

(No Model.)

2 Sheets—Sheet 1.

L. D. VOGEL.
ADJUSTABLE ROOF.

No. 313,559.

Patented Mar. 10, 1885.

Fig. 1.

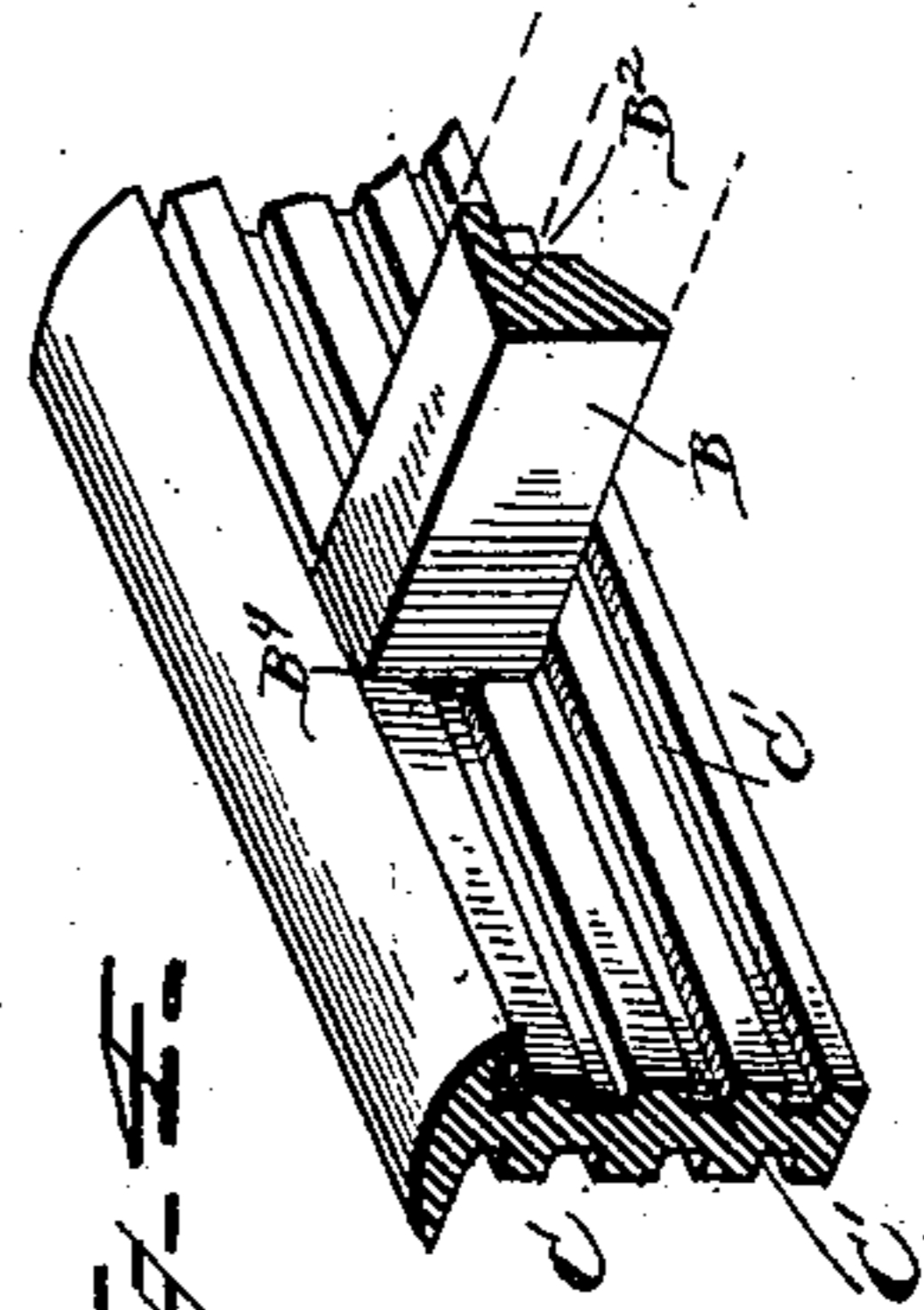
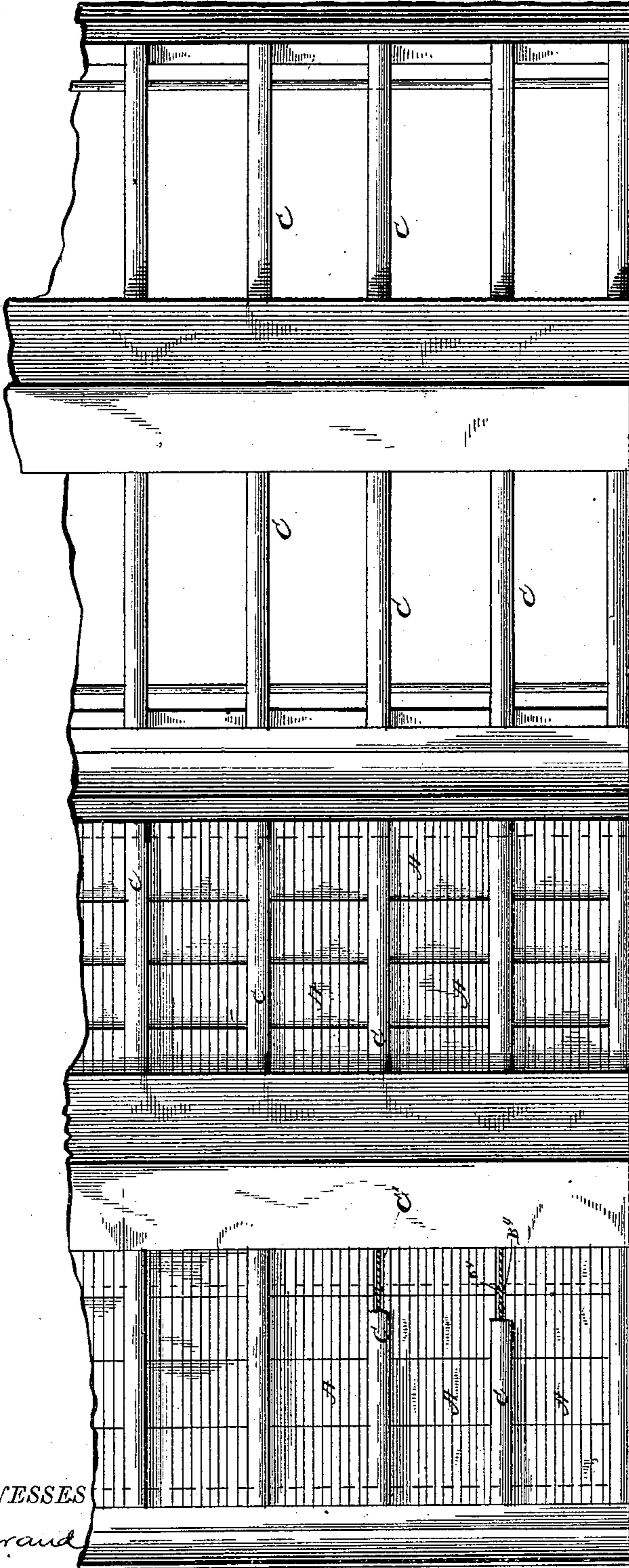


Fig. 2.

WITNESSES

F. L. Ourand
E. F. Murdoch

INVENTOR

L. D. Vogel
by H. H. Woodward
Attorney

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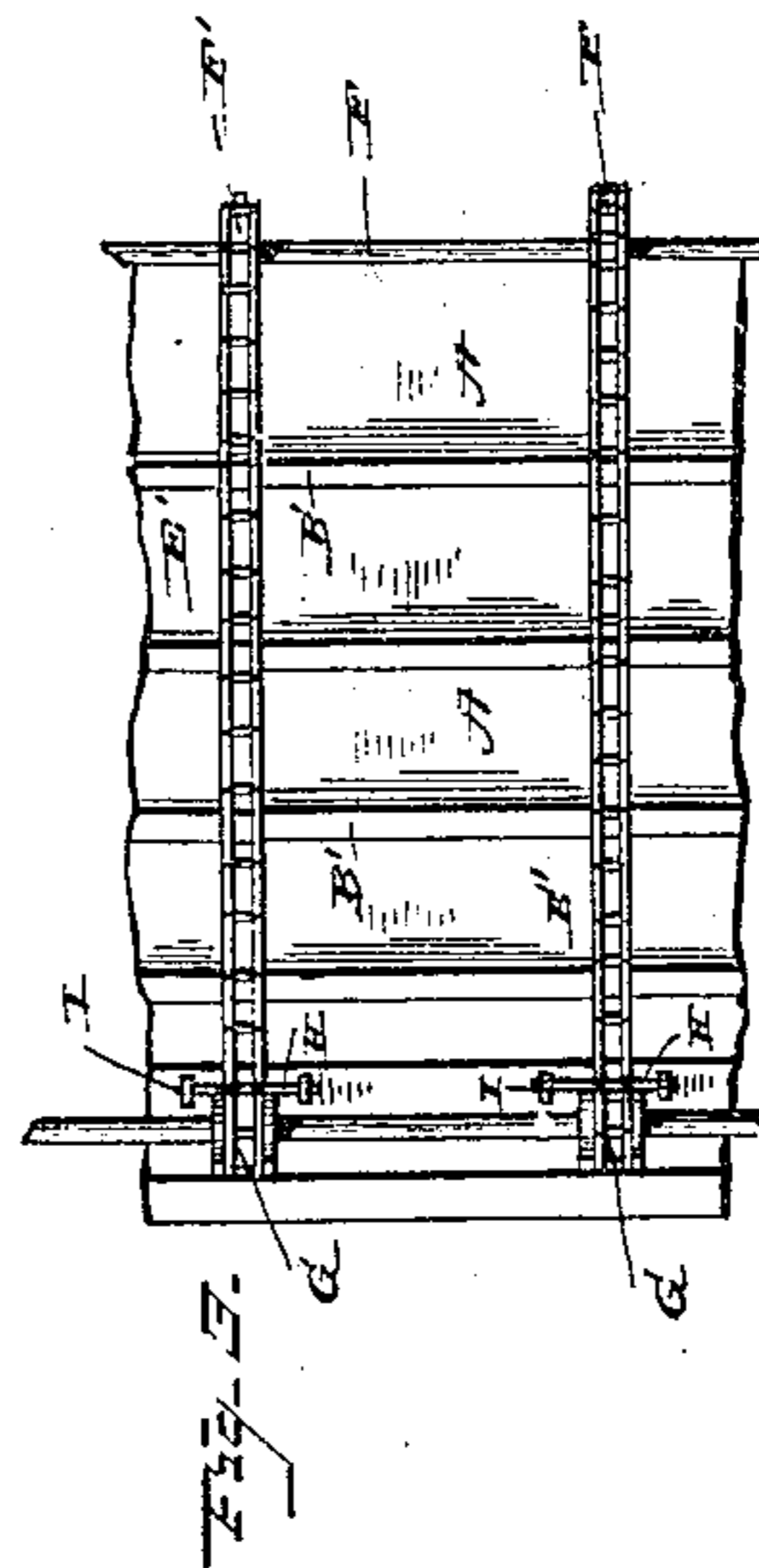
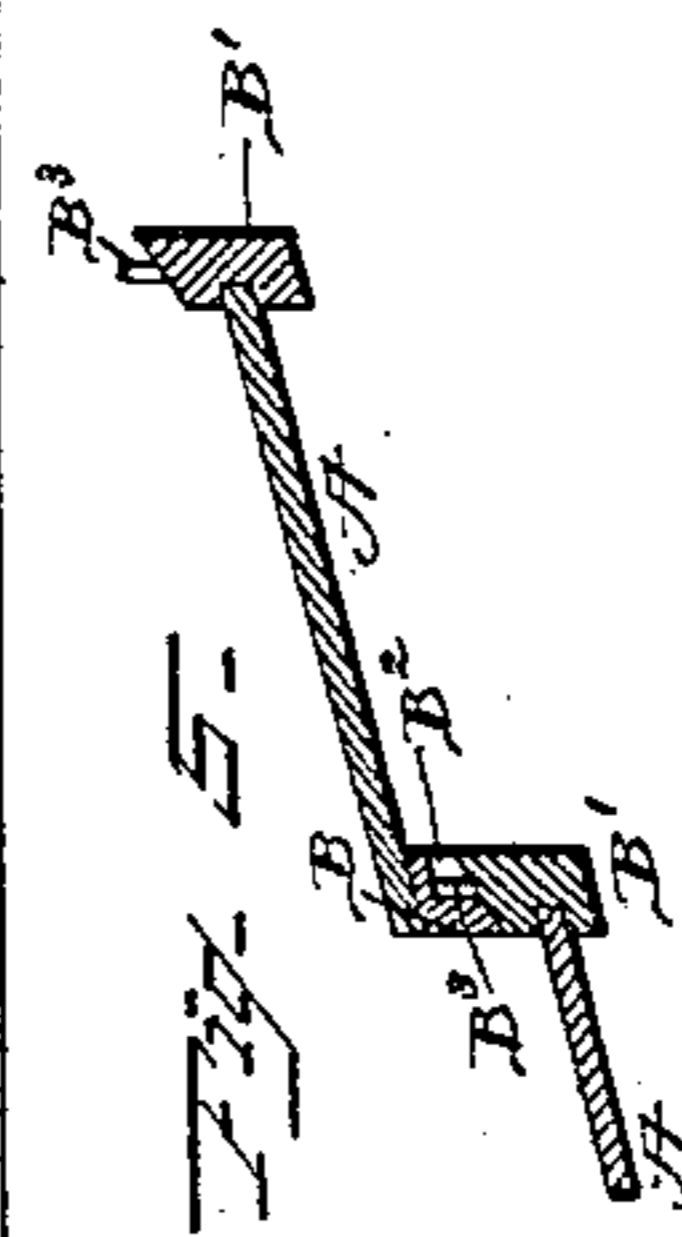
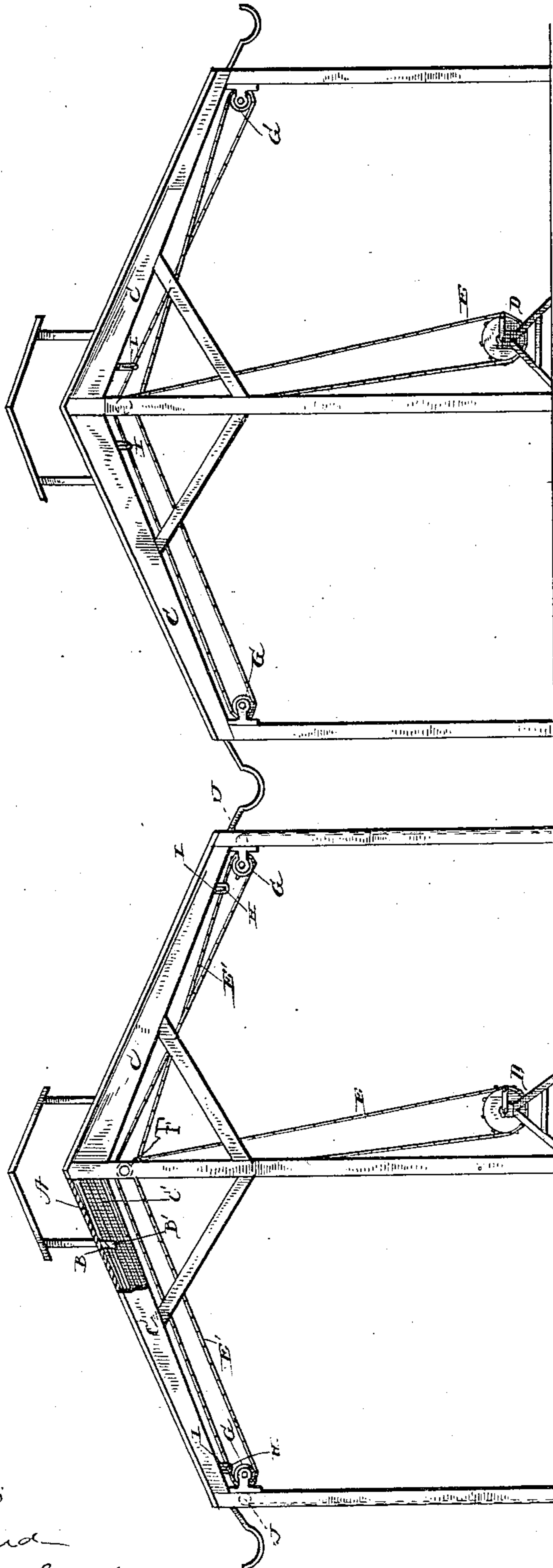


Fig. 2.

WITNESSES
F. L. Curran
E. J. Murdock

INVENTOR
L. D. Vogel
by H. A. Smith
Attorney

UNITED STATES PATENT OFFICE.

LOUIS DAVID VOGEL, OF BOONE, IOWA.

ADJUSTABLE ROOF.

SPECIFICATION forming part of Letters Patent No. 313,559, dated March 10, 1885.

Application filed June 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, LOUIS DAVID VOGEL, of Boone, county of Boone, and State of Iowa, have invented a new and useful Improvement in Adjustable Roofs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use it, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to improvements in folding roofs in which sections of the same are folded together and disposed of or spread out at will by means of chains and pulleys.

The objects of my invention are to spread out a great surface of roof and fold the same in the shortest time possible, and to dispose of the necessary friction, so as to prevent jamming. I accomplish this by means of the mechanism shown in the accompanying drawings, in which—

Figure 1 is a plan view of two sections of sheds provided with my invention. In one of the sections the roof is shown folded under the cupola and in the other spread out. Fig. 2 is a front elevation of Fig. 1, showing the folding and opening gear. Fig. 3 is a detail of the roof-sections and manner of manipulating the same. Fig. 4 is a detail of the rafters provided with the grooves for the roof-sections. Fig. 5 is a detail view of rafters with attachments.

In describing the operation and parts of my invention I will take brick yards or sheds; but it is obvious that I do not confine myself to them.

In the drawings, A represents the roof-sections, Fig. 3, to which are attached the end pieces, B and B', in the manner shown in the drawings.

In the piece B are the slots B², to engage the pins B³ in piece B' in the following manner: When the lower section moves, these pins engage the slots in the section above it, and so on, the sections following down the grooved rafter C in succession. The end pieces B' extend up so as to form a shoulder, which engages the lower portion of the piece B' of the section above, and thus when the folding is

commenced the shoulders operate much as the pins do in unfolding. The sections A are held in the grooves in C by the batten-pieces B⁴, which project on either side and engage the grooves C' in rafter C. Instead of these batten-pieces, I sometimes use an iron shoe of any suitable form.

C is a rafter that is provided with the grooves C', which are grooves running along the side of the rafter, as shown in drawing Fig. 4. About the center of the shed is the windlass D, and above it, swung on the center posts, is the shaft F, which is provided at every section length with a pulley, F'. From the windlass runs an endless chain, E, which connects the windlass and shaft, and from the pulleys on the shaft extend the endless chains E E to the stationary pulleys G.

To the chain E is attached the rod H, which is swung between the slotted pendants I I. These pendants are fastened fixedly to the lower end piece of the lower section, A, as shown in drawings. In this way the sections are brought down with the least friction, as the edges are kept off the rafter by the rod being swung between those of different sections, and the chain attached to the center of said rod.

J is a roller, on which is rolled a canvas curtain or flap to keep out driving rain. This roller J is connected to the pulleys G and operated by them so as to operate as the roof does and from the same motor, thus decreasing the number of laborers.

The operation of my invention is as follows: The windlass is operated, and as the chains E E are connected immediately or mediately with it they are operated simultaneously, and, carrying the lower section by means of the pendant I, either fold or unfold the sections as the chain moves.

Having thus fully described my invention, what I claim is—

1. In a roof, the sections A, provided at their ends with the pieces or shoulders B B', and a projection on their sides to engage the slots C' in the rafter C, substantially as and for the purpose set forth and described.

2. In a folding roof, the combination of the slotted pendants I, the connecting-rod H, 100

and the endless chains E, substantially as and for the purpose set forth and described.

3. The combination of the windlass D, the chains E E E, pulley-shaft F, and pulleys G
5 with the roof-sections A, having the pendants I and connecting-rod H, substantially as and for the purpose set forth and described.

4. The combination of the sections A, having at their ends the shoulders B B', and projections at their sides to engage the grooves
10 C' in rafter C, with the windlass D, chains E E E, pulley-shaft F, and pulleys G, substantially as and for the purpose set forth and described.

15 5. In a folding roof, the combination of the

end piece or shoulder; B, provided with the slot B² and beveled on its under side, with the end piece or shoulder, B', provided with the pin B³ on its upper surface to engage slot B², and having its upper side beveled to coincide
20 with shoulder B of section above it, substantially as and for the purpose set forth and described.

In testimony that I claim the foregoing I append my signature.

LOUIS DAVID VOGEL.

Witnesses:

CURTIS L. DAY,
F. I. MEAD.