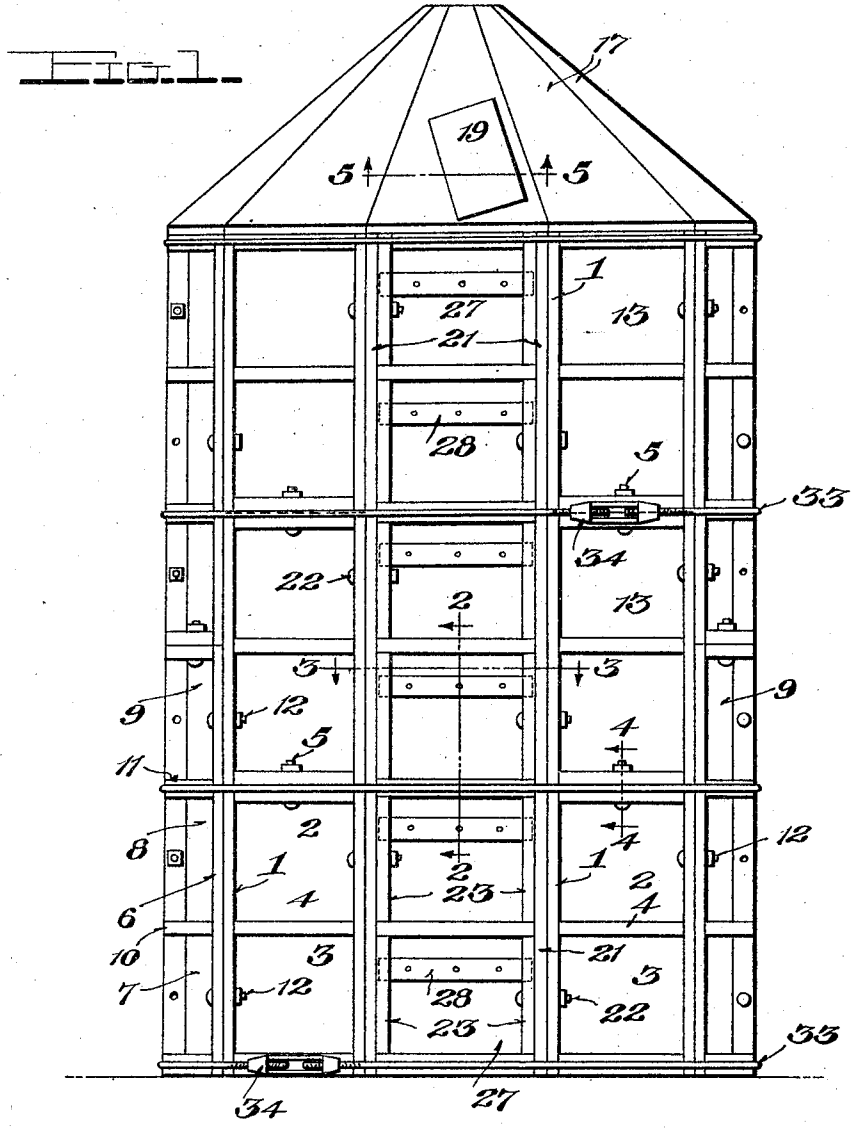
Oct. 25, 1932. P. J. HEGNES 1,885,013

SILO

Filed March 25, 1931 2 Sheets-Sheet 1



Inventor

Peter J. Hegnes

By A. W. Freeman

Attorney

Oct. 25, 1932. P. J. HEGNES 1,885,013

SILO

Filed March 25, 1931 2 Sheets-Sheet 2

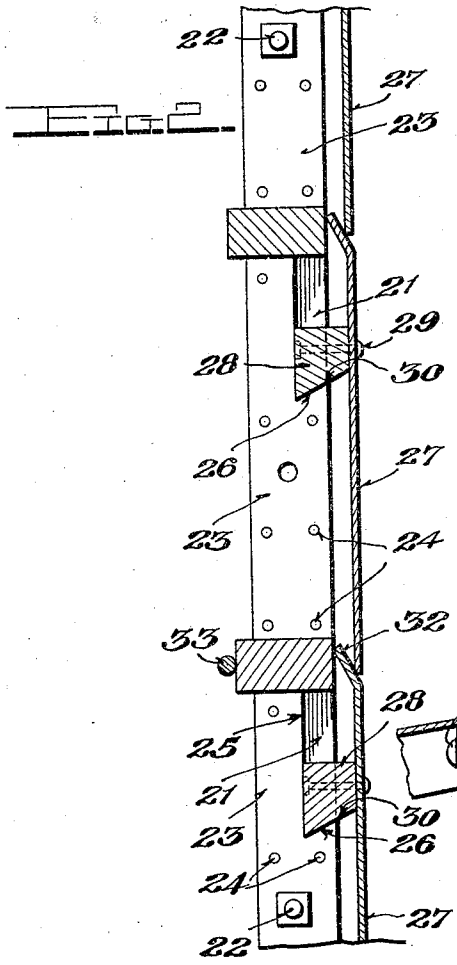


FIG. 4

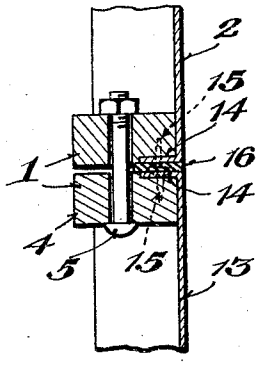


FIG. 5

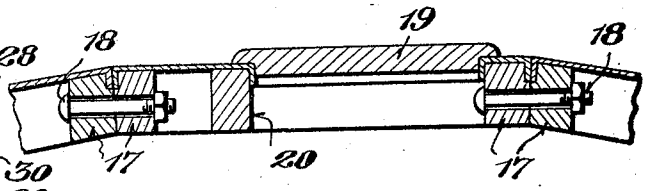
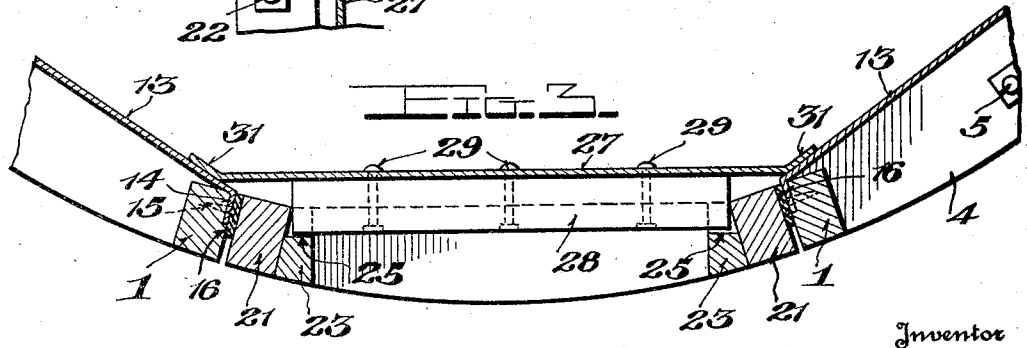


FIG. 3



Inventor

Peter J. Hegnes

By A. W. Freeman,

Attorney

Patented Oct. 25, 1932 1,885,013

UNITED STATES PATENT OFFICE

PETER J. HEGNES, OF CANTON, SOUTH DAKOTA

SILO

Application filed March 25, 1931. Serial No. 525,265.

This invention relates to silos, although equally applicable to corn cribs or granaries.

The primary object of the invention is to provide a practical, simple, and sturdy construction which can be economically produced and which can be shipped in knock-down form and easily and quickly assembled.

A further object of the invention is to provide a novel construction of units which obviates seepage of air, or moisture from the silage.

Still further, the invention aims to provide units which are interchangeable and which are formed of panels, the cross members of which are aligned with adjacent units.

Further and other objects will be later set forth and manifested in the course of the following description.

In the drawings:

Fig. 1 is a front elevation of the invention; and

Figs. 2, 3, 4, and 5 are enlarged sections on the lines 2—2, 3—3, 4—4, and 5—5 respectively of Fig. 1.

Referring to Fig. 1 it will be seen that there are short units 1 having two panels 2 and 3, the units being formed of wood or metal frames having cross pieces 4 which define the panels 2 and 3. Adjacent panels have their ends abutting and are secured by bolts and nuts 5. Alternating with the short units 1 are long units 6 composed of three panels 7, 8, and 9, the long units also being constructed of wood or metal frames and have their cross pieces 10 and 11, which define the panels, in alignment with the cross pieces 4 of the short units 1 and with the adjacent superimposed ends of two adjacent short units. The sides of the short and long units are also bolted together as indicated at 12. Referring to Fig. 4 of the drawings it will be seen that the frames of which the units are formed are covered with metal sheathing 13, the edges of which are inturned at right angles as indicated at 14 and are embedded in cut-out portions formed therefor in the frames 1 and may be secured or nailed in position as indicated at 15. Any suitable packing strips 16 may be interposed between adjacent units to seal the joints. From the foregoing it will be seen that the frames of the units are not only strengthened and reinforced by the metal sheathing but further that a simple and economical construction of units is provided. The top of the structure is formed of similar units 17 which are generally of segmental form which latter are bolted together as shown at 18. A door 19, which may be secured in an opening 20, in any suitable manner is employed, the opening being formed in one of the top sections 17.

A door frame or doorway 21 is provided and is interposed between adjacent, vertical tiers of the units and is bolted thereto as shown at 22. Cleats 23 are secured by fastenings 24 to the inner faces of the sides of the door frame and are provided with cut-outs 25 that extend through the tops of the cleats and are formed to afford substantially V-shaped seats 26 at the lower parts of the cut-outs. There are a series of superimposed doors for the doorway each composed of a metal plate 27 to each of which is secured a cross bar 28 by means of bolts 29, the cross bars being provided with V-shaped portions 30 that correspond to the seats 26 and conformably engage therein as shown particularly in Fig. 2. As shown in Fig. 3 the sides of the metal plates 27 are turned outwardly as indicated at 31 to seat tight against the metal plates 13 of the units. As shown in Fig. 2 the upper ends of the plates 27 are turned inwardly as indicated at 32 and engage against the adjacent cross pieces of the adjacent units and in turn are engaged by the bottom edges of the metal plates 27 of the next adjacent upper door section. In this way it will be noted that tight joints are formed between the adjacent door sections and the adjacent metal plates of the units, thus affording a metal-to-metal contact or joint throughout the boundary of each of the door sections, the pressure of the silage obviously maintaining the joints tight. It will also be apparent that the door sections can be easily and quickly removed and applied, and in removing same are merely lifted upwardly to move the bars 28 out of their seats 26 whereupon the door can be moved outwardly in

a lateral direction and can be easily secured in position by reverse movements.

It will be further understood that each unit is transversely curved so that the entire assemblage affords a structure circular in cross section.

Preferably, in assembling, only sufficient bolts are employed to temporarily hold the structure together, cables 33 being then secured about the structure and are drawn taut by means of turnbuckles 34. Of course if desired the bolts 5, 12, and 22 can remain in position and be tightened.

As shown in Figs. 3, 4, and 5 the metal plates of the units form virtually a continuous metallic lining for the entire structure, while the roof units have their metal coverings exposed and form a sealed roofing for the silo.

The metal plates forming the bodies of the doors, are of sufficient flexibility so as to respond to the pressure of the silage and thereby assure tight metal-to-metal joints.

What is claimed is:

1. In a structure of the type set forth, a series of transversely curved units each composed of an open rectangular frame, metal sheathing extending over said frame and having the edge portions thereof turned at right angles and secured to the adjacent edges of the frame, and means to secure adjacent units together in superimposed and side to side engagement and with the sheathing forming a substantially continuous lining for the structure and with the frames exposed on the exterior of the structure, said securing means being disposed exteriorly of the frames.

2. In a structure of the type set forth, a series of transversely curved units each composed of an open rectangular frame, metal sheathing extending over said frame and having the edge portions thereof turned at right angles and secured to the adjacent edges of the frame, and means to secure adjacent units together in superimposed and side to side engagement and with the sheathing forming a substantially continuous lining for the structure and with the frames exposed on the exterior of the structure, said securing means being disposed exteriorly of the frames, said units being composed of alternating series of long and short frames, the horizontal joints between adjacent short units occurring intermediate the ends of the adjacent long units.

3. In a structure of the type set forth, a doorway having substantially V-shaped aligned seats on the inner faces of its opposite sides, and a series of door sections each composed of a metal plate and a transverse bar secured to the plate between its ends and having corresponding V-shaped parts receivable in the seats, wall forming units secured to the sides of the doorway, said plates having their sides turned at an angle and engaged with adjacent units and having their tops extended inwardly at an angle and extending rearwardly of and above the bottom edge of the next adjacent door section.

4. In a silo or the like, a doorway having a series of pairs of aligned angular seats, and a series of doors each composed of a metal plate and a transverse bar secured to the plate between the ends of the latter and having portions engageable in the seats to hold the doors against outward movement, and being removable from the seats by upward movement out of the seats and then outward movement, said plates overlapping the doorway at their sides and one other at their ends and being flexible so as to respond to the pressure of the silage and effect tight joints with the parts against which the plates engage.

5. In a silo or the like, a body having a doorway, a series of doors, and means to removably mount the doors in the doorway, said doors having portions which extend an appreciable distance beyond the doorway at their sides and top for engaging the inner face of the body, and which overlap one another at their ends, said portions of the doors being flexible so as to respond to the pressure of the silage and to effect tight joints with the parts engaged by said door portions.

6. In a silo or the like, a metal lined body, a doorway, doors and means to removably mount the doors in the doorway, said doors having bodies composed of flexible metal plates which overlap and engage the lining at their sides and top and one another at their ends whereby to form tight metal-to-metal joints at all of the bounding edges of the doors.

7. In a silo, a body having a doorway, a series of doors and means to removably mount the doors in the doorway, said doors having bodies formed of flexible metal plates which engage the silo body at their sides and which have their upper ends turned inwardly to also engage the silo body, the lower ends of the plates being engaged over the inclined upper ends of the plates whereby to form tight metal-to-metal joints at all of the bounding edges of the doors.

8. In a silo or the like, a series of superimposed units having side-to-side engagement with adjacent units, each unit being composed of an open frame, a metal covering extending over the frame and having its free edge portions bent at substantially right angles to form flanges, the flanges of one unit being adapted to engage the flange of the next adjacent unit and means for securing the units and thereby the opposed flanges together to form tight metal-to-metal joints at the edges of each unit.

In testimony whereof I affix my signature.

PETER J. HEGNES.