2 Sheets--Sheet 1.

A. MOELLER.

Stringing Pianos.

No. 164,862. Patented June 22, 1875.

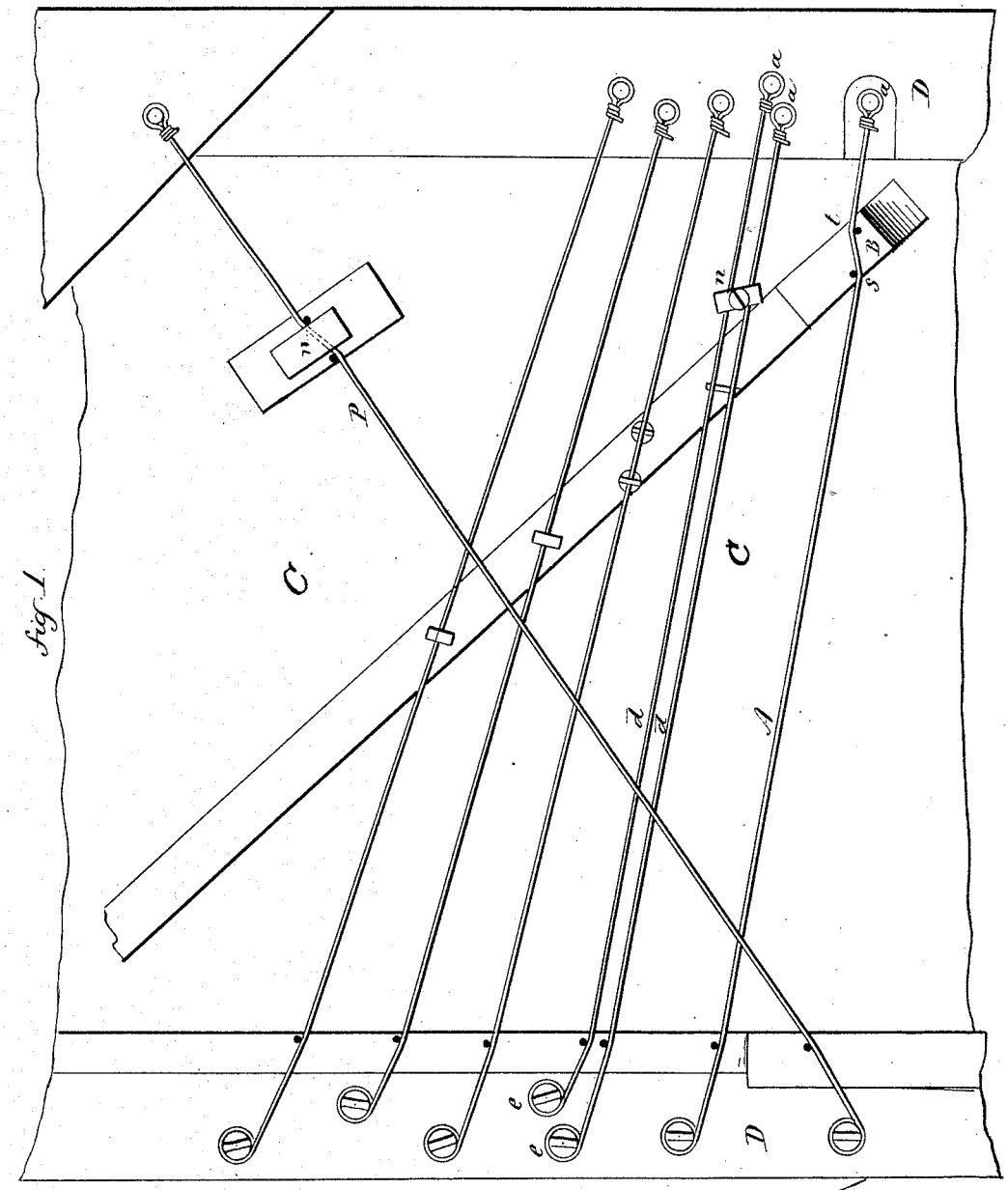

Fig. 1.

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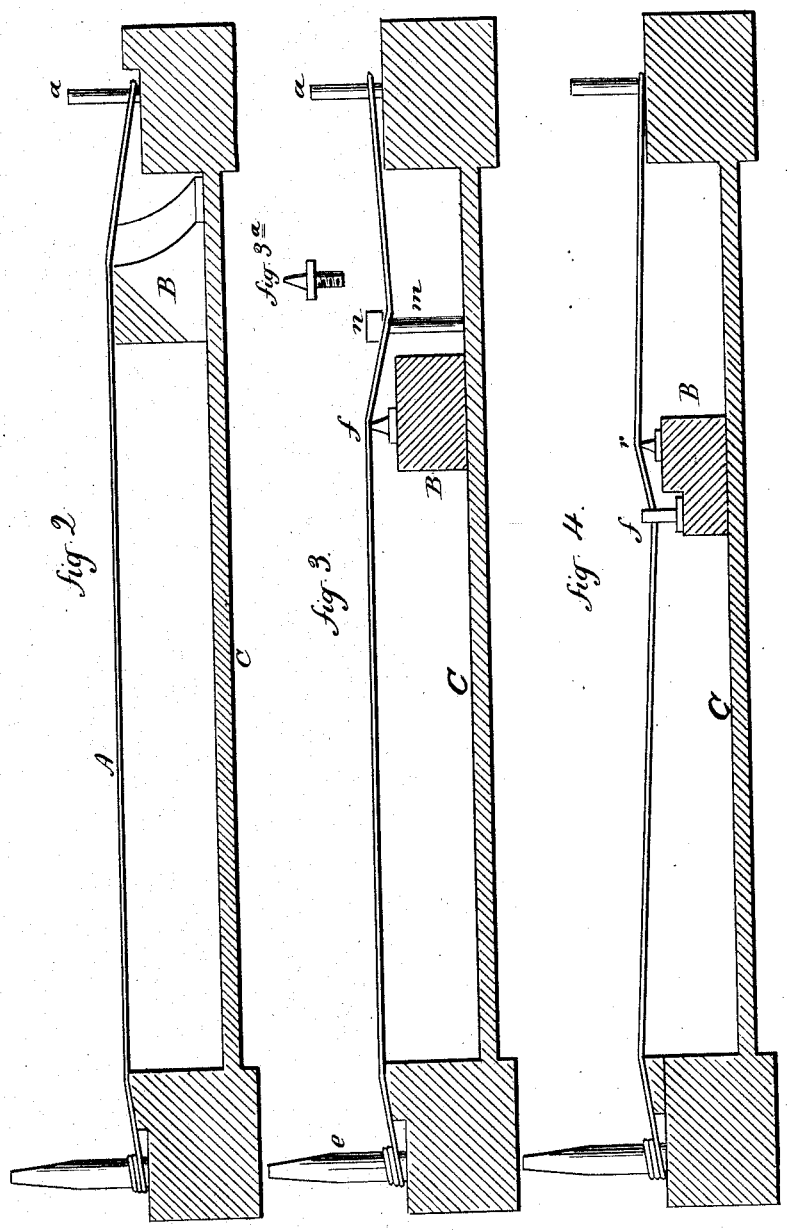

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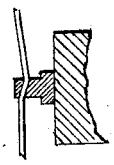
Fig. 5

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UNITED STATES PATENT OFFICE.

AUGUST MOELLER, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN STRINGING PIANOS.

Specification forming part of Letters Patent No. **164,862**, dated June 22, 1875; application filed March 27, 1875.

To all whom it may concern:

Be it known that I, AUGUST MOELLER, of Hartford, in the county of Hartford and State of Connecticut, have invented a new Piano; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in Figure 1, plan showing several arrangements of strings. Figs. 2, 3, 4, 5, sectional side views, showing the said arrangements.

This invention relates to an improvement in the method of stringing pianos.

In the usual method, which is illustrated in Fig. 2 and by the line A, Fig. 1, the bridge B rests upon the sounding-board C, and is higher than the pin *a* by which the wire is attached to the frame D; the result of this is a powerful downward pressure upon the sounding-board, which causes the board to settle, or fall out of shape, materially affecting the resonance or the vibration of the wires.

The object of this invention is principally to avoid this difficulty; and it consists in so arranging the agraffe, or bearings for the wires upon the sounding-board, that the bend in the wire over, or at the agraffe, shall be in relation to the pins, so as to produce a lifting strain upon the board nearly equal to the downward pressure, as more fully hereinafter set forth.

For the purpose of illustration, the frame D and sounding-board C are shown as square, but it will be understood that these are of the usual or any desirable construction. The bridge B is made somewhat lower than the usual construction, but is arranged in substantially the usual line. *d* represents two wires; one end of each is secured to a pin, *a*, and the other end to the studs *e*, by which the wires are drawn in the usual manner; the agraffe *f*, (see Fig. 3,) consists of a metal stud, shown at Fig. 3ª, presenting a thin edge, over which the wires are drawn; this upper edge should be substantially upon a plane with the point of attachment of the wire to the pin *a*. Between the bridge and the frame a bar or capodastor, *n*, rests upon the wires, and through these a screw or stud, *m*, extends into the sounding-board—the capodastor *n* being below the plane of the wire, between the agraffe and the pin *a*, so that the wire will descend from the pin to the bar *n*, and thence rise to the agraffe, as clearly seen in Fig. 3.

Thus it will be seen that while the strain upon the bridge is the same as by the old construction, and which is substantially necessary, it is counterbalanced by the lifting of the wire on the capodastor *n*, and the sounding-board is relieved from the damaging downward strain of the usual construction.

The capodastor *n* may extend along the board, so that one capodastor will answer for all the wires.

A modification is shown in Fig. 4, where the agraffe *f* is perforated for the wire to pass through, and then rising over the rest *r*, so that the same lifting and downward strain of the wire is attained. Or the agraffe may be made, as seen in Fig. 5, with an inclined perforation, so that the bend of the string or wire comes within the agraffe, yet retaining the same upward and downward strain.

By this construction, the lateral bend, which is usually made in the wire on the bridge, as between the points *s t*, Fig. 1, and which is necessary to insure a perfect vibration, is made vertically, and thus advantage taken of that necessary bend, and a much better or prolonged vibration is obtained by this construction than by the old.

A further advantage results from the fact that whereas, in the present construction, hard wood (usually maple) must be used for the bridge, in order to sustain the piano, and which not unfrequently splits; by this construction there is no such strain upon the bridge, and a softer wood may be employed, thereby increasing the resonance over that with a hard-wood bridge.

I am aware that pianos have been so strung as to give a lifting strain only upon the sounding-board, and that they have also been strung to give only a downward strain upon the sounding-board. Such methods I do not claim.

I claim—

As an improvement in stringing pianos, the agraffe and the string or wire combined and arranged with the frame and sounding-board, substantially as described, so as to give the downward bend to the wire at the bridge, and a combined lifting and downward strain upon the sounding-board.

Witnesses: AUGUST MOELLER.

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