3 Sheets--Sheet 1.

CHARLES F. CHICKERING.

Improvement in Upright Pianos.

No. 121,334. Patented Nov. 28, 1871.

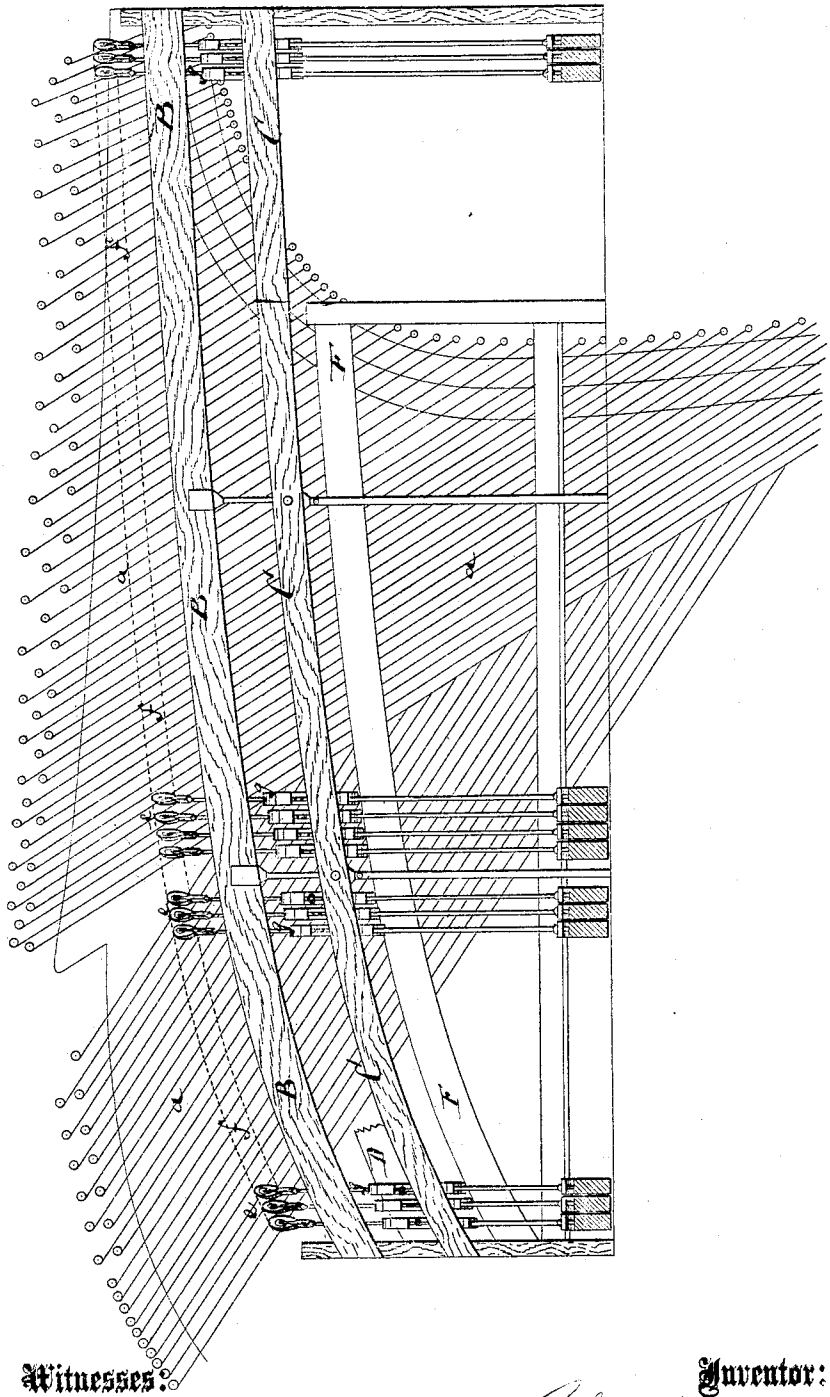


fig. 1.

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N.Y. PHOTO-LITHOGRAPHIC CO. (OSBORNE'S PROCESS.)

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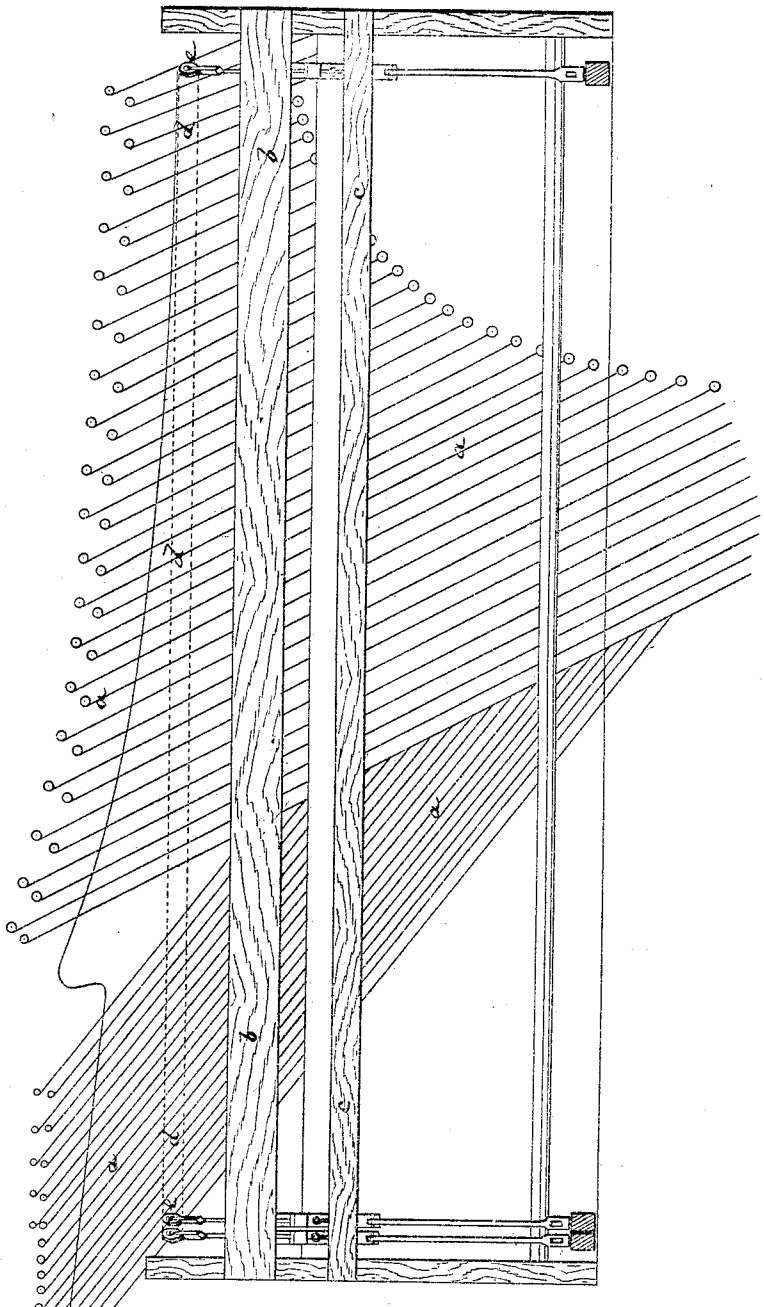


Fig. 2.

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CHARLES F. CHICKERING.

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Fig. 3.

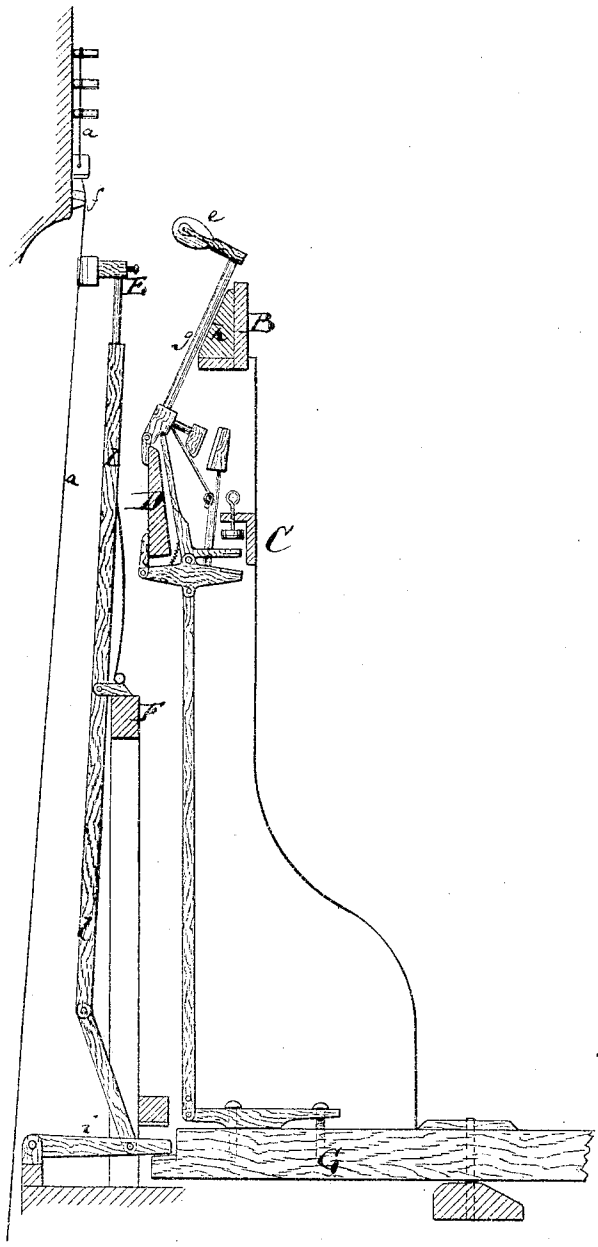
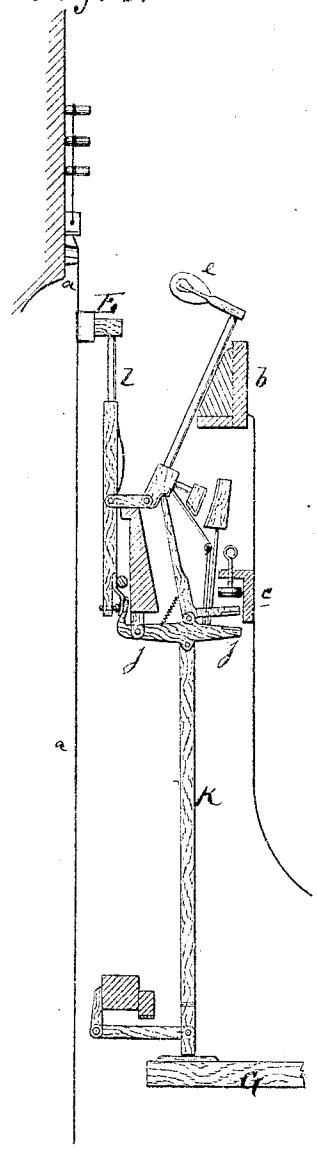


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES F. CHICKERING, OF NEW YORK, N. Y.

IMPROVEMENT IN UPRIGHT PIANOS.

Specification forming part of Letters Patent No. 121,334, dated November 28, 1871.

To all whom it may concern:

Be it known that I, CHARLES F. CHICKERING, of New York, in the county and State of New York, have invented a new and and useful Improvement in Upright Piano-Fortes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 represents a face view of my new action-frame for an upright piano. Fig. 2 is a face view of an action-frame as now used in upright pianos. Fig. 3 is a vertical transverse section of my improved action-frame and action. Fig. 4 is a similar view of the ordinary frame and action.

Similar letters of reference indicate corresponding parts.

This invention has for its object so to improve the construction of upright piano-forte action-frames that more room is obtained for the hammers without varying the arrangement of strings or size or shape of instrument. This object is attained by arranging the hammers in a curved line and making the rails in the action-frame arched to correspond.

Fig. 2 represents clearly the former arrangement of parts to which my invention has reference. *a a* are the strings. *b* and *c* are the straight parallel upper rails of the action-frame, and the dotted lines *d* indicate where the hammers *e e* are arranged. This line of hammers, it will be seen, is straight, and the shortest, almost, that could be devised on the instrument. The consequence is that the hammers stand very close and are beveled on their faces, so their striking edges are very thin. The action becomes thereby less durable and reliable than it would be if the hammers were larger and further apart.

Fig. 1 shows my improvement. The hammers *e e* are arranged on a curved line, *f*, whereby a considerably larger space, adding about three-sixteenths of an inch for every hammer, is obtained. In order to effect this arrangement and leave the hammer-shanks *g g* all of equal length the lower rail C and the inner rail D of the action-frame must be arched to correspond with the curve of the hammers. The upper rail B of the action-frame must also be arched in the same way, so that the hammers may all strike its cushion *h* at the same angle. The dampers E in my new action are pivoted to an arched rail, F, and their shanks *l* extended down, as in Fig. 3, to be directly acted upon by the levers *i* that are in contact with the keys G. This becomes necessary in order to equalize the movement of the dampers, which would not be the case were their shanks, as hitherto, directly acted upon by the heads *j* of the risers *k* that move the hammers.

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

1. The upright piano-forte having its hammers arranged on a curve, substantially as and for the purpose herein shown and described.

2. The arched rails B, C, and D of the action-frame, arranged as described to permit the application of the hammers on a curved line, as specified.

3. The damper-frame having the arched rail F, substantially as and for the purpose herein shown and described.

Witnesses:
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(112)