

**No. 677,465.**

**L. W. NORCROSS.**

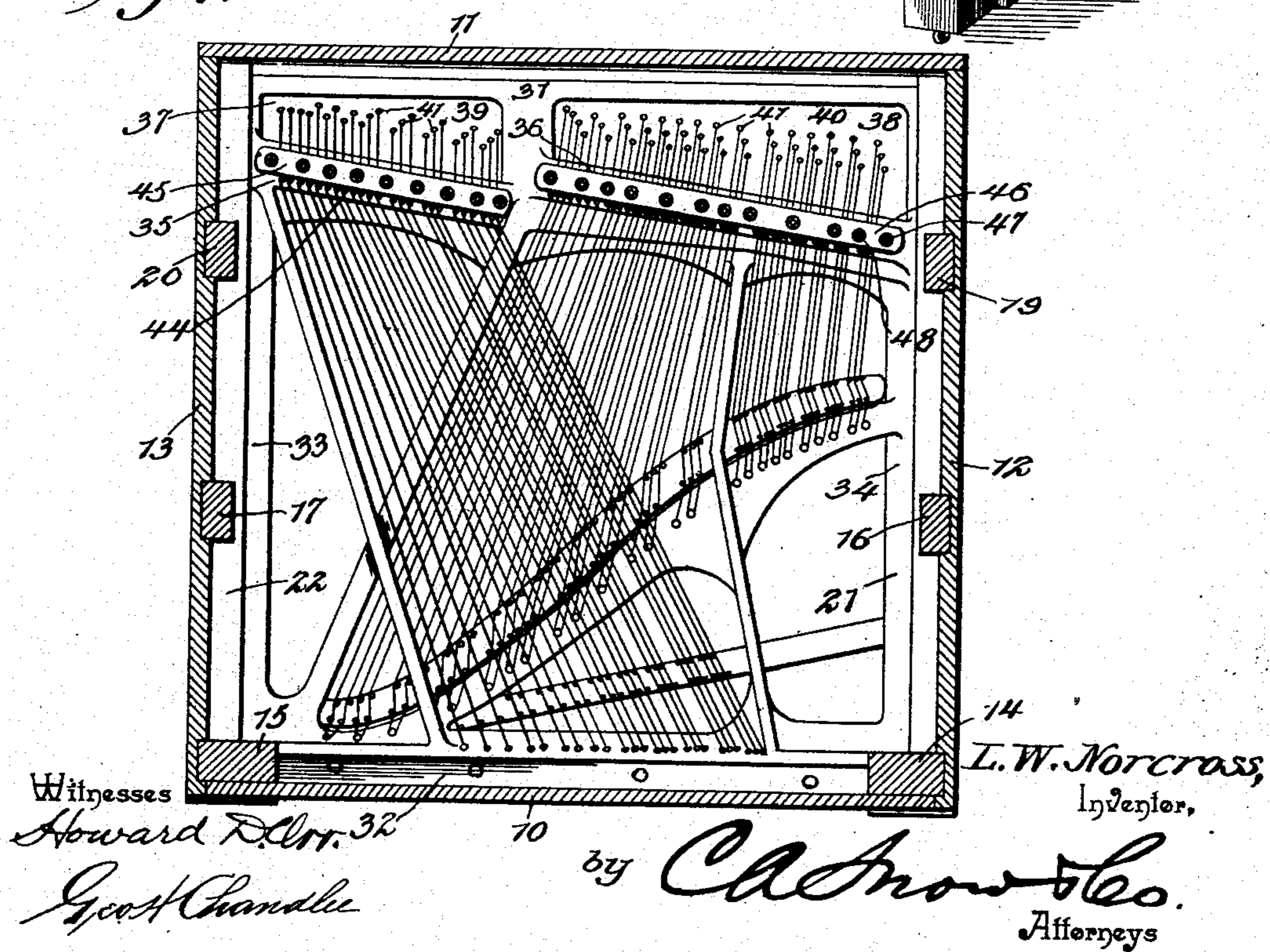
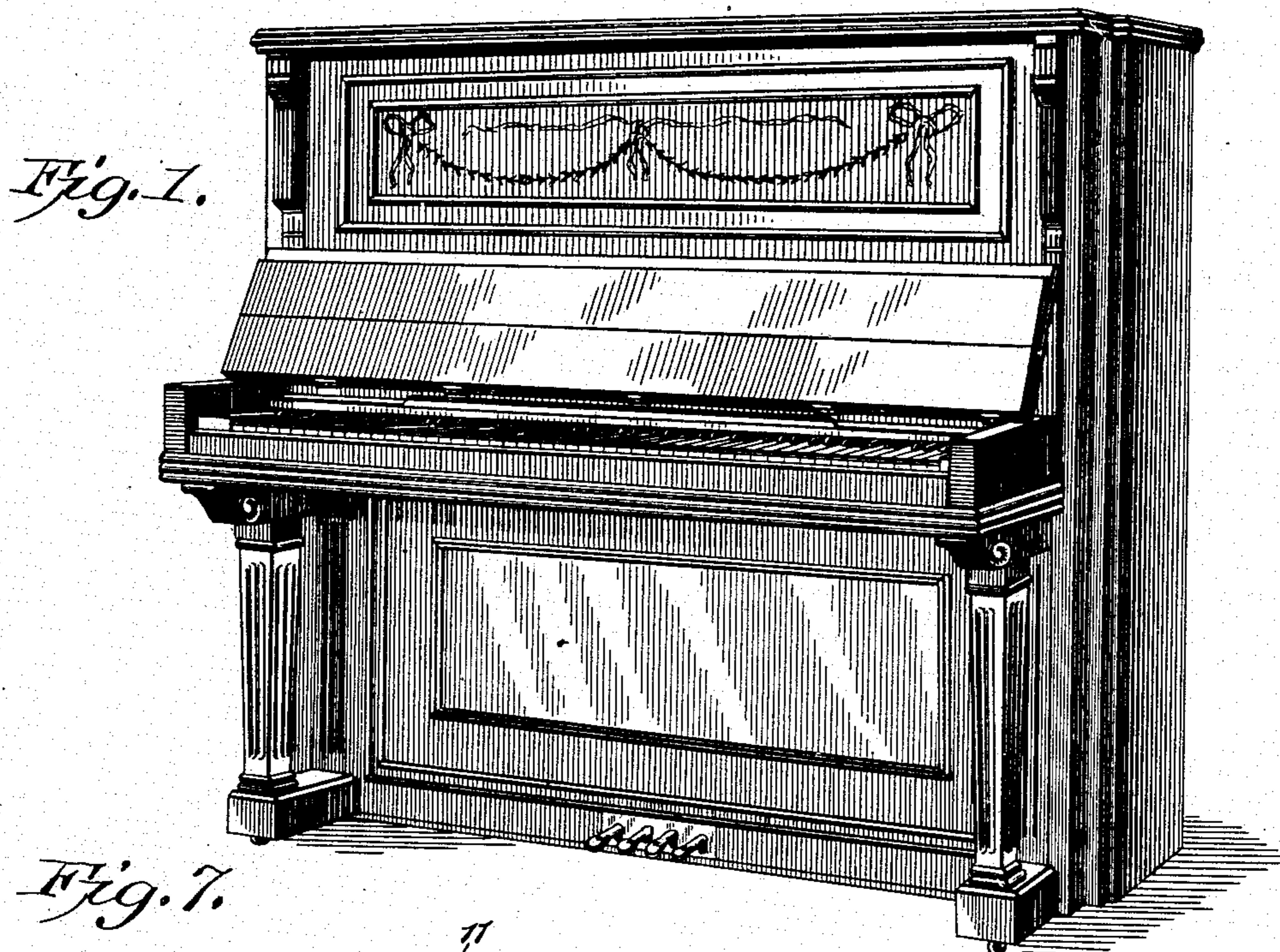
**Patented July 2, 1901.**

**PIANO.**

(Application filed Sept. 10, 1900.)

(No Model.)

**4 Sheets—Sheet 1.**



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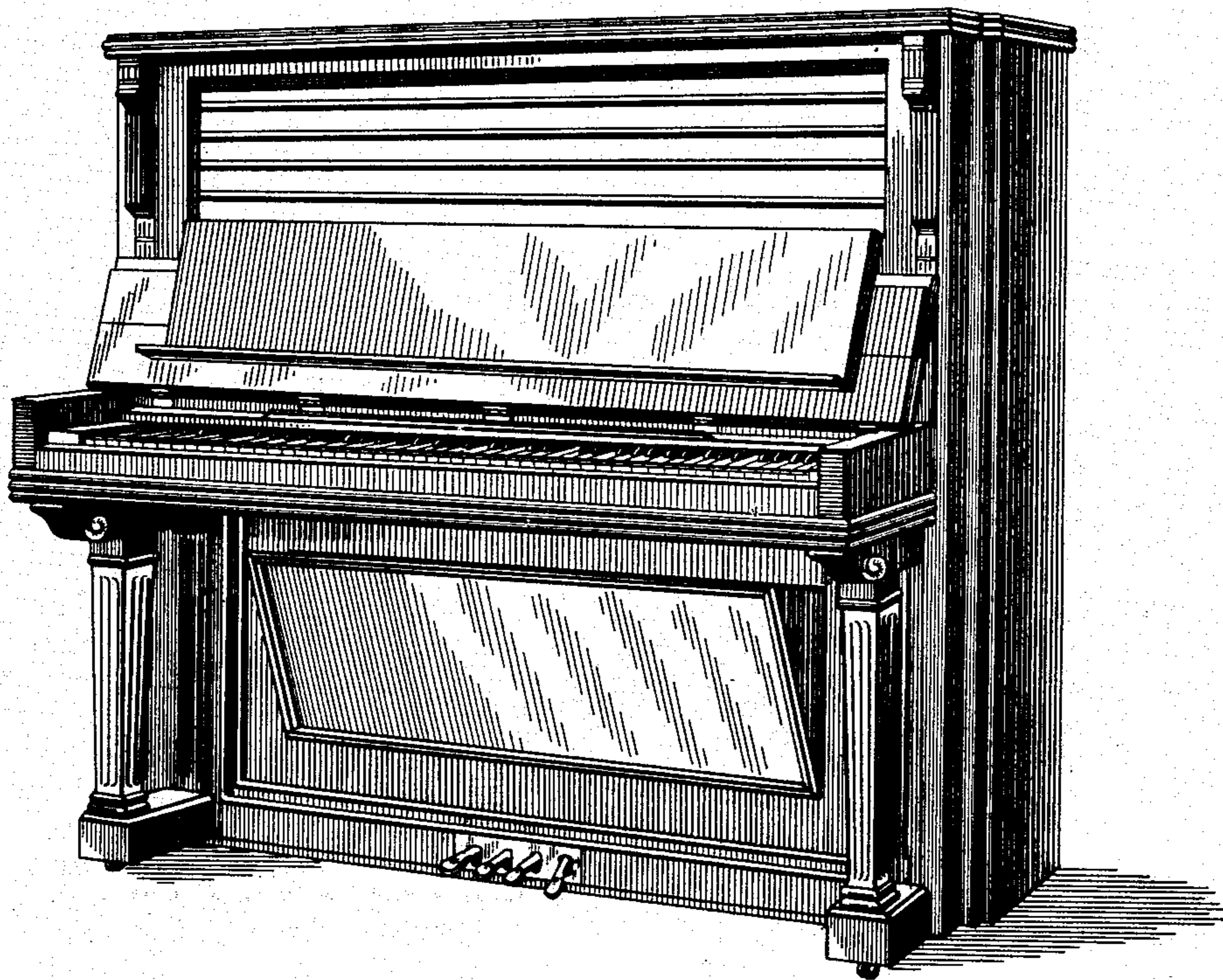
PIANO.

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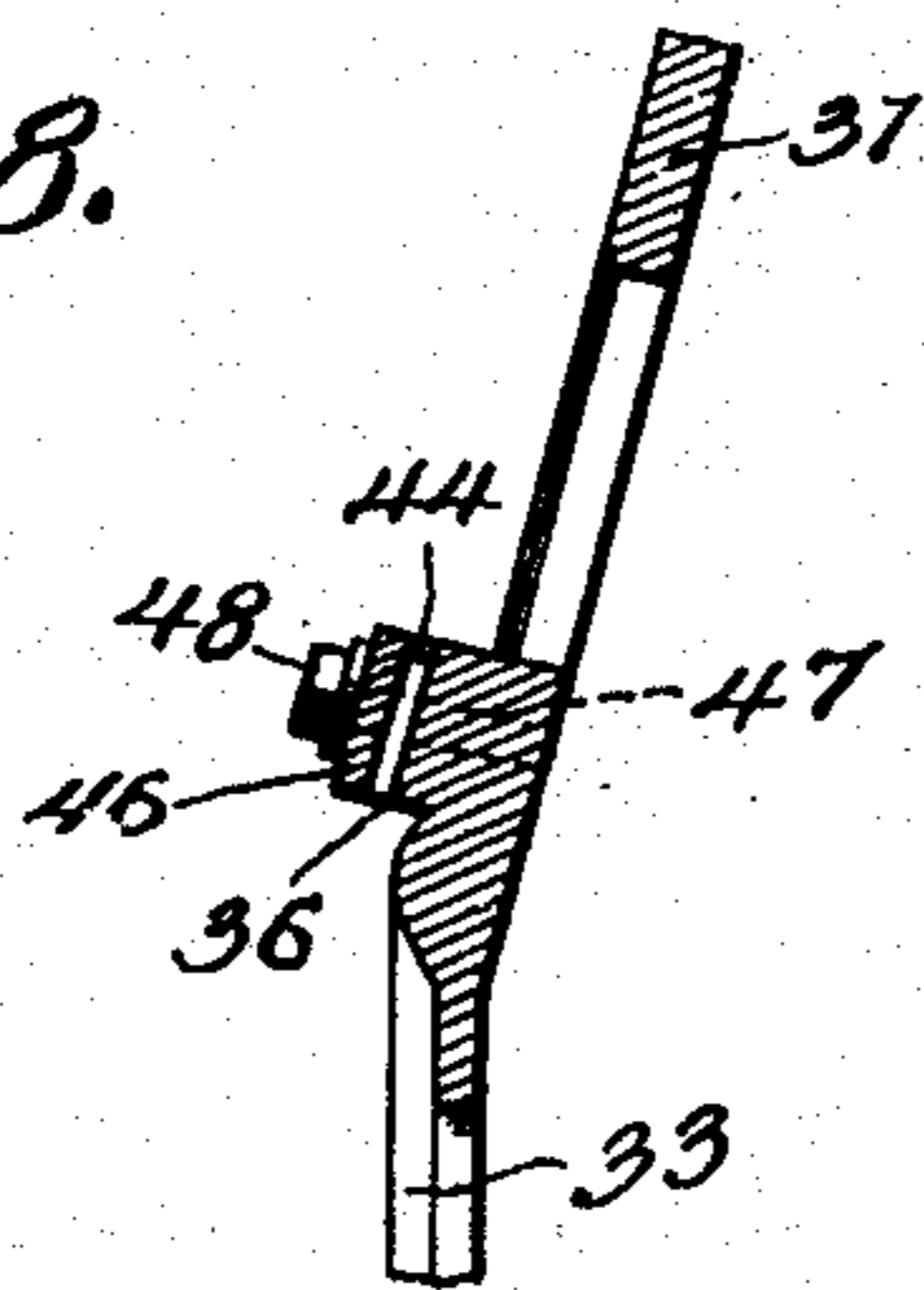
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*Fig. 2.*



*Fig. 8.*



Witnesses  
*Howard D. Orr.*  
*Geo. H. Chandler.*

*L. W. Norcross,* Inventor,  
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Attorneys

Fig. 3.

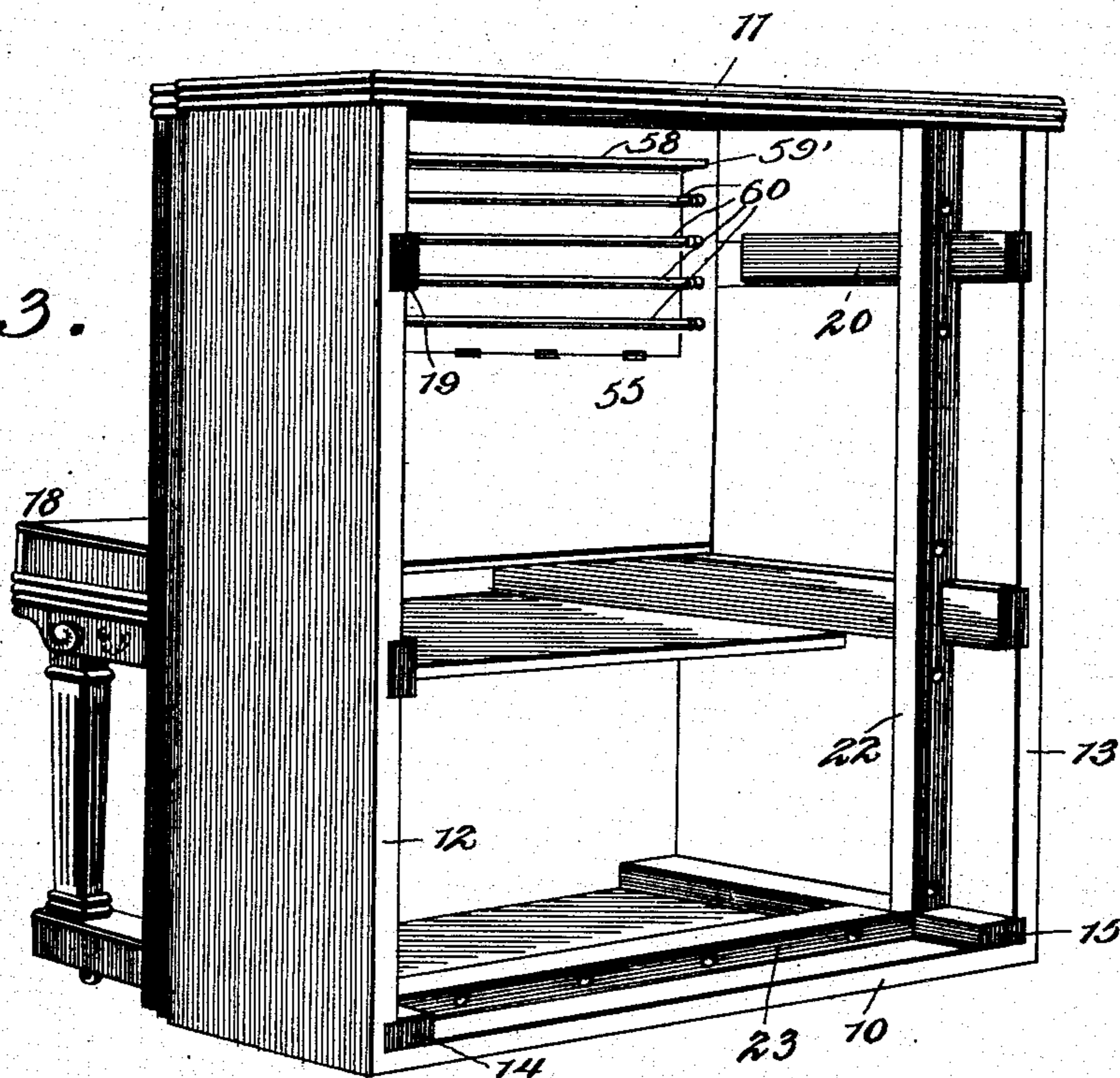
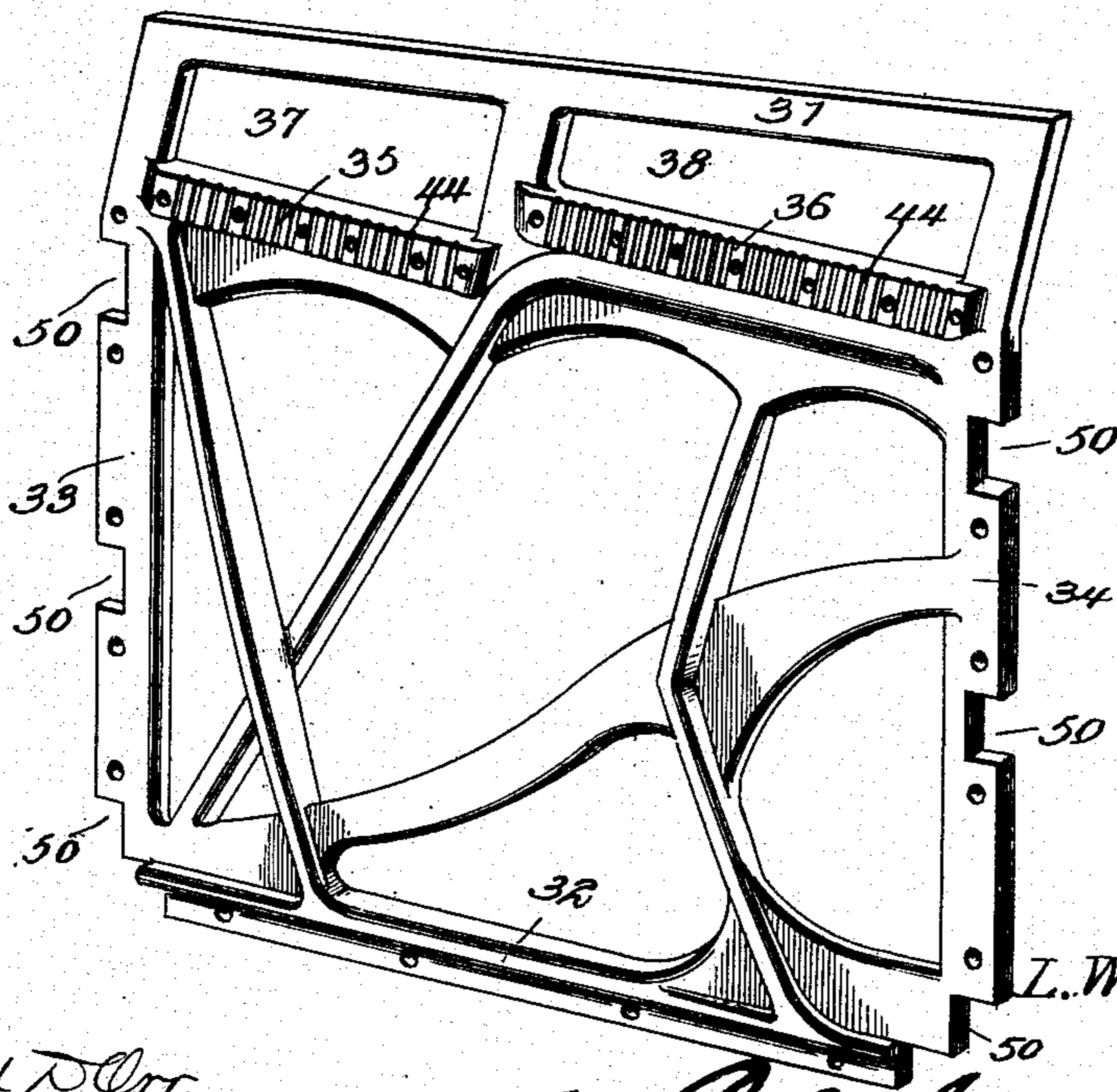


Fig. 6.



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# UNITED STATES PATENT OFFICE.

LEVI WATSON NORCROSS, OF PARIS, TEXAS.

## PIANO.

SPECIFICATION forming part of Letters Patent No. 677,465, dated July 2, 1901.

Application filed September 10, 1900. Serial No. 29,579. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI WATSON NORCROSS, a citizen of the United States, residing at Paris, in the county of Lamar and State of Texas, have invented a new and useful Piano, of which the following is a specification.

This invention relates to pianos in general, and more particularly to the class of upright pianos, one object of the invention being to provide a case wherein the front board may be tilted to provide for holding the music, said board comprising hinged members to permit the upper member to open outwardly and expose the upper portion of the stringing of the piano, thus precluding the necessity of raising the piano-lid to increase the loudness of the instrument.

A further object of the invention is to so construct the casing and the string-frame that the latter may be readily and quickly applied and removed without disturbing any part of the piano-action, thus permitting a string-frame carrying strings of a preferred tone to be changed from one piano-casing to another, as a customer may prefer.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a perspective view showing the complete piano with the casing closed, save for the keyboard-lid. Fig. 2 is a view similar to Fig. 1 and showing the upper section of the front board let down to expose the upper portion of the stringing and permit the sound to escape. Fig. 3 is a rear perspective view of the casing with the string-frame, sounding-board, and action removed. Fig. 4 is a vertical section of the complete instrument, taken through the keyboard and string-frame. Fig. 5 is a horizontal section taken through the sides of the piano-casing, the string-frame, and the uprights to which the string-frame is secured. Fig. 6 is a perspective view showing the string-frame. Fig. 7 is a vertical section taken longitudinally of the piano directly in front of the strings. Fig. 8 is a detail sectional view showing the upper portion of the string-frame and illustrating the manner in which it is bent rearwardly to hold the tuning-pin boards at an angle to the vibratory portions of the strings.

Referring now to the drawings, the piano

includes a casing comprising a bottom 10, top 11, and sides 12 and 13. Bottom sills 14 and 15 are secured at the corners between the bottom and sides and extend transversely of the casing, additional transverse sills 16 and 17 being secured to the inner faces of the sides and projecting beyond the front edges thereof to form supports for the keyboard 18. Sills 19 and 20 are secured to the inner faces of the sides above and parallel with the sills 16 and 17, and connected with the sills at each side of the casing by mortising are uprights 21 and 22, which are spaced inwardly from the rear edge of the frame and lie in a common plane transversely of the piano. In the plane of these uprights 21 and 22 and connecting their lower ends is a longitudinal sill or beam 23, held securely to the upper face of the bottom of the case. The beam 23 and the uprights or beams 21 and 22 provide a means for holding the string-frame within the case, the beam 23 lying flush with the upper faces of the lower sills 14 and 15, while the beams 21 and 22 project inwardly beyond the inner faces of sills 16, 17, 19, and 20, respectively. The string-frame, which is secured against these beams, as shown in Figs. 6, 7, and 8, is rectangular in outline and comprises a top 31, a bottom 32, and sides 33 and 34. Transversely of the upper portion of the frame are formed two wrest-plate bridges 35 and 36, disposed slantingly and parallel, the bridge 36 being somewhat longer than the bridge 35 and likewise lower, the upper end of the bridge 36 lying somewhat higher on the frame than the lower end of the bridge 35.

Between the bridge 35 and the upper side 31 of the frame is a recess in the form of a truncated triangle, and which recess is shown at 37. A similar and larger recess 38 lies intermediate the wrest-plate bridge 36 and the upper side of the frame, the bridge 36 being known as the "treble" wrest-plate bridge and the bridge 35 as the "bass" wrest-plate bridge.

Tuning-pin blocks 39 and 40 are disposed in the recesses 37 and 38, and the strings which are engaged with the tuning-pins therein are taken over the wrest-plate bridges in the manner shown in my prior patent, numbered 649,174. The wrest-plate bridges have grooves 44 formed therein to receive the



