(No Model.)

F. T. FREELAND.

JIG BOX FOR SEPARATING ORES.

No. 348,517. Patented Aug. 31, 1886.

Fig. 1.

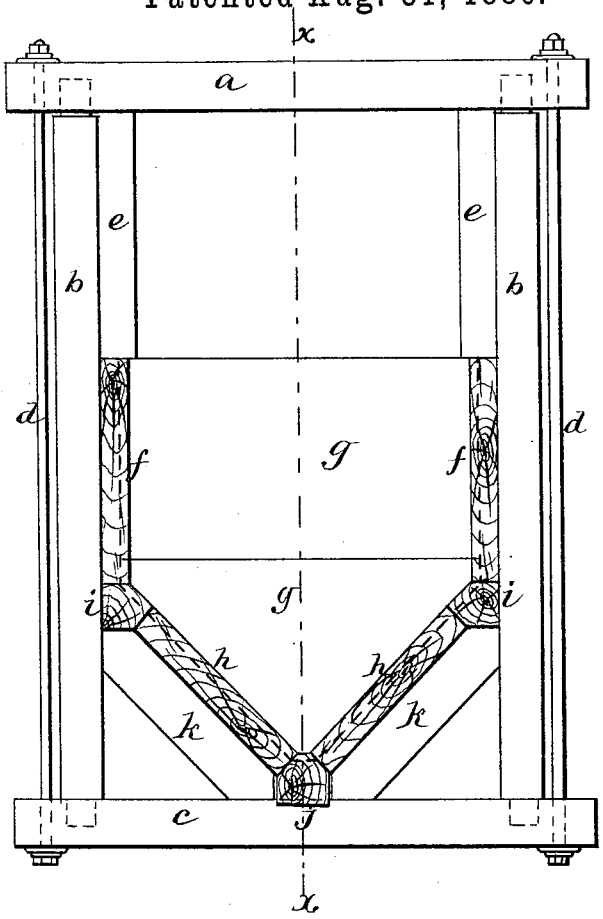


Fig. 2.

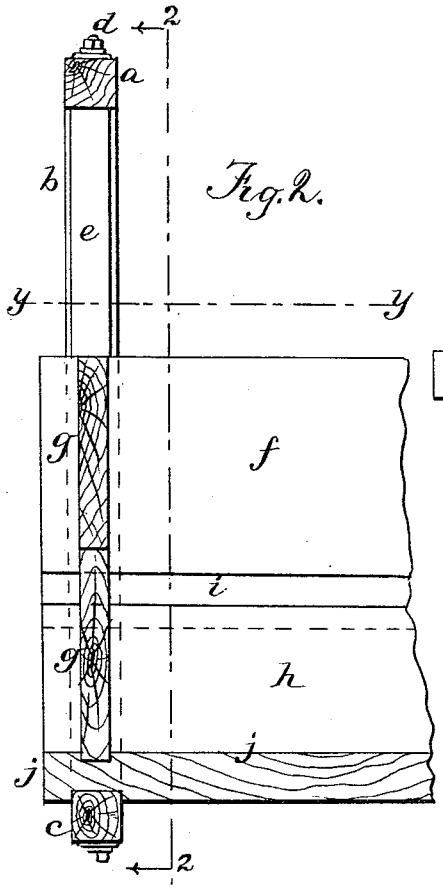
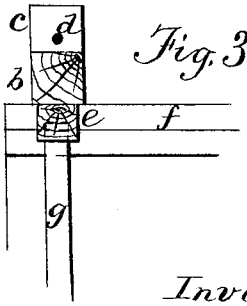


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

FRANCIS T. FREELAND, OF LEADVILLE, COLORADO.

JIG-BOX FOR SEPARATING ORES.

SPECIFICATION forming part of Letters Patent No. 348,517, dated August 31, 1886.

Application filed April 26, 1886. Serial No. 200,125. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS T. FREELAND, a citizen of the United States, residing at Leadville, in the county of Lake and State of Colorado, have invented new and useful Improvements in Jig-Boxes for Separating Ores, of which the following is a specification.

My invention relates to jig-boxes used in ore-washing; and my improvement consists in the combination of the box and frames as constructed, whereby its several parts are held together in a manner to form water-tight joints, without being lag-screwed or bolted, as will be more particularly hereinafter set forth and claimed, and shown in the annexed drawings, in which—

Figure 1 is a transverse sectional view of a jig-box of my construction, on the line 2 2 of Fig. 2. Fig. 2 is a broken section on the line *x x* of Fig. 1 of one side portion. Fig. 2 is a section on the line *y y* of Fig. 2 of one corner.

The box comprises the sides *f*, inclined bottom pieces, *h*, end pieces, *g*, let into grooves in the sides and bottom pieces, and angle-pieces *i* and *j*, the angle-pieces *i* being interposed between the upper edges of the inclined bottom pieces and the lower edges of the sides, and the angle-piece *j* being interposed between and filling the angular space between the lower or adjacent lower edges of the inclined bottom pieces. The box is supported and held together by frames, each composed of the sill *c*, side posts, *b*, and a cross-beam, *a*. The two posts *b* have their ends tenoned and let into corresponding mortises near each end of the cross-beam and sill, but are not pinned. When the distance between the beam *a* and sill is greater than the height of the box, distance-pieces *e* are fitted in between the beam and the upper edges of the box in such manner that the lower end of each distance-piece bears upon one side and end piece of the box. The parts are so proportioned that the distance between the shouldered ends of the posts is less than the distance between the tops of the distance-pieces and the bottom of the box, so that when the cross-beam and sill are drawn nearer together the pressure will be transmitted equally to the various pieces of the box and form water-tight joints. To draw the beam and sill together bolts *d* are employed, which run parallel with the posts *b* and pass through the outer ends of the beam and sill, respectively. In practice, one frame is located at each end of the box; but intermediate ones may be used, if necessary. That portion of the angle-piece *j* adjacent to the sill of the frame is scarfed to prevent longitudinal displacement and permit sidewise movement thereof when drawing the parts together, so as to equalize the pressure. Packing may be interposed between the parts to insure close and tight joints; but this is not absolutely necessary, if the meeting edges are perfectly smooth. When set up, the box is strengthened by braces *k*, intermediate the angle-pieces *i* and *j*, and bearing upon the under sides of the bottom pieces to sustain the same against the weight and pressure of the water and other contents of the box. The distance-pieces *e* may be dispensed with and the cross-beam made to bear direct on the upper edges of the box; but the form shown and described is preferred, as the frame is thereby applicable to boxes of varying heights by using distance-pieces of corresponding lengths. The bolts *d* may be dispensed with and the posts have their tenoned ends projected through the beam and provided with means—such as threads and nuts—to force the beam and sill into close relationship. For stability and lightness it is preferred to use the posts *b* and the bolts *d*.

By my construction the box may be easily set up and taken apart for transportation and packing. The distance-pieces stand over those parts of the end pieces where the latter are let into the grooves in the sides of the box. In tightening the bolts the pressure is transmitted through the distance-pieces to the body of the box and to all the joints thereof, binding them tight, because, as none of the box-forming pieces are bolted or screwed to the frame, the pressure is transmitted from one piece to the other, making all the joints water-tight. The angle-piece *j* is scarfed down from its top on each side in such a way that it can move sidewise a little, so as to equalize the pressure upon the inclined bottom pieces, *h*, and the frame and box forming parts retain their relative positions by being clamped together, the joints binding hard one upon the other upon the bevels of the angle-pieces *i i* and upon the bevels of the bottom angle-piece.

What I claim is—

1. The combination, with a jig-box composed of sides, ends, and slanting bottom pieces, of frames, each consisting of a sill, posts, and a cross-beam encompassing the top, bottom, and sides of the box, and means for drawing the sill and cross-beam into closer relationship, whereby the several parts of the box are securely held together, forming water-tight joints, substantially as set forth.

2. The combination, with the jig-box composed of the sides, slanting bottom pieces, ends let into grooves in the sides and bottom pieces, and the angle-pieces *i i* and *j*, the former being interposed between the meeting edges of the sides and bottom pieces, and the latter between the adjacent lower edges of the bottom pieces, of the frames, each consisting of side posts resting against and supporting the sides of the box, the sill and cross-beam uniting the ends of the posts, and means for drawing the sill and cross-beam into closer relationship, for transmitting a pressure to the several parts and securing them together, forming a jig-box with water-tight joints, as set forth.

3. The combination, with the jig-box consisting of the sides and two slanting bottom pieces formed with grooves, the ends let into said grooves, and angle-pieces *i i* and *j*, interposed between the meeting edges of the sides and bottom, and between the adjacent lower edges of the bottom, of frames, each comprising a sill, cross-beam, side posts tenoned into the sill and beam, bolts for drawing the latter into closer relationship, and distance-pieces set in between the upper edges of the box and the cross-beam, substantially as set forth, for the purpose specified.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANCIS T. FREELAND.

Witnesses:
WM. H. KELLER,
LOUIS SPENCER NOBLE.