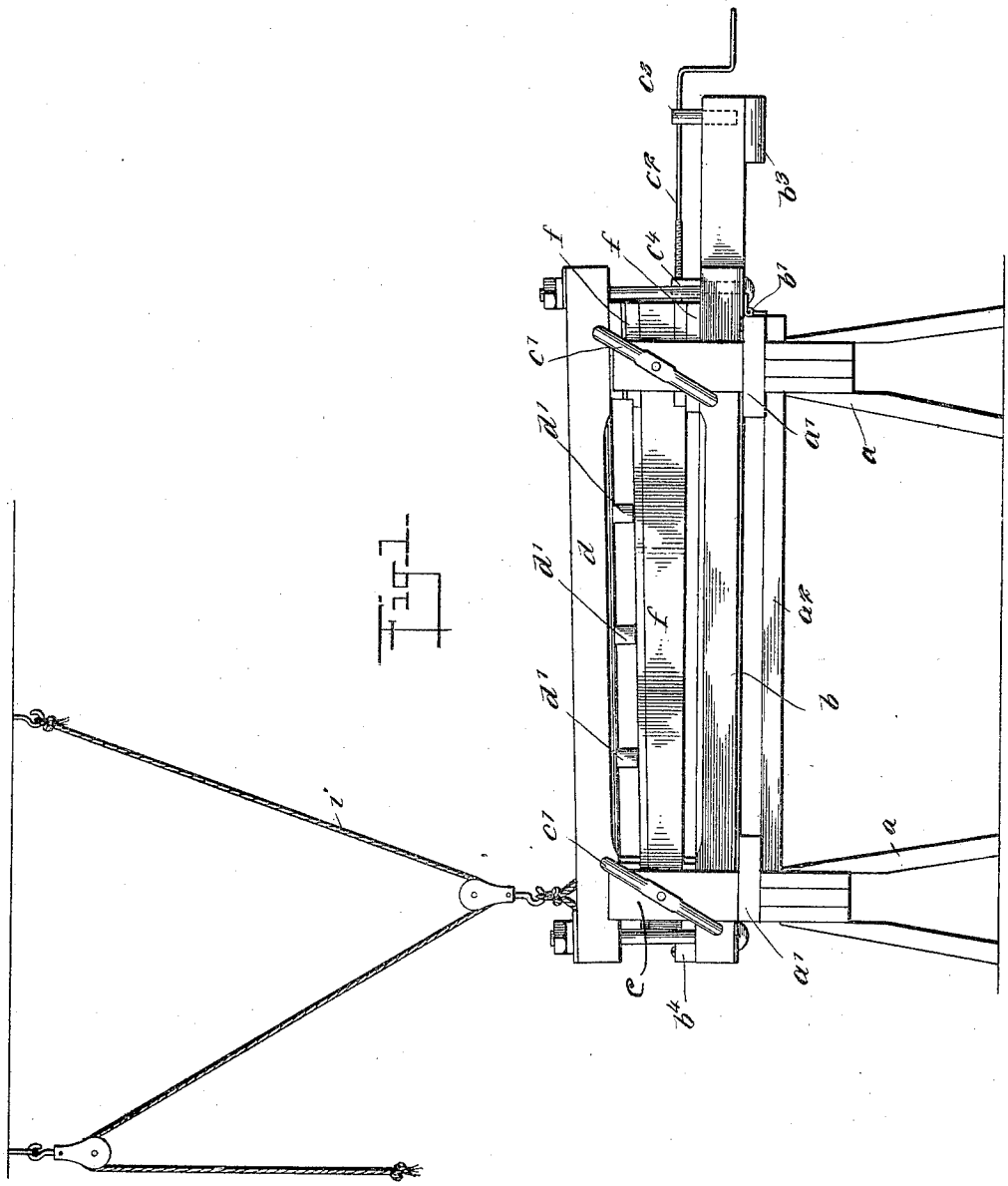
No. 689,061. Patented Dec. 17, 1901.

C. H. BROMM.

APPARATUS FOR ASSISTING IN MAKING PIANO BACKS.

(Application filed Aug. 30, 1901.)

(No Model.) 3 Sheets—Sheet 1.



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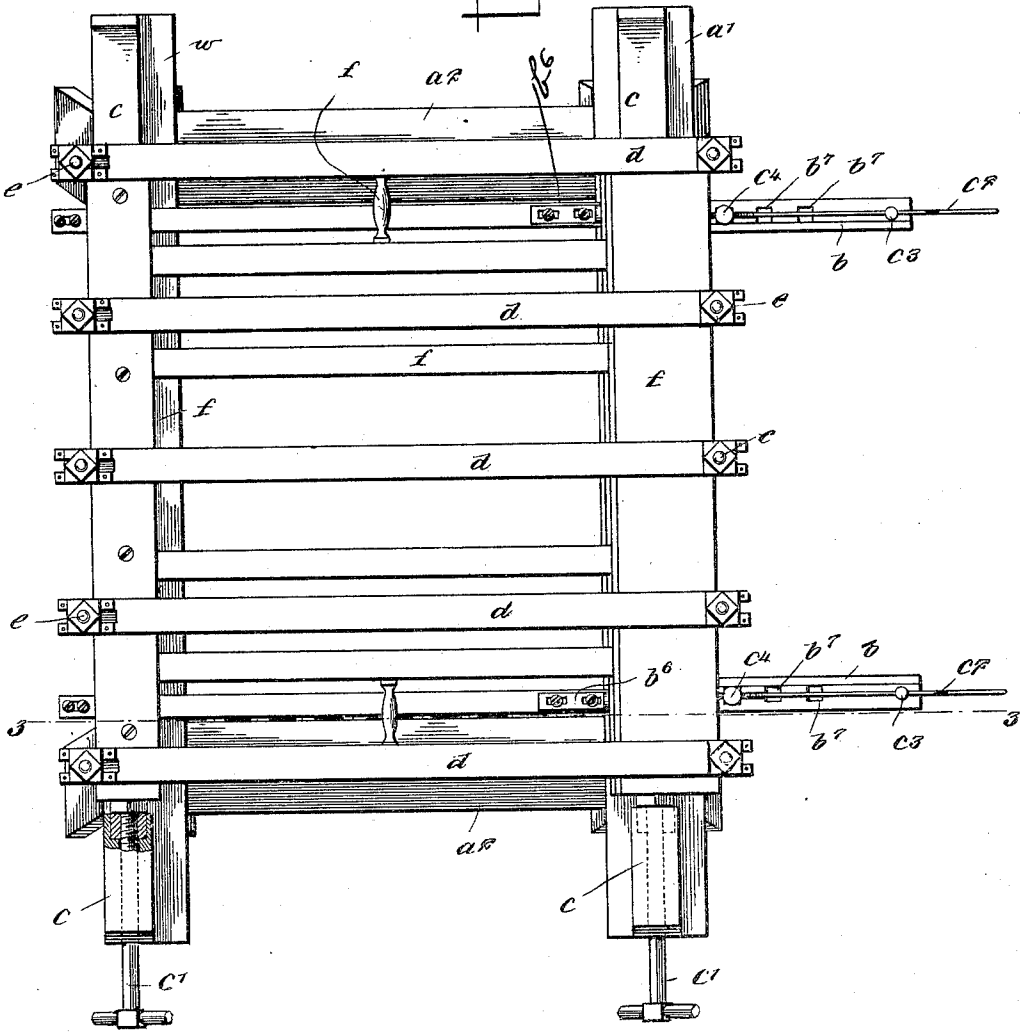
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Fig. 2



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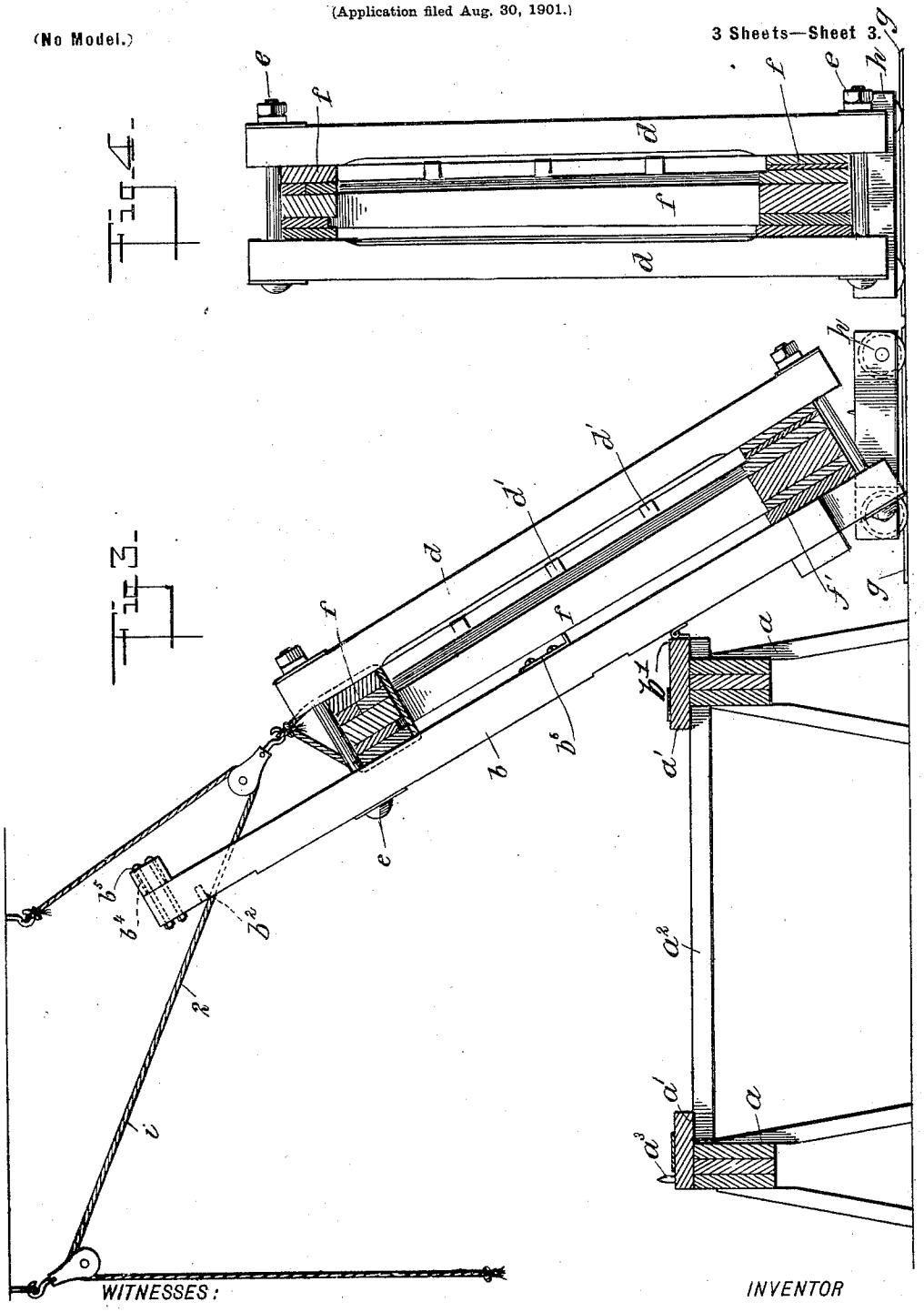
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UNITED STATES PATENT OFFICE.

CHARLES HENRY BROMM, OF SAGINAW, MICHIGAN.

APPARATUS FOR ASSISTING IN MAKING PIANO-BACKS.

SPECIFICATION forming part of Letters Patent No. 689,061, dated December 17, 1901.

Application filed August 30, 1901. Serial No. 73,793. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY BROMM, a citizen of the United States, and a resident of Saginaw, in the county of Saginaw and State of Michigan, have invented a new and Improved Apparatus for Assisting in Making Piano-Backs, of which the following is a full, clear, and exact description.

This invention relates to a frame and clamp for holding together the parts of piano-backs or other structures during the work of assembling them. It is especially adapted for use in connection with the manufacture of the backs of pianos, it having been primarily designed for this purpose.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the invention. Fig. 2 is a plan view thereof. Fig. 3 is a section on the line 3 3 of Fig. 2, and Fig. 4 is a section showing a piano-back in the clamping-frame and the truck for carrying it.

The apparatus is provided with a base formed of two trestles a, having cap-pieces a' and stringers of side rails a^2 extending between the trestles to connect them together. On the base are mounted by hinges b' two tilting bars b, which are capable of being thrown upward into an inclining position, as shown in Fig. 3. These bars have sockets b^2, (see the dotted lines in Fig. 3,) adapted to receive pins a^3 on the cap a' of one of the trestles to hold the free ends of the tilting bars from sidewise movement. The rear ends of the bars b project beyond the adjacent trestles and are provided with counterweights b^3, as shown, to counterbalance the weight of the bars when dropping in position. At the free end of each tilting bar b and at the top thereof is arranged a gage-block b^4, adjustably held in place by bolts b^5, working in slots in the gage-blocks, serving to gage the position of the piano-back in perfect square with outwardly-projecting block c on the trestles a, thereby causing the piano-back to be glued up square when the pressure of hand-screws c^2 is brought to bear on the respective parts of the piano-back. Flanged cleats b^6 are secured to the tilting bars at their upper sides near the hinges b' and serve to gage in position the part f', which in turn is used to distribute the pressure of the rails d obtained by bolts e more evenly over the surface being glued.

As shown in Figs. 1 and 2, each cap a' of the trestles is provided at each end with an outwardly-projecting block c, between which blocks the clamping-rails d are placed. The blocks c at one side of the base have hand-screws c' therein, which are arranged horizontally and adapted to be engaged for the purpose of bringing the posts and blocks of the piano-back closely together. Each tilting bar b is provided with a hand-screw c^2, whereby the respective parts of a piano-back are brought into position to be glued. These hand-screws are carried in pins c^3 and c^4, the former pins having the screws fitted loosely therein and the latter pins being internally threaded, so that the screws may work therewith. The pins c^3 are removably engaged in the ends of the tilting bars b, and the pins c^4 are fitted adjustably in sockets b^7, formed in the tilting bars. By adjusting these pins c^3 and c^4 the clamping-screws c^2 may be arranged for engaging work of any size, and by completely removing the pins and hand-screws the tilting bars are left unobstructed at their rear ends, (see Fig. 3,) so that the clamping-frame may be readily removed in a manner which will be hereinafter described.

The clamping-frame is composed of a number of pairs of longitudinally-extending rails d, the members of which are connected together by bolts e, which may be engaged with the clamping-rails at their ends outside of the piano-back or other work, which work is indicated by the letter f. Any suitable form of wrench may be provided for working the nuts of the bolts e; but I prefer to employ a ratchet-wrench, owing to the convenience of this sort of tool and to the position of the nuts.

The various parts of the piano-back being properly placed and assembled together the upper set of rails d are then placed in position to receive bolts e, which are then drawn tight, so that the various parts of the piano-back may be properly glued together. Wedge-shaped blocks d' may then be driven in be-

tween the end clamping-rails *d* and the adjacent edge of the piano-back, (see Figs. 1, 3, and 4,) to further assist in holding the parts rigidly together. The back being held in the clamping-rails *d* hand-screws *c'* and c^2 are then released, thereby allowing it to rest on bars *b*. Hand-screws c^2 are then removed from their sockets. The piano-back clamped in rails *d* may then be removed, as hereinafter described.

It is preferred to form on the floor of the room in which the apparatus is arranged a track *g*, (see Fig. 4,) on which may be arranged trucks *h* of any suitable form. When one of the backs has been placed in the clamping-frame and properly glued and fastened together, the hand-screws *c'* should be released and the tilting bars *b* thrown up to the position shown in Fig. 3. The raising operation I prefer to do by means of a suitable tackle *i*. (See Figs. 1 and 3.) When the parts are clamped in rails *d*, they are raised at the free ends of the bars *b* in an inclining position on bars *b*, then allowed to be lowered and settled onto the pair of trucks *h*. The piano-back, with rails *d* clamped to it, may then be wheeled to one side and left standing for any length of time desired, so as to dry the glue employed in the manufacture of the piano-back. When the glue has been dried, the clamping-rails *d* may then be removed and used again in the same manner as herein described. I also employ the ratchet-wrench to release the clamping-rails *d*.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a base, a tilting member mounted thereon, a gage-block at one end of the member and a clamping device at the other end of the member, and a clamping-frame adapted to rest with its work on the tilting member.

2. The combination of a base, a tilting bar mounted thereon and adapted to carry a clamping-frame and its work, a hand-screw, and means for carrying said screw, said means being removably engaged with the tilting bar, for the purpose specified.

3. The combination of a base, a tilting bar mounted thereon and adapted to carry a clamping-frame and its work, a hand-screw, and pins on which the hand-screw is carried, said pins being removably engaged with the tilting bar.

4. The combination of a base, a tilting member mounted thereon, a clamping device on the tilting member, and a clamping-frame carrying the work, said tilting member being adapted to sustain the clamping-frame and its work.

5. The combination of a base, a tilting member arranged thereon, a gage-block carried at the front end of the tilting member, a cleat carried on the tilting member adjacent to its pivot or hinge, and a clamping device, the said tilting member serving to carry a clamping-frame and its work and the said clamping device serving to force the work against the gage-block, thereby bringing all the parts together in square, and said cleat serving to gage in position a part of said clamping-frame.

6. The combination of a trestle, an upwardly-projecting block at one end thereof, a hand-screw at the other end thereof, a tilting bar mounted on the trestle, a gage-block mounted at one end of the tilting bar, and a hand-screw mounted at the other end of the tilting bar.

7. The combination of a base, a tilting bar mounted thereon, and means for holding the work on the bar, part of said means being removable from the bar, to permit sliding the work down and off the same when tilted.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES HENRY BROMM.

Witnesses:

JENNER E. MORSE,

GEORGE A. KENDALL.