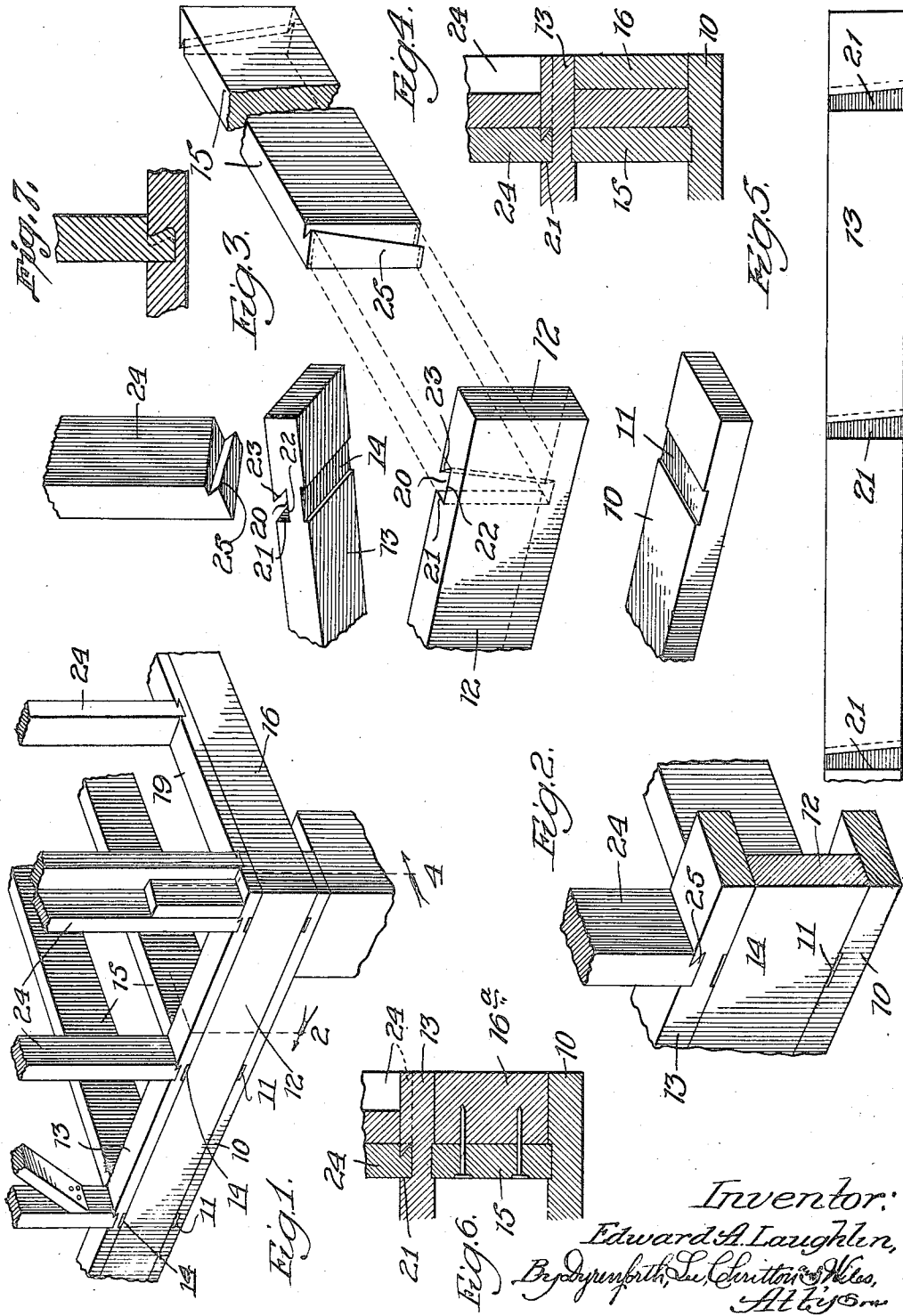


1,423,949.

Patented July 25, 1922.



Inventor:
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 By *John P. Smith, Jr., Clinton S. Miles, Attorneys*

UNITED STATES PATENT OFFICE

EDWARD A. LAUGHLIN, OF PORT ARTHUR, TEXAS.

BUILDING CONSTRUCTION.

1,423,949.

Specification of Letters Patent.

Patented July 25, 1922.

Application filed February 2, 1921. Serial No. 441,724.

To all whom it may concern:

Be it known that I, EDWARD A. LAUGHLIN, a citizen of the United States, residing at Port Arthur, in the county of Jefferson and State of Texas, have invented a new and useful Improvement in Building Constructions, of which the following is a specification.

My invention relates to certain new and useful improvements in building construction, and is fully described and explained in the specification as shown in the accompanying drawings, in which Figure 1 is a perspective view illustrating the salient elements of my building construction. Figure 2 is a perspective view of a portion of the sill and joist construction on the line 2 of Fig. 1. Figure 3 is a view similar to Figure 2 showing the different parts separate in order better to disclose the construction. Figure 4 is a vertical sectional view on the line 4 of Figure 1. Figure 5 is an elevation of one of the plates 13 or sills 12. Figure 6 is a view similar to Figure 4 showing a modified construction, and Fig. 7 is a detail cross section of a different form of dado.

Referring to the drawings, 10 is a transverse bottom sill, provided across its upper surface with shallow dadoes or notches 11, which are spaced at regular intervals corresponding to the spacing which is to be employed for the floor joists. 12 is a timber or plank exterior sill set on edge, and provided across its inner face with a series of tapered, dovetailed dadoes or notches, one of which is shown in Figure 3, indicated generally by 20. 13 is a plate provided across its lower face with shallow dadoes or notches 14. 15 are the floor joists, set on edge and entering the dadoes or notches described, that is to say, the end of each floor joist can rest in a dado on the sill 10, is engaged with the vertically tapered, dovetailed dado or notch 20 in the exterior sill 12, and the plate 13 is set down over the joists, with the dadoes in engagement therewith, so as to locate and hold the same in proper position. By this means the floor joists are very securely fastened in position and the construction can be assembled with great rapidity. The joists being deeper or wider than the space between the sill 10 and the plate 13, it is impossible that the member can be improperly placed or spaced, even by careless workmen.

The plates 13 and 19 are provided with tapered, dovetailed dadoes or notches similar in construction or form to those on the inner face of the sill 12, and also generally indicated by 20. Each of the notches 20 is provided with a surface or shoulder 21 at right angles to the face of the plate or sill in which located. The notch preferably has a flat bottom 22, and on the opposite side it is provided with an under-cut surface or shoulder 23; this surface inclines toward the surface or shoulder 21, so that the notch tapers and is smaller at one end than at the other. The angles at each edge of the under cut surface may be rounded into curves as indicated in Fig. 7.

24 are the studs, each being provided at the lower end or each end, with a tenon or head adapted to enter one of the tapered, dovetailed dadoes or notches 20. The construction is best shown in Figures 2 and 3, from which it will be seen that one face of the stud is carried down to form a square shoulder, or corner at the end. The opposite face of the stud, however, is cut to form a tapered head or dovetail 25 one edge of which is inclined from the surface of the stud, so that the head is narrower at one end than at the other to conform to the shape of the tapered, dovetailed dado or notch 20.

The ends of the floor joist 15 are similarly provided with tapered tenons or heads adapted to enter the tapered, dovetailed, dadoes or notches 20 in the sill 12. The construction is best shown in Figure 3, from which it will be seen that one face of the joist 15 is continued to form a square shoulder or corner at the end, the opposite face being cut to form a head or dovetail 25 one edge of which is inclined from the adjacent surface of the joist, so that the head is narrower at one end than at the other to conform to the shape of the tapered, dovetailed dado or notch in the sill 20. In other words, the ends of the floor joist 15 are similar in shape to the ends of the studs 24 described above. In Figure 3 the parts are shown separated. The solid lines show the ends of the floor joist removed from the sill 12, and the broken lines show it joined to the sill.

The construction is assembled in a manner which will be quite obvious from an inspection of the drawings and the description

of the details of the parts. The sills 10 if used are first positioned, and the exterior sills 12 are then put in position on top with the dados 20 registering with the notches 11. The ends of the floor joist 15 are then dropped into position in engagement with the notches 20 on the inner surface of the sill 12, with their bottom edges resting in the notches 11 or on the top surface of the sill 10. The plates 19 are then put in position on top of the sill 12 with the notches 14 engaging the upper edges of the joist 15. The studs 24 are then pushed into position from one side with their bottom end engaging with the tapered, dovetailed dados or notches 20 in the upper surface of the plates 19 and 13.

Reference to the drawings shows the transverse sills 10, 12, and the plates 13 are always cut off at the corner ends a fixed distance from the exterior face of the end notches, to wit: the width of the studs in the longitudinal wall. This automatically positions the longitudinal sill 16 shown in Figure 1 and Figure 4, and permits of its formation "built up" or solid. It also positions plate 19. This being a fixed principle in the production and assembling of the lumber, it becomes what I call a "starter", and from that point the structural members are spaced and placed at regular distances apart.

It is quite obvious that the dovetailed tenons 25 on the ends of the joist 15 with the regular spaced dovetailed dados or notches 20 in the sills 12 are of distinctive formation that simplifies their manufacture by machinery in quantities at a minimum of cost; also allows their use in practical building construction without conflict. Either end of the joist will readily fit the notches in the sills without turning the joist end for end, and any notched sill can be used in either a left or right hand position. Therefore it will be impossible to position the different members wrong.

In practical construction and use of material embodying my invention, it is intended that the notched and shaped parts described will be finished in the mill to known dimensions, and with considerable accuracy. The work can be done in quantities by machinery at high speed, and the material so made affords a means whereby buildings of various shapes and sizes, can be assembled with the greatest speed and economy. Dados or notches in the horizontal members being cut at regular intervals, all the regular spaced parts will find their own places, with no difficulty whatever. In this way the use of tools and labor in the construction of the building is reduced to the minimum.

The distinctive tapered dovetail used in the tenon or formation at ends of the joist and corresponding notches in the sills, permit the wood to swell and shrink when ex-

posed to weather conditions without affecting the positioning of the parts. The lock joint saves nails and labor in practical construction. The sharp edge of the dovetail may be rounded off, as shown in Fig. 7, to avoid damage in handling and to add strength to the material when positioned in the frame of a building. This material, being formed and finished into ready-to-use units, can be painted, stained, preserved or creosoted by mechanical means.

The foregoing construction not only produces a building which possesses increased strength and stiffness, but produces one where the parts can be assembled with the utmost speed and economy, by comparatively unskilled labor. It is quite possible to cut the material and design buildings for the employment of same so that all the measurements will come out in even multiples of the spacing unit adopted and in that event it will practically be unnecessary to re-cut any of the material. In any event, the more important parts of the building frame will be cut to standard lengths or multiples quite accurately at the mill and will fit together without any hand work on the job.

In Figure 6 I have shown a construction slightly modified from that shown in Figure 4. In this figure the sill 16^a is made somewhat thicker than the sill 16, and the end joist is nailed to it as indicated.

I realize that considerable variation is possible in the details of the construction herein shown, and I do not intend to limit myself thereto, except as pointed out in the following claims, in which it is my intention to claim all the novelty inherent in the device as broadly as is permitted by the state of the art.

What I claim as new, and wish to secure by Letters Patent, is:

1. In a building construction, sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, and joists embraced at their ends in the respective pairs of notches thereof.

2. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills notched at corresponding intervals on their inner faces and embracing the ends of the joists.

3. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills having on their inner faces at corresponding intervals dovetailed notches

each of uniform depth throughout and narrower at one end embracing the ends of the joists.

4. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills having on their inner faces at corresponding intervals dovetailed notches each of uniform depth throughout and narrower at the bottom end, embracing the ends of the joists.

5. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and an exterior sill having on its inner face at corresponding intervals dovetailed notches embracing dovetailed extensions on the ends of the joists.

6. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills notched at corresponding intervals on their inner faces and embracing the

ends of the joists, the end notch on an exterior sill being spaced from the end thereof a distance equal to the width of a stud. 35

7. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills notched at corresponding intervals on their inner faces and embracing the ends of the joists, the end joist being spaced from the end of a sill a distance equal to the width of a stud and a longitudinal sill nailed to said end joist. 40 45

8. In a building construction, bottom sills notched at regular intervals on their upper faces, plates notched at corresponding and registering regular intervals on their lower faces, joists embraced at their ends in the respective pairs of notches thereof, and exterior sills notched at corresponding intervals on their inner faces and embracing the ends of the joists, the end joist being spaced from the end of a sill a distance equal to the width of a stud and a longitudinal sill of the same thickness as the width of a stud nailed to said end joist. 50 55 60

In witness whereof I have hereunto set my hand and seal this 20th day of January 1921.

EDWARD A. LAUGHLIN. [L. S.]