

No. 616,430.

Patented Dec. 20, 1898.

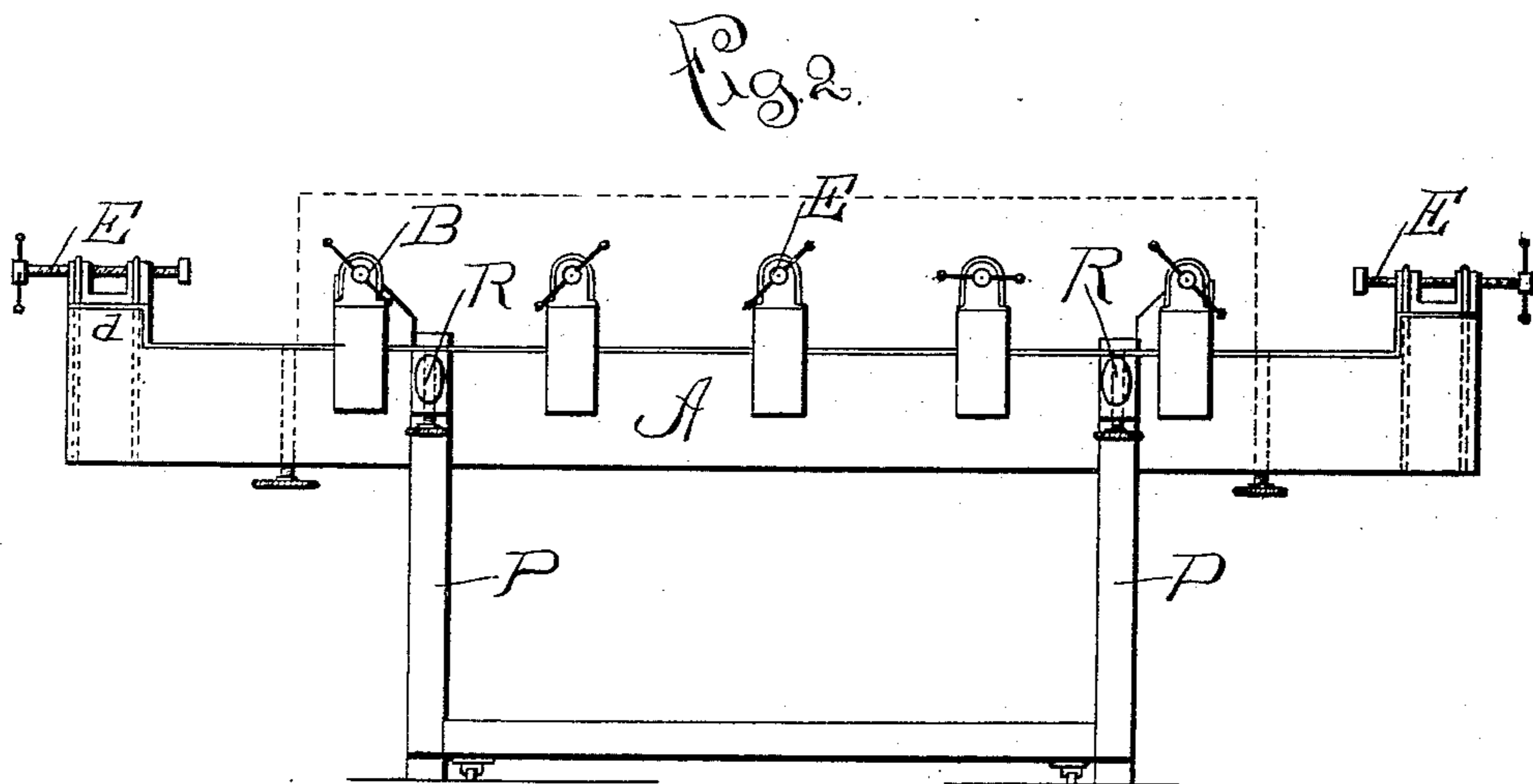
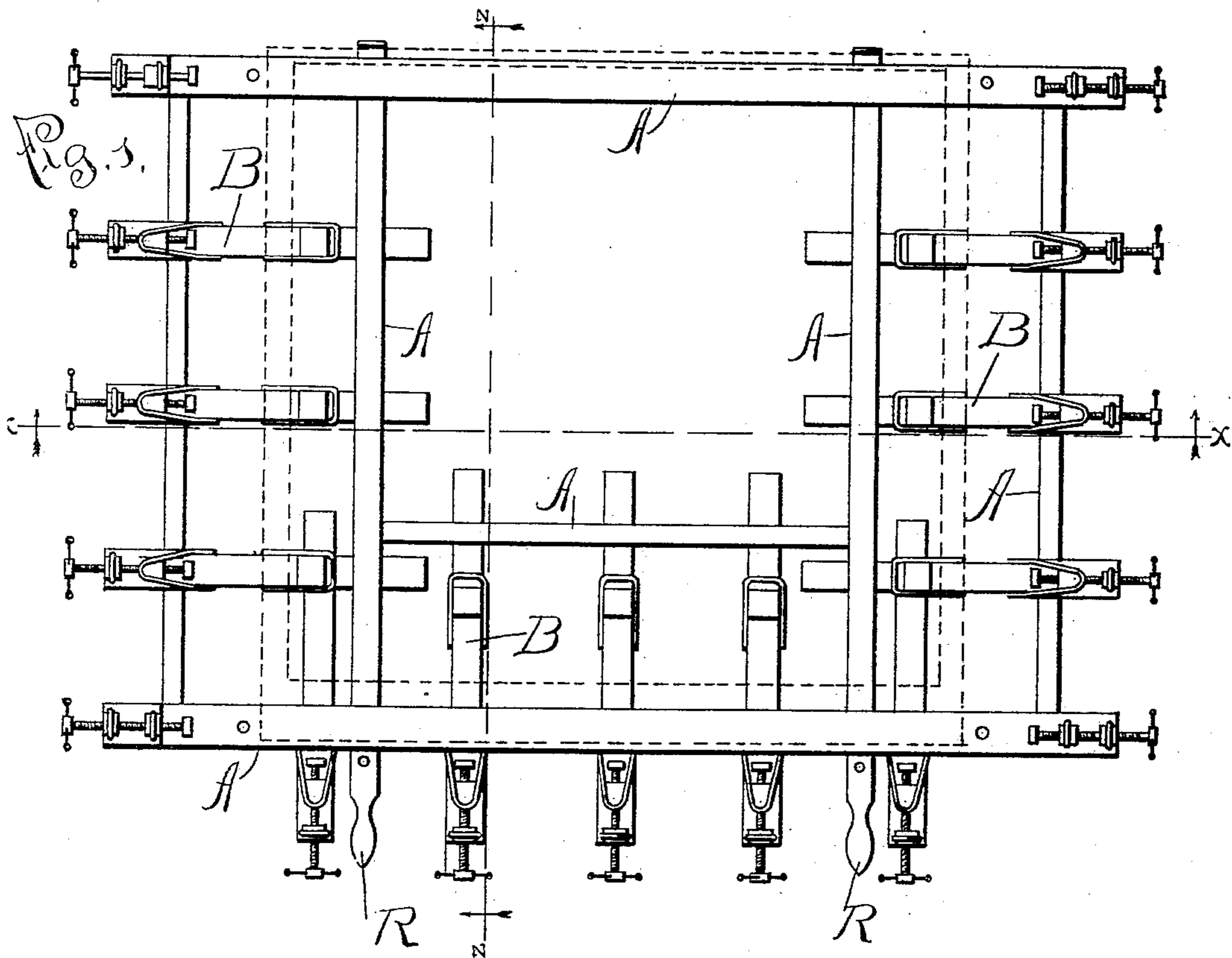
S. N. SWAN.

SECURING APPARATUS FOR USE IN PIANO CONSTRUCTION.

(Application filed Sept. 30, 1897.)

(No Model.)

3 Sheets—Sheet 1.



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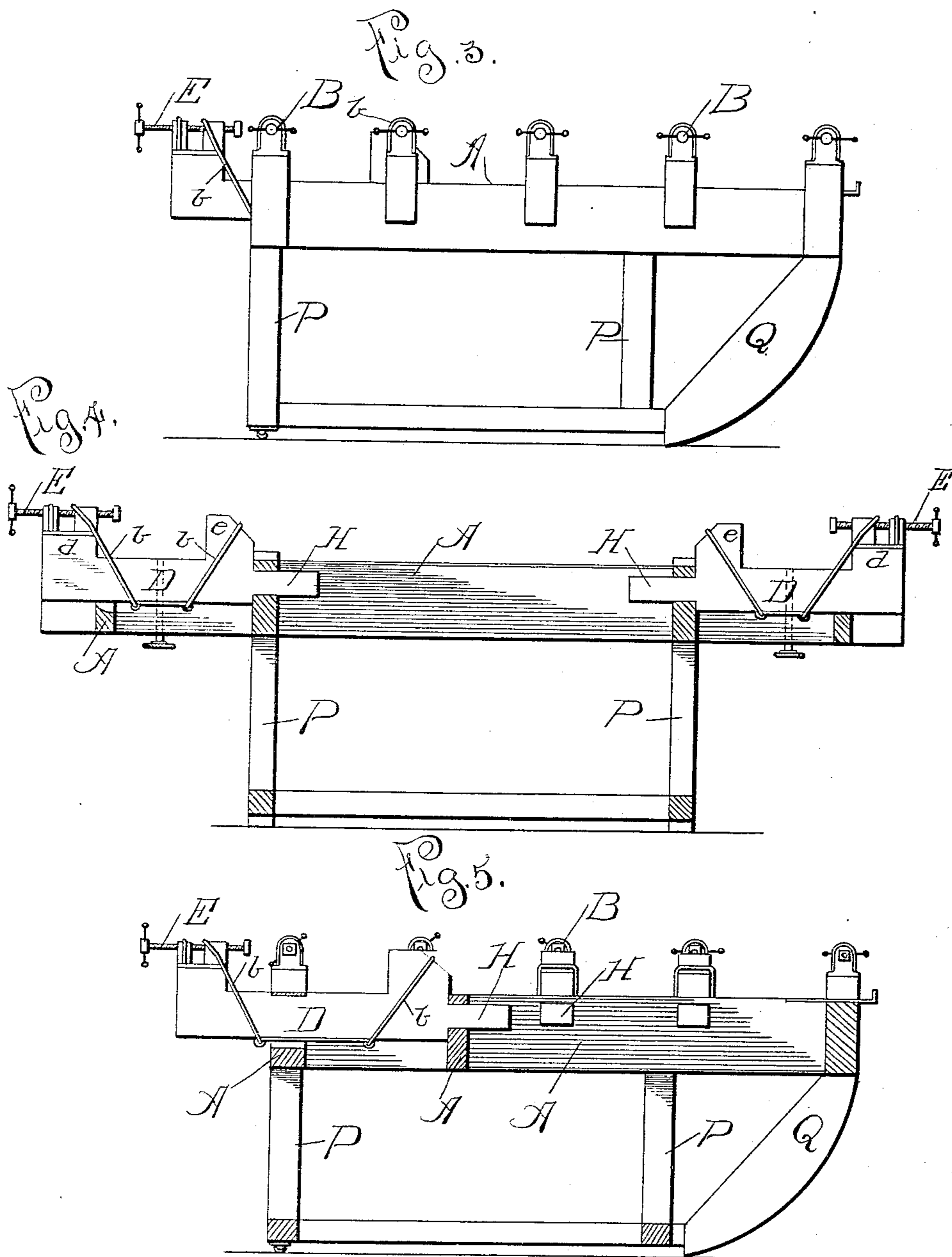
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3 Sheets—Sheet 2.



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3 Sheets—Sheet 3.

Fig. 6.

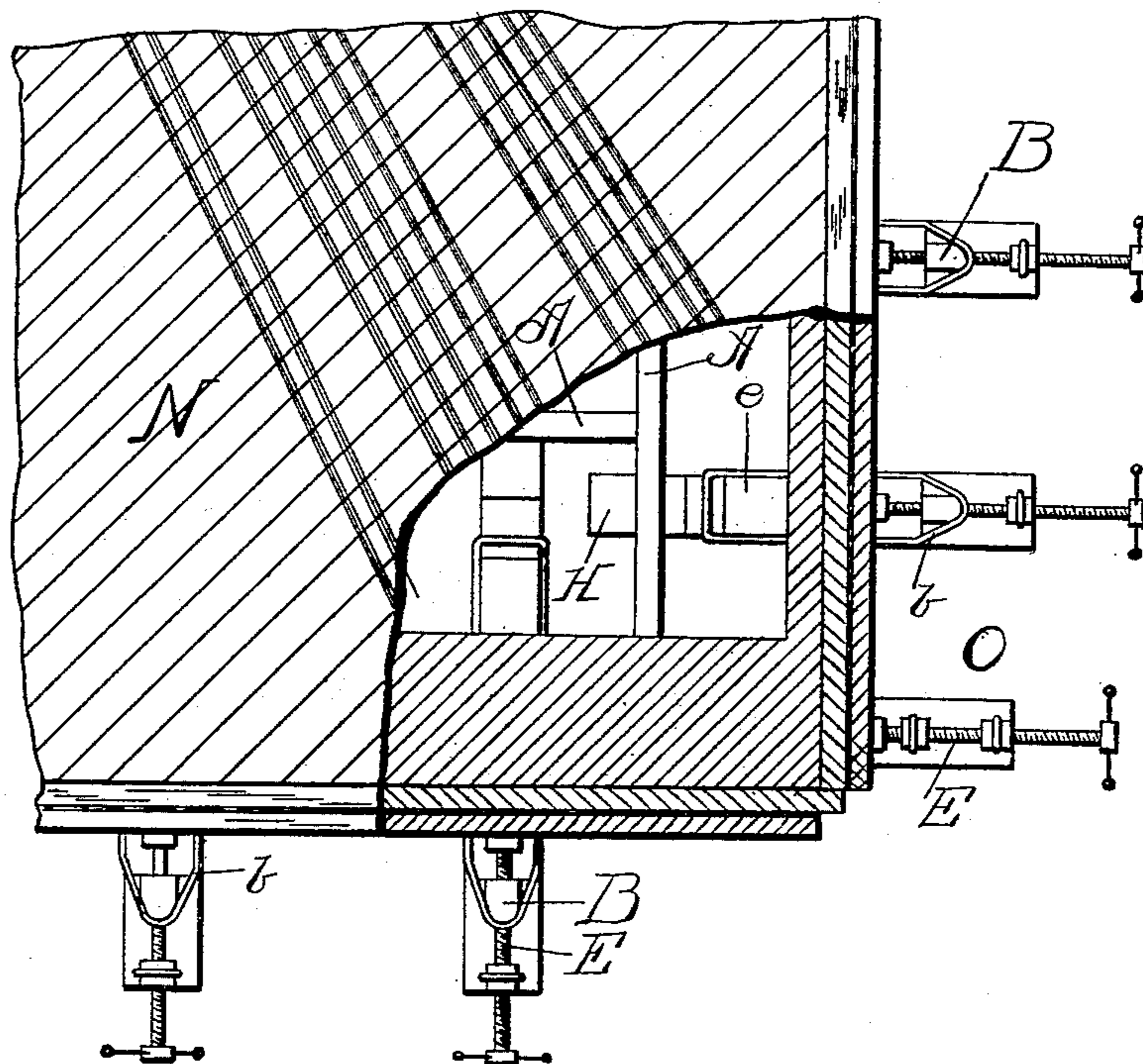


Fig. 8.

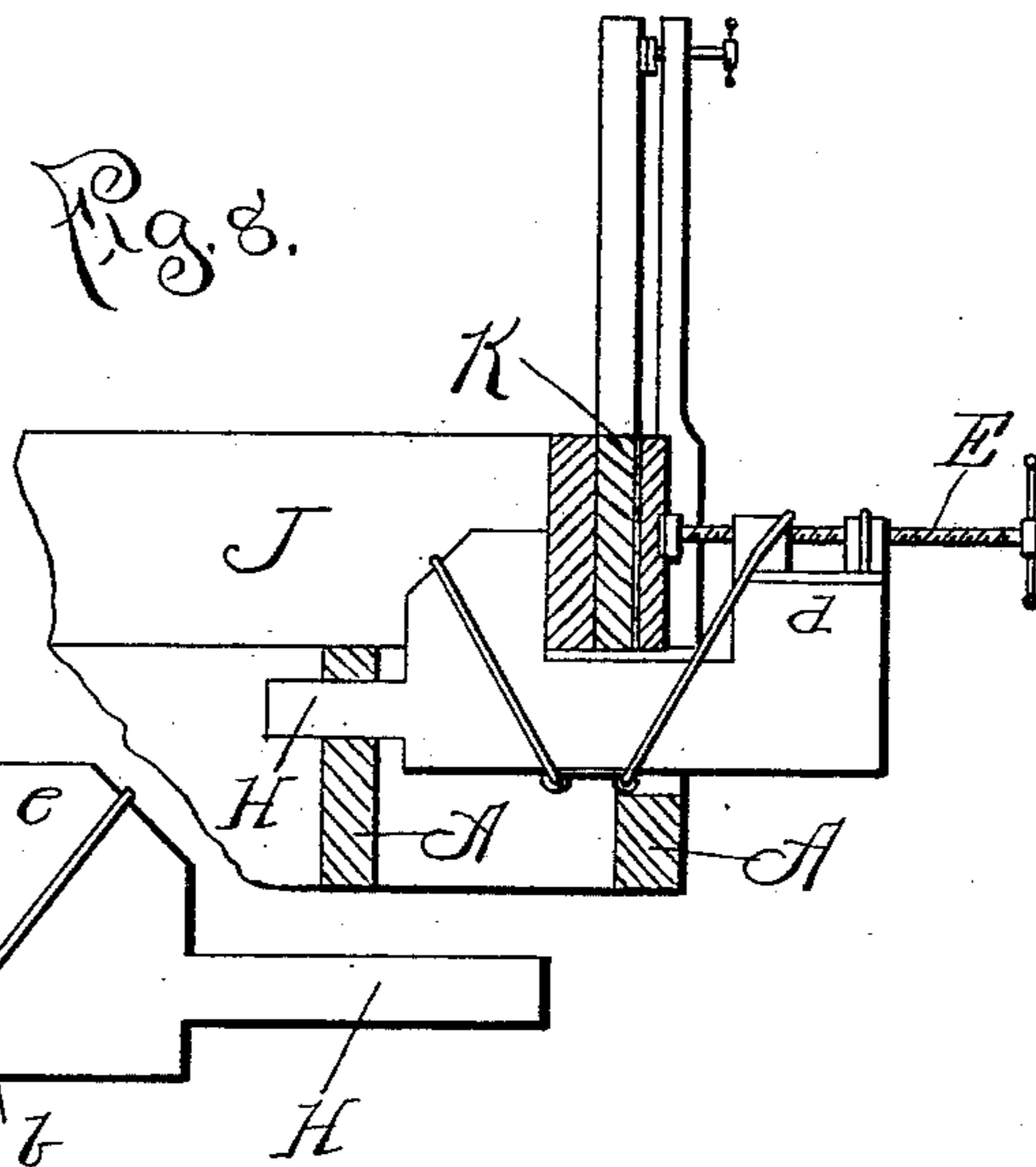
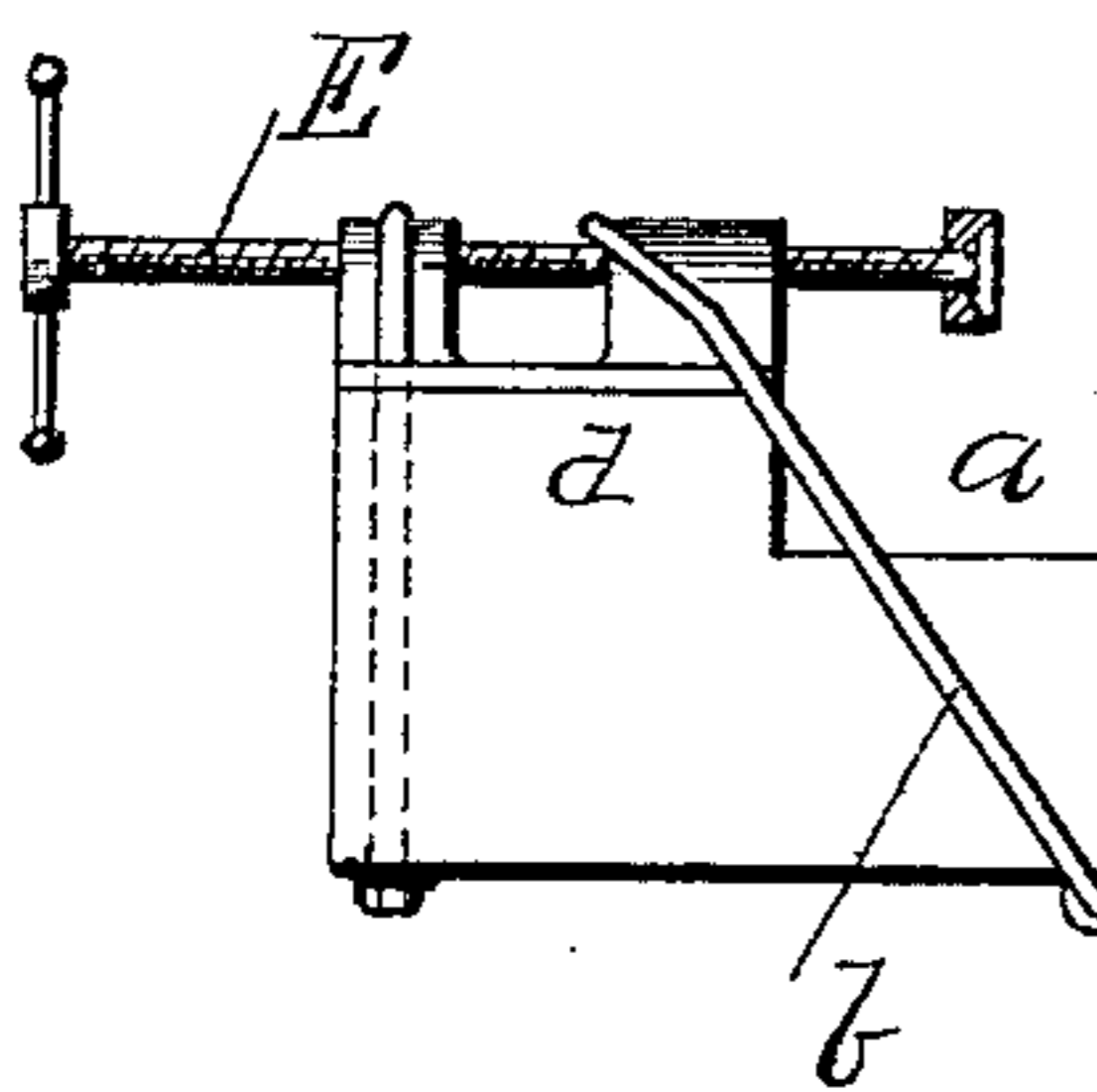


Fig. 7.



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UNITED STATES PATENT OFFICE.

SWAN NILSON SWAN, OF CHICAGO, ILLINOIS.

SECURING APPARATUS FOR USE IN PIANO CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 616,430, dated December 20, 1898.

Application filed September 30, 1897. Serial No. 653,631. (No model.)

To all whom it may concern:

Be it known that I, SWAN NILSON SWAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Securing Apparatus for Use in Piano Construction, of which the following is a specification.

My invention relates to an apparatus designed for use in connection with piano construction.

The object of my invention is to provide means for holding and securing in position, while jointing, certain parts of the framework of a piano, including the end pieces, sides, and top, and for compressing these parts to and upon the sounding-board frame.

My invention consists in certain features and has certain other objects in view, reference being now had to the accompanying drawings, in which—

Figure 1 is a plan view of the completed device, showing in dotted lines the form about which the end pieces or sides and top are arranged. Fig. 2 is an end elevation. Fig. 3 is a side elevation. Fig. 4 is a central cross-section on the line *xx* of Fig. 1. Fig. 5 is a cross-section on the line *zz* of Fig. 1. Fig. 6 is an enlarged detail view showing the parts positioned in the apparatus. Fig. 7 is a detail view of one of the compression-blocks and compression device. Fig. 8 is a like view showing the parts of the piano in position and secured.

In carrying out my invention I provide a structure comprised of several connecting-bars joined together in such a way as to provide a framework upon which the parts of the piano to be held and jointed may be positioned. The parts of the piano, including the sounding-board, string-plate, and frame thereof, are mounted upon this framework, and the sides and top pieces of the piano are then positioned in their proper relation to the sounding-board and string-plate so mounted. The compression members, of a particular construction, are disposed upon the frame structure and adapted to conjointly act upon the top and side pieces whereby to compress them upon the string-plate or sounding-board frame. The frame structure is held in an

elevated plane by a supporting structure having semicircular runways at one side thereof, which permits the tilting of the structure as a whole, together with its superimposed piano parts, into a vertical position, thereby transferring the piano structure, when completely joined, from its horizontal position, assumed while being jointed, into the necessary vertical position.

The supporting-frame body upon which the work is placed is composed of the several rods or bars A, secured together and providing a frame structure.

Positioned at intervals on the three sides of the frame structure A are the compression devices B, of a construction to be particularly described. All of these compression devices operate inwardly toward the center of the said supporting structure A.

The compression devices are similar in construction except the two at the extremity of the supporting-frame A and comprise in their construction a compression-block D, having a recessed portion *a*, Fig. 7, and the stay-yokes *b*, which are secured to the under side of the compression-block D and are yoked over the elevated end portions of said block, (respectively designated at *d* and *e*,) these stay-yokes serving to hold the elevated portions *d* and *e* in a firm and secure position under the strain of the compression-screw E. The compression-block D with its attached parts, is secured in position upon the frame structure by means of the extension H and connected to the supporting-frame structure A.

In Fig. 8 will be seen the manner of joining the outer parts of the piano to the sounding-board frame, which latter is designated at J, and the side piece of the piano, (designated at K.)

In Fig. 6 the sounding-board is designated at N, the compression members, which are designated as a whole at O, being in position joining the parts together.

In Figs. 1 and 2 is shown in dotted lines a form X, about which the parts of the piano-frame are arranged in position to be joined together.

The supporting-body structure or frame A is held in an elevated horizontal plane by the supporting construction or frame P, circular

runways Q being provided secured to the supporting-frame P and to the body structure or frame A.

As an arrangement for permitting a slight vertical adjustment of the side pieces of the piano construction after the same have been placed in position on the floor or bed of the apparatus the opposite ends of the long front and rear bars A A are provided with vertically-arranged adjusting-screws S S, and the forward ends of the handles R R are provided with smaller or similarly-disposed adjusting-screws T T.

From this construction it will be manifest that I provide an apparatus which permits of an adjusting in position of the outer and inner parts of a piano-body to be joined and the ready, convenient, and equal compression of these various parts in such a manner as to effectually join them together, the pressure being applied on all sides of the structure as a whole and in a uniform manner, whereby to insure a complete and perfect jointure of the various parts.

It is further manifest that the construction is of a firm character calculated to withstand a strain of compression and to permit a transfer of the position of the jointed structure when completed by simply elevating the frame, with its superimposed piano parts, from a horizontal position to a vertical position on the runways Q, the operator taking hold of the handles R. (Shown in Fig. 1.)

It is further observable that with the form of compression-block D, with its recessed portion, the sides or other parts of the piano to be jointed, set on edge, are depressed in such a manner and held in such a position that the compression-screw acts upon the middle portion of the parts to be compressed, the stay-yokes B serving to hold the elevated portions *d* and *e* in a manner to withstand excessive strain of compression, said elevated end portion *e* also serving as a backing for the parts to be compressed.

Further, it is observable that the compres-

sion members are removable and replaceable upon the supporting-body A by means of the connecting extension H.

The construction as a whole provides a convenient and accurate means for adjusting the various parts of the piano to be joined in position whereby they may be fitted.

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

1. In an apparatus for use in piano construction, the combination of a body structure affording a substantially horizontal top when in use; and a plurality of compression devices which are constructed with recesses adapted and positioned to receive the parts of the piano to be joined, and also constructed with longitudinal extensions adapted to fit removably within recesses formed in the sides of the body structure and so permit the bodily and independent removal and replacement of the devices, and which are provided with screws or the like adapted to act inwardly so as to compress the aforesaid parts against the abutments formed by the inner walls of such recesses, substantially as described.

2. A compression member for use in piano construction, comprising a compression-block recessed to form a cut-out portion and elevated ends one of which provides a support for a compression-screw; and a longitudinal extension made smaller in size than the block and adapted to fit removably into recesses formed in the supporting-frame so as to permit the bodily attachment and detachment of the members therefrom, and also so as to cause the block to provide an abutment adapted to limit the inward movement of the extension when the members are being attached, substantially as described.

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

SWAN NILSON SWAN.

Witnesses:

GEO. W. TEUKSBURY,
D. G. KEEFE.