C. L. VAN NOSTRAND.

SELF CLOSING AND LOCKING JOINT FOR STRUCTURAL ELEMENTS.

APPLICATION FILED FEB. 3, 1919.

1,367,643. **Patented Feb. 8, 1921.**

Fig. 1.

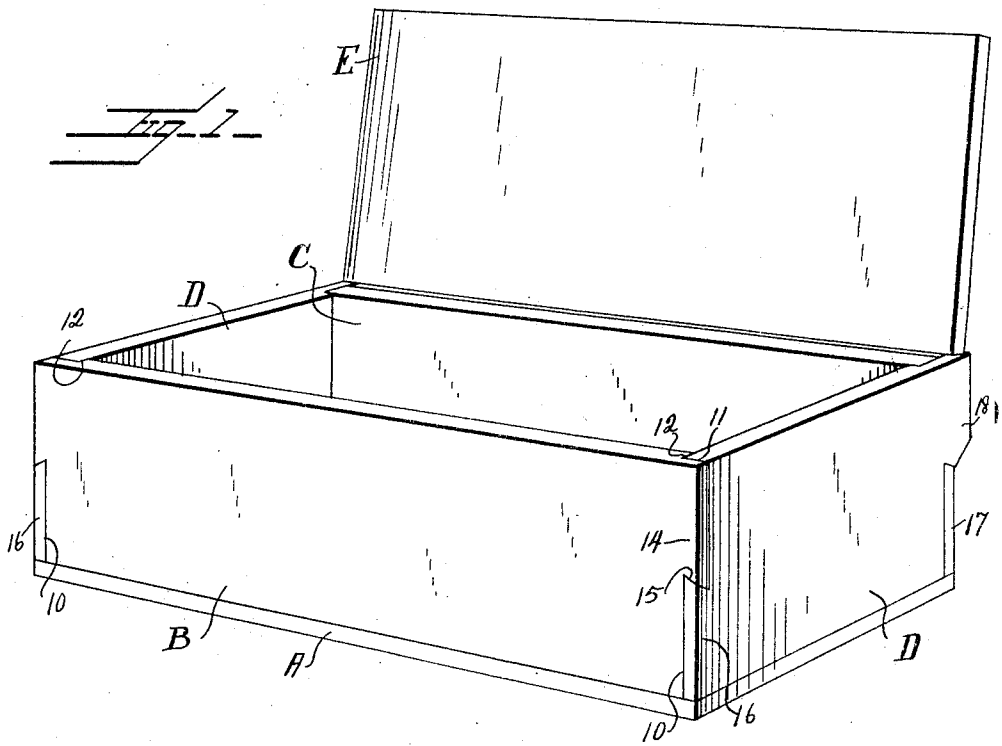


Fig. 3.

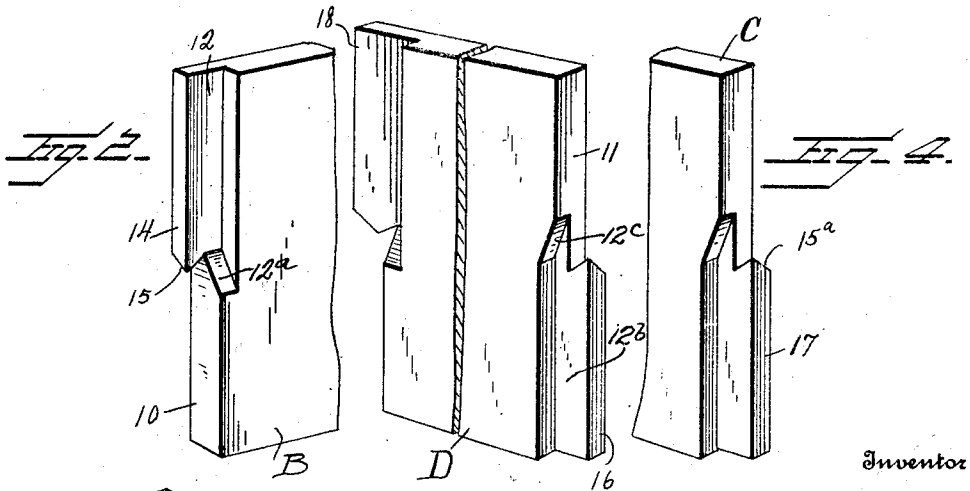


Fig. 2.

Fig. 4.

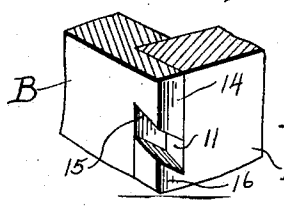


Fig. 5.

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SELF CLOSING AND LOCKING JOINT FOR STRUCTURAL ELEMENTS.

1,367,643. Specification of Letters Patent. Patented Feb. 8, 1921.

Application filed February 3, 1919. Serial No. 274,653.

To all whom it may concern:

Be it known that I, CHARLES L. VAN NOSTRAND, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Self Closing and Locking Joints for Structural Elements, of which the following is a specification.

This invention relates to structures such as caskets, vaults, buildings or other cubical structures, and particularly to a joint between the walls thereof.

The general object of the invention is to provide a joint for the walls of these structures which will be interlocking and self-closing under the weight of the structure itself, and in this connection provide joints of such construction that the weight of the walls and the weight of material on the structure will act to draw the side walls of the structure together and securely lock these walls.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view of a structure embodying my invention;

Fig. 2 is a perspective view of one end of the element B;

Fig. 3 is a perspective view showing opposite ends of the element D and looking toward its inside face;

Fig. 4 is a perspective view of one end of the element C looking toward its inside face; and

Fig. 5 is a fragmentary perspective view of the adjacent ends of the two elements slightly separated.

In the drawings, I have illustrated my invention as applied to an oblong or cubical chest or container of like shape which might be made of slabs of stone or concrete, or might be made of any suitable material. It is to be understood, however, that the drawings are purely illustrative of one application of my improved joint and that I do not wish to be limited to the use of this joint to a box-like structure of the character described. In these figures, A designates the bottom of the structure, B the front wall, C the rear wall, D the end walls, and E the cover. It will be noted from Fig. 1 that the front wall B has a total length equal to the length of the bottom, but that this front wall at its ends is cut away from its lower edge to a point approximately half way between its top and bottom, as at 10, and that the corresponding end wall D has a total length equal to or greater than the width of the bottom A but that its forward edge is cut away, as at 11 from the top downward. this cut-away portion 11 being complementary to the cut-away portion 10. The front wall B, at its ends, is reduced in thickness, as at 12 from the top downward, for a portion of its height which terminates in a beveled face or shoulder 12^a, while each end wall D is also reduced in thickness at its end engaging with the front wall B and from its lower edge up to a point somewhat above the cutaway portion 10, as at 12^b, terminating in a beveled face 12^c, this beveled face extending upward and outward toward the inside face of the end wall D. That portion 14 of the front B which overhangs the projecting part of the wall D at its lower end, is downwardly and laterally and downwardly and inwardly beveled, as at 15, while that portion 16 of the wall D disposed below the portion 14 of the wall B at its upper end is downwardly and laterally beveled and downwardly and inwardly beveled. Thus, the face of the portion 15 fits against and interlocks with the face of the portion 16 and this interlock is such that the inclination of these faces resist any movement of the parts away from each other, either in the plane of the wall B or the plane of the wall D, and these two beveled faces will cause the weight of the wall B to draw the walls B and D into close contiguity and the greater the weight of the wall B or the greater the downward pressure on the wall B, the greater will be the strength with which these walls are held together. What is stated above with relation to the front wall and one wall D is equally true with regard to the other wall D and the same interlock is used.

The wall C and the walls D have the same sort of joint as the walls B and D, except that in this case the upper portion of the rear end of the wall D is extended beyond the lower portion thereof, while the lower portions of the ends of the wall C are extended beyond the upper portion. The walls D and C are rabbeted in the same manner as the walls B and D are rabbeted. The upper edge face of the lower portion 17 of the wall C is downwardly and outwardly

and downwardly and laterally beveled as at 15ª and the lower face of the projecting portion 18 of the wells D is beveled in the same manner. Thus the same interlock is formed between the walls C and D as between B and D, except that it is the weight of the walls D and any pressure thereon which causes the wall C to be drawn inward against the end of the walls D.

The reduced portions 12 and 12ᵇ and the beveled faces 12ª and 12ᶜ are very important factors in the construction of my wall, in that these reduced or rabbeted portions 12 and 12ᶜ form shoulders limiting the inward movement of the walls relative to each other. The shoulders formed by the beveled faces 12ª and 12ᶜ act to prevent the upward movement of the front or rear walls relative to the end walls. If it were not for these shoulders 12ª and 12ᶜ, the front and rear walls could move upward relative to the end walls, or the end walls could move vertically relative to the front and rear walls. Thus, for instance, in Fig. 1 the front wall B could move upward relative to the end walls D, or the end walls D downward relative to the front wall B, if it were not for these confronting shoulders 12ª and 12ᶜ, while the rear wall could move downward relative to the end walls D, or the end walls D move upward toward the rear wall C, if it were not for these confronting shoulders. Thus, the beveled shoulders 15 and 15ª and the beveled shoulders 12ª and 12ᶜ prevent this relative upward and downward movement, and any tendency to move in this manner causes these beveled faces 12ª and 12ᶜ to operate against each other and there is a tendency for the walls to wedge outward, which, however, is resisted by the thrust of the earth on all sides of the walls.

It is to be particularly pointed out that in my construction the beveled ends 15 of the portions 14 have a wedging engagement with the beveled faces 15ª so that the pressure of the earth tends to force these parts together and the whole weight of the casket, sarcophagus, or vault will force these parts into this interlocking wedging engagement and the whole weight supported by these inclined or beveled faces. This form of vault is particularly desirable where desiccation is desired. This cannot take place in a sealed marble vault, for it is air-tight and waterproof and placed below frost, and thus it is impossible for the embalmed body to become desiccated. Many people desire this desiccation but, of course, wish a vault or sarcophagus which will not crush. A sarcophagus constructed in accordance with my invention will support tons of earth above it, but the joints are such that the different members of the sarcophagus will be locked and cannot come apart until the weight of earth above it is removed, while at the same time there is no necessity of cementing or sealing the joints, and thus a sarcophagus is provided which will permit desiccation.

It is further to be particularly noted that the sarcophagus is not formed of a plurality of small sections liable to come apart under pressure and requiring very skilled workmanship in putting it up, but is simply formed of four walls, a bottom and a top, and the sarcophagus may be assembled merely by putting the floor of the sarcophagus in place, then placing on it the front wall, the end walls, and the rear wall in turn, slipping the joints into each other as the slabs are put in place, and that once these parts are in place and the earth tamped down around the tomb, the parts are held in this position ready for the reception of the coffin. After the coffin has been lowered into the tomb, the lid may be placed thereon, and once the lid is in place and the earth filled in, it is impossible for the elements of the tomb to become disjointed.

Also in many cases it is desirable that the portions 18 of the walls D shall extend beyond the outer face of the rear wall C so as to form brackets for the support of the lid or cover E when the latter is raised. These projecting brackets are particularly necessary where my container is used as a grave vault and is necessary to support the upper slab in an open position during interment. It will be seen that the weight of the cover and the weight of the superincumbent earth, where the container is being used as a grave vault, causes the ends and side walls of the vault to be drawn closely together and interlocked with each other without the use of cement and that the greater the pressure upon the top of the vault, the more closely will the walls hold together.

It is again to be noted that this form of joint may be applied to a large number of different structures and that I do not wish to be limited to any particular structure in which this joint may be used.

I claim:—

1. A structure of the character described having longitudinally extending front and back walls and transversely extending end walls, the front wall at the lower portion of its ends being cut away and the upper portion of the forward ends of the end walls being similarly cut away whereby the front wall overlaps, the upper portions of the end walls, and the lower portions of the end walls overlap the lower portions of the front wall, the confronting end faces of said overlapping portions being beveled downwardly and longitudinally and downwardly and laterally whereby to interlock the end walls with the front wall, the lower portions of the other ends of the end walls being similarly cut away and the upper portions of the ends of the rear wall being cut away

whereby the upper portions of the end walls will overlap the upper portions of the rear wall, the confronting faces of said end portions of the end walls and rear wall being beveled downwardly and laterally and downwardly and longitudinally whereby to cause said walls to interlock, the confronting, overlapping portions of the front and rear walls being reduced in thickness, the ends of said reduced portions forming confronting shoulders.

2. A structure of the character described having longitudinally extending front and back walls and transversely extending end walls, the front wall at the lower portion of its ends being cut away and the upper portion of the forward ends of the end walls being similarly cut away whereby the front wall overlaps the upper portions of the end walls, and the lower portions of the end walls overlap the lower portions of the front wall, the confronting end faces of said overlapping portions being beveled downwardly and longitudinally and downwardly and laterally whereby to interlock the end walls with the front wall, the lower portions of the other ends of the end walls being similarly cut away and the upper portions of the ends of the rear wall being cut away whereby the upper portions of the end walls will overlap the upper portions of the rear wall, the confronting faces of said end portions of the end walls and rear wall being beveled downwardly and laterally and downwardly and longitudinally whereby to cause said walls to interlock, the confronting, overlapping portions of the front and rear walls being reduced in thickness, the ends of said reduced portions forming confronting shoulders, the confronting faces of said shoulders being complementarily beveled.

In testimony whereof I affix my signature.

CHARLES L. VAN NOSTRAND.