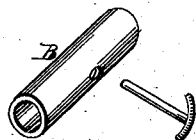
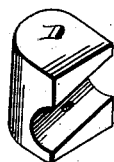
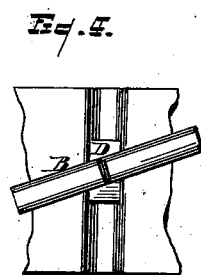
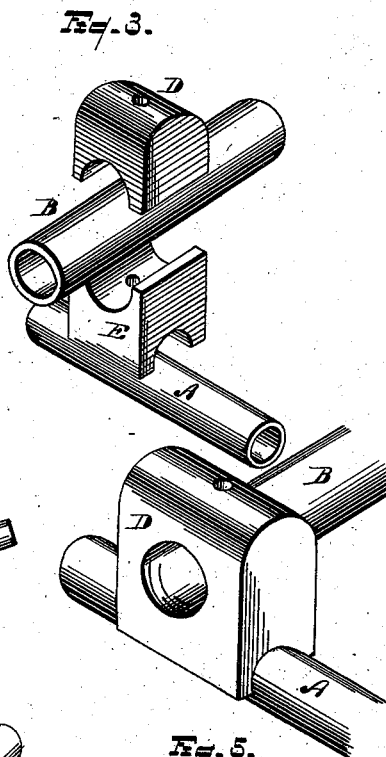
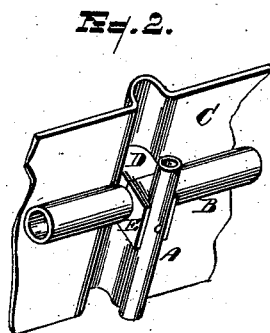
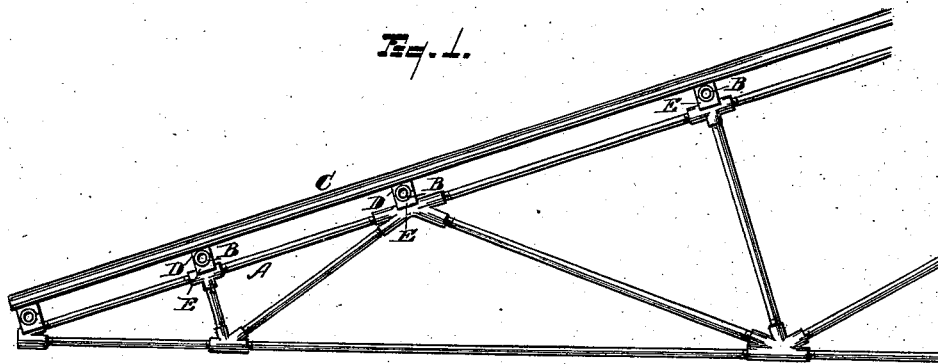


(No Model.)

H. C. HODGES.  
CONSTRUCTION OF ROOFS, &c.

No. 381,137.

Patented Apr. 17, 1888.



WITNESSES.

Samuel E. Thomas  
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# UNITED STATES PATENT OFFICE.

HENRY C. HODGES, OF DETROIT, MICHIGAN.

## CONSTRUCTION OF ROOFS, &c.

SPECIFICATION forming part of Letters Patent No. 381,137, dated April 17, 1888.

Application filed February 9, 1888. Serial No. 263,439. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. HODGES, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Construction of Roofs, &c.; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a view in perspective of a section of a roof construction embodying my invention. Fig. 2 is a view of the joint whereby the purlin, rafters, and roofing are united. Fig. 3 represents detail views of the parts constituting the said joint. Fig. 4 is a variation of my invention. Fig. 5 is another variation.

In the construction of roofs, and especially those which are provided with metallic trusses, girders, and purlins, the said roofs are rendered exceedingly expensive, owing to the labor required in their construction. It is the purpose of my invention to make a roof construction of this character which shall be at once substantial and inexpensive.

To this end, A represents my roof-rafter made of metallic pipe.

B represents the purlin.

C represents channeled or corrugated metal roofing.

A feature of large expense heretofore has been the joints whereby the roofing and purlins and the rafters are united. This I accomplish as follows: D is a block of metal, shaped upon its upper side for the reception of the said channeled or corrugated roofing. If the roofing is channeled or corrugated, as shown in the drawings, then the upper portion of this piece is shaped to fit the said channel or corrugation. The under side of the said piece D is provided with a concave bearing for the purlin I propose to make of metallic pipe. If, however, the purlin be of any other form of metal, the cavity in the block D should be made to correspond thereto. E is another block. This upon its upper side is concaved in a direction at right angles to the purlin for

the reception of the rafter A, which rafter is likewise preferably made of metallic piping. A bolt or rivet passes down through the roof-plate, the said blocks, the purlin, and the rafter and binds the whole securely together.

Of course the trusses may be made in the usual variety of ways, and these will necessitate corresponding fittings at the points where the braces meet.

Instead of employing bolts or nuts, the roofing and blocks, purlins, and rafters may be fastened together by any other convenient means—as, for instance, by any suitable clamp. This peculiar joint is not limited solely for roofing purposes, but is equally applicable wherever two or more such elements are to be joined together substantially as the roof-plate, the purlins, and the rafters are here joined together. So, also, the blocks may be grooved or shaped as to permit the pipe or pipes to cross the block at an angle other than a right angle, as shown in Fig. 4. It is also adapted for the connection directly of channeled metal, metallic sheeting or siding, or roofing to a purlin or brace alone. Thus, as shown in Fig. 4, there is simply the block D set into the corrugation of the sheet, and this is crossed by a tubular pipe or purlin, and the whole bound together by a bolt. I would have it understood that this joint is *per se* a part of my invention.

The blocks D and E may be made as a single block, as shown in Fig. 5. In this case the purlin or pipe may be passed through the opening in said block, or may be tapped into opposite sides of said through-passage.

What I claim is—

1. In the construction of metallic roofing, the combination, with the roof-sheet, the purlin, and the rafter at their points of intersection, of the blocks D E, and the whole fastened together, substantially as and for the purposes described.

2. The combination, with the roof-sheet, of tubular metallic purlins and rafters, said rafters, purlins, and roof-sheets united with intermediate blocks, D E, and the whole fastened together, substantially as and for the purposes described.

3. A joint consisting of the combination, 100

with corrugated or channeled metal, of a brace or purlin and an intermediate block, D, shaped upon one side to conform to said channel, and upon the opposite side grooved to admit and conform to the purlin or brace, the whole secured by a bolt or rivet, substantially as and for the purposes described.

4. The block E, grooved on its upper and lower sides to conform to and receive the surfaces of two intersecting elements, in combination with the block D, grooved in its under side, and means, substantially as described, for fastening them together.

In testimony whereof I sign this specification in the presence of two witnesses.

HENRY C. HODGES.

Witnesses:

M. B. O'DOHERTY,  
SAMUEL E. THOMAS.