B. H. SHILLING.

SILO.

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1,249,218.

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Fig. 1.

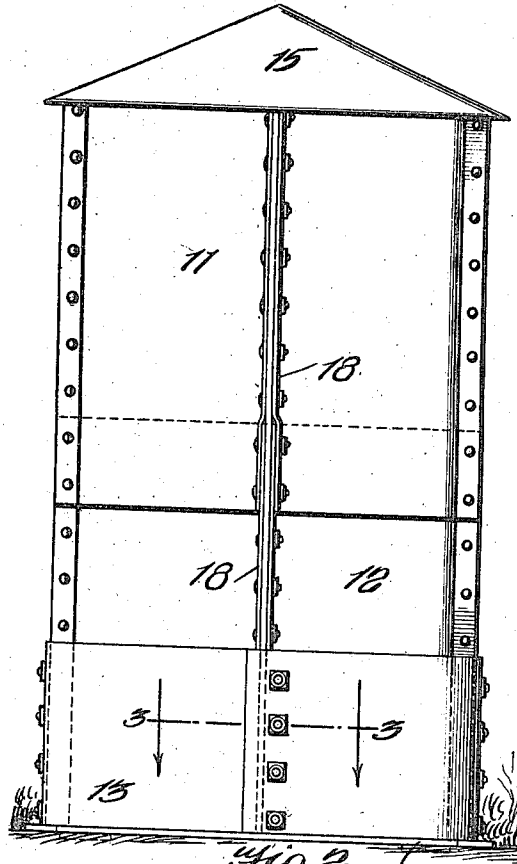


Fig. 2.

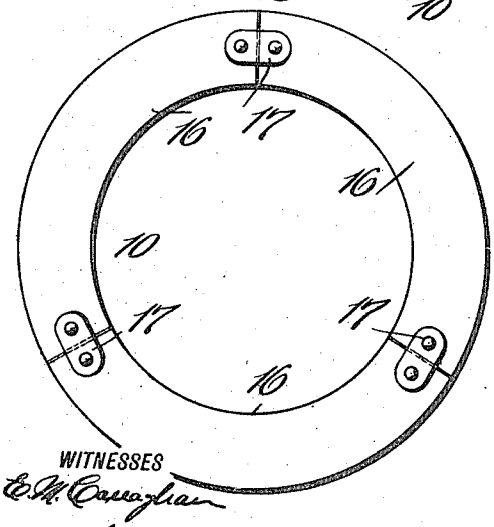


Fig. 3.

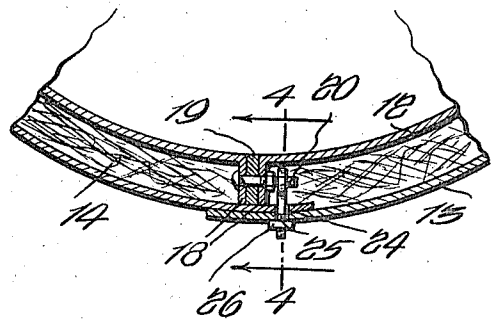


Fig. 4.

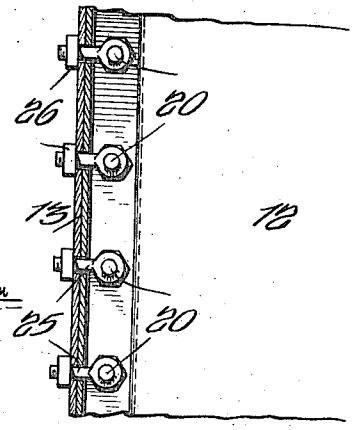
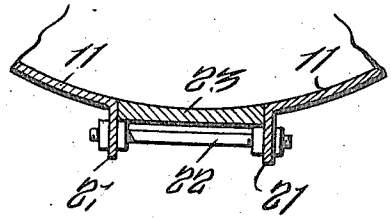


Fig. 5.



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SILO.

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To all whom it may concern:

Be it known that I, BENJAMIN H. SHILLING, a citizen of the United States, and a resident of Knox, in the county of Starke and State of Indiana, have invented a certain new and useful Improvement in Silos, of which the following is a specification.

My present invention relates generally to silos, and more particularly to a metal silo construction, my object being to provide a silo, more especially a construction adapted to the formation of silo tanks for the storage of grain, and like structures, of a take-down portable nature adapted to the needs of renters and others to whom the transportation of a construction of this nature, from place to place, is a consideration of great moment.

It is the object of my invention, therefore, to provide a jointed construction of the type above set forth, having means whereby the joints may be rendered water- and air-tight, and their connection and disconnection readily and quickly effected.

A still further object of my invention is to provide a jacket surrounding the tank and providing for the reception of a layer of insulating material of suitable nature, to prevent the contents of the tank from freezing, together with certain novel means whereby to support the jacket in position, as hereinafter described.

With these and certain other objects residing for the most part in the details of construction, all of which will be better understood from the following description, referring to the accompanying drawing forming a part of this specification and in which—

Figure 1 is a side elevation, the upper portion of the jacket removed;

Fig. 2 is a bottom plan view of the base;

Fig. 3 is a horizontal section through a portion of the silo wall taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a vertical section taken substantially on line 4—4 of Fig. 3, and

Fig. 5 is a horizontal section taken adjacent the door.

Referring now to these figures, my improved take-down construction includes a base 10, an upright cylindrical tank in upper and lower parts 11 and 12, the lower end of which tank rests upon the base 10, and a jacket 13 surrounding the tanks in spaced relation to the major portion of the tank surface, to provide for the introduction of a layer of hay, straw, or other material, as at 14 in Fig. 3, calculated to insulate the tanks and prevent the contents thereof from freezing.

When used as a silo, my improved construction is, of course, provided with a top or cover 15, which may be of the usual conical type, as shown in Fig. 1.

The base 10, as clearly seen in Fig. 2, is formed of a plurality of segmental sections 16, and is in the form of a ring, with its sections 16 connected in detachable relation at their adjoining ends by means of bolted fish plates 17 and the like, upon the lower surface of the ring. This ring may, of course, be filled in with straw, hay, or a suitable or desired composition.

The tank sections 11 and 12, as particularly seen in Fig. 1, overlap one another at an intermediate point, the lower portion of the upper part 11 depending below the upper portion of the lower part 12, each part being composed of a plurality of segmental sections having outstanding flanges along their vertical edges, disposed in spaced relation as indicated at 18, and seen particularly in Fig. 3, with interposed sealing strips 19, preferably formed of wood with surface pitch, paint, or other material calculated to form an air- and water-tight joint when the flanges 18 are bolted by the vertically spaced connecting bolts 20 which extend also through the sealing strips 19.

It will be noted from Fig. 1 that the lower portions of the flanges 18 of the upper tank part 11 are slightly offset in order to embrace the upper portions of the flanges 18 of the lower part, the overlapping lower portion of the upper part being preferably cemented by an elastic cement and the like to the upper portion of the lower part 12 in order to exclude air and water without materially increasing the labor of detaching the several sections.

Where the construction as thus described is used as a silo, with the top or cover 15 as before described, the sections of the upper and lower parts 11 and 12 are at certain points provided with widely spaced flanges 21, as seen in Fig. 5, and connected in such spaced relation by means of rods 22, for the support of door sections 23, the latter of which are as usual pressed outwardly by the material within the tank, to closed position.

The jacket 13 is in a plurality of sections of segmental form, the ends of which overlap one another circumferentially of the

tank and bear against the connected flanges 18 and 21 thereof, as seen particularly in Figs. 3 and 4, such overlapping ends of the jacket sections being provided with apertures 24, as in Fig. 3, through which eye-bolts 25 extend, in a vertical series adjacent the connected flanges 18 of the tank, so that their apertured inner ends may engage the extending ends of the bolts 20 before described, and thus, upon the tightening of their outer nuts 26, securely hold the jacket in place and at the same time permit of its ready disconnection and removal.

In practice the tank proper, including the upper and lower parts 11 and 12, and the several sections thereof, are formed of comparatively heavy metal of a nature unsusceptible to the attacks of ensilage acids, although the jacket 13 may be formed of material considerably lighter in weight than the tank itself, in view of the fact that it is removed from the influence of the ensilage at all times.

It is further obvious that a silo, constructed in accordance with my invention, does entirely away with the usual cumbersome hoops and other attachments supporting the same, and extremely difficult of adjustment to proper position, and that the several sections may be readily and quickly erected and detached, without in any manner impairing the same or lessening their capacity of future use.

It is further obvious that my invention provides a simple, comparatively inexpensive construction, which may be erected and taken down without the use of skilled labor, which will hold and protect its contents from exterior influences, and which will permit of ready transportation when its sections are detached and removed.

I claim:—

1. A construction of the character described, including a vertically disposed cylindrical tank in vertically lapping portions, each portion including a plurality of similar sections having parallel opposing and upstanding vertical flanges, bolts extending through and connecting the said flanges, and an outer shell in annularly spaced relation to the outer faces of the tank sections, said shell including similar annularly lapped portions, the lapped portions of which abut the outer edges of the said connected flanges of the tank sections, and are provided with alined openings, and connecting members extending through the said openings to join the said sections of the shell, said connecting members engaging portions of the tank whereby to hold the shell against displacement with respect thereto.

2. A construction of the character described, including a vertically disposed cylindrical tank in vertically lapping portions, each portion including a plurality of similar sections having parallel opposing and upstanding vertical flanges, bolts extending through and connecting the said flanges, and an outer shell in annularly spaced relation to the outer faces of the tank sections, said shell including similar annularly lapped portions, the lapped portions of which abut the outer edges of the said connected flanges of the tank sections and are provided with alined openings, eye-bolts engaging portion of the connecting bolts of said tank flanges and extending outwardly through the alined openings of the inner sections whereby to connect the latter to one another, and anchor the shell to the tank to prevent displacement thereof.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."