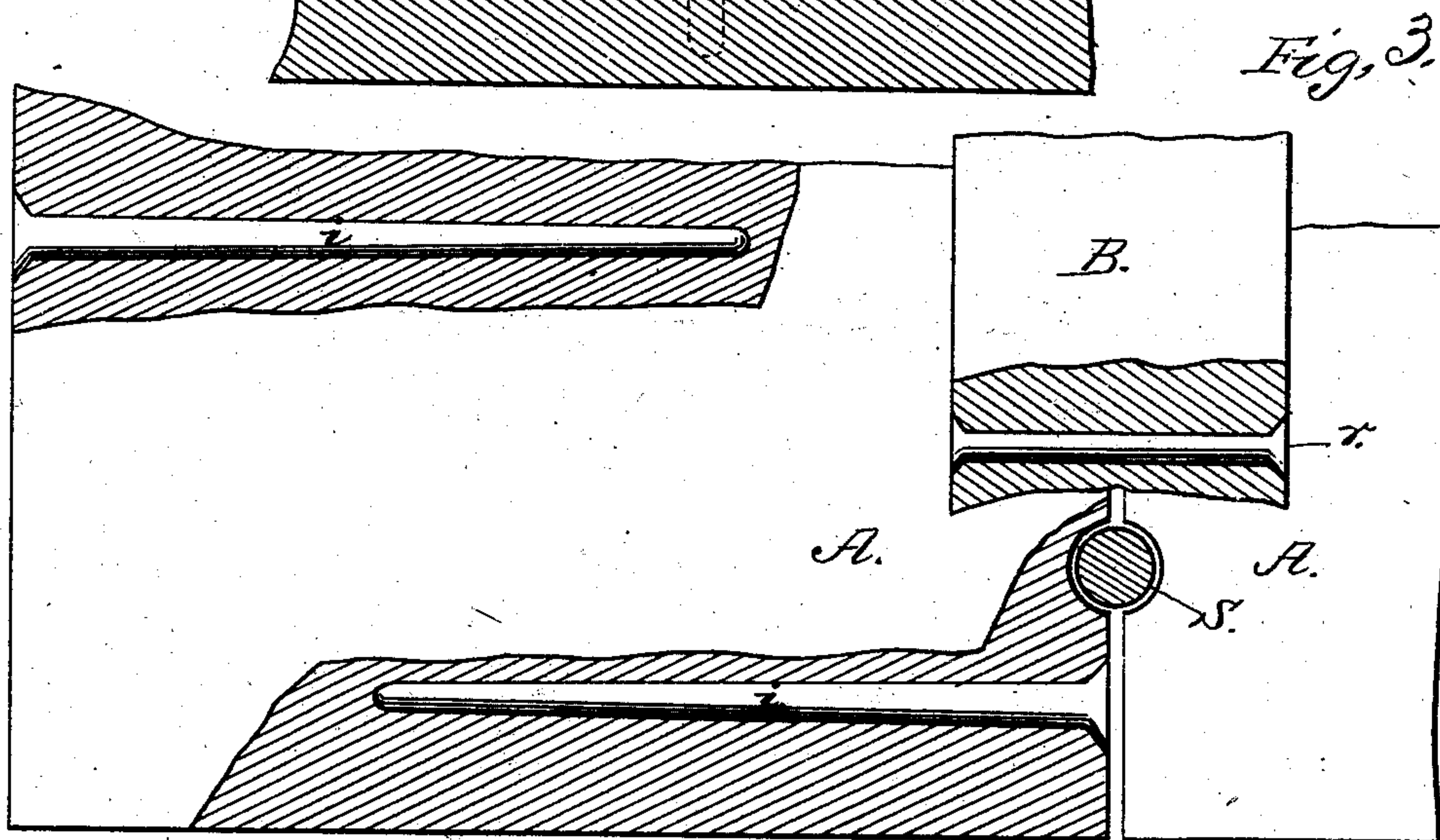
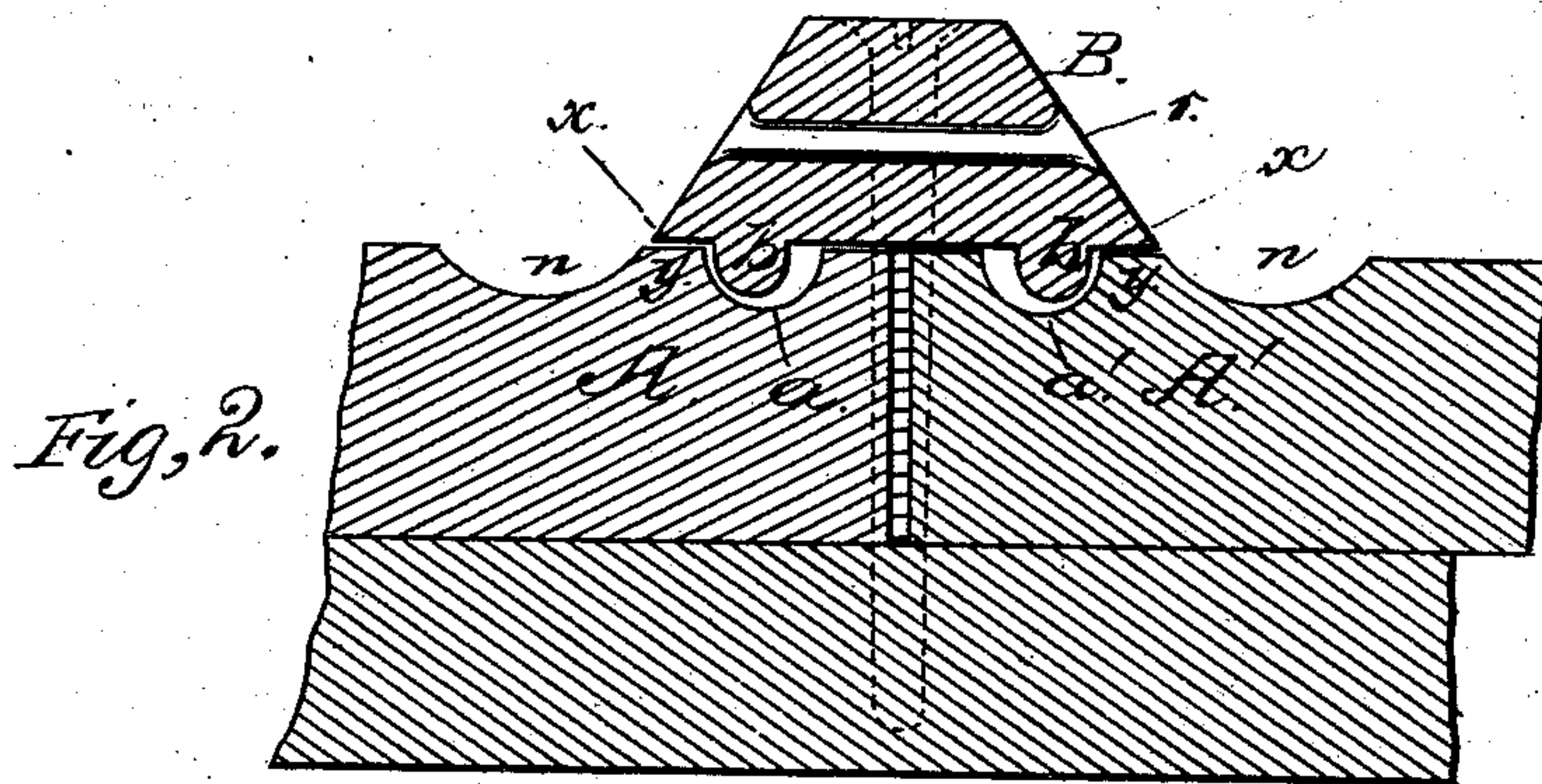
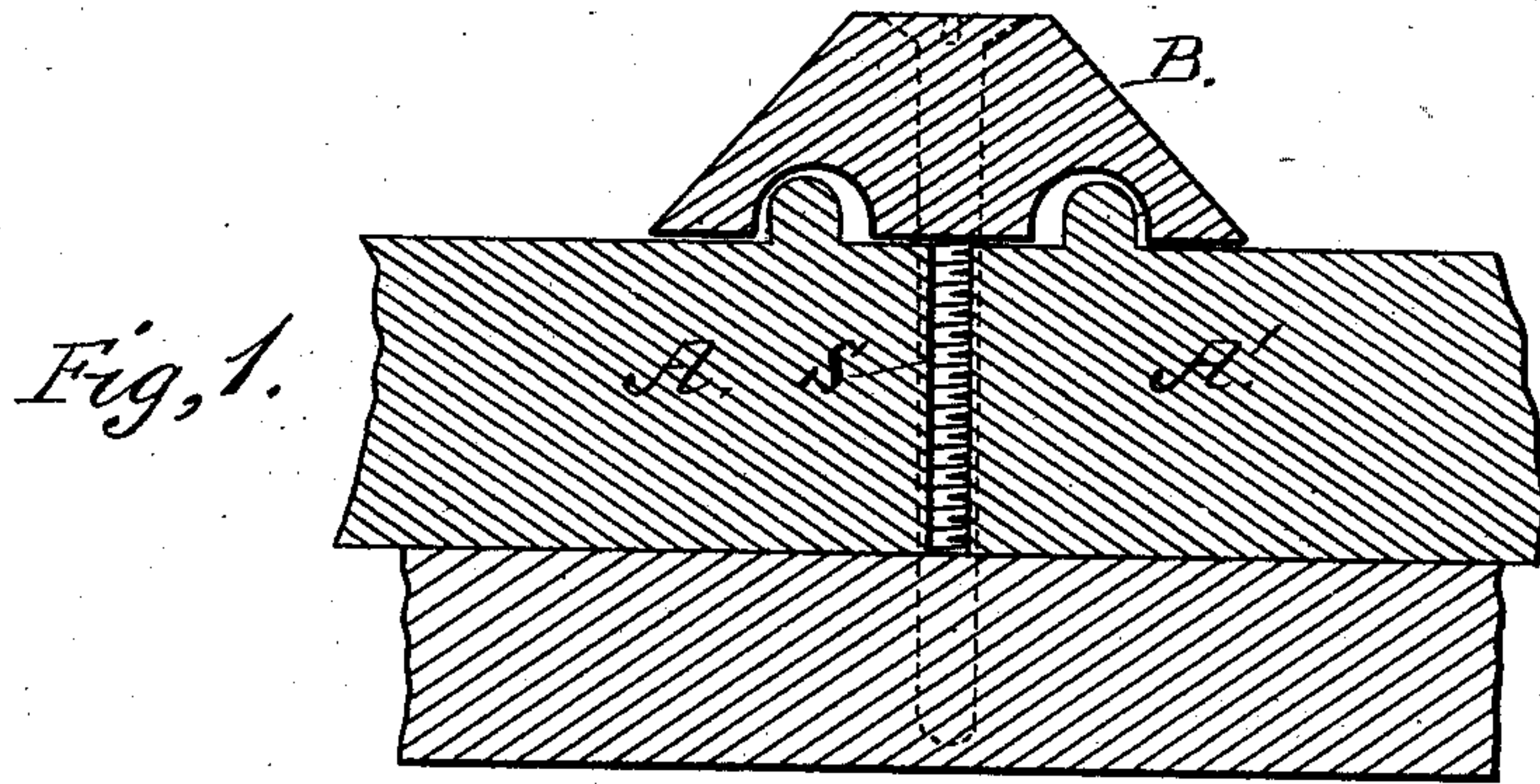


J. C. WANDS.
Car-Roofs.

No. 224,496.

Patented Feb. 10, 1880.



WITNESSES
Villette Anderson.
Frank J. Masi.

INVENTOR
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UNITED STATES PATENT OFFICE.

JOHN C. WANDS, OF LOUISVILLE, KENTUCKY.

CAR-ROOF.

SPECIFICATION forming part of Letters Patent No. 224,496, dated February 10, 1880.

Application filed December 6, 1879.

To all whom it may concern:

Be it known that I, JOHN C. WANDS, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and valuable Improvement in Wooden Car-Roofs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of cross-sectional view of my improved car-roof. Fig. 2 is a sectional view thereof in modified form, and Fig. 3 is a plan view thereof, partly in section, showing the arrangement of the screws, the rivets, and nails.

This invention has relation to improvements in wooden car-roofs.

The nature of the invention consists in the construction and novel arrangement of parts, as hereinafter shown and described.

In the annexed drawings, the letters A A' designate two adjoining boards of a car-roof, laid side by side upon a roof-frame and extending from the ridge-pole somewhat beyond the sides of the car. Near the adjacent edges of the boards A A' are formed channels *a a'*, of suitable depth, in which are received tongues or ribs *b*, upon the under side of a "batten," "cap," or "strip," as these devices are indifferently called; or, as shown in Fig. 1, the channels or grooves may be made in the cap B, and the tongues on the edges of the boards. In either case the grooves or channels are wider than the tongues, in order to allow the boards to expand or contract freely. These battens have inclined sides, and their lower portions or eaves, *x*, reach out beyond the inner edge of the said grooves when in the boards, and rest upon a plane bearing, *y*, between the grooves *a n*, so that the former are completely covered in, and dust, cinders, and the like are prevented from getting into and clogging up the same.

The boards are laid upon the frame side by side, and the caps placed thereon, the tongues and grooves being engaged with each other. Screws *S* are then passed down through the center of the cap between the roof-boards into

the purlins or rafters of the roof and forcibly driven home, one-half of said screws being in the edge of one of said boards and the other half in that of the other. Thus, it will be observed, the boards have a slight edgewise movement that neutralizes the cross-strain of the car and relieves them of all stress, while at the same time they are incapable of end-wise movement, for the reason that one-half of the thickness of the screws is in the edge of one board and the remainder in that of the other. The caps, also, are free of the stress of the cross-strain.

As shown in Fig. 2, the caps are prevented from warping by means of rivets *r*, driven through them from edge to edge, and the like injury to the boards A A' is guarded against by means of wire nails *i*, driven alternately from opposite edges and extending two-thirds of the way through from edge to edge. This application of the nails possesses the advantage of offering no obstacle to the expansion or contraction of the roof-boards, while it is equally as effective as transverse battens, which interrupt the downward flow of water, or through-nails.

Outside of the caps the roof-boards may have other channels, *n*.

What I claim as new, and desire to secure by Letters Patent, is—

The strip, cap, or batten B, having the tongues *b*, and the eaves portions *x*, extending laterally beyond said ribs, in combination with the roof-boards A A', having parallel channels *a n*, the former receiving the said tongues and of greater width than the same, and the plane bearing *y*, between said channels, and the fastening-screws passing down through the caps between the boards into the roof-frame and seated half in one board and half in the other, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JOHN CLARK WANDS.

Witnesses:

THOS. CUDIHY,
RICHARD P. TRAVERS.