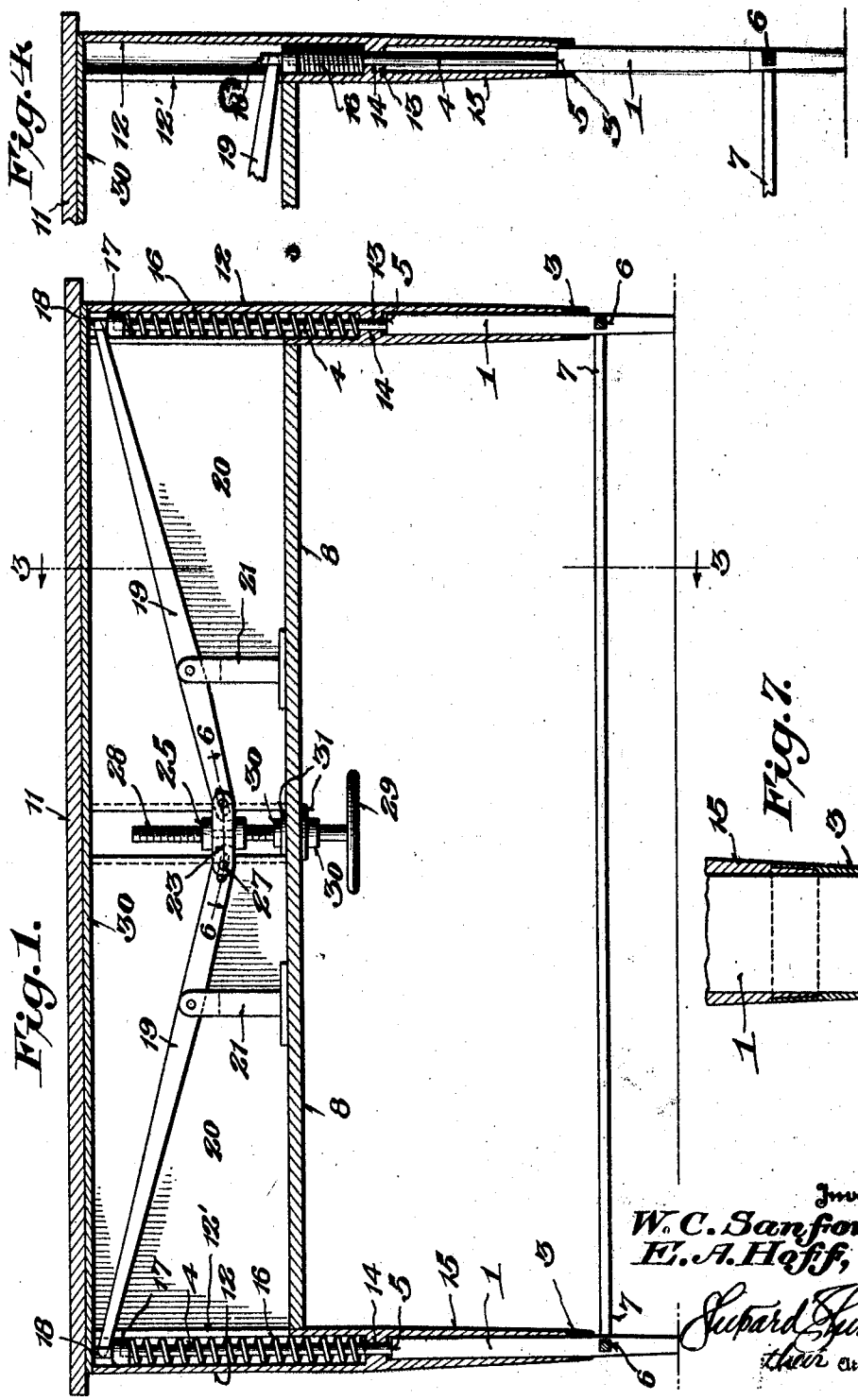
Aug. 3, 1926. 1,594,835

E. A. HOFF ET AL

PIANO BENCH

Filed Feb. 5, 1925 2 Sheets-Sheet 1



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Fig. 2.

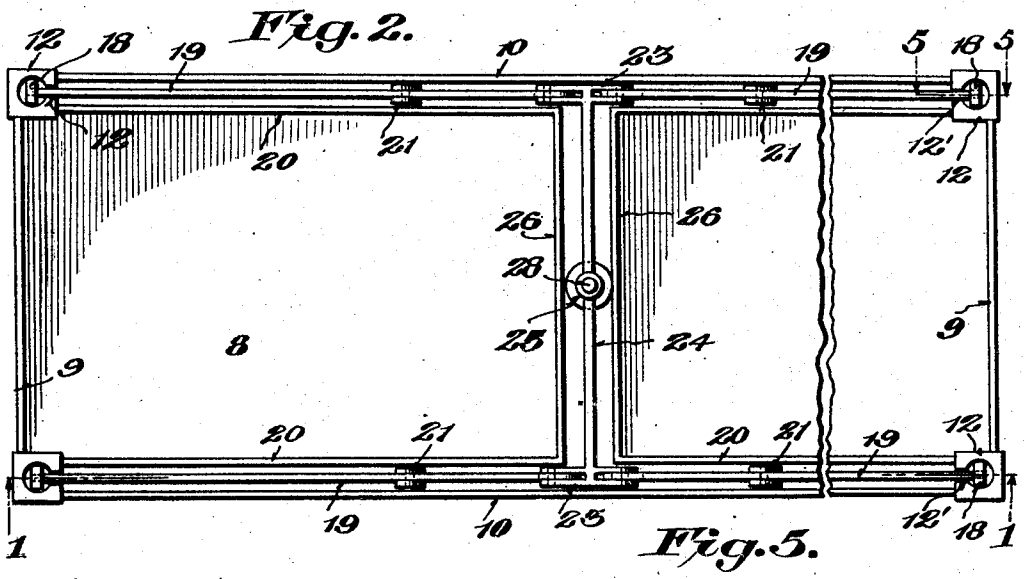


Fig. 5.

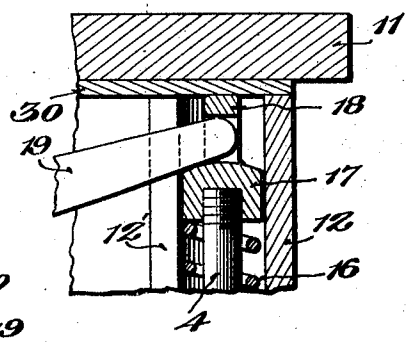


Fig. 3.

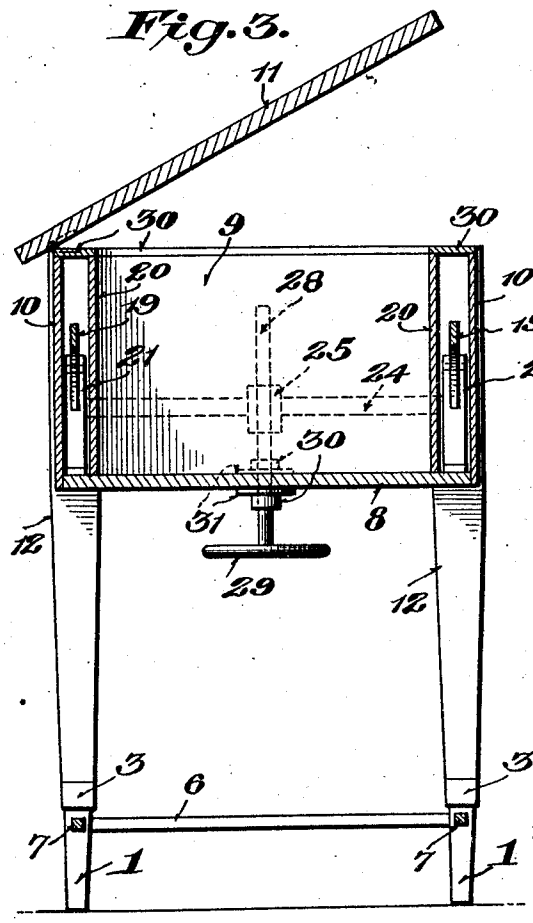
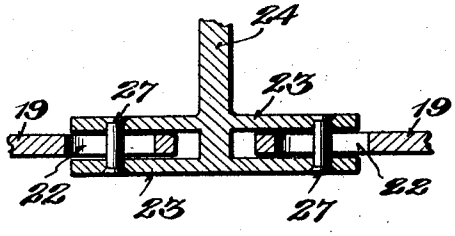


Fig. 6.



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UNITED STATES PATENT OFFICE.

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PIANO BENCH.

Application filed February 5, 1925. Serial No. 7,132.

This invention is a piano bench, and the object of the invention is to provide for adjusting the height of the seat portion of the bench in a very simple and convenient manner, and to provide for housing the adjusting mechanism so as not to detract from the usual appearance of the bench. The bench is of the usual type including a box or cabinet for containing books and sheet music, and the cabinet has the usual hinged top to give access to the interior of the cabinet and also to form the seat proper.

While the adjusting mechanism is housed within the cabinet, there is a hand wheel located below the bottom of the cabinet where it is conveniently accessible for actuating the adjusting mechanism to raise and lower the cabinet which is mounted for vertical adjusting movements on a stationary base. The base and the cabinet are constructed for convenient assemblage, and spring mechanism is employed to maintain the interfitting parts of the base and cabinet in proper relation, thereby to prevent looseness of parts and wabbling of the cabinet upon the base.

With these and other objects in view, the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it of course being understood that changes in the form, proportion, size and minor details may be made, within the scope of the claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Figure 1 is a vertical longitudinal sectional view of a piano bench embodying the features of the present invention and taken on the line 1—1 of Figure 2;

Figure 2 is a top plan view of the improved piano bench with the hinged top removed;

Figure 3 is a cross sectional view on the line 3—3 of Figure 1, the seat or top being shown in an elevated position;

Figure 4 is a fragmentary enlarged sectional view illustrating the cabinet portion of the bench in an elevated position;

Figure 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Figure 2;

Fgure 6 is an enlarged detail sectional view taken on the line 6—6 of Figure 1.

Figure 7 is an enlarged fragmentary sectional view showing the ferrule at the bottom of one of the hollow leg members.

The base is made up of a plurality of standards 1, there being four standards employed in the embodiment of the invention shown in the accompanying drawings. Rising from the top of the standard portion 1 is a reduced spindle 4, there being a shoulder or abutment 5 at the base of the spindle. The four standards 1 are connected by suitable braces 6 and 7 thereby completing the stationary base of the present invention.

The box or cabinet portion is of rectangular shape as usual and includes a bottom 8 opposite ends 9 and longitudinal sides 10. The open top of the cabinet is closed by a seat member 11 which is hinged to one of the longitudinal sides 10 in any preferred manner in order that it may be lifted upwardly to give access to the interior of the cabinet which is designed to contain books and sheet music as usual.

At each corner of the box or cabinet there is a hollow leg member 12 connected to the side 10 and the end 9 in any suitable manner, and open at its top and bottom. About midway of the length of the leg there is a transverse web or partition 13, having an opening 14 extending centrally therethrough for the reception of the spindle portion 4 of the standard 1. The interior of the lower sleeve-like portion 15 of the leg is of a shape and size to telescope closely with the standard portion 1, whereby the cabinet and its leg members may be moved up and down on the standards 1. The lower end of the sleeve-like portion 15 of each leg is made very thin and provided with a metal ferrule 3 for the purpose of minimizing the appearance of the joint between the lower end of the leg and the standard 1. The interior of the upper hollow portion of each leg 12 is of a size to accommodate a helical spring 16 surrounding the spindle 4 and bearing at its lower end on the top of the web or partition 13 and at its upper end against the under side of a head or cap 17 suitably secured to the top of the spindle 4, as by screw threads as shown in Figure 5 of the drawings. This head or cap 17 is of a size to have a working fit within the upper tubular portion of the leg, and constitutes a guide to maintain the upper portion of the leg centered on the standard 1 during up and down movements of the leg when ad-

justing the height of the box or cabinet. The top of this cap or head 17 is convex, and rising from the central portion thereof is a loop or eye 18 having a purpose as will be hereinafter explained.

The mechanism for raising and lowering the cabinet on the stationary base includes levers 19, four of which have been indicated in Figure 2 of the drawings. Each lever is housed between one of the sides 10 of the cabinet and an interior board or panel 20. The lever has its outer end extending loosely through a vertical slot 12' in the upper tubular portion of the adjacent leg and also through the eye 18 and bearing upon the convexed top of the head or cap 17 as a fulcrum. An intermediate portion of the lever is pivoted within the bifurcated top portion of a bracket 21 rising from and suitably secured to the bottom 8 of the cabinet. The inner end of the lever is slotted, as at 22, best shown in Figure 6 of the drawings, and this slotted inner end of the lever is received in the bifurcated adjacent end of a head 23 carried by an arm 24 which in turn extends outwardly from a nut 25, the latter being located midway between the sides and ends of the cabinet and housed between partitions or panels 26 extending transversely across the middle interior portion of the cabinet. The slot 22 of the lever receives a pivot pin 27 extending transersely across the bifurcated portion of the head 23. The nut 25 receives an upstanding screw 28 and extends downwardly through the bottom 8 of the cabinet and is provided at its lower end with a handwheel 29 accessible beneath the bottom of the cabinet. The lower portion of the screw 28 has an unthreaded part which carries upper and lower collars 30 suitably fixed to the screw and bearing against top and bottom wear-plates 31 suitably secured to the bottom board 8, whereby the screw is swiveled in the bottom board and may be rotated by manipulation of the hand wheel 29 without imparting vertical movement to the screw. Rotation of the screw will feed the nut 25 either up or down according to the direction of rotation of the screw, and this movement of the nut will be translated through the arms 24 and the heads 23 to the levers 19, the outer ends of which are fulcrumed upon the tops of the stationary standards of the base, whereby the box or cabinet will be raised or lowered in accordance with the direction of feed of the nut.

In the lowermost position of the box or cabinet, as shown in Figure 1 of the drawings, each spring 16 will be in its extended condition, but when the box or cabinet is elevated, the spring will be compressed, as shown in Figure 4, for the reason that it is held against upward movement by the head or cap 17 fixed to the top of the base standard, and therefore the spring will be compressed between the head 17 and the web 13, so that under all conditions a spring tension will be maintained in opposite directions against the parts 13 and 17, which will maintain each telescopic leg member in proper relation with its cooperating base standard thereby to prevent looseness of parts and wabbling of the box or cabinet.

The levers of the elevating mechanism of the present invention are disposed within the cabinet, adjacent the longitudinal sides thereof and effectually housed between said sides the interior panel members 20, and the top pieces 30, while the screw 28 and the nut 25 and the arms 24 are housed between the interior cross panels of partitions 26, whereby the interior of the cabinet at opposite sides of its middle is free and unobstructed and therefore may be utilized for containing books and sheet music. With the exception of the hand wheel 29, all of the mechanism is protected and concealed from view, so that the piano bench has the appearance of the usual type of bench, and at the same time the cabinet may be conveniently raised and lowered to suit the desires of the user of the bench.

What is claimed is:

1. A piano bench comprising standards, a cabinet constituting a seat and having leg members telescoping with the standards, a plurality of cabinet elevating devices housed within the cabinet and cooperating with the respective standards, and a single hand operated means common to the several elevating devices for actuating the same, said hand operated means being located and also accessible beneath the bottom of the cabinet.

2. A piano bench comprising standards, a cabinet constituting a seat and having leg members telescoping with the standards, a plurality of cabinet elevating devices housed within the cabinet and including levers fulcrumed upon the standards, and a single hand operated means common to the several levers for actuating the levers, said hand operated means being located and also accessible beneath the bottom of the cabinet.

3. A piano bench comprising standards, a seat having leg members telescoping with the standards, elevating levers fulcrumed upon the standards and connected with the seat, and a single actuating means common to the several levers and including a traveling nut having the levers connected thereto and an adjusting screw for the nut, said adjusting screw being accessible beneath the bottom of the bench.

4. A piano bench comprising standards, a cabinet constituting a seat and having leg members telescoping with the standards, elevating levers extending through slots in the leg members and fulcrumed upon the standards, brackets carried by the cabinet

and having the respective levers pivotally connected thereto, a vertically traveling nut having arms extending therefrom, a cross head on each arm, each lever being pivotally connected to one of the cross heads, and an elevating screw swiveled upon the cabinet and having the nut mounted thereon.

5. A piano bench comprising standards, a seat having leg members telescoping with the standards, manually operable seat elevating means carried by the seat and cooperating with the standards, and means maintaining a spring tension in a vertical direction against the standards and the upper ends of the leg members and in opposition to the elevation of the seat and its leg members.

6. A piano bench comprising standards, a bench having leg members telescoping with the standards, a helical spring embracing a portion of each standard and bearing at opposite ends against the standard and the adjacent leg member, and means for elevating the seat and its leg members.

7. A piano bench comprising standards, a bench having leg members telescoping with the standards, each standard having an abutment within the enclosing leg member, each leg member having an internal abutment, a helical spring embracing each standard and bearing at opposite ends against the abutment of the leg member and the abutment of the standard, and seat elevating means carried by the seat and cooperating with the standards for elevating the seat and its leg members on the standards.

8. A piano bench comprising a cabinet having a displaceable top, standards, leg members depending from the cabinet and telescoping with the standards, longitudinal compartments within the cabinet at the front and back thereof, a transverse compartment connecting the front and back compartments in the middle of the cabinet, a pair of levers mounted in each longitudinal compartment, each lever being pivoted intermediate of its ends within the compartment, the outer end of each lever being fulcrumed upon one of the standards, a cross head within the transverse compartment and carrying a nut, the inner ends of each pair of levers being pivotally and slidably connected to the adjacent end of the cross head, and a screw swiveled through the bottom of the cabinet and extending through the nut, the lower end of the screw projecting below the bottom of the cabinet and provided with an operating handle.

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