

C. E. MARTIN.
 ROOF FOR SILOS.
 APPLICATION FILED FEB. 2, 1914.

1,106,150.

Patented Aug. 4, 1914
 2 SHEETS—SHEET 1.

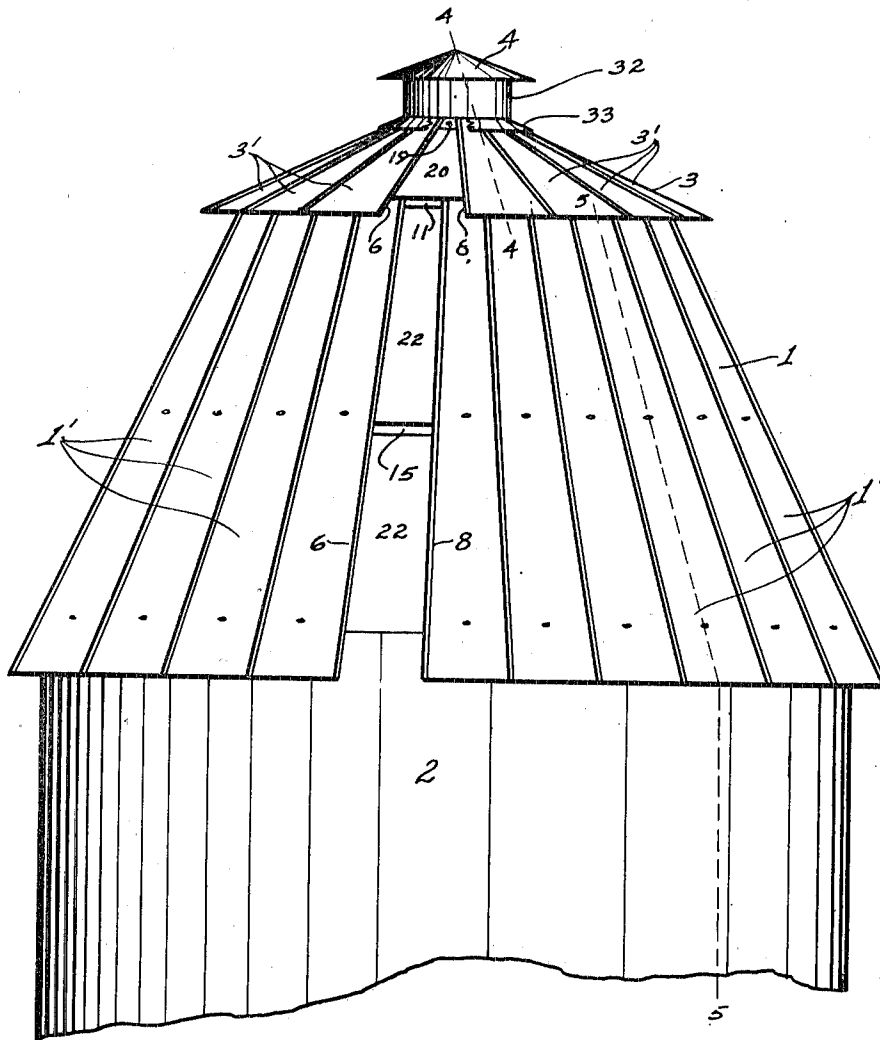


Fig. 1.

Witnesses

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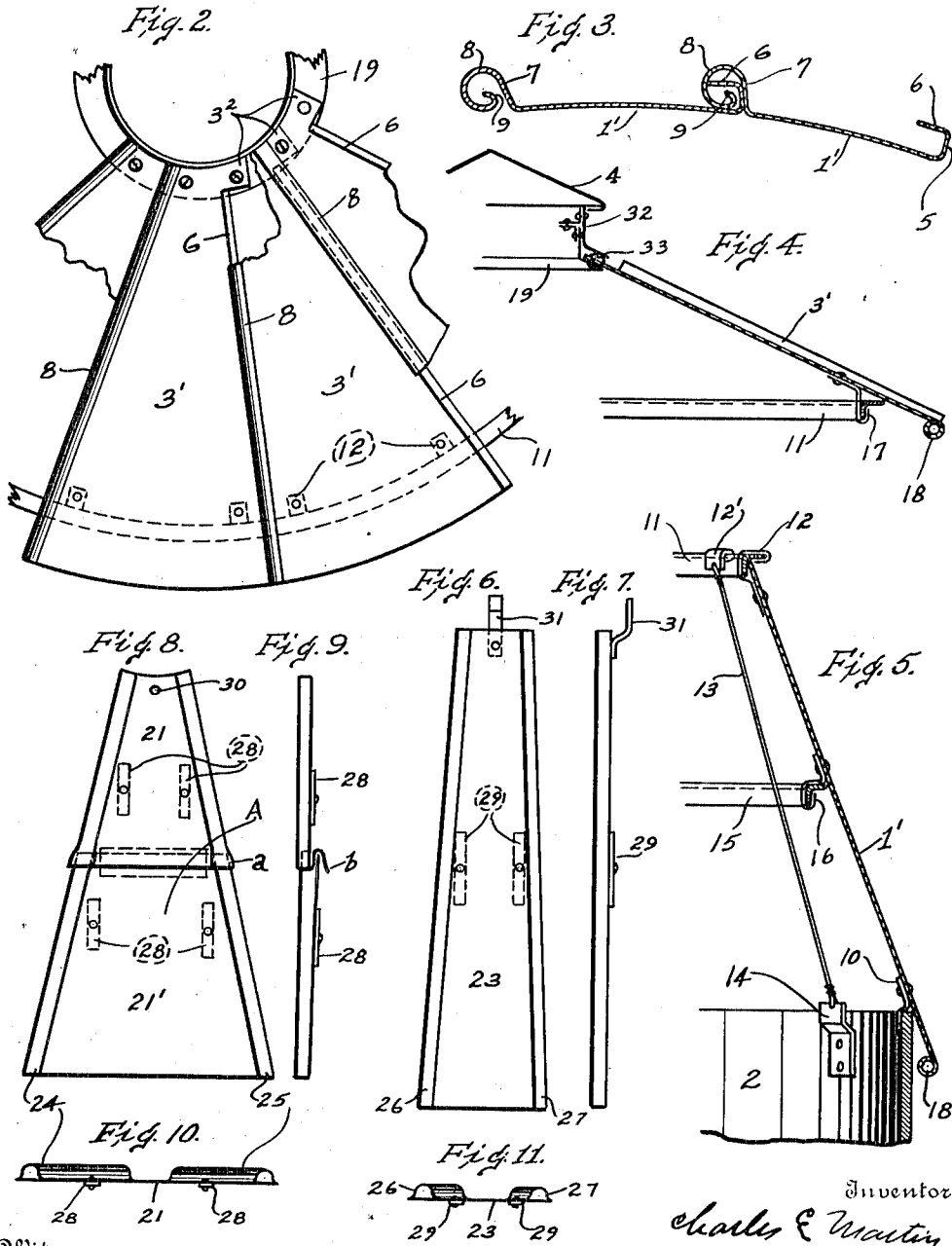
John H. Cow
 his Attorney

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UNITED STATES PATENT OFFICE.

CHARLES E. MARTIN, OF MANSFIELD, OHIO.

ROOF FOR SILOS.

1,166,150.

Specification of Letters Patent.

Patented Aug. 4, 1914.

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To all whom it may concern:

Be it known that I, CHARLES E. MARTIN, citizen of the United States of America, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Roofs for Silos, of which the following is a specification.

This invention relates to certain new and useful improvements in silo roofs and the primary object thereof is to provide a silo roof which is substantially air tight.

A further object of the invention is to provide novel, improved, and simplified joints between the several sections which constitute the roof structure.

A still further object of the invention is to provide novel and improved means for securing the roof doors in closed position, which will allow said doors to be easily and quickly placed into and removed from operative positions.

In the drawings Figure 1 is a side elevation of the invention, the door openings being shown uncovered; Fig. 2 is a fragmentary top plan view partly broken away; Fig. 3 is a transverse section taken through two of the crown sections, the latter being shown interlocked; Fig. 4 is a section taken on the line 4—4 of Fig. 1; Fig. 5 is a section taken on the line 5—5 of Fig. 1; Fig. 6 is a top plan view of the door of the base portion of the roof structure; Fig. 7 is a side view of Fig. 6; Fig. 8 is a top plan view of the door of the crown portion of the roof; Fig. 9 is a side view of Fig. 8; Fig. 10 is an end view of Fig. 8; and Fig. 11 is an end view of Fig. 6.

The roof structure consists of a base portion 1 which seats on the silo body 2, a crown 3 which is supported by the base 1 and a cap 4 which is connected to the crown 3. The crown and base are each made of a plurality of flat sections which in the instance of the base are designated 1', and in the instance of the crown are designated 3'. The several sections are connected by substantially air tight joints constructed as follows: Each section is formed or bent to have a right angular side portion 5 the free end of which is bent to present a part 6 which overlies the section in substantial parallelism thereto, while the opposite side portion of the section is bent outwardly at an obtuse angle at 7, and is rolled over at 8, to provide

a hollow rib, the free end portion 9 of the rib being curved and spaced from the part 7 to receive the right angular portion 5 in said space. The part 6 abuts the inner face of the rib and exerts pressure thereagainst so as to cause the portion 5 to bind against the part 7, the curved free end portion 9 bearing against the outer face of the adjacent section, whereby it will be seen that there are three mutual points of contact between the two parts of a joint effecting a substantially air-proof structure.

The sections 1' are provided with clips 10 which hook over the upper edge of the body 2, the upper ends of which sections seat in the corner of a ring 11, of L-shape in cross section, straps 12 being secured to the sections 1', and being bent over the rings 11 so as to effectively relate the parts. For the purpose of anchoring the ring 11, to the silo body, clamps 12' engage over the ring and are engaged with cables 13 which latter are secured to brackets 14 secured to the silo body 2. In order to further strengthen and brace the structure, a ring 15 of greater diameter than that of the ring 11 is attached by straps 16 to the sections 1'. The sections 3' of the crown 3 rest at their lower ends on the ring 11 and are secured thereto by the straps 17, the free extremities of the sections 3' being curled to provide strengthening beads 18. The upper ends of the sections 3' are riveted or bolted to the base flange 19 of the cap 4.

The crown opening 20 is closed by a door made in two parts 21 and 21' as shown in Fig. 8. The parts of the door 21 and 21' have rolled over side portions 24 and 25, which are adapted to slidably receive the parts 6 and ribs 8 respectively, which latter are carried by the sections 3' at the sides of the opening 20, while the door 23 has similar side portions 26 and 27, which are for sliding engagement with the parts 6 and ribs 8 respectively, which latter are carried by the sections 1' at the sides of the opening 22.

The parts 21—21' comprising the door "A" and the door 23 are provided with pivoted latches 28 and 29 respectively, which are adapted to be turned to extend laterally of the doors so as to engage the under faces of the adjacent respective sections 3' and 1' to hold the doors securely in position. The parts 21 and 21' comprising the door "A" are joined together at "a" telescopically.

The upper part 21 is provided with a lip portion "b" which extends over the joint to shed water, and keeps it from passing between the joined ends of the parts 21 and 21' of the door "A." A ring 32 is fitted to the cap 4 and is provided with an outwardly extending annular flange 33 which extends over the upper ends of the sections 3' of the crown to shed water. The end of the sections 3' are provided with projecting portions 3² which overlap and are secured to the adjacent sections auxiliarily providing means for fastening the ends of the sections 3' to the flange 19 of the cap, thereby preventing lateral movement of each individual section.

The part of the door 21' preferably has a top opening 30 through which a bolt may be passed to secure the door to the flange 19 of the cap. The door 23 has a bracket 31 secured to and projecting outwardly from its upper end, the bracket being for engagement under the ring 11 to hold the door flush with the sections 1' of the roof.

By the provision of flat sections that conjointly constitute the base portion and crown of the roof structure, air is effectively excluded, since the sections seat tightly on the top edge of the silo body and the ring 11, and have contact with same throughout their widths at the points of contact with the silo body and ring, as distinguished from corrugated sections which obviously allow air to pass therebeneath at their convex portions.

Attention is further called to the fact that a silo roof of the form and character described will increase the capacity for storing ensilage, as the silo can be filled to the apex of the roof structure, thereby giving extra storage capacity, and in the event of

the shrinkage of the ensilage will leave the silo body substantially full.

What is claimed is:

1. In a silo, a roof structure consisting of a base and a crown secured to the base, the base and crown each being composed of flat sections the side edges of which have interlocking joints, the crown and base having door openings formed by omitting a section of each, and doors for closing said door openings having rolled side edges which slidably receive the interlocking parts of the sections adjacent the door openings.

2. In a silo, a roof structure consisting of a base and a crown secured to the base, the base and crown each being composed of flat sections, the side edges of which have interlocking joints, the crown and base having door openings formed by omitting a section of each, doors for closing said door openings having rolled side edges which slidably receive the interlocking parts of the sections adjacent the door openings, latches on the doors pivoted to be movable to engage under the sections adjacent the door openings, and means to secure the upper ends of the doors to prevent lateral movement thereof.

3. In a silo, a roof structure formed of sections the side edges of which have interlocking joints, one of the sections being omitted to provide a door opening, and a door for closing said opening having rolled side edges which slidably receive the interlocking parts of the sections adjacent the door opening.

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

CHARLES E. MARTIN.

Witnesses:

JOHN H. COSS,
LELA RITCHIE.