L. H. DICKELMAN.

GRAIN STOREHOUSE CONSTRUCTION.

APPLICATION FILED OCT. 13, 1914.

1,219,267.

Patented Mar. 13, 1917.

2 SHEETS—SHEET 1.

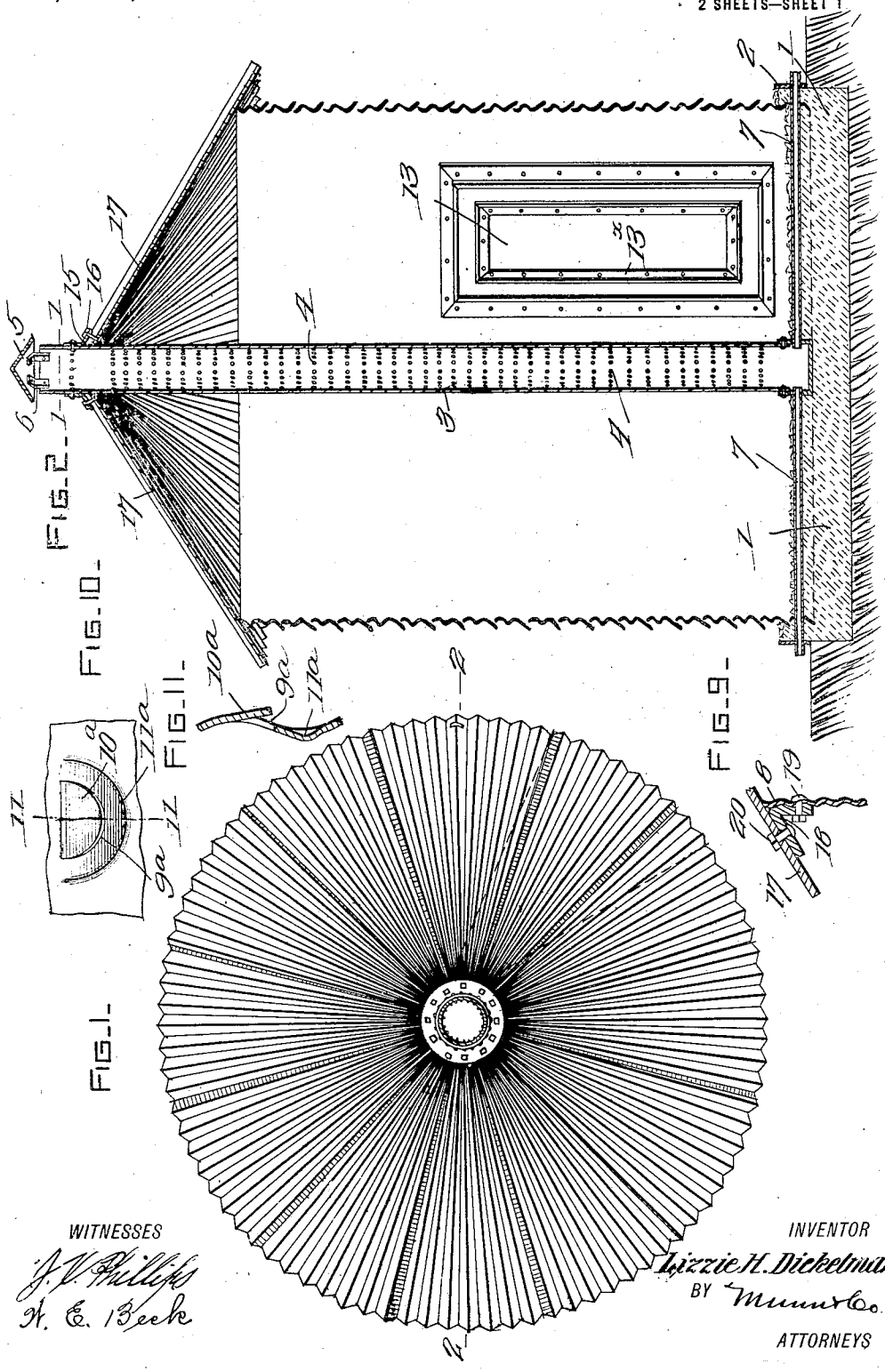


FIG. 1.

FIG. 2.

FIG. 10.

FIG. 11.

FIG. 9.

WITNESSES

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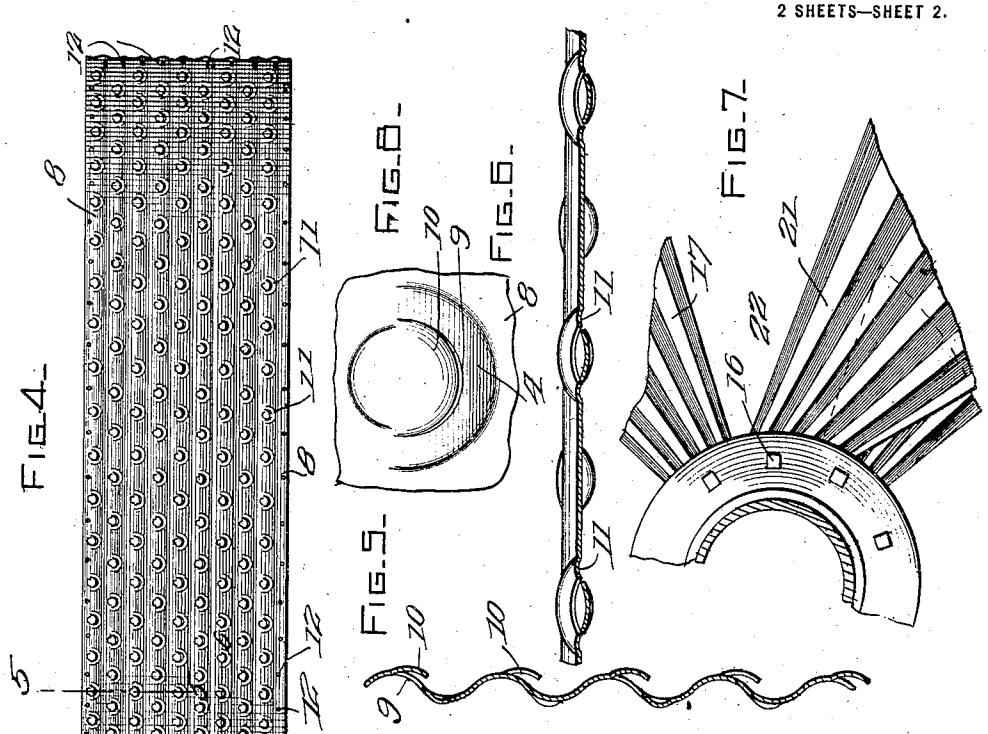
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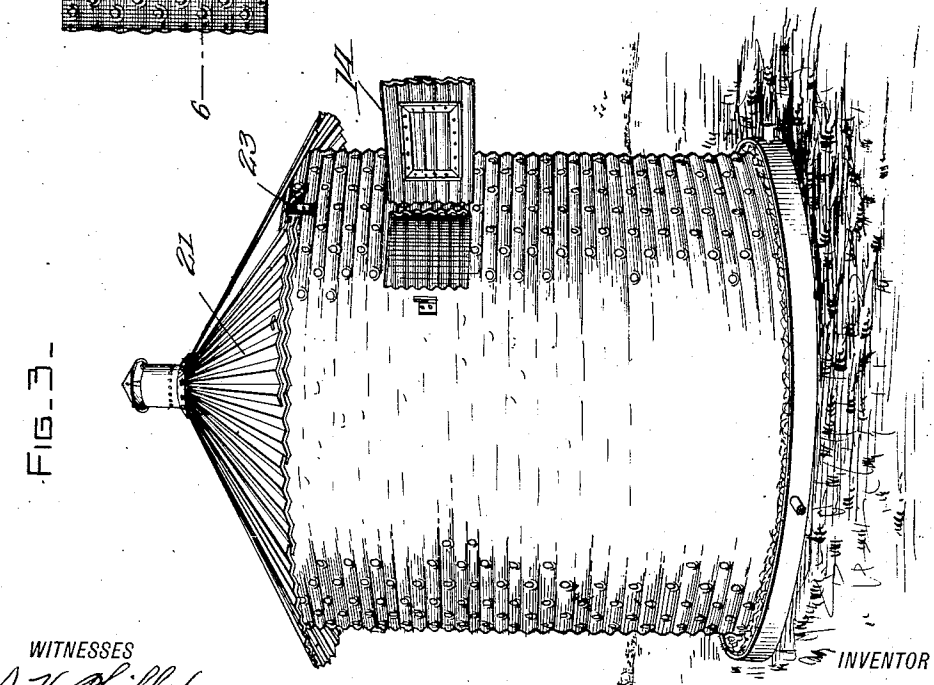
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UNITED STATES PATENT OFFICE.

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GRAIN-STOREHOUSE CONSTRUCTION.

1,219,267. Specification of Letters Patent. Patented Mar. 13, 1917.

Application filed October 13, 1914. Serial No. 866,435.

To all whom it may concern:

Be it known that I, LIZZIE H. DICKELMAN, a citizen of the United States, and a resident of Forest, in the county of Hardin and State of Ohio, have made certain new and useful Improvements in Grain-Storehouse Construction, of which the following is a specification.

My invention relates to improvements in grain store-house construction and it consists in the combinations, constructions and arrangements herein described and claimed.

An object of my invention is to provide a structure which is substantially all metal, the construction being primarily designed as a corn crib in which perfect ventilation is secured, while at the same time the contents of the crib are kept from snow and rain.

A further object of my invention is to provide a device of the type described which is vermin-proof and rat-proof.

A further object of my invention is to provide a corn crib in which the arrangement is such that the placing of corn within the crib cannot close the ventilating openings, but in which proper ventilation is secured at all times.

A further object of my invention is to provide a substantially all metal structure in which the roof is self supporting, thereby relieving the walls of the greater part of the weight of the same.

Other objects and advantages will appear in the following specification and the novel features of the device will be particularly pointed out in the appended claims.

My invention is illustrated in the accompanying drawings forming part of this application in which—

Figure 1 is a top plan view taken on the line 1—1 of Fig. 2,

Fig. 2 is a vertical section on the line 2—2 of Fig. 1,

Fig. 3 is a perspective view of the corn crib,

Fig. 4 is a plan view of one of the curved metal plates,

Fig. 5 is a section along the line 5—5 of Fig. 4,

Fig. 6 is a section along the line 6—6 of Fig. 4,

Fig. 7 is a fragmentary plan view of a portion of the roof,

Fig. 8 is an enlarged face view of a stamped portion showing the opening as viewed in front,

Fig. 9 is a detail view showing the connection of the roof to the circular walls,

Fig. 10 shows a face view of a portion of modified form of the perforated sheet, and

Fig. 11 is a section along the line 11 of Fig. 10.

This application relates more particularly to a building construction. The metallic plate disclosed herein has been made the subject of a divisional application, Serial Number 37,976, filed July 3, 1915.

In carrying out my invention I provide a suitable base 1 which is preferably of concrete and of circular shape. This base may extend below the ground, as shown in Fig. 2. and is provided at the top of the ground with a metal ring or band 2. Carried by the base is a central metal column or tube 3 which is provided with perforations 4, and which has at its top a hood 5 supported by brackets 6, which space the hood from the upper end of the tube or shaft. Extending radially from the central air tube or shaft are auxiliary air tubes 7, these air tubes extending through the ring 2 and being provided at their outer ends with screens for preventing the entrance of rats, mice, or vermin.

The main body of the structure is made up of a series of curved metal plates like that shown in detail in Figs. 4, 5 and 6. In constructing these plates an oblong sheet of metal 8 such as galvanized iron is stamped so as to provide a series of longitudinal corrugations. A series of openings 9 is punched or stamped from the metal in such a manner as to provide a curved or embossed lip 10 (see Fig. 5). It will be observed from this figure that this opening 9 is disposed on the under side of one of the longitudinal corrugations so that it is protected from rain not only by the lip which projects downwardly substantially to the bottom of the opening, but also by the fact that it is on the under side of a longitudinal corrugation. It will also be observed that the portion of the metal plate immediately surrounding the bottom edge of the opening has a semicircular depression 11 for a purpose hereinafter explained. The plate, fashioned as described above, is curved to conform with the curvature of the building to be erected and

is provided with bolt holes 12 along its side edges and at its ends. The openings 9 are substantially crescent-shaped and it will be observed that the space between the lower edge of the lip 10 and the lower edge of the opening 9 is too small to permit the entrance of mice.

The curved plates are secured together by means of bolts, the bolt holes of the various plates registering so as to contribute to the ready assemblage of the plates. A door such as that shown at 13 may be provided, this door comprising a metal frame $13^{\times}$ to which curved plates (not shown) but similar to those shown at 18 in Fig. 4 are secured. An upper door 14 of similar construction (see Fig. 3) may be provided for filling the crib.

The roof of the device forms one of the novel features of the invention. It consists of a series of substantially triangular corrugated sections which are secured at their upper ends to a flanged collar 15, by bolts 16. The collar 15 is secured to the central air shaft 3 and the flange on the collar extends over the inner ends of the roof sections 17 so as to make a weather-proof construction. By fastening the roof sections 17 to the air shaft I make the roof partly self supporting, that is to say, very little of the pressure of the roof is carried by the outer circular walls. The roof is secured to the walls, however, by means of a band or lug 18, this lug being secured to the upper plates by bolts 19 and to the roof by similar bolts 20.

The structure is further provided with means for filling the same through the roof and to this end I pivot one of the sections, *i. e.*, that shown at 21 in Figs. 3 and 7 on one of the retaining bolts 16. This section 21 may be swung to the right or to the left, thereby providing an opening 22, through which the crib may be filled. The pivoted section 21 may be locked in position by means of the hasp 23 (see Fig. 3).

In Figs. 10 and 11 I have shown a modification, this modification consisting of a lip 10^{a} which is struck up from the metal sheet leaving an opening 9^{a} of crescent shape, beneath the lip, the lip itself being flat, that is to say, without embossing. This form of the device equally fulfils the purpose of my invention, the only object of embossing it being to strengthen the device as a whole.

From the foregoing description of the various parts of the device the operation thereof may be readily understood.

A structure built as described has the following advantages: With the exception of the base it is all metal and therefore does not tend to decay. The corrugations in the wall plates tend to strengthen the same and as has been heretofore pointed out the openings 9 being on the under side of the projecting portion of the corrugation, the latter serves to protect the opening from the elements. The lip 10 forms a further protection or awning for the opening 9. When, viewed from the outside along a horizontal plane the lower part of the lip 10 comes substantially in alinement with the lower part of the opening so that it is unlikely that rain or snow will enter the opening even if driven by a high wind.

The center of the corn crib is well ventilated by the central air shaft 3, since the air within the crib will be entrained by that passing through the auxiliary air pipe 7, the auxiliary air pipes being screened prevent the entrance of vermin or mice. These air pipes 7 are embedded in the concrete base 1 and extend outwardly from the air shaft 3 so as to anchor the device securely and to prevent the blowing over of the crib by a high wind.

The provision of a substantially self supporting roof which projects out over the edge of the wall of the device is also an important feature since this relieves the walls in part of a weight which might otherwise tend to weaken them. Corn stored in this device will not mold as readily as in cribs where the rain and snow can beat in. The peculiar locations of the openings or perforations 9 obviate the danger of the openings clogging up by the pressure of the corn on the inside of the bin or crib so that good ventilation is secured at all times.

I claim:

1. A grain store-house construction comprising a base, a central air shaft supported by said base, a laterally extending tube communicating at its inner end with said air shaft, said tube being secured to said base and the outer end being open to the atmosphere, a roof secured to said air shaft, and perforated walls carried by the base and joining said roof.

2. A grain store-house construction comprising a base, a central perforated air shaft carried by said base, a plurality of radiating tubes having their inner ends communicating with said air shaft, the outer ends of the tubes being open to the atmosphere, each of said tubes being secured to the base along its entire length, a roof supported by said central air shaft, and perforated walls carried by the base and joining the roof, said walls being anchored to said radiating tubes.

3. A grain store-house construction comprising a central perforated air shaft, a plurality of laterally extending tubes communicating at one end with the interior of said air shaft, a ring encircling said central air shaft and spaced therefrom, the opposite ends of the tubes being open to the atmosphere, and being secured to said ring, a substantially conical shaped roof carried by said central air shaft, perforated circular walls secured to said tubes near the outer

ends thereof and extending upwardly to said roof, and plastic material disposed between said central air shaft and said ring, said plastic material embedding said tubes and the lower ends of said walls.

4. A grain store-house construction comprising a central perforated air shaft, a plurality of radiating tubes communicating at one end with the interior of said air shaft, a ring surrounding said air shaft and secured to each of said tubes, and plastic material disposed between the air shaft and the ring, said plastic material embedding said tubes.

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Witnesses:
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