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LIFTING DEVICE

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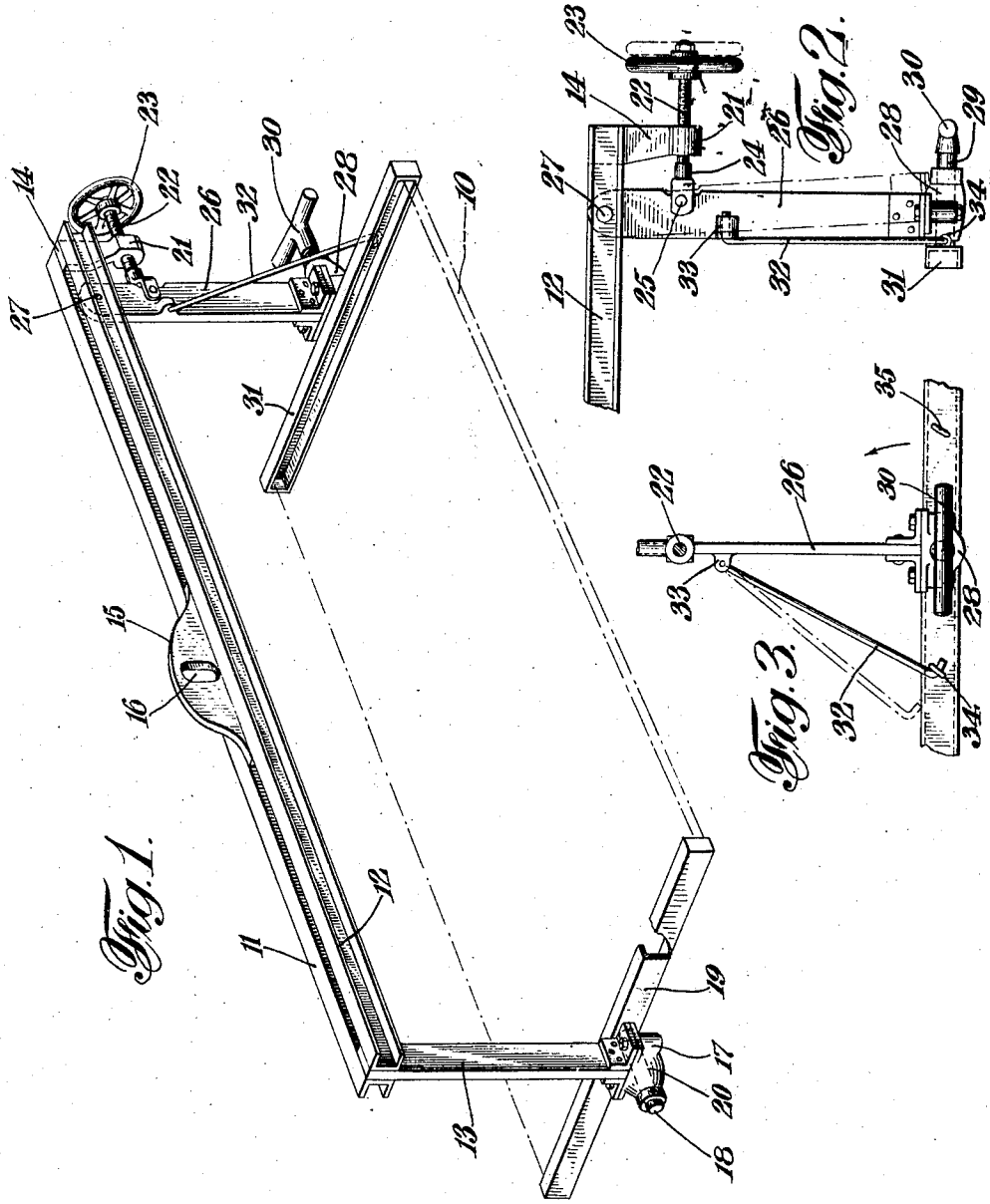


Fig. 1.

Fig. 2.

Fig. 3.

INVENTOR
Charles P. Haff
BY
Edwards, Bower & Pool
ATTORNEYS

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CHARLES P. HAFF, OF AMBLER, PENNSYLVANIA, ASSIGNOR TO AMBLER ASBESTOS SHINGLE & SHEATHING COMPANY, A CORPORATION OF PENNSYLVANIA

LIFTING DEVICE

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This invention relates to apparatus for handling and transferring materials such, for example, as sheets or slabs of builders' boards and the like. Among other objects, the invention aims to provide an improved apparatus of this character which will efficiently and rapidly handle the materials for which it is designed with a minimum of manual labor and attention.

The nature of the invention may be readily understood by reference to one illustrative apparatus embodying the invention and shown in the accompanying drawings, in which

Fig. 1 is a perspective view of the apparatus;

Fig. 2 is a side elevation of one end of the apparatus; and

Fig. 3 is an end elevation of the end of the apparatus shown in Fig. 2.

The illustrative apparatus is arranged, in this instance, for the distribution and handling of materials, builders' boards, for example, to drying rooms, or to other apparatus for future treatment.

Builders' boards are usually prepared in a continuous web by well known machines adapted for that purpose. The board thus formed then usually requires treatment, by drying, for example, to remove excess moisture, and for this purpose it is usually cut into sheets or slabs of various lengths for convenience in handling. These boards in the form of sheets or slabs are large and cumbersome and difficult to handle and to turn and in many cases very heavy, such, for example, as boards formed of a cement and asbestos composition which in some instances are approximately 96 inches long, approximately 42 inches wide and approximately 3 inches in thickness.

In the present arrangement the boards, in the form of separate sheets or slabs are delivered, after they have set sufficiently to render them capable of being handled, from the forming machine.

From the forming machine the sheets or slabs 10 are placed in the lifting and handling apparatus supported from an overhead moving crane, the lifting and handling apparatus being such that the sheet or slab can be rotated about its longitudinal axis to expose either surface thereof for working thereon or for stacking the sheet or slab flat or on edge as desired.

The lifting apparatus consists of a frame constructed of two equal lengths of angle or channel irons 11 and 12 spaced from each other by end pieces 13 and 14 and center piece 15 suitably secured to the channel irons, the center piece 15 being provided with an aperture 16 for the hook of the lifting crane or other attaching means.

The end piece or arm 13 at its lower end supports a bearing 17 in which the shaft 18 is free to rotate. The inner end of the shaft 18 is secured to a laterally extending channel piece 19 for the reception of one end of a sheet or slab of builders' board. The shaft and channel piece 19 are free to rotate but prevented by collar 20 from longitudinal movement.

The end piece 14 is provided with an enlargement 21 in which longitudinally moving screw 22 is threaded to which, at one end, is secured hand wheel 23 for movement of the screw. The opposite end of screw 22 is formed or provided with a forked section 24 straddling and pivoted at 25 to a depending arm or member 26 which in turn is pivoted at 27 between supporting irons 11 and 12. The opposite or lower end of pivoted member 26 carries a bearing member 28 similar to bearing member 17 in which rotates shaft 29 in alignment with shaft 18 and to the opposite end portions of which are secured a hand member 30 and a channel piece 31.

It will be readily seen that any movement of the screw 22 will change the space between the cooperating channel pieces 19 and 31 thus regulating the space therebetween in accordance with the length of the sheet or slab 10 to be received in and clamped and supported by them.

For the purpose of retaining the sheet or slab 10 in horizontal positions when held between the members 19 and 31, a hook member 32 is provided pivoted in lug 33 of pivoted member 26 and adapted to be alternatively hooked into eye bolts 34 and 35.

As illustrated in the drawings, the sheet or slab 10 is shown with one flat surface uppermost and when it is desired to turn the opposite surface uppermost the hook member 32 is removed from eye bolt 34 and the hand member 30 turned until the slab is reversed, when the hook member 32 may be hooked into eye bolt 35.

Obviously, the present invention is not restricted to the details of the illustrative apparatus herein shown and described.

Having described one embodiment of my invention, I claim:

1. In apparatus for handling building board sections, the combination comprising cooperating rotatable members for holding said board sections, hand operated means for moving said members toward one another, hand operated means for rotating said members, and separate means for positively securing said members in horizontal positions.

2. In apparatus for handling building board sections, the combination comprising cooperating rotatable members for holding said board sections, hand operated means for moving said members toward one another, hand operated means for rotating said members, and means for securing said members in horizontal positions, all of said means for moving, rotating and securing said rotatable members being located at one end of said apparatus.

3. In apparatus for handling building board sections, the combination comprising a substantially horizontal frame work, end members extending from said frame work relatively movable toward one another, bearing members carried by said end members, cooperating members rotatable in said bearing members for clamping said board sections therebetween, and a hook member for retaining said board sections in horizontal positions.

4. In apparatus for handling buildings boards and the like, the combination of a frame bar, arms spaced apart and supported by said bar, one of said arms being fixed to the bar and the other movably mounted thereon, two board-receiving elements, the first element pivoted to said fixed arm and the second element pivoted to said movable arm, hand-controlled means for adjusting said movable arm, and hand-controlled means for adjusting said second element.

5. In apparatus for handling building boards and the like, the combination of a frame bar, arms spaced apart and supported by said bar, one of said arms being fixed to to the bar and the other movably mounted thereon, two board-receiving elements, the first element pivoted to said fixed arm and the second element pivoted to said movable arm, hand-controlled means for adjusting said movable arm, and hand-controlled means for adjusting said second element, the two hand-controlled means being adjacent to each other so that they may be conveniently manipulated.

6. In apparatus for handling building boards and the like, the combination of a frame bar, arms spaced apart and supported by said bar, one of said arms being fixed to the bar and the other movably mounted thereon, two board-receiving elements, the first element pivoted to said fixed arm and the second element pivoted to said movable arm, hand-controlled means for adjusting said movable arm, and hand-controlled means for adjusting said second element, and a locking device for maintaining the movable bar and the element pivoted thereon in fixed relationships.

CHARLES P. HAFF.