

*T. K. Grube,*

*Drain.*

*No. 106,690.*

*Patented Aug. 23. 1870.*

Fig. 1.

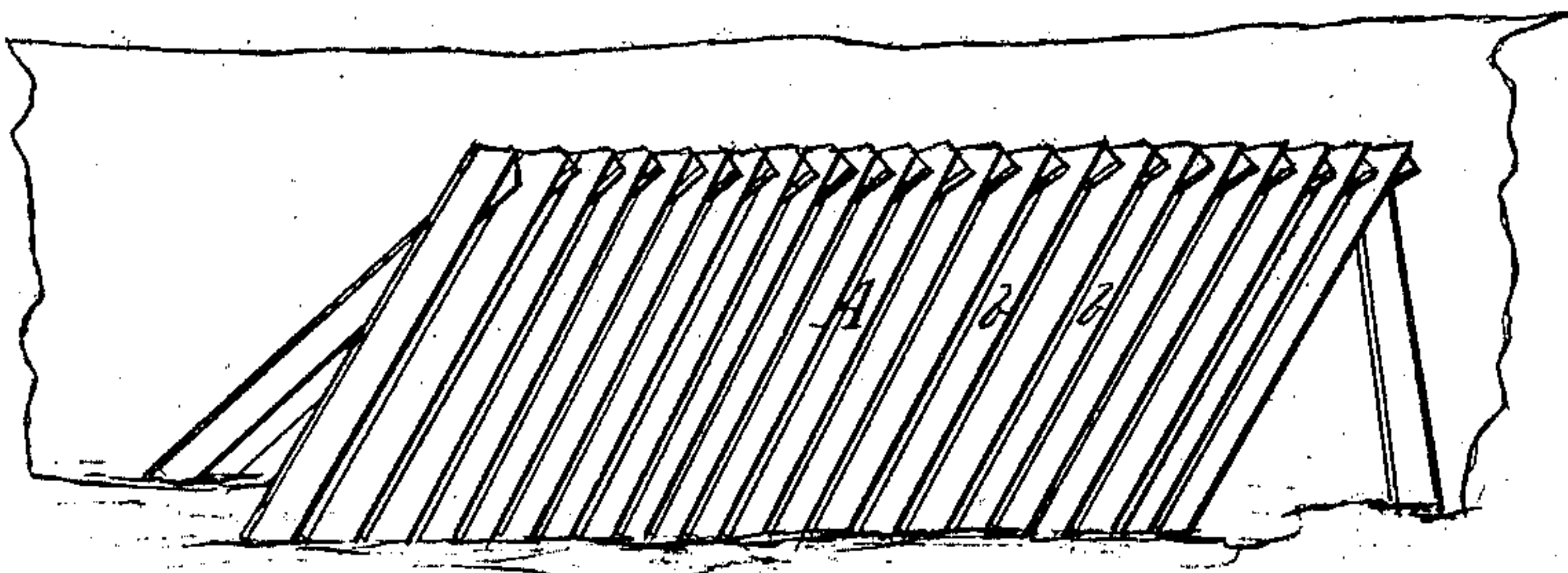


Fig. 2.

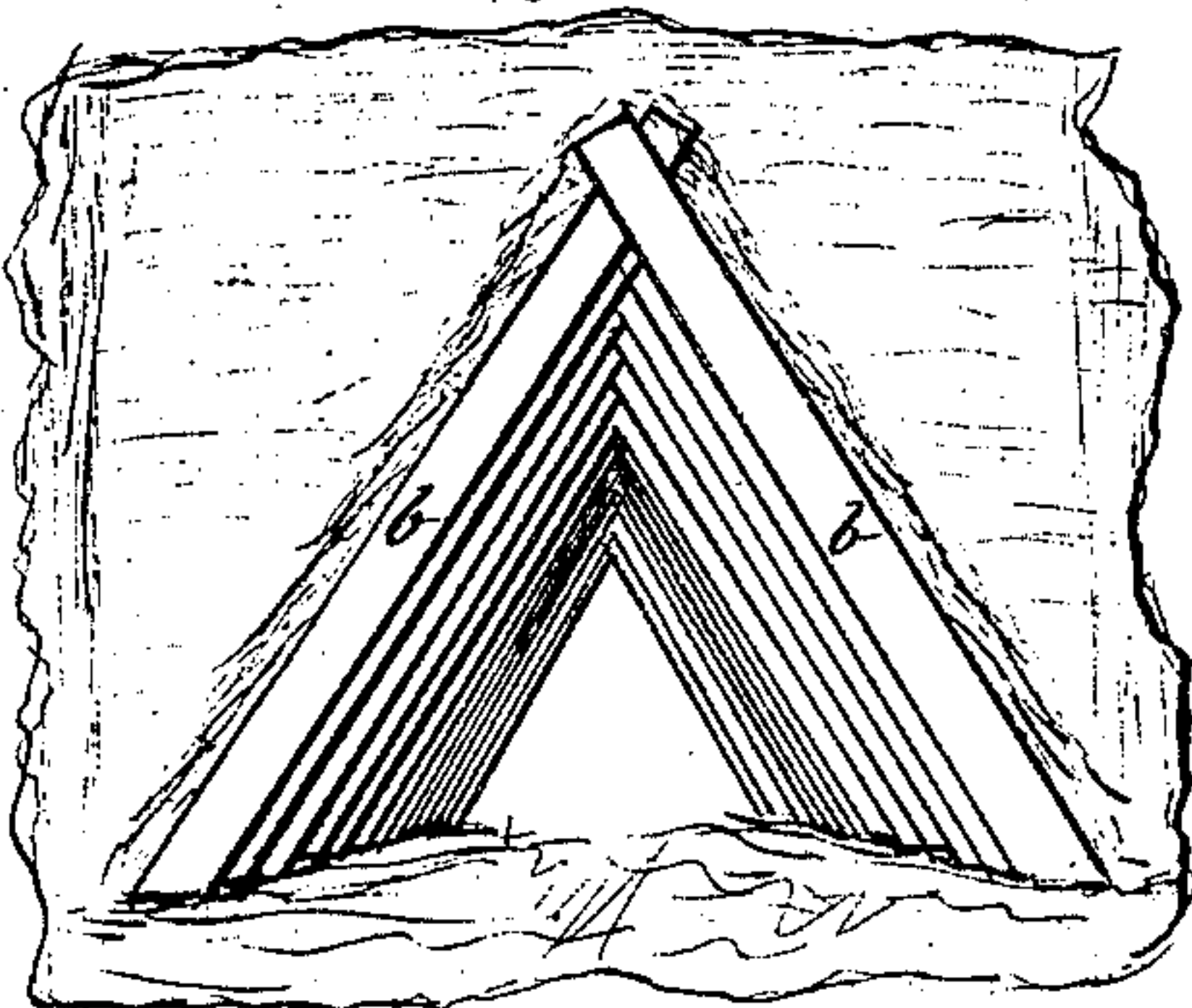


Fig. 3.

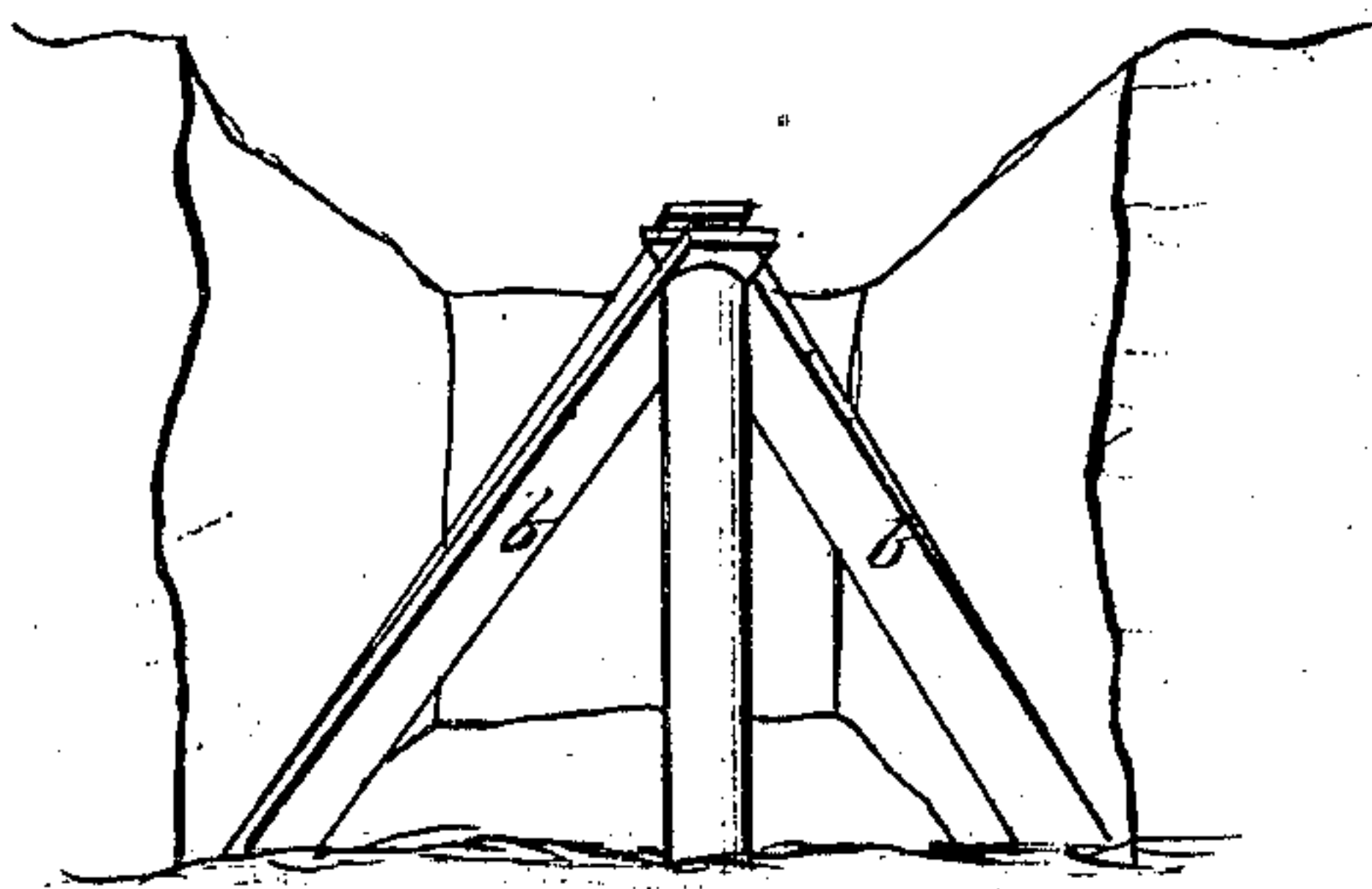
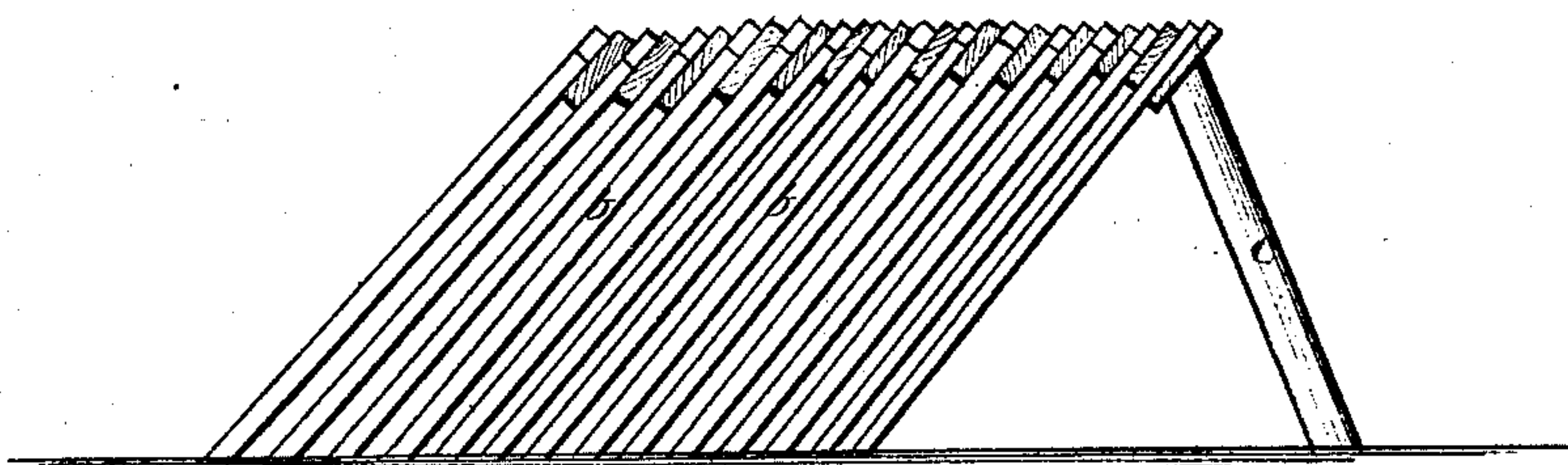


Fig. 4.



*Witnesses.*

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# United States Patent Office.

TOBIAS K. GRUBE, OF NAPOLEON, OHIO.

*Letters Patent No. 106,690, dated August 23, 1870.*

## IMPROVEMENT IN THE CONSTRUCTION OF DITCHES.

The Schedule referred to in these Letters Patent and making part of the same

*To all whom it may concern:*

Be it known that I, TOBIAS K. GRUBE, of Napoleon, in the county of Henry and State of Ohio, have invented a new and valuable Improvement in the Construction of Ditches; 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 drawing making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a longitudinal side view of my invention in perspective.

Figure 2 is a sectional end view, showing the layer of leaves and earth above the frame.

Figures 3 and 4 are details.

My invention relates to means for preventing ditches dug in loose or sandy soil from filling up, and consists in the novel arrangement of a series of sticks therein, inclining upward, inward, and forward from the base of the ditch, and secured together at the top, forming an angular frame-work, sloping like the eaves of a house.

The letter A of the drawing designates the series of sticks *b*, which forms the frame-work of my ditch.

When first laid, they are covered with a layer of leaves, moss, &c., in order to prevent the finer particles of earth from sifting through until the filling above the frame-work has become well settled.

My invention possesses the advantage of economy. It may be constructed from refuse material, or sticks may be finished for the purpose. Such a ditch will not fill up, although existing in sandy soil.

A further very important advantage consists in the facility with which it may be adapted to any curve or bend, as in passing around a stump, &c.

In commencing the ditch, I usually employ a prop or block, *c*, to support the first sticks.

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

The angular supporting frame-work A composed of the sticks *b*, substantially as specified.

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

TOBIAS K. GRUBE.

Witnesses:

S. H. STEEDMAN,  
OLIVER HIGGINS.