening means such as bolts 15' secure all of these parts together.

The upper edges of the side wall members 13 are reinforced and bound by angle members 15'' as indicated in Fig. 1, and whose upper members will be formed so as to conform to the angle of the roof hereinafter described.

The roof portion is constructed in a peculiar manner, and by reference to Figs. 1 and 3 the same will be understood. Any suitable number of sector shaped sections 16 as may be desired will be employed to make up the roof, one of such sections being indicated in perspective in Fig. 3. The material from which each of these sections is formed is folded in a peculiar manner upon itself at its lateral edges to form reinforced vertical flanges 16', a portion of such flanges lying flat upon the main portion of the section, whereby by the use of a comparatively small amount of material the structure is rendered very rigid and durable. The upper or smaller end of the section is bent at an angle to the main body, so as to extend vertically when the roof is assembled. Such portion indicated at 17 is provided with lateral flanges 17', and for a more effective bracing of the several portions the flanges 17' preferably extend between the portions of the flanges 16' as indicated at 18. Again, the lower or outer edge of each section is bent downwardly at 19 to increase the rigidity in a transverse direction and also to provide a better watershed. The adjacent sections 16 are detachably connected by means of bolts 20 passed through the vertical flanges 16' and 17'. Furthermore, all of the sections 16 are detachably connected to the aforesaid flanges 15'' by means of bolts 15'. So far described the roof members 16 when assembled will form a polygonal opening at the apex, and in order to sufficiently close this opening so as to exclude snow and rain and also to provide sufficient air space for the purpose of ventilation there is preferably provided a cap 21 having a conical top

and a downwardly projecting polygonal portion fitted within the aforesaid opening and indicated at 21^a in Fig.

Disposed centrally within the structure 5 and seated in the socket piece 12 is a strong hollow center post 22, provided with numerous perforations 22'. This post extends from the socket 12 substantially up to and within the cap 21. Near the upper end the post 22 10 is provided with a collar 23 upon which rests a heavy disk or ring 24, and which in turn supports all of the roof sections 16 and whereby the post at its upper end is supported in place by the roof sections. A plu- 15 rality of porous sleeves 25, such for instance as common drainage tile, are loosely placed around the center post 22. These tile members 25 are separated by rings 26, which serve the dual purpose of protecting the tiles 20 from breakage and also of preventing the contents of the bin from filling up the space between the inner surface thereof and the post 22. By virtue of this arrangement of tiling in connection with the perforated center post moisture is withdrawn from the con- 25 tents of the bin and a certain amount of draft provided therefrom upwardly through the open top.

Doors or windows may be provided at any 30 desired points in the structure. As shown herein the one member 13 of the side walls is provided with a door consisting of two sections 27 consisting of flanged metal plates, connected to each other and to the flange 35 surrounding the door opening. Either or both of said door members 27 may be removed for any purpose desired. Again, smaller door members 28 may be provided for the purpose of introducing or removing 40 material into or from the container. Any one of the roof sections 16 may be detached from the others and from the flange 15^a in order to displace the same for the purpose of receiving grain into the bin from a threshing 45 machine or conveyor or for any other purpose.

The structure hereinbefore described may be of a permanent nature, but it is intended primarily for portable purposes. The struc-

ture as a whole may be mounted on skids or 50 runners, not shown, but usually the structure will be disconnected by means hereinbefore set forth so that it may be transported with greater facility. To assemble the device re- 55 quires the expenditure of a comparatively few hours of time, and yet when assembled it is possessed of maximum rigidity and strength.

Having thus described the preferred em- 60 bodiment of the invention, but without desiring to be limited to the exact construction illustrated, what I claim as new and desire to secure by Letters Patent of the United States is:

1. The herein-described metallic grain tank 65 comprising a bottom, a socket member secured centrally thereupon, vertical side members surrounding the socket member and upon the upper surface of the bottom a plu- 70 rality of roof sections secured each to each and to the said side members, said roof sections forming a central ventilating opening, a perforated metallic center post seated in said socket and projecting upwardly into said roof opening, a ring connected to the 75 said post and surrounding the same just below its upper end and cooperating with the roof sections, a plurality of sleeves loosely surrounding the post and a cap to cover the roof opening. 80

2. The herein-described metallic grain tank comprising a bottom, a socket piece secured thereupon, vertical wall members, a plurality 85 of sector shaped roof members detachably connected each to each and to the wall members, a metallic hollow perforated center post seated in said socket and extending upwardly 90 to the roof, a plurality of porous sleeves loosely surrounding the center post, rings separating and supporting said sleeves, and a ring connected to the post near its upper end for cooperation with the roof members.

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

CHARLES M. PORTER

Witnesses:

EDWARD P. KELLY

J. J. ATKINS