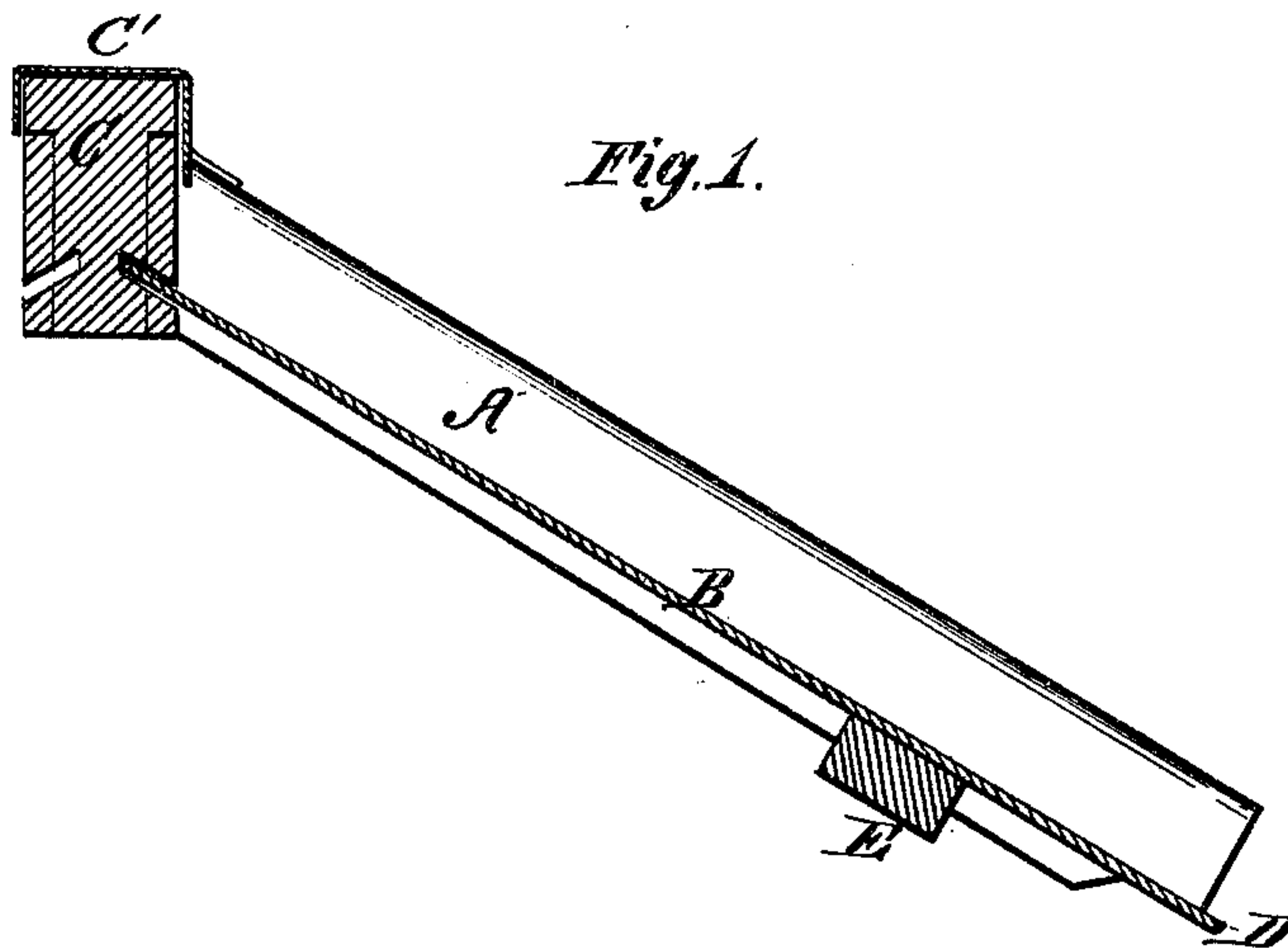


M. A. SHEPARD.

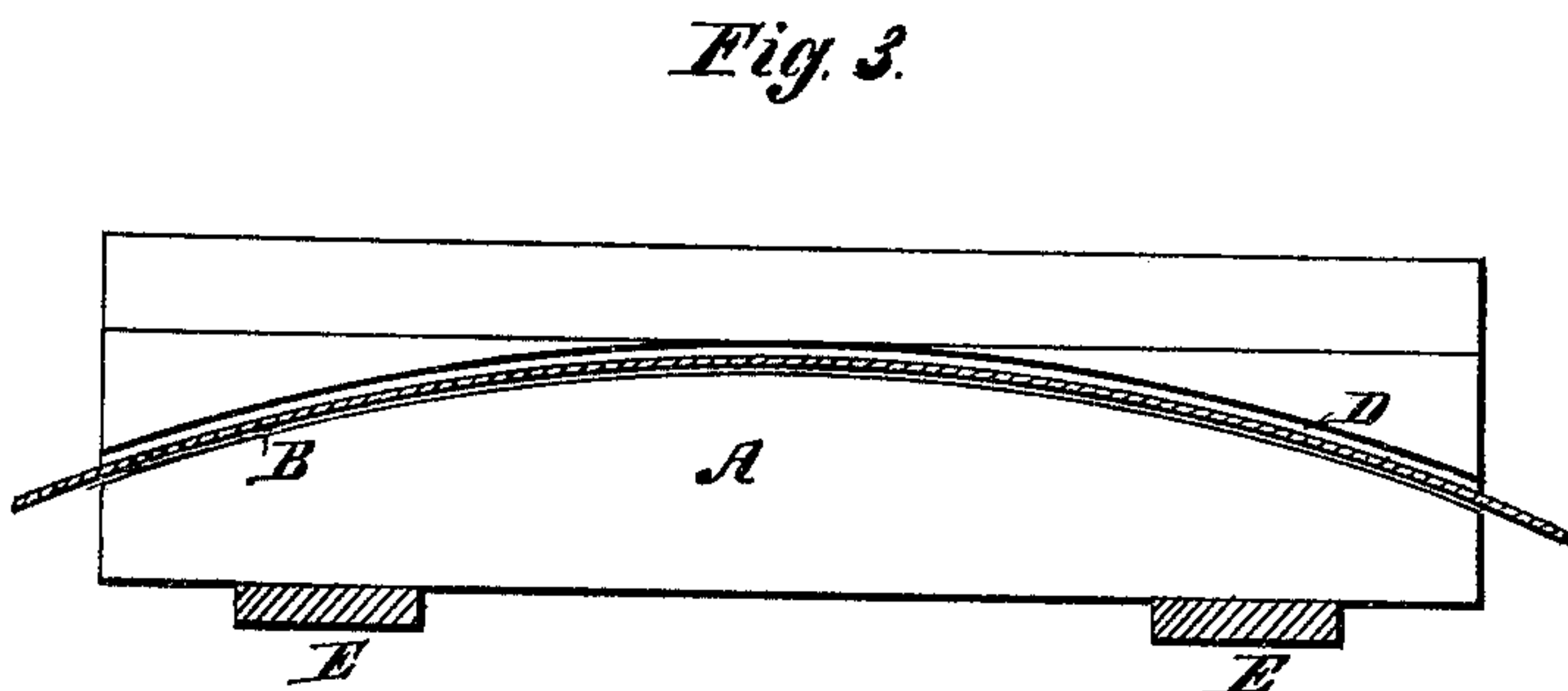
ROOF.

No. 176,446

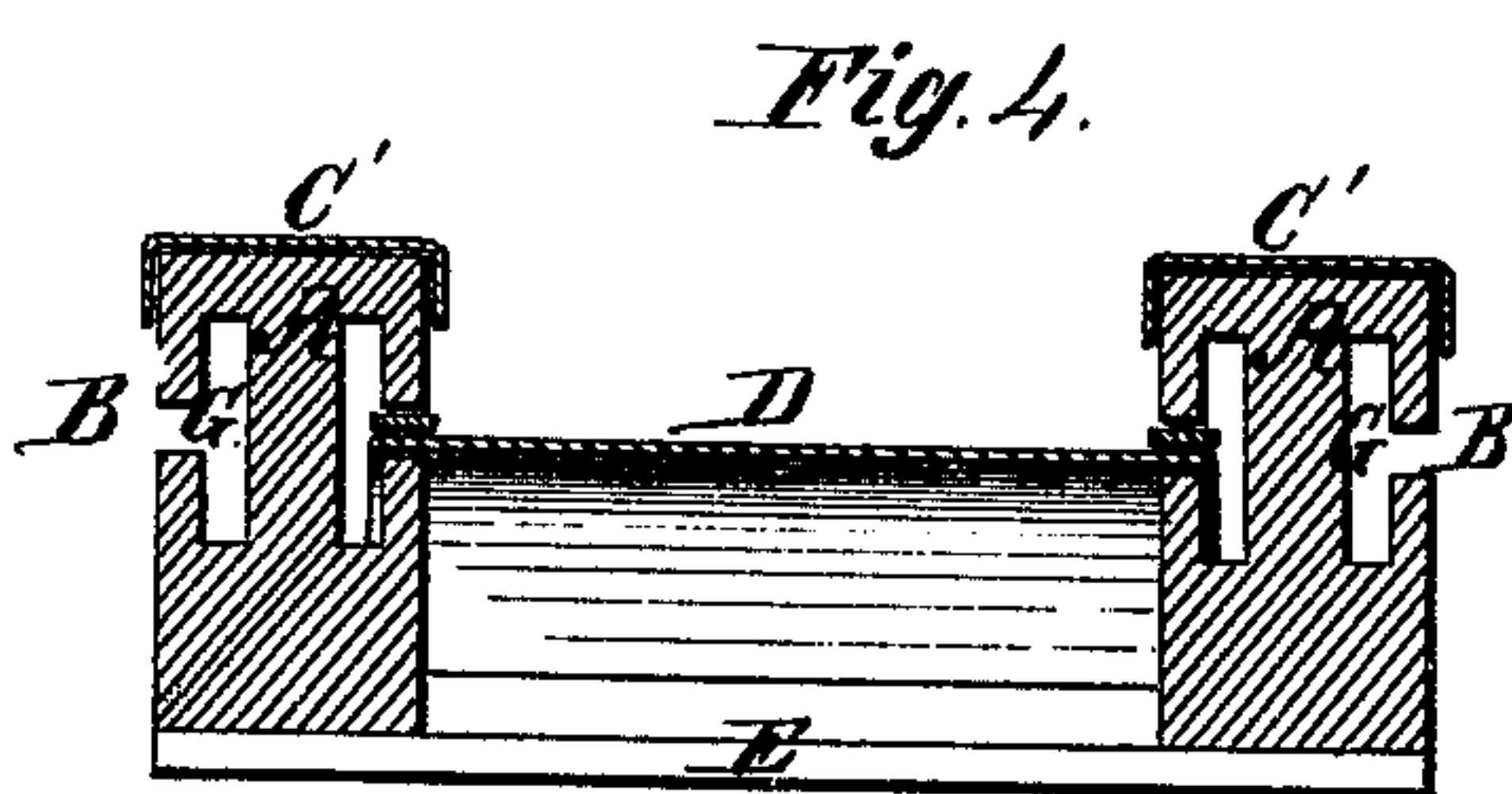
Patented April 25, 1876.



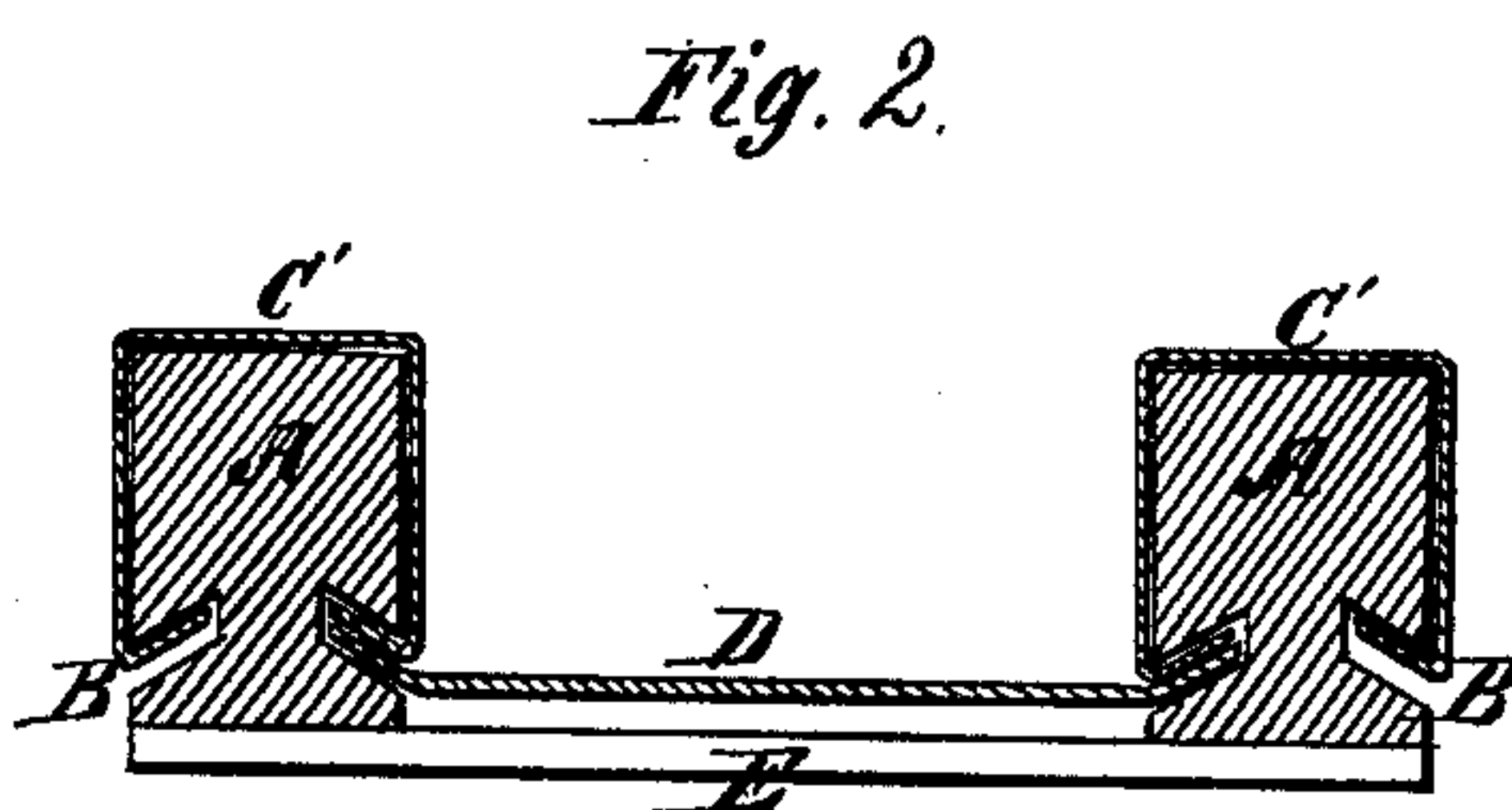
*Fig. 1.*



*Fig. 3.*



*Fig. 4.*



*Fig. 2.*

*Witnesses.*

*H. C. Allard*  
*J. H. Eckert.*

*Inventor.*

*Morrill A. Shepard.*

# UNITED STATES PATENT OFFICE.

MORRILL A. SHEPARD, OF LEBANON, ILLINOIS.

## IMPROVEMENT IN ROOFS.

Specification forming part of Letters Patent No. **176,446**, dated April 25, 1876; application filed August 21, 1875.

*To all whom it may concern :*

Be it known that I, MORRILL A. SHEPARD, of Lebanon, county of St. Clair and State of Illinois, have invented a new and useful Improvement in Combined Wood and Metal Roofs, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a section of the roof, presenting a longitudinal view of the rafters; Fig. 2, a view, showing the rafters in cross-section. Figs. 3 and 4 are modifications.

The object of this improvement is to build a roof that will be as nearly fire-proof as the ordinary tin, slate, or tile roofs now placed on wooden supports, or more so, and yet will be sufficiently cheap to be within the reach of all. It can, in fact, be made as cheap as the ordinary shingle roof, as it requires much less material.

A, in Fig. 1, represents a wooden rafter, with merely a groove or channel, B, sawed or cut longitudinally in it, in which metal sheets or other thin material will be placed, to form a roof or siding, by merely sliding them into the grooves.

The advantage of this method is, that a perfect roof can be made with these sheets, placed in position between the rafters A A, in their respective grooves or receptacles, without any soldering or external nailing. One or two nails is all that is required to keep them in their places, and these are driven from the under side of the ridge-timber C, just merely through the sheets; and when it is desired to remove any of the roof-sheets, all that will be required is to draw the said nails, pull the sheet out, and replace it with another.

When the material to be used in the roof can readily have its longitudinal edges turned up, I propose to incline the groove B about as shown in Fig. 2; then turn up the edges of the roofing-plate and slide them up and into the groove in the cap or ridge-timber C, Fig. 1, the rafters A being framed into this ridge-timber C at their upper ends, and fastened to the plates of the building at their lower ends,

and secured, when necessary, with cross-cleats E, Figs. 1 and 2. This will make a substantial frame to receive, support, and protect the roof D. Experience and circumstances will indicate whether it will be best to fasten the roof at the lower edge of the rafters A A, or at some convenient distance between their lower and upper edges.

In cases where stiff or inflexible pieces may be desired to be used for roofing between the lower and upper edges of the combined rafters, I use the combined grooves or channels B and G, as shown in Fig. 4. In these grooves roof or siding material is placed, and in order to secure it from leakage, a long narrow strip of felt or tarred roofing-paper may be pressed in on the upper side into the groove B; but in case any leakage should occur, I have combined the vertical longitudinal groove G with the longitudinal groove B, (both as shown in Fig. 4,) by which such leakage will be conducted out in the trough of the groove G. This groove G may be formed by a small circular saw, by first cutting the longitudinal groove B, and then sawing the groove G, without cutting the rafters in longitudinal sections to work out the groove.

When required, I use the caps C', of thin metal, as shown, on the ridge timber C and rafters A A, Figs. 1 and 2; but a good roof can be obtained without these caps by my improvement.

The top edges of the rafters may be painted, to protect them from cracking and decay, and, if desired, the upper edges of the rafters may be beveled or rounded at pleasure.

I claim as my invention—

The wooden rafters A A, with their upper edges extending above the roof D, and having the longitudinal groove or channel B, for receiving the edges of the roofing material D, substantially as and for the purpose set forth.

MORRILL A. SHEPARD.

Witnesses:

H. C. ALLARD,  
I. H. ECKERT.