No. 875,219. PATENTED DEC. 31, 1907.

C. H. SCAMMELL.

CLAMPING DEVICE FOR BUILDING CONSTRUCTIONS.

APPLICATION FILED MAY 17, 1907.

Fig. 1.

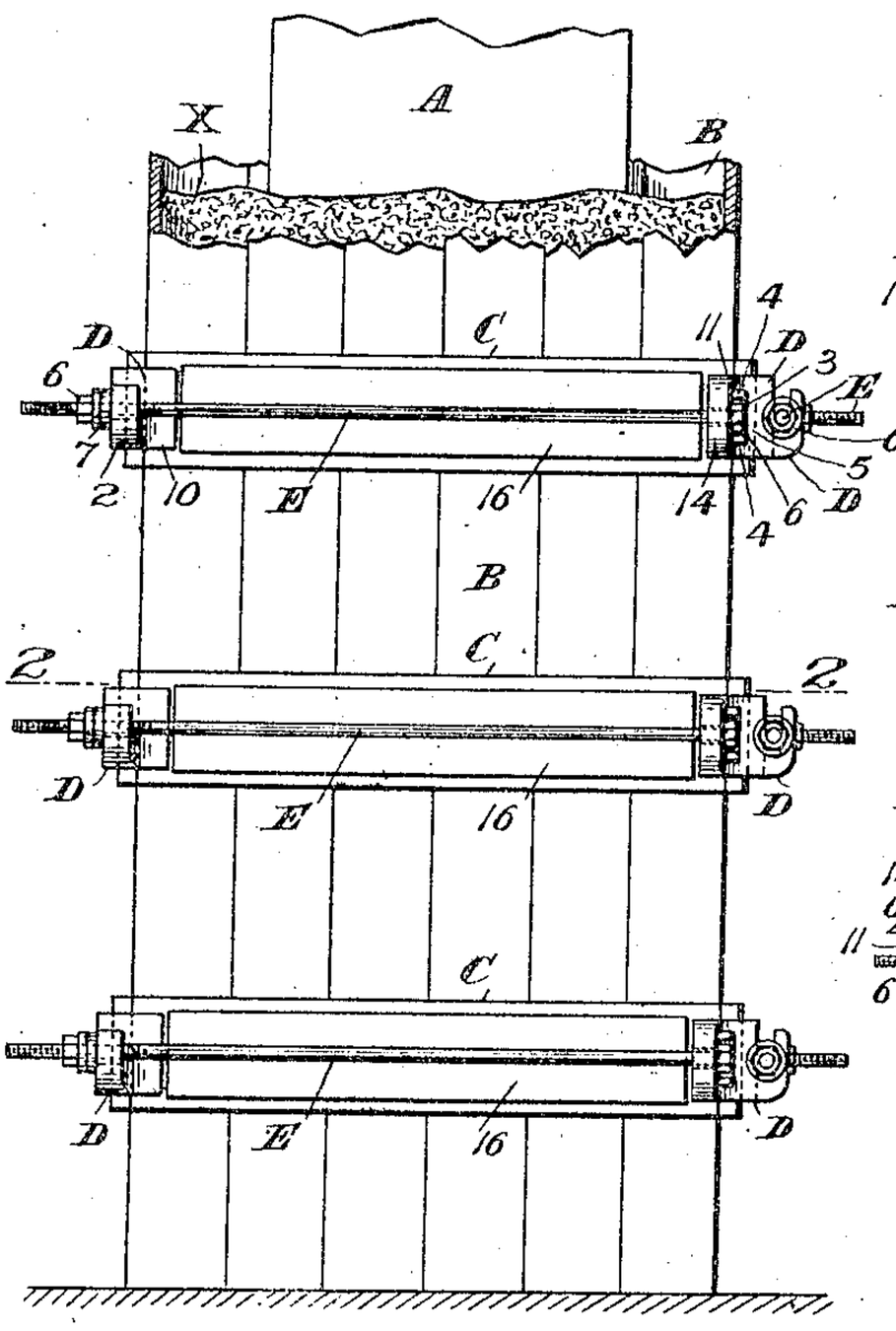


Fig. 2.

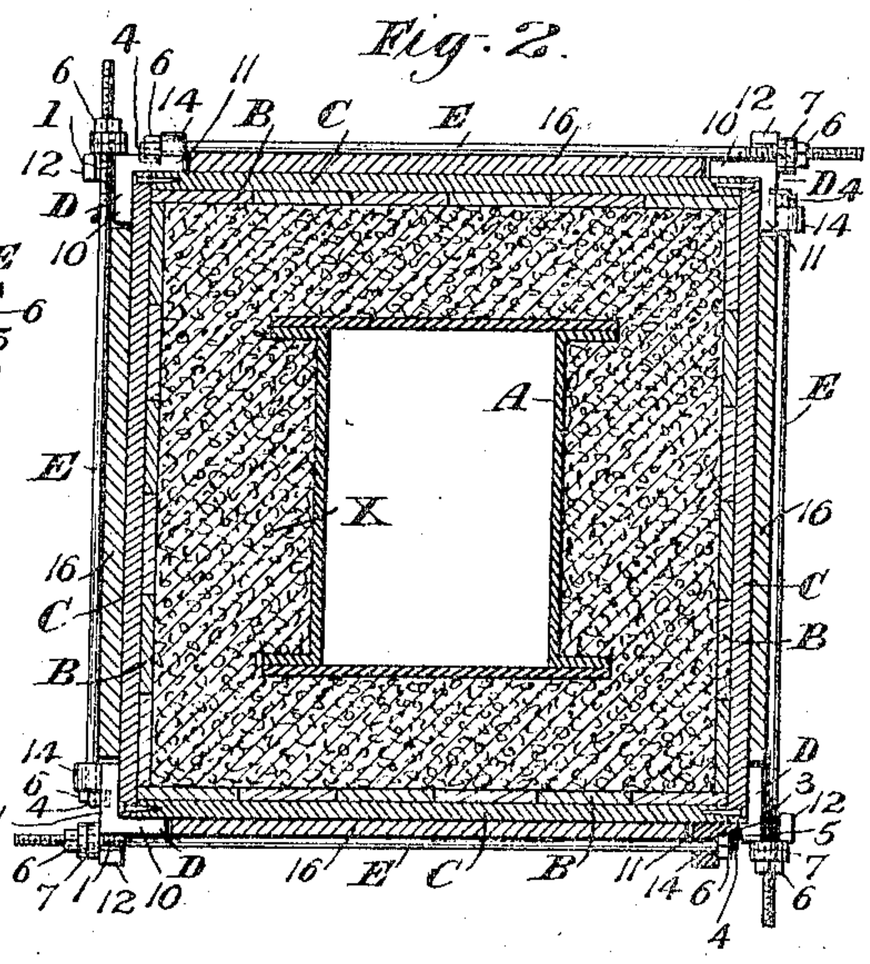


Fig. 3.

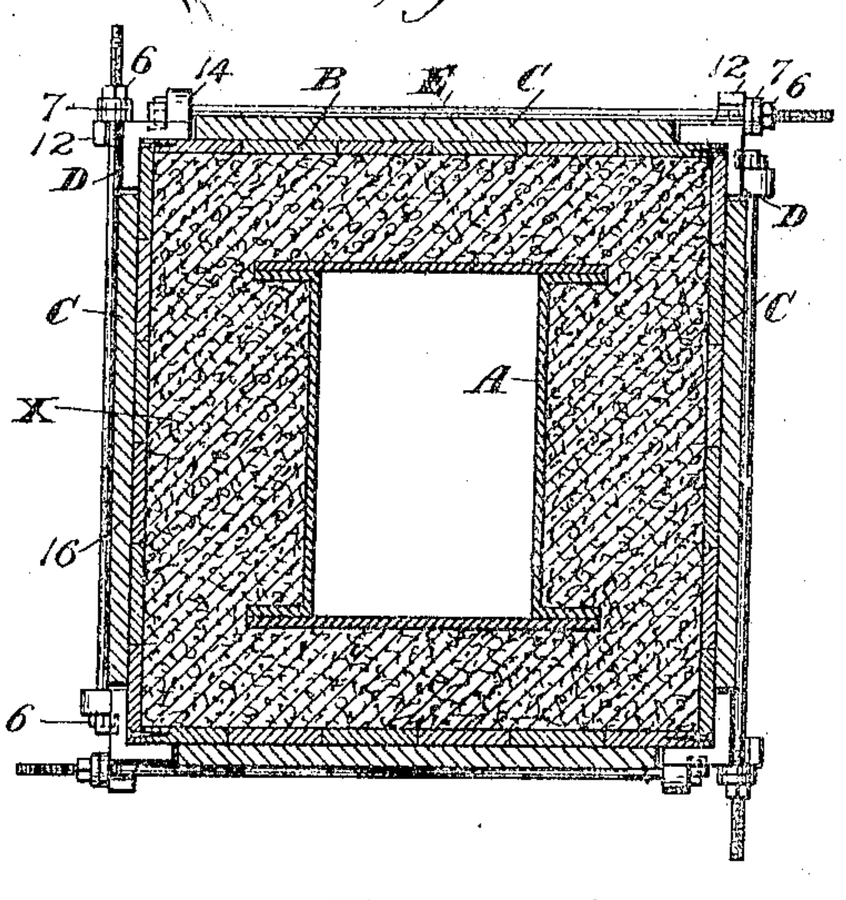
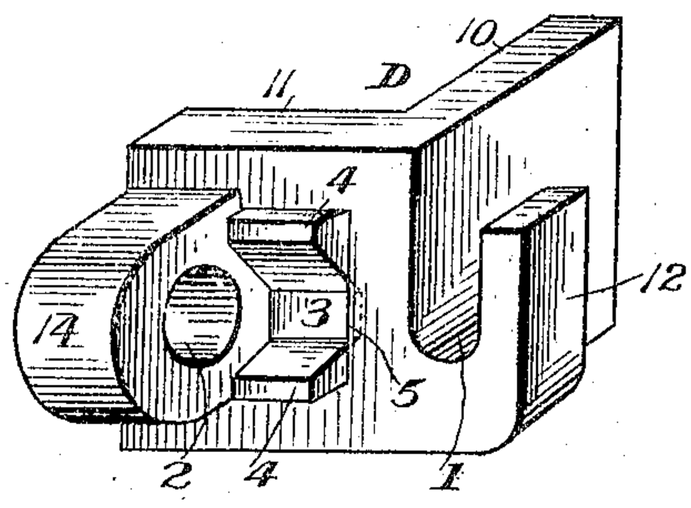


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CLAMPING DEVICE FOR BUILDING CONSTRUCTIONS.

No. 875,319. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed May 17, 1907. Serial No. 374,145.

To all whom it may concern:

Be it known that I, CHARLES H. SCAMMELL, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Clamping Devices for Building Constructions, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to an improved clamp for holding together parts of building constructions, the especial object of the invention being to provide an improved adjustable clamp, by which the same clamps may be used for constructions varying widely in size, and which shall provide for the cheap and convenient assembling and disassembling of the construction and shall avoid the loss of time and parts resulting from the separating of bolts, nuts, or clamps.

The clamp is applicable for permanent parts of building constructions, but is of especial value and especially adapted for use in constructing temporary centerings for vertical columns, smoke stacks, piping and the like, which are to be covered with concrete, the clamps being used to hold the temporary centering in place at the proper distance from the column in filling in the concrete. The invention will, therefore, be described in connection with clamps applied in such a construction, certain features of which temporary centering and other temporary frame works in connection with the clamps, form specific parts of the invention.

In the accompanying drawings forming a part of this specification, and in which is shown a construction embodying all the features of the invention in a preferred form—Figure 1 is a broken elevation of a column with the centering in place and concrete filled in. Fig. 2 is a cross section on the line 2 of Fig. 1. Fig. 3 is a view similar to Fig. 2 showing a modification. Fig. 4 is a perspective view of the clamp.

In the drawings, A is a metal column of a common form of structural metal, B is the lagging of boards set vertically to form the centering between which and the column A the concrete is to be filled in. This lagging consists of boards set vertically, and the lagging on each of the four sides being held together by battens C at suitable intervals, each side of the centering being formed preferably before erection by nailing or bolting the battens to the lagging boards so as to tie the latter together. The four sides of the centering are held together by clamps D on the corners at the battens and bolts E extending across the centering over the battens from clamp to clamp, complete ties inclosing the centering being thus formed by four clamps and four bolts. Such a tie is shown at each batten, but it will be understood that only so many ties will be used as required, and that the battens and ties will be spaced on the column as required according to the size and character of the construction.

Referring now to the clamps D, each clamp consists of an angle plate having the two sides 10, 11, on one of which, 10, is formed a lug 12 having an open slot 1 and on the other of which, 11, is a lug 14 having a bolt hole 2, and on the side of the bolt hole toward the corner of the clamp a nut recess 3 having the nut holding shoulders 4 and end bolt stop 5. The bolts E have nuts 6 at one end and a holding head at the other, or nuts 6 at each end, and one end of each bolt passes through the bolt hole 2 of a clamp with its nut seated in the recess 3 and the other end of the bolt adapted to be slipped into the open slot 1 of another clamp in erecting the centering.

The erection and removal of the centering as shown in Figs. 1 and 2 will be clear from the following description. The four sides of the centering being formed by securing together the lagging B by the battens C, the sides of the centering are put in place, the battens nailed together at the corners to hold the centering in place until the ties are applied, and the successive ties formed by the clamps and bolts applied. The clamps D are applied at the corners with bolts E extending from the clamps across the centering, and the free end of each bolt, the nut 6 on it being loosened sufficiently, is slipped into the open

slot 1 of the next clamp and the nut 6 then tightened up against the side of the lug 12 to clamp and secure the centering. When the centering is to be removed, it is only necessary to loosen the nuts 6 sufficiently to allow the ends of the bolts to be slipped upward out of the open slots 1, freeing the clamps for removal, after which the lagging may be removed, the centering of course being left up until the concrete X has set.

In the construction shown in Figs. 1 and 2 the bolts E would not bear against the battens on account of the ends of the battens being overlapped for nailing together, so that a loose board 16 is preferably slipped in between the batten and bolt before tightening up the latter, this board forming a bearing piece between the bolt and batten. The construction shown in Fig. 3 is the same as that of Figs. 1 and 2, except that the ends of the battens do not overlap but are made of such length that the clamp D fills the corner between the battens. In this case, the bolts lie directly on the battens, so that the loose bearing pieces 16 are not needed. The construction of Figs. 1 and 2 is preferred, however, as it is an advantage to nail the battens directly together for holding the centering in place temporarily.

The bolts are shown as extending somewhat outside the clamps, with washers 7 between the nuts 6 and the lugs 12. By using no washers or less washers, the clamps and bolts may be used for larger columns than that illustrated, and by putting on more washers the clamps and bolts may be used for smaller columns. The clamps are thus conveniently adjustable for any desired range of structure size.

It will be seen that the invention provides a very simple, cheap, and efficient clamping device, enabling cheap and convenient erection and removal of centering or other frame work, involving no skilled labor for application or removal of the clamps.

An important detail feature of the construction, although not absolutely essential to the invention, considered broadly, is that each clamp carries its own bolt and nuts, and it is not necessary to separate these parts in erecting or removing the centering, so that the loss of time resulting from the separation and accidental misplacement of parts is wholly avoided. In the preferred form shown, the only parts for each clamp that ever require separation are the washers, and these only when the clamps are to be adjusted for different size structures.

It will be noted that the slots 1 and the bolt holes 2 of each clamp are in line and still the bolts do not interfere with each other, as the bolt passing through the bolt hole 2 is held in place and prevented from crossing the slot 1 by the nut or head in recess 3 and stop 5. This feature of having the two bolts substantially in line is important, as this provides for the clamping pressure on both sides of the clamp in the same line, and avoids tendency to tipping the clamp, but it will be understood that a clamp in which the two bolts are not in line is within the invention defined by the broader claims.

What I claim is:—

1. An angle clamp having its two sides provided with lugs for holding the bolts parallel with the clamp sides, one lug being provided with a bolt hole and the other with an open bolt slot.

2. An angle clamp having its two sides provided with lugs for holding the bolts parallel with the clamp sides, one lug being provided with a bolt hole and the other with an open bolt slot, the bolt hole and bolt slot being in line.

3. A clamp having two sides at an angle to each other, one side being provided with a lug having a bolt hole and a head holding recess and bolt stop between the bolt hole and clamp corner, and the other side having a lug with an open bolt slot.

4. A clamp having two sides at an angle to each other, one side being provided with a lug having a bolt hole, and a bolt stop between the bolt hole and clamp corner, and the other side having a lug with an open bolt slot.

5. An angular frame work consisting of lagging B and battens C held together by bolts E and clamps D, said clamps D having their sides provided, respectively, with bolt holding lugs, one having a bolt hole and the other an open bolt slot.

6. An angular frame work consisting of lagging B and battens C held together by bolts E and clamps D, said clamps D having their sides provided, respectively, with bolt holding lugs, one having a bolt hole and the other an open bolt slot, said clamps covering the corners of the battens, and bearing pieces 16 between the bolts and battens.

7. A temporary frame work held together by bolts and angle clamps, said clamps having two bolt holding lugs at an angle to each other, each lug having a bolt opening and said openings including an open bolt slot.

8. A clamp having two bolt holding lugs at an angle to each other, each lug having a bolt opening and said openings including an open bolt slot.

9. Clamp D having two sides 10, 11, side 10 being provided with lug 12 having open bolt slot 1, and side 11 being provided with lug 14 having bolt hole 2 in line with bolt slot 1.

10. Clamp D having two sides 10, 11, side 10 being provided with lug 12 having open bolt slot 1, and side 11 being provided with lug 14 having bolt hole 2 in line with bolt slot 1 and with bolt stop 5.

11. Clamp D having two sides 10, 11, side 10 being provided with lug 12 having open bolt slot 1, and side 11 being provided with lug 14 having bolt hole 2 in line with bolt slot 1 and with head holding shoulders 4 and bolt stop 5.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses.

CHAS. H. SCAMMELL.

Witnesses:
ROBT. L. WINNE,
ASA HIMMELWRIGHT.