(No Model.) 2 Sheets—Sheet 1.

J. HAISH.

SCREEN FOR WINDOWS, DOORS, &c.

No. 376,881. Patented Jan. 24, 1888.

FIG. 1.

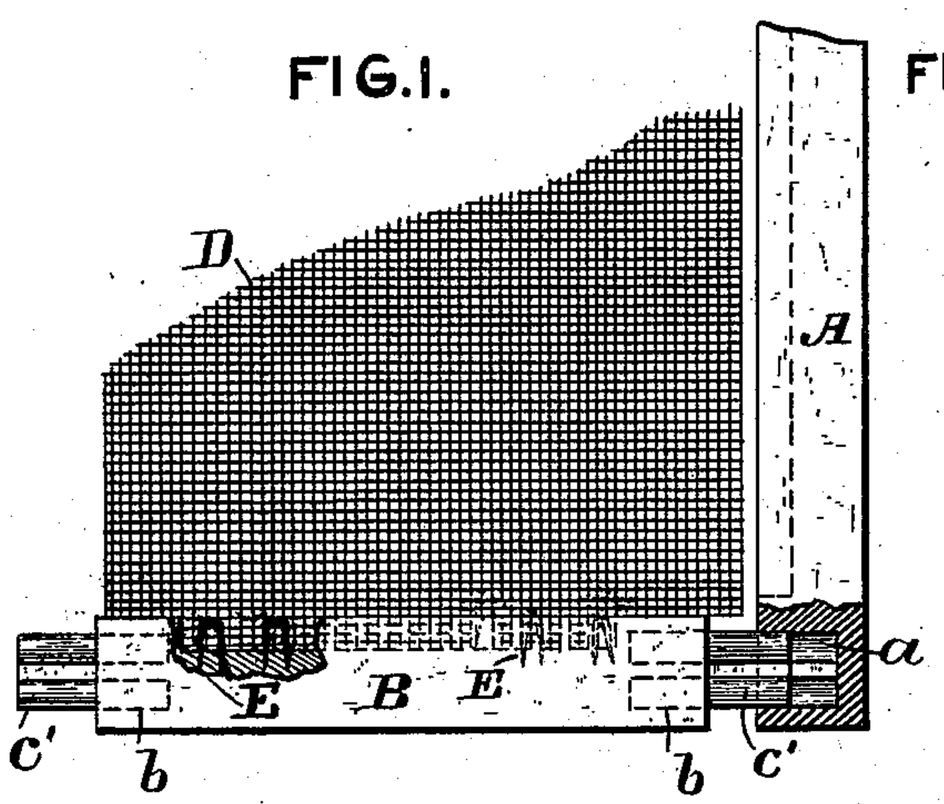


FIG. 2.

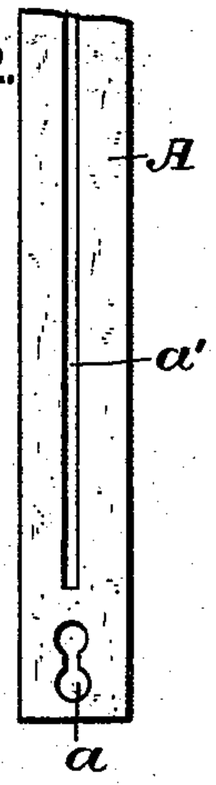


FIG. 3.

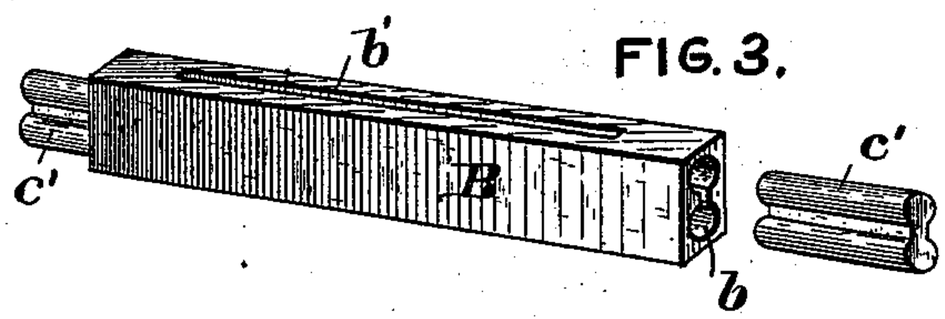


FIG. 5.

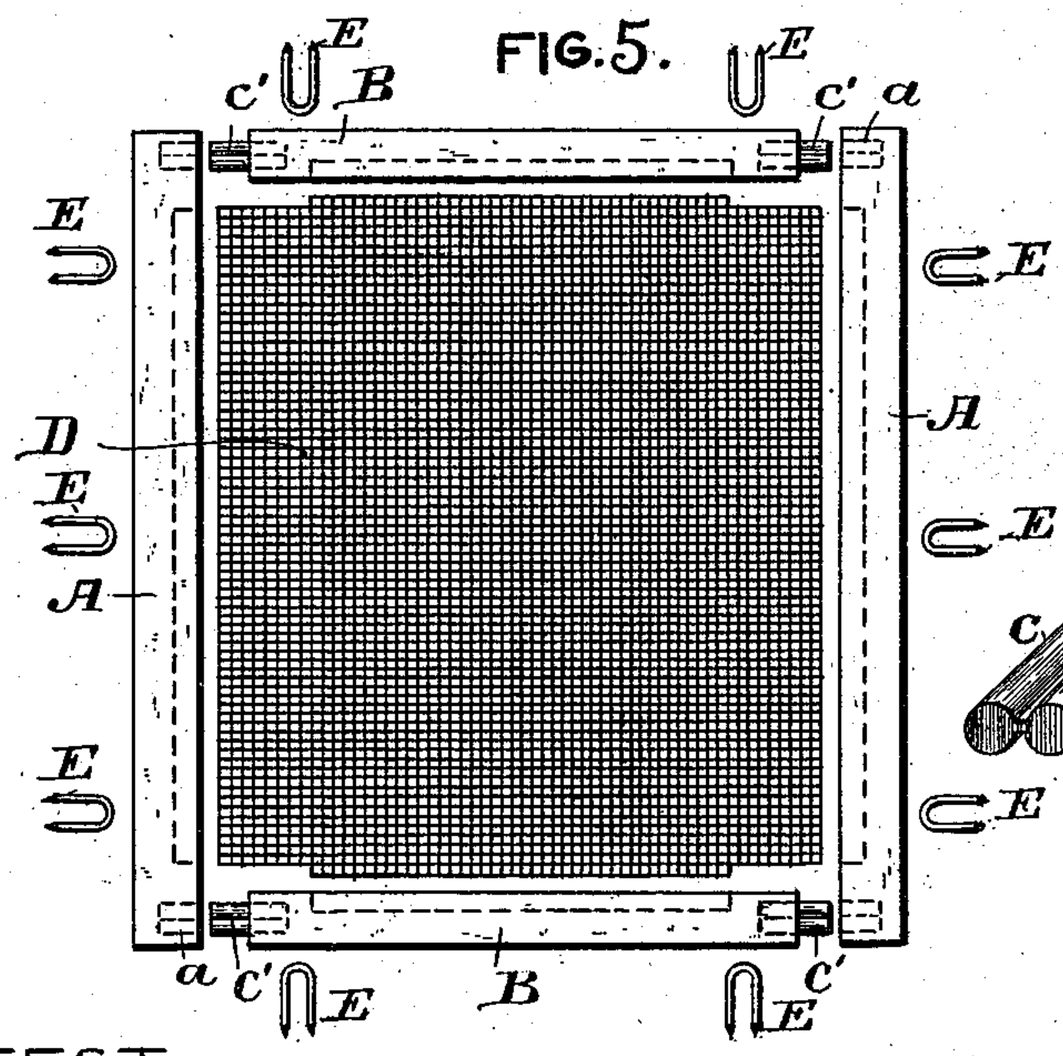
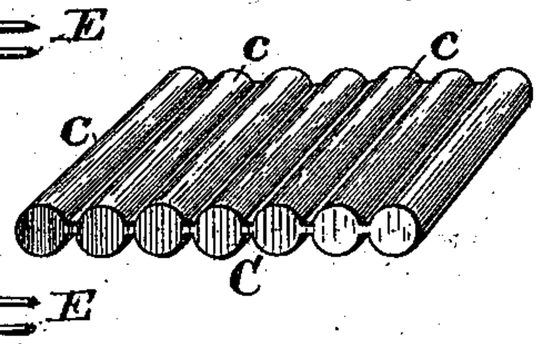


FIG. 4.



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(No Model.) 2 Sheets—Sheet 2.

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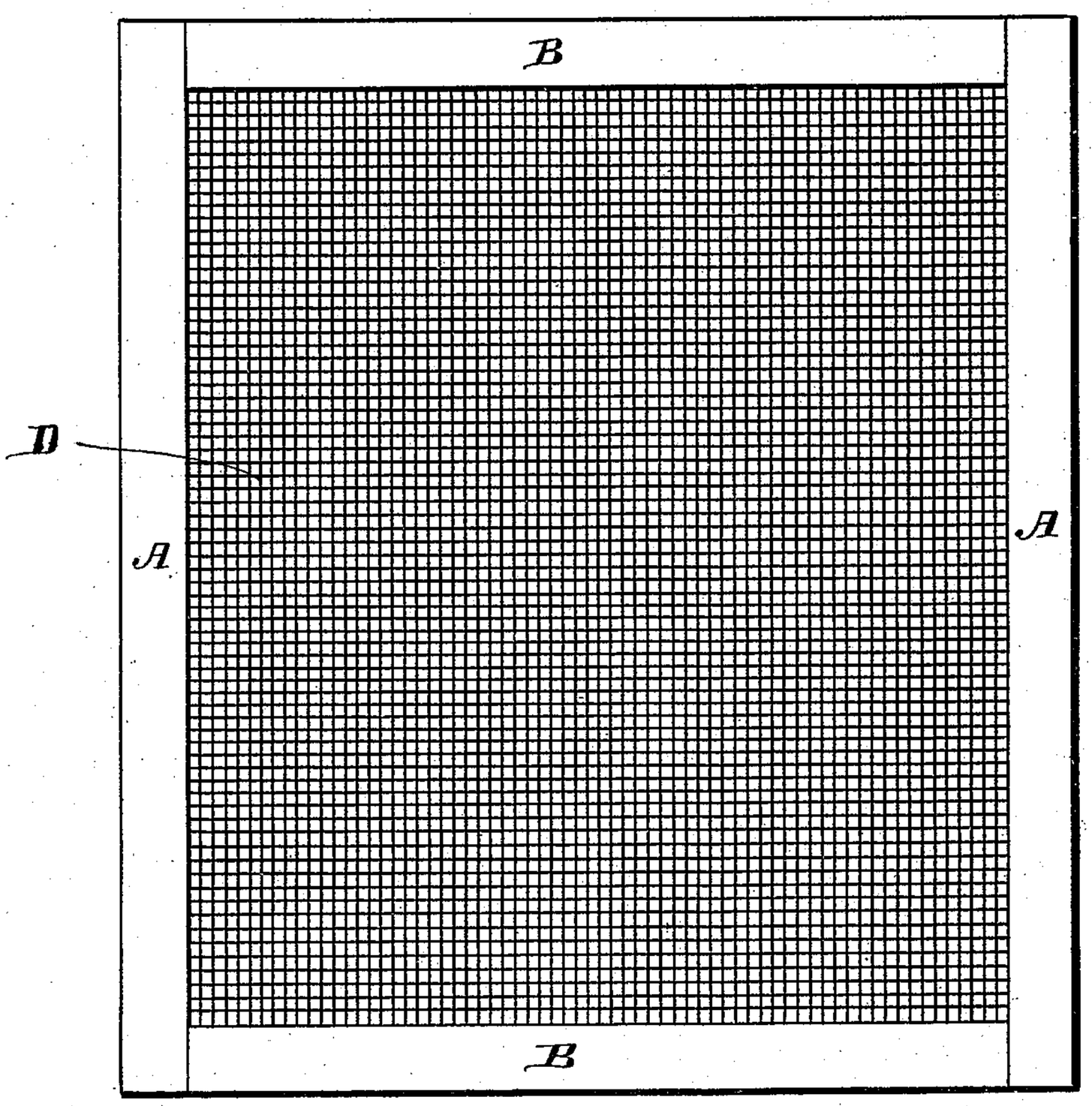
FIG. 6.



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SCREEN FOR WINDOWS, DOORS, &c.

SPECIFICATION forming part of Letters Patent No. 376,881, dated January 24, 1888.

Application filed October 29, 1887. Serial No. 253,772 (No model.)

To all whom it may concern:

Be it known that I, JACOB HAISH, a citizen of the United States, residing at De Kalb, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Screens for Windows, Doors, &c.; 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.

Figure 1 is a front elevation of a portion of the screen. Fig. 2 is a plan view of part of one of the rails. Fig. 3 is a perspective view of one of the sills. Fig. 4 is a perspective view of a piece of wood from which the tenons are cut. Fig. 5 is an elevation of rails, sills, tenons, and wire mesh or cloth, the several parts separate and ready to be united. Fig. 6 is an elevation of the complete screen.

There has been much difficulty and expense in the ordinary way of manufacturing screens for doors and windows by reason of the cost and trouble in making mortises and tenons in the frame, and in applying a molding over the edges of the wire-cloth to make a good finish, and in securing the parts together neatly, cheaply, and firmly.

The present invention is designed to afford a screen that can be made very cheaply and easily, and when made will be very handsome in structure, and will also be of less bulk or weight than any of the screens now in use; and to this end my invention consists in making mortises by boring holes in the adjacent faces or ends of each sill and rail and providing loose tenons to fit into said holes, and in making a slit or groove along the inner face of the rails and sills, and then in fitting the several parts together with the edges of the wire-mesh in said grooves, and securing the structure together by means of wire staples forced into the slots.

Having now stated in general terms the nature and scope of my invention, I will proceed to describe it fully.

In the accompanying drawings, A denotes the rails, and B the sills, of this device. In the top and bottom ends of these rails are auger-holes *a a*, one, two, or more, as may be desired. In like manner in each end of the sills are bored holes *b b*, to correspond in size and number with the holes *a*. These holes may be close to but independent of each other; or after the boring, the partition between can be cut through, so as to make the several holes parts of the individual mortise.

The tenon-piece C is made of any length and having as many rounded portions *c* as may be desired. These portions are of same diameter as each of the holes *a* or *b*, into which they are designed to be fitted, as will be explained hereinafter.

In the face of each rail is made by any desired means or by machine the longitudinal grooves *a'*, and so, also, in the sill the grooves *b'*. In these the edges of the wire-mesh D are designed to be fitted. These grooves preferably do not run the entire length of the face, but at a distance from each end equal to the width of the piece which rests upon it.

When, now, the several parts have been prepared, a boy takes the wire and fits its edge into the groove in a rail or sill, and then forces into the groove, and so as to engage with the edges of the wire-mesh, the staple E, as many as may be deemed necessary. These are preferably forced down into the grooves, so as to be out of sight. He next fits one end of the loose tenon C', which has been cut from the piece C, into the bored holes in the end or lower part of the piece of the frame he is handling. Now, taking the piece of the frame that should match the one he has in hand, he pushes the tenons into the bored holes in the second piece and carefully fits the edge of the wire-mesh into the longitudinal groove in it, and when the several parts are well fitted together drives the staples into the slots, as above stated. In like manner the other parts of the frame are fitted together, and the wire-mesh is also secured in the slots.

Thus, when the screen is complete, the parts are held in place by the staples, the mortises and tenons uniting in giving firmness to the frame.

The screen can be made without the need of a skilled workman, and in the cheapest and quickest manner. The parts are so few that the cost is reduced to a figure much less than that of the ordinary screen. In shipping the screens they not only will pack closely, but by reason of their very light weight can be readily loaded or unloaded from the car. Their

structure renders the closest packing possible—a very important consideration in the saving of freight charges.

I am aware that in screens wire mesh has been secured in the grooved edges of the frame by means of nails driven through the frame from side to side, leaving the heads exposed; but in my structure all tendency to damage the frame by such means of construction and to mar its external appearance is avoided, because the staples which secure the mesh and at the same time hold the frame together are driven directly down into the grooves in the inner face of the rails and sills, and are generally wholly concealed from sight by being sunk their whole length into the groove; but if partly exposed will not attract attention or be at all unsightly.

Having thus described my invention, what I wish to secure by Letters Patent is—

1. In a screen for windows and doors, the combination of the rails and sills, each grooved on its inner face, with the wire-mesh placed in said grooves, and staples driven into said grooves in the manner described, whereby they hold the mesh therein, and also secure the entire structure together without the aid of the fastenings.

2. A screen the rails and sills of which are grooved and have holes bored into their ends, combined with the loose tenons adapted to fit into said holes and give the frame firmness, and with the wire-mesh fitting into said grooves, and with staples securing the mesh in the frame and all the parts together, substantially as described.

3. In a screen, the rails A, each having in its ends the auger-holes *a* and in its inner face the groove *a'*, and sills B, each having like holes *b* and grooves *b'*, combined with the wire-mesh D and loose tenons C', and with the staples E, driven down into said grooves and retaining said mesh therein, substantially as and for the purposes set forth.

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

JACOB HAISH.

Witnesses:

CHARLES A. SALISBURY,

SAML. P. BRADSHAW.