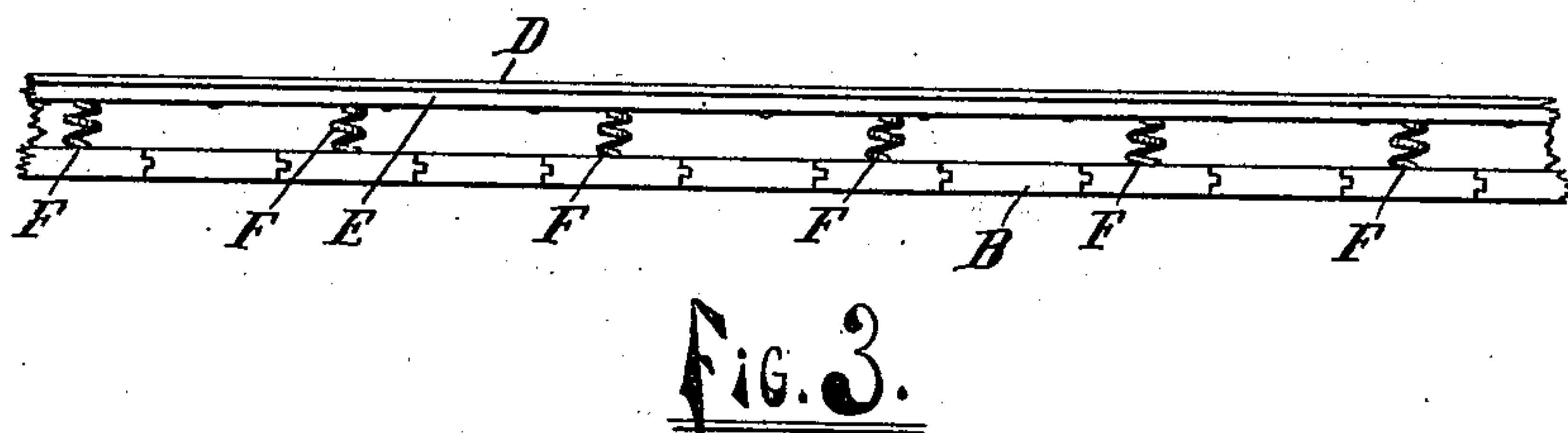
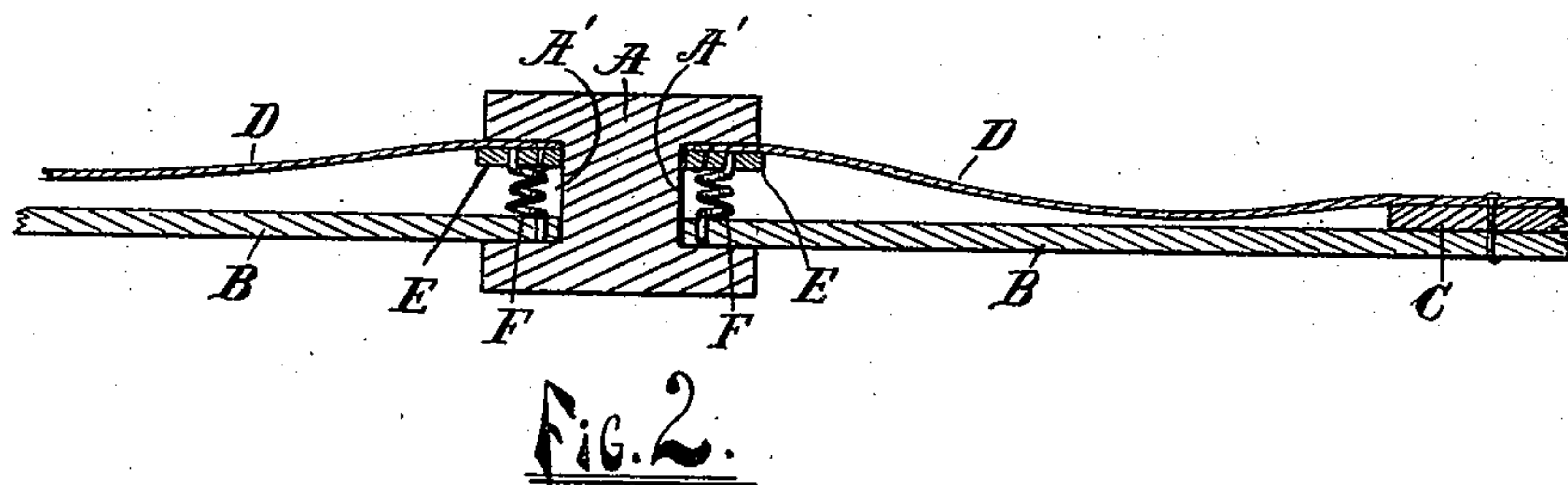
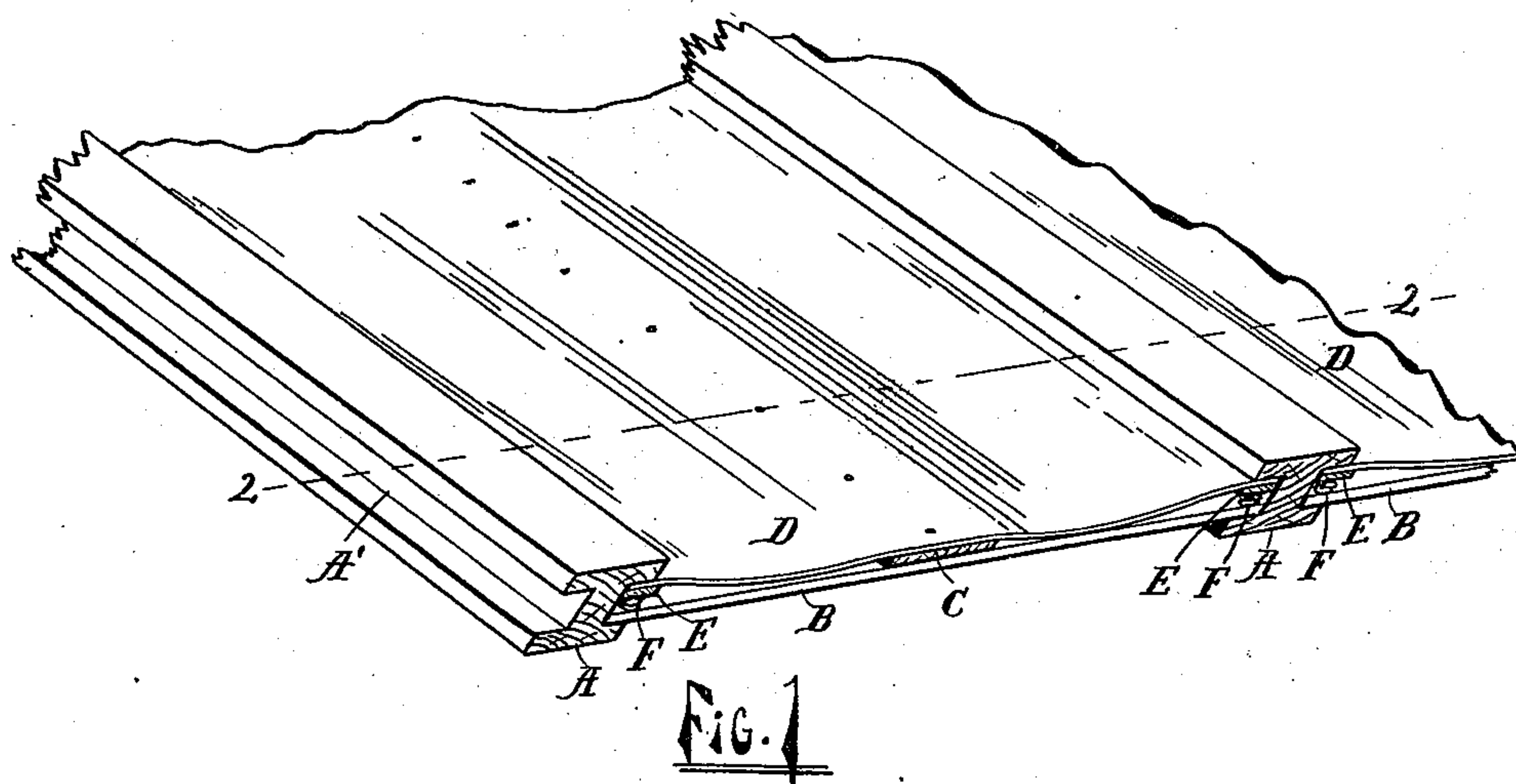


(No Model.)

C. H. LEONARD.
ROOF FOR PORTABLE HOUSES.

No. 510,920.

Patented Dec. 19, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES H. LEONARD, OF GRAND RAPIDS, MICHIGAN.

ROOF FOR PORTABLE HOUSES.

SPECIFICATION forming part of Letters Patent No. 510,920, dated December 19, 1893.

Application filed March 13, 1893. Serial No. 465,695. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. LEONARD, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Roofs for Portable Houses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in a roof for portable houses, and its object is to provide the same with certain new and useful features, hereinafter more fully described and particularly pointed out in the claims, reference being had to the accompanying drawings in which—

Figure 1 is a perspective of a portion of a roof embodying my invention; Fig. 2 a transverse section of a portion of the same on the line 2—2 of Fig. 1; and Fig. 3 an edge view of a portion of a panel.

Like letters refer to like parts in all the figures.

A represents the rafters or rails, which have longitudinal grooves A' at each side to receive the edges of panels. Said panels consist of a bottom board B, of any suitable construction, preferably of thin matched stuff arranged transversely, and secured to a longitudinal middle strip C, a sheet of flexible water proof material D, of substantially the same size as said panel is above the same, being attached along the middle to the strip C, or otherwise as convenient and having attached at each edge upon its under side strips E E of wood, or other suitable material arranged with their outer edges in the same vertical plane with the respective edges of the panels B. Between said panels and strips is a series of compressible springs F, which serve to separate the panel and sheet D at their edges, and press them against the respective lower and upper sides of the grooves A' A', thus forming a tight joint between the panels and rails. The strips C and E E also serve to separate the panel B and sheet D, and form an air space between them, whereby

the heat is kept from the panel B and ventilation secured.

By the described construction the springs will yield, and maintain a tight joint, the panels and rails being also readily separated and again attached.

What I claim is—

1. In a roof for portable houses, rails having grooves, a panel having attached a flexible water proof sheet, strips attached to the respective edges of said sheet and springs between said strips and panel, substantially as described.

2. In a roof for portable houses, grooved rails, a panel adapted to engage said grooves at its respective edges, a longitudinal strip on said panel, a flexible water proof sheet supported by said strip above said panel, and engaging said grooves at its edges, strips attached to the edges of said sheet and springs between said strips and panel, substantially as described.

3. In a roof for portable houses, grooved rails, a panel having transverse strips of matched boards, a longitudinal strip secured to said boards, a sheet of flexible water proof stuff secured to and supported by said strip, strips attached to each edge of said sheet with their edges in the same vertical planes with the edges of said panels, and springs between said panel and strips, the respective edges of said panel and sheet being inserted within said grooves and pressed against its upper and under surface respectively by said springs, substantially as described.

4. In a roof for portable houses, rails having grooves, panels consisting of two parts, of substantially equal areas, having their edges engaging said grooves, and springs between said parts pressing them against the respective upper and lower sides of said grooves, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES H. LEONARD.

Witnesses:

LUTHER V. MOULTON,
LEWIS E. FLANDERS.