Aug. 9, 1932. J. F. CAVANAGH 1,871,041

KNOCKDOWN SCAFFOLDING

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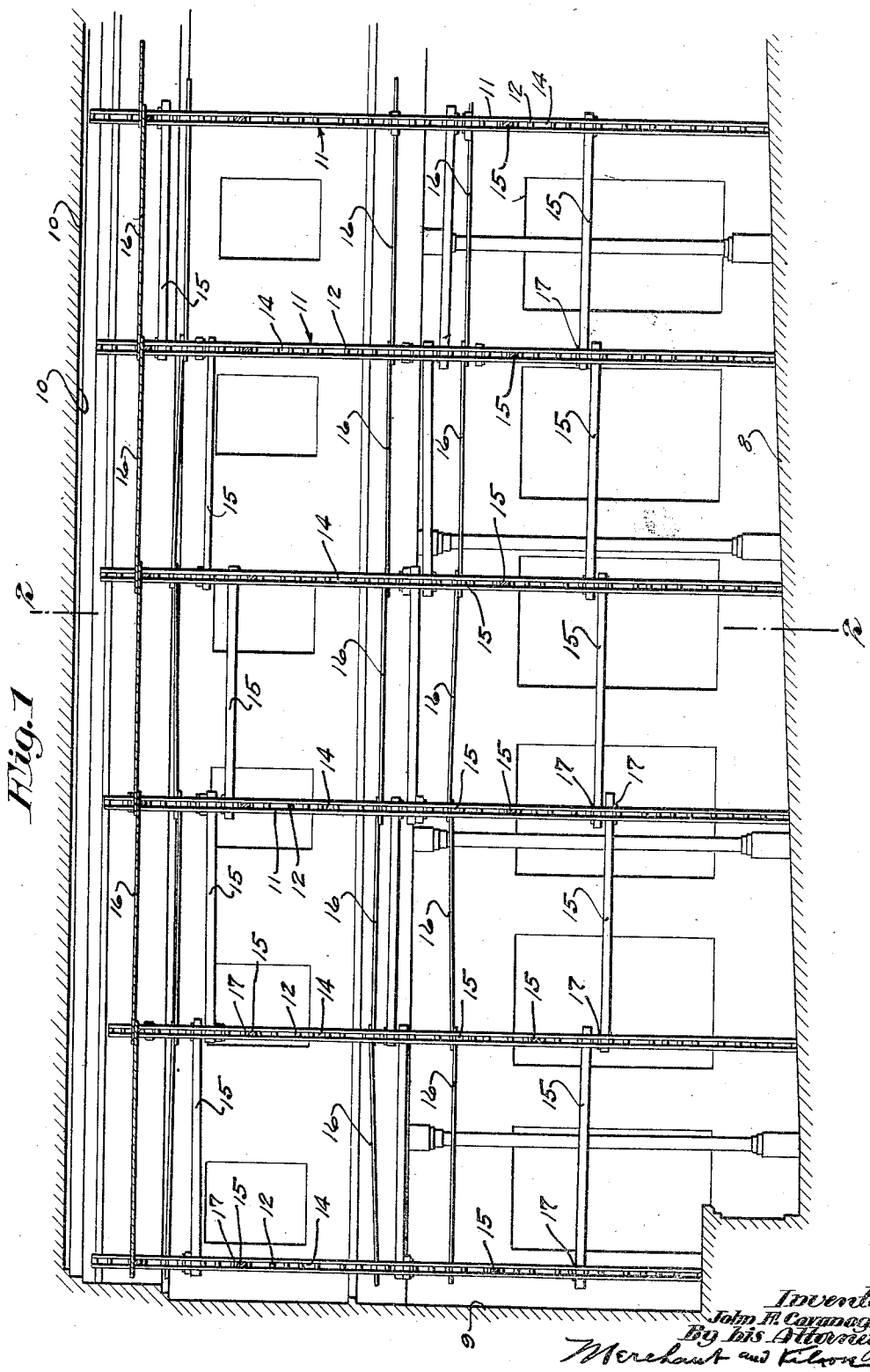


Fig. 1

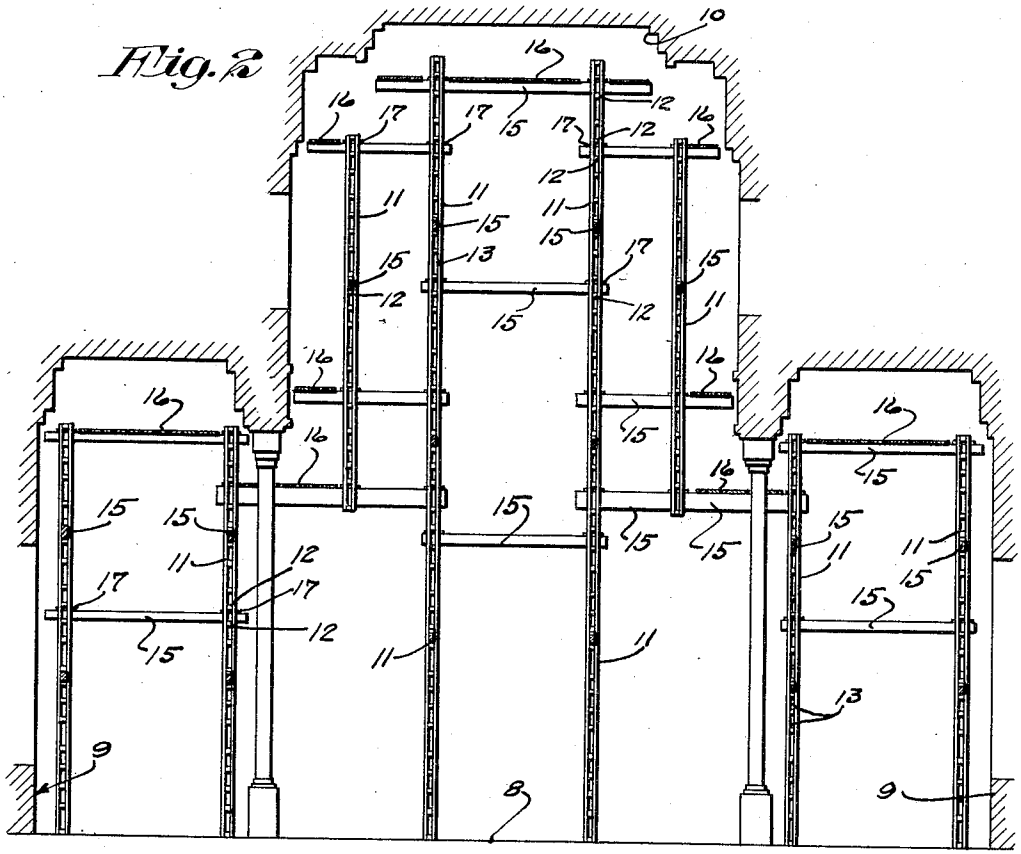
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Fig. 2



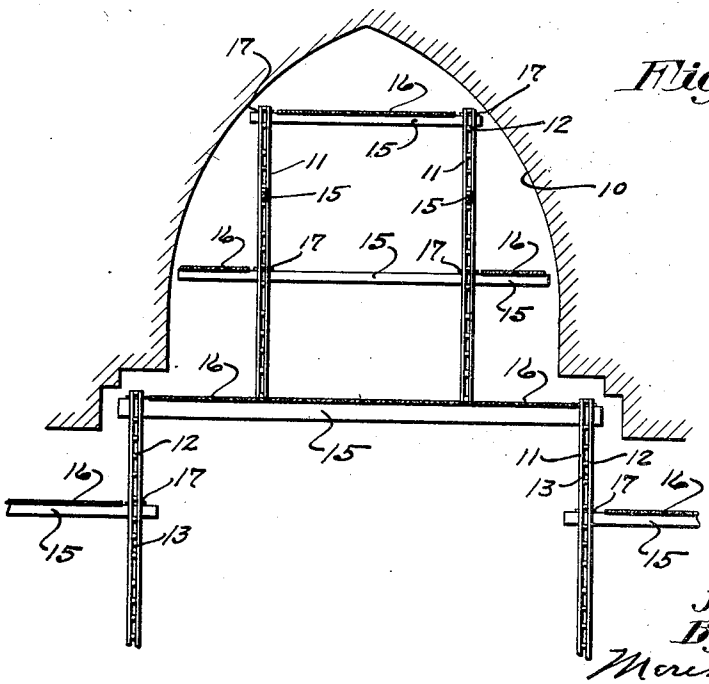


Fig. 2a

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Fig. 3

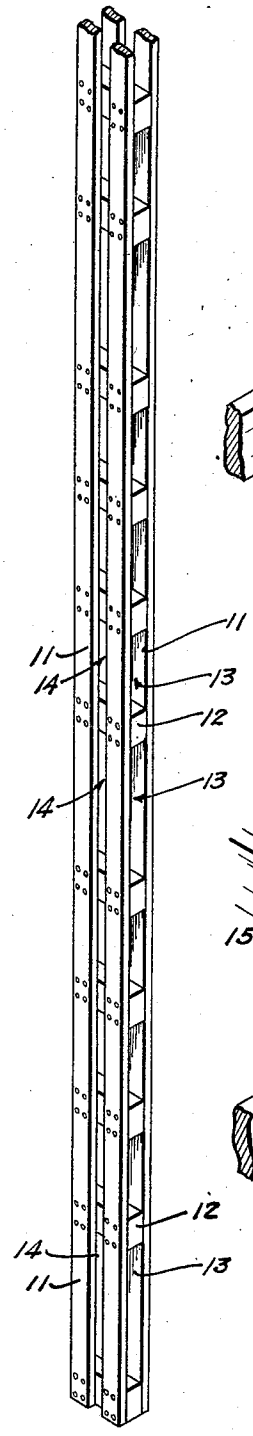


Fig. 4

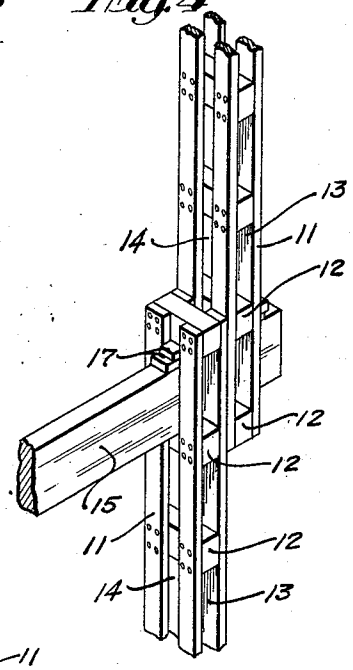


Fig. 5

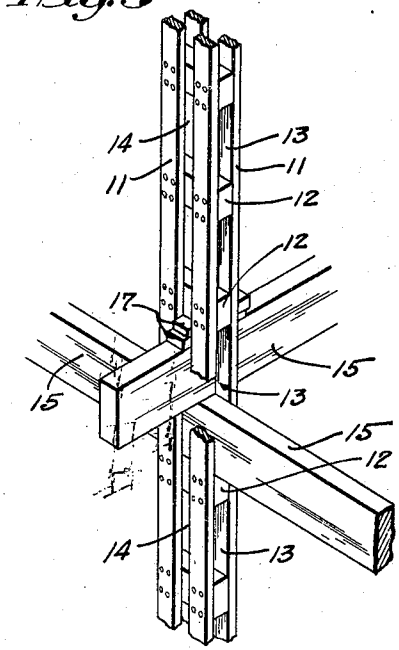


Fig. 6

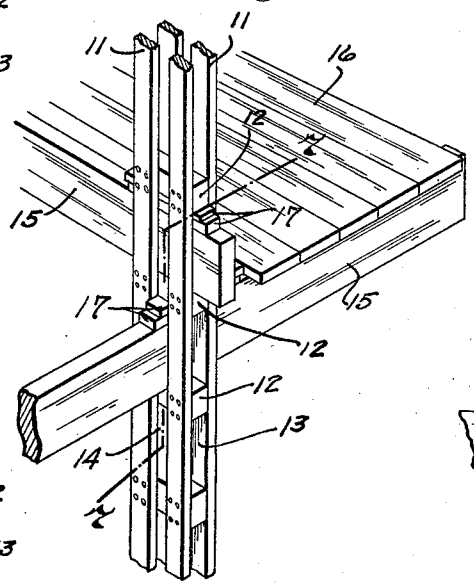
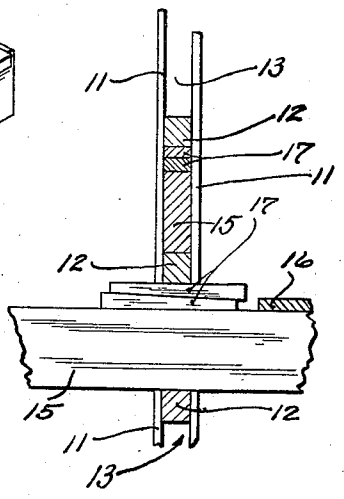


Fig. 7



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UNITED STATES PATENT OFFICE

JOHN F. CAVANAGH, OF ROBBINSDALE, MINNESOTA

KNOCKDOWN SCAFFOLDING

Application filed February 11, 1931. Serial No. 514,949.

My invention provides knock-down scaffolding of simple construction and comparatively low cost that is capable of being quickly put up in various different formations to suit the conditions of the work and quickly taken down after the work has been done, and without damage to the scaffolding and without the use of nails or bolts. Such a scaffolding not only saves waste in the use of lumber, but a great amount of time in the setting up and taking down thereof. The scaffolding is capable of use not only in interior work in places such as cathedrals which have vaulted domes in various irregular formations requiring finish or redecoration or cleaning, but is capable of outside use. The interior use, however, requires the most elaborate arrangement of scaffolding and while usually more difficult to accomplish may with this improved scaffolding, be readily and quickly accomplished in the most efficient way.

The scaffolding is capable of being made entirely of wood and preferably is made entirely of wood. It involves as its salient novel feature, columns of novel construction, but these are arranged to interlock with platform supporting beams in a very novel and efficient way as will hereinafter appear.

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a vertical section taken centrally through a structure such as a cathedral and showing the improved scaffolding applied therein;

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1;

Fig. 2ª is a fragmentary view corresponding to Fig. 2, but illustrating a somewhat different dome formation;

Fig. 3 is a perspective showing one of the columns of the scaffolding;

Fig. 4 is a fragmentary perspective view showing the ends of two columns connected with a lapped joint by one of the scaffolding beams;

Fig. 5 is a fragmentary perspective showing the manner of connecting at right angles two platform-supporting beams by a column;

Fig. 6 shows beams connected to columns at a right angle the one with the other, and a platform supported on one of the beams; and

Fig. 7 is a section taken approximately on the line 7—7 of Fig. 6.

The floor, walls and ceiling structure of the cathedral or building in which the scaffolding is installed are indicated, respectively, by the numerals 8, 9 and 10. The columns of the structure, as preferably designed, are made up each of four upright wooden strips 11 and vertically spaced blocks 12, the said strips being connected to said blocks preferably by nails permanently applied. By the blocks 12, the strips 11 are spaced so that rectangular openings 13 and 14 are formed through the columns at closely spaced places along the longitudinal dimensions of the column. The beam passages 14 extend at right angles to the beam passages 13 and both extend transversely through the columns at right angles to the axis of the column. At their ends, the columns are preferably formed with flat surfaces terminating flush with the end blocks 12, so that when desirable, the columns can be placed end to end to afford long columns made up of several columns or column sections. The platform-supporting beams are indicated by the numeral 15 and platform boards are indicated by the numeral 16. The numeral 17 indicates wedges, preferably tapered and adapted to be used as fillers to lock the beams in the columns in rigid adjustment and arrangement.

The columns and the beams may be and preferably will be made in various different

lengths but inasmuch as the beams can be projected through the columns to any desired extent, a beam of a given length will answer where the span of the beam used will vary to a very large extent. The drawings clearly illustrate various different ways in which the columns, beams and platform boards may be assembled to answer the purpose of the particular job and it will be noted that the platform boards can be laid on beams running in either direction. Fig. 4 shows the manner of splicing together overlapped ends of columns or column sections by extending the ends of the beam through aligned beam passages 14 thereof and then rigidly securing the said lapped ends by driving the wedges 17 on top of the beam and under the overlying blocks 12. When the wedges are thus driven in, they rigidly support the columns in vertical positions and when a number of such beams and columns are connected, the whole scaffolding structure becomes very rigid. The openings in the columns as best illustrated in Fig. 3, can be varied in their vertical spacing and in their vertical dimensions and inasmuch as the beam can be extended through a column for a given elevation in either direction, to wit: through the passages 13 or 14 at will, it is evident that the beams can be supported at very many different elevations. Moreover, slighter variations in the elevation of a beam can be determined by driving both of the wedges in under the particular beam or even by driving one wedge over the top and the other over the bottom of the beam. In some cases, the so-called wedges will not need to be tapered, but the tapered wedges are desirable in most instances because they permit a tight locking together of the columns and beams.

The features just noted make it possible to maintain substantially level platforms on beams resting with their lower ends on an inclined floor such as found in theaters and frequently in churches and cathedrals and which feature is illustrated in Fig. 1. Fig. 5 illustrates that the beams extended at right angles one to the other, can be extended through a column at any one of many different elevations. Fig. 2 shows various different ways of supporting transverse beams of varying lengths so as to bring the platform boards just at the right place for the workmen working on the walls and it will be noted, by reference to this Fig. and by reference to Fig. 2ª, that the structure may be built up into contracted beams in such manner that all portions of the interior surface may be readily reached by workmen. Fig. 2ª particularly illustrates the manner in which short columns can be supported on a platform, which, in turn, is supported from beams carried by lower columns.

The scaffolding described is, of course, capable of use generally wherever the walls of a building are to be worked upon. I have commercially used this device with great success on the interiors of a church or cathedral for redecorating the same and in this use, the device accomplished a very large saving in time and produced no dirt or litter either in the erection, the use or taking down of the scaffolding. The preferred form of the scaffolding has been illustrated, but as already indicated, it is capable of modification within the scope of the invention herein disclosed and broadly claimed.

What I claim is:

1. A knock-down scaffolding comprising columns, beams and platform-forming elements, said columns having beam passages extending therethrough in two directions at right angles, said beams being extensible through said beam passages in two directions and the scaffolding-forming elements being supportable on the beams supported by the columns, certain of said columns being made up of sections having overlapped ends, and certain of said beams being passed through aligned passages of the lapped ends of the column sections.

2. A knock-down scaffolding comprising columns, beams and platform-forming elements, said columns having beam passages extending therethrough in two directions at right angles, said beams being extensible through said beam passages in two directions and the scaffolding-forming elements being supportable on the beams supported by the columns, certain of said columns being made up of sections having overlapped ends, and certain of said beams being passed through aligned passages of the lapped ends of the column sections, and wedges applied against said beams and tightly driven into and filling the beam passages of said columns and rigidly connecting said column sections and beams.

3. The structure defined in claim 2 in which said columns are made up each of four strips and interposed blocks vertically spaced to afford horizontal beam passages extending through the columns in directions at right angles.

4. A column for knock-down scaffolding comprising four wooden strips and spacing blocks interposed between and rigidly secured to the said four strips and spacing the strips in two directions so as to afford beam passages extending through the column in two directions at right angles.

5. A column for knock-down scaffolding comprising four wooden strips and spacing blocks interposed between and rigidly secured to the said four strips and spacing the strips in two directions so as to afford beam passages extending through the column in two directions at right angles, in combination with beams insertable through said column in two directions, wedges insertable in the beam

passages of said columns and against the beams, the beams thus supported being adapted to support platform elements.

6. A plurality of columns such as defined in claim 4, in combination with a plurality of wooden beams insertable through the beam passages of said columns in two directions and adapted to support platform elements, and means for locking said beams in said beam passages, thereby connecting said columns and beams in a rigid self-sustaining structure.

In testimony whereof I affix my signature.

JOHN F. CAVANAGH.