E. F. SCHLICHTER.

SILO.

APPLICATION FILED OCT. 31, 1914.

1,264,689. Patented Apr. 30, 1918.

Fig. 1.

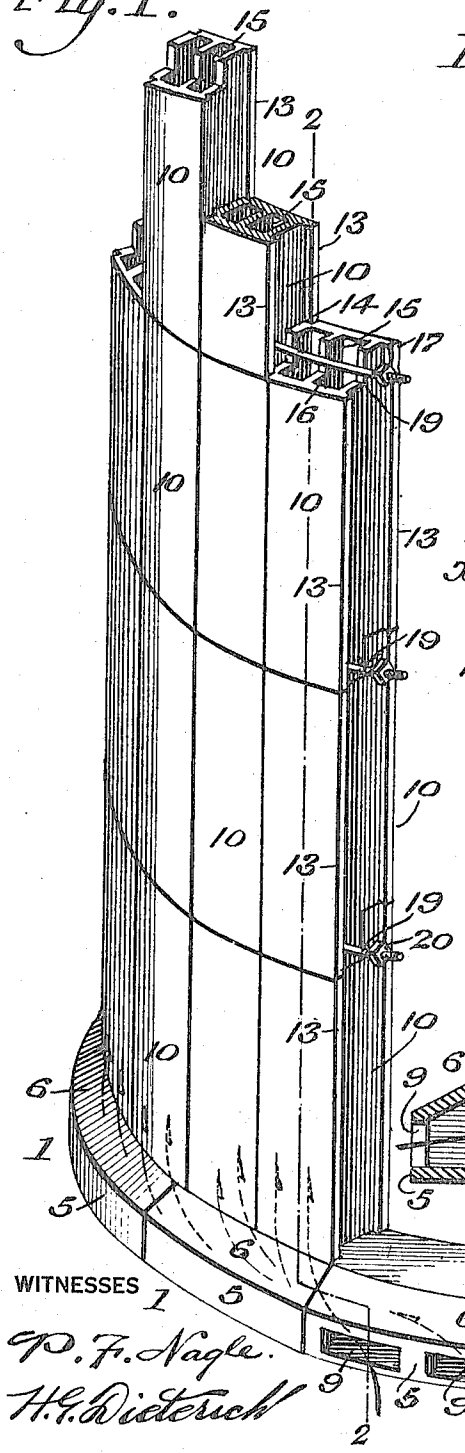


Fig. 2.

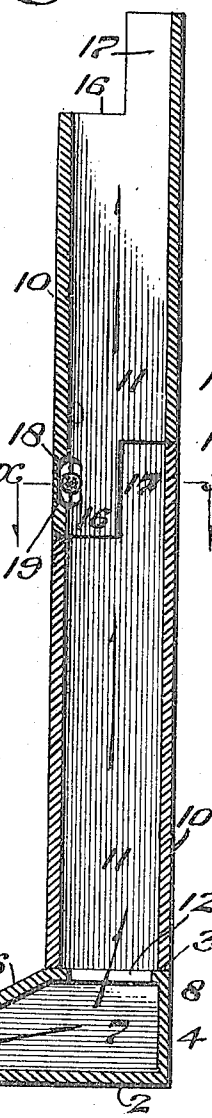


Fig. 4.

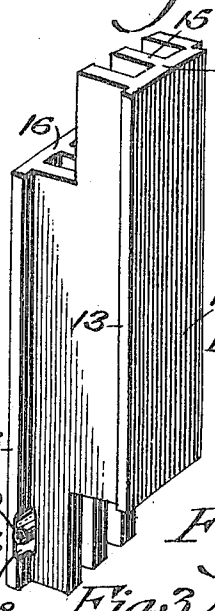


Fig. 6.

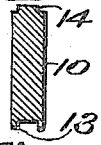


Fig. 5.

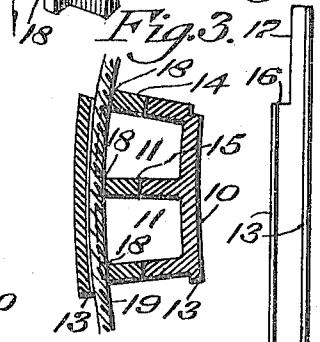


Fig. 3.

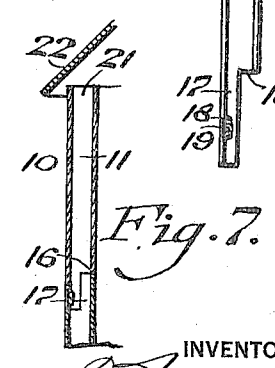


Fig. 7.

WITNESSES

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SILO.

1,264,689. Specification of Letters Patent. Patented Apr. 30, 1918.

Application filed October 31, 1914. Serial No. 869,531.

To all whom it may concern:

Be it known that I, ENOS F. SCHLICHTER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Silo, of which the following is a specification.

My invention consists of a silo constructed from staves formed by hardened plastic material, such as concrete or tile, and tied by hoops secured to such staves.

It further consists of such silo in which the staves are hollow and connected to form hollow walls having connected air-spaces.

It further consists of means for interlocking and firmly connecting the blocks forming the walls of the structure.

It further consists of blocks formed with interlocking faces offering comparatively large cementing surfaces at their joints, while requiring a minimum of cement in such joints.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—

Figure 1 represents a perspective view of a portion of a silo embodying my invention.

Fig. 2 represents a vertical section of the wall of the silo, the section being taken on line 2—2 of Fig. 1.

Fig. 3 represents a section on the line *x*—*x* in Fig. 2.

Fig. 4 represents a perspective view of a block from which the silo is constructed.

Fig. 5 represents a side view of a block.

Fig. 6 represents a sectional view through a solid block, as shown in Fig. 5.

Fig. 7 represents a detail sectional view of the upper portion of the wall and a part of the roof or cover.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, the reference numerals 1 indicate base-blocks which are supported upon the foundation of the silo in a circular or other desired or required configuration. Said blocks have flat bottoms, 2, and tops, 3, and plane and slightly curved inner walls, 4, and outer walls, 5, the upper and outer corners, 6, being beveled. The blocks are hollow and have the ends of their interiors, 7, open to register with the ends of the adjoining blocks. The outer walls of the blocks, 8, forming the sill of the silo-door, have openings, 9, into the interior of the blocks. The base-blocks are curved upon circles corresponding to the curvature of the base. The staves of the silo are composed of blocks, 10, the lower ends of the lower set of which rest upon the base-blocks and have their hollow interiors, 11, communicating with the interiors of the base-blocks through openings, 12, in the tops of the same. The uppermost blocks of the wall are open, as at 21, and spaced from the cover or roof, 22, of the silo, so that each stave formed by the hollow blocks will form an air-flue open at its top and bottom. In the construction shown in the drawings the blocks are formed at one side with corner flanges, 13, and upon the other side with a tongue, 14, which fits between the flanges of the adjoining block, so that the sides of the blocks interlock when in place. The blocks are preferably formed with a partition, 15, longitudinal of the hollow interior and bracing the inner and outer walls of each block, and said walls are transversely curved to form segments of the circular outlines of the assembled structure. The ends of the blocks are formed with shouldered rabbets, 16, and tongues, 17, which fit into each other to form continuous overlapping joints between the ends of the blocks and thus form a continuous inner and outer surface of the wall of the silo. The sides and partition of one tongue at the end of each block have longitudinal slots, 18, through which a hoop or tie, 19, is passed circumferentially through the blocks when assembled, and has its ends locked by nuts or heads, 20, at the jambs of the door-openings, thus retaining the blocks of a circumferential group of blocks in place and laterally clamped together. Such hoops may be formed from plain metallic rods, twisted metallic rods or wire-rope or any other metallic annular tie, and the ends of the hoops can be secured by any suitable means which will prevent movement of the hoops. The meeting faces and edges of the blocks are united by mortar or cement to form air and water-tight joints between the blocks to produce an air and water tight wall for the silo.

If desired, the blocks can be solid and without cavities, as illustrated in Figs. 5 and 6.

By constructing the silo from hollow blocks, lightness is combined with strength in the structure, and, as the ends of the hollow blocks are vertically connected, a cylindrical and vertically spaced hollow wall is formed, taking in air at the lower ends of its ducts and expelling it at the open upper ends of the same, thus keeping the hollow wall perfectly dry. The hollow wall forms a poor heat-conductor, so that the ensilage contents will not get either overheated nor freeze by extreme changes of temperature. The silo is fireproof and, the joints between the blocks interlocking, said joints require comparatively little cement to hold the blocks together and to render the joints air and waterproof. The blocks may be made from clay or similar substances, burned or baked to be solid and impervious, or they may be formed from concrete composition suitably molded and dried, and treated to be air and waterproof.

As the hoops pass through or are embedded in that portion of the superimposed blocks here shown as the tongues which are exterior of and overlap the tongues of the adjoining blocks, the overlapping outer tongues will be held by the hoops against displacement from outward pressure of the contents of the silo, and confine the overlapped adjoining tongues of the adjoining blocks and so form a firm and positive joint.

While the sides of the blocks are disclosed as forming tongue and groove joints, and such construction is preferable on account of strength and tightness of joints, the sides may be formed in any suitable manner to accomplish the desired results. By embedding the hoops or ties on the blocks they are not exposed to the elements and are not only less liable to rust and other damages, but also will not expand and contract to such an extent, thus insuring more positive action and serving to properly hold the joints in position.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the mechanism thus disclosed, provided the principles of construction set forth in the following claim are employed.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

A silo having its walls formed of hollow blocks having their inner faces curved and their adjoining sides fitted together and with their meeting ends formed with overlapping shouldered rabbets and tongues respectively interlocking with each other to form joints forming a continuous inner and outer surface of the wall of the silo, said tongues having apertured slots, cement uniting the meeting faces of the ends of the blocks forming an air and watertight joint, and tie rods transversely extending through the tongues of said joints to reinforce them.

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