(No Model.)

J. NORWOOD.

SCREEN FOR SAND, &c.

No. 571,575. Patented Nov. 17, 1896.

Fig. 3.

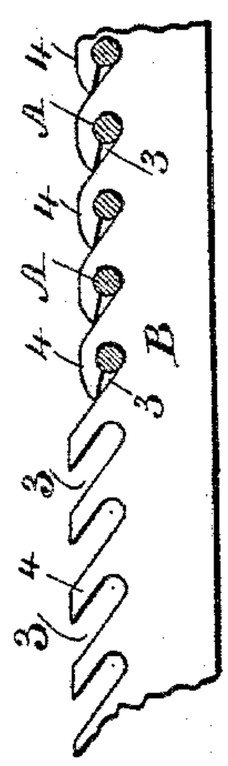

Fig. 4.

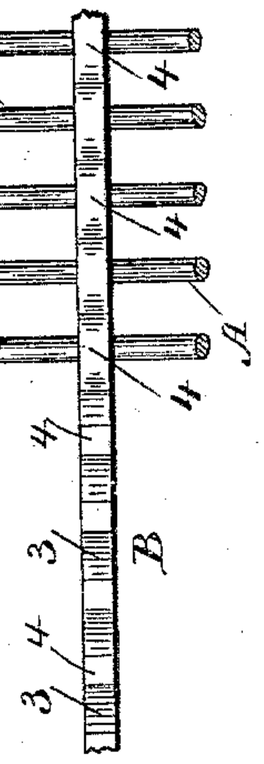

Fig. 2.

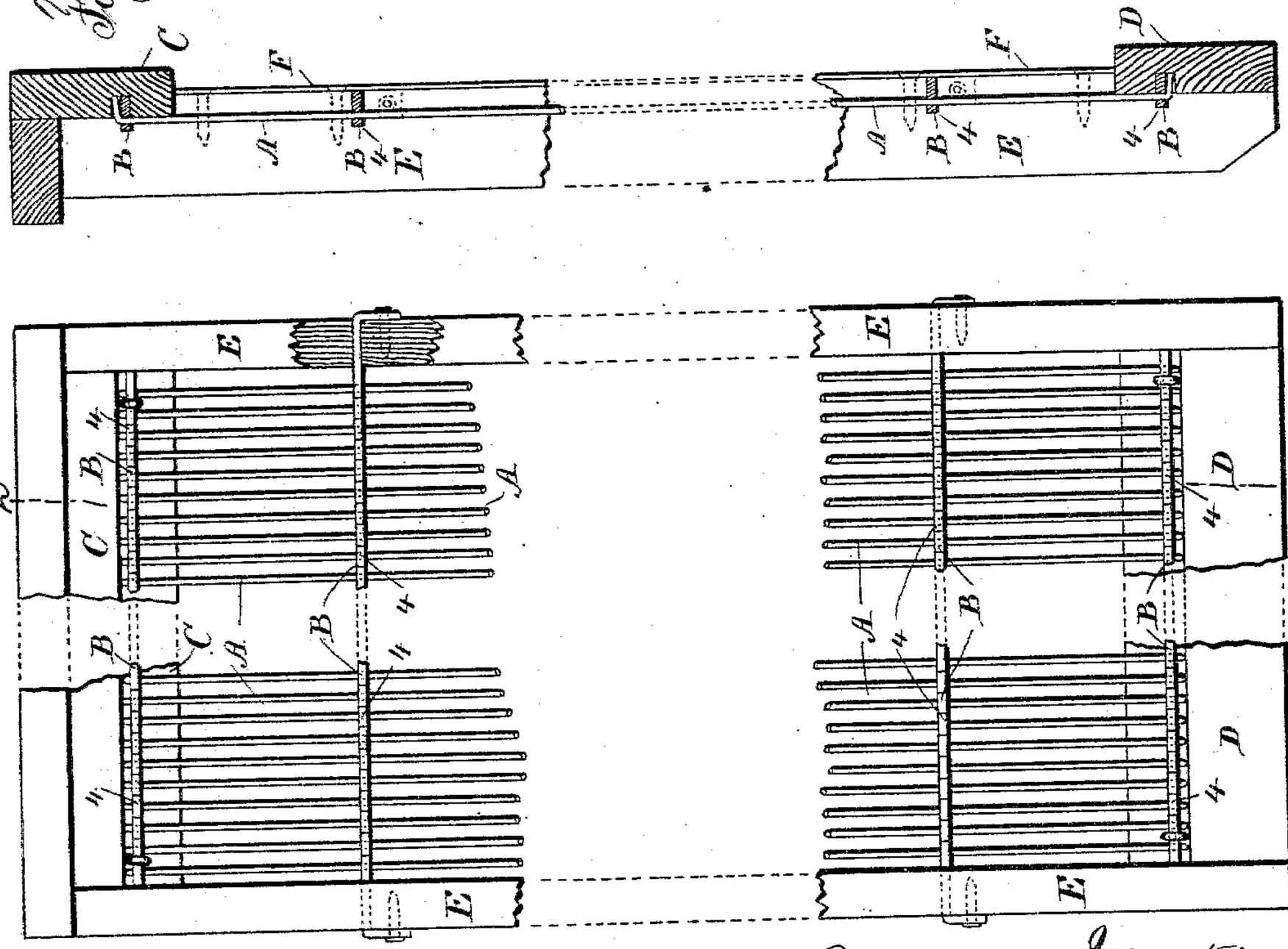

Fig. 1.

Witnesses
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SCREEN FOR SAND, &c.

SPECIFICATION forming part of Letters Patent No. 571,575, dated November 17, 1896.

Application filed March 11, 1896. Serial No. 582,719. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH NORWOOD, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Screens for Sand, &c., of which the following is a specification.

Screens have heretofore been made with longitudinal parallel wires and the wires have been kept at the proper distances apart by cross-lacings of wire, and in some instances the lacing-wires have also secured transverse rods. This involves considerable hand labor and the expense is correspondingly increased. In other instances the parallel wires have been let into notches in the edges of bars and the metal at the ends of the notches has been upset or riveted, so as to spread the same partially over the wires and hold them in position; but this mode of securing the wires is unreliable and requires considerable labor in spreading or upsetting the metal to secure the wires.

The object of the present invention is to simplify the construction of the screen, lessen the cost of the same, and render the connection between the wires and the cross-bars stronger and more durable.

I make use of parallel wires held together by one or more cross-bars, each cross-bar being made with diagonal incisions for the reception of the wires, and which wires are held firmly in position by bending down the hook-shaped points of the cross-bars at the acute angles between the slots and the edges of the cross-bars, thus firmly grasping and holding the parallel wires; and in constructing a sand-screen I use similar cross-bars at the top and bottom ends, the same being introduced into grooves or between transverse slats at the top and bottom ends of the screen, and the ends of the cross-bars are bent up at right angles, so as to firmly hold the side pieces of the screen-frame in their proper relative positions.

In the drawings, Figure 1 is an elevation representing the top and bottom portions of a sand-screen, one of the side pieces being in section. Fig. 2 is a longitudinal section at the line 2 2. Fig. 3 shows part of one of the cross-bars with some of the wires in position and with some of the slots open ready for the reception of the longitudinal wires, and Fig. 4 is a plan of the parts shown in Fig. 3.

The parallel bars A or wires are of any desired size, shape, and length, and the cross-bars B are applied at suitable distances apart, and each cross-bar is of the desired strength and preferably of a comparatively soft steel, and in one edge of each cross-bar slots 3 are made by the action of a suitable die and punch or by saws or cutters. Each slot is diagonal, so as to leave the metal at one side of the slot in the form of an acute angle, and the slots are sufficiently deep for the acute angles to form hooks 4, and the wires are introduced into the slots and resting at the bottoms of the slots the hooks 4 are pressed down or bent over the wires, so as to retain them in position in a very firm and reliable manner, and by making the slots in the form represented in Fig. 3 the acute-angle hooks 4 can be bent down rapidly by a roller or other tool forcibly brought into contact with the edge of the bar and passed across the same.

It is advantageous to bend the ends of the wires A at right angles, so as to come outside the top and bottom cross-bars of the screen and thus prevent end motion to such wires.

Screens made in this manner can be made up into any desired form, and where they are employed with a wooden frame, as shown in the drawings, for use in screening sand, ashes, or other materials, the top and bottom cross-bars and the bent ends of the wires A are received into grooves in the top and bottom cross-pieces C and D, which connect the side pieces E at the upper and lower portions of the screen, or these top and bottom cross-bars B may be received between two of the slats or cross-pieces forming the top and bottom ends of the screen.

The intermediate cross-pieces B on the screen are made sufficiently long for their ends to project beyond the side pieces E, and such cross-pieces are received into notches or saw-cuts in the back edges of such side pieces E, and they are bent outwardly and at right angles and preferably secured by screws or nails passing through the perforated ends of the cross-bars, so as to connect the side pieces E firmly to the cross-bars, and I usually employ bands F, nailed or screwed to the back edges of the side pieces E, as an ad-

ditional support for holding the cross-bars B in their proper positions.

I claim as my invention—

1. The combination in a screen with the top and bottom cross-pieces having grooves in their surfaces, of longitudinal parallel wires having their ends bent at right angles, cross-bars each having diagonal slots forming acute-angle hooks, the slots receiving the wires and the hooks bent down to hold such wires in place, the intermediate cross-bars being secured at their ends to the side members of the frame and the cross-bars at the respective ends of the parallel wires being received with the bent ends of such wires into the grooves of the top and bottom cross-pieces of the frame, substantially as set forth.

2. The combination in a screen with the parallel wires, of cross-bars slotted diagonally and receiving the wires, the acute-angled hooks of the cross-bars being bent down to hold the wires in position and the ends of the cross-bars being bent at right angles, the cross-pieces C D and the side frames connected together, such side frames being notched for the passage of the end portions of the cross-bars, and to which side pieces the ends of the cross-bars are connected, substantially as set forth.

Signed by me this 9th day of March, 1896.

JOSEPH NORWOOD.

Witnesses:

GEO. T. PINCKNEY,

MARY L. BYRNE.