A. O. HALL.
Piano-Hammer.

No. 199,537. Patented Jan. 22, 1878.

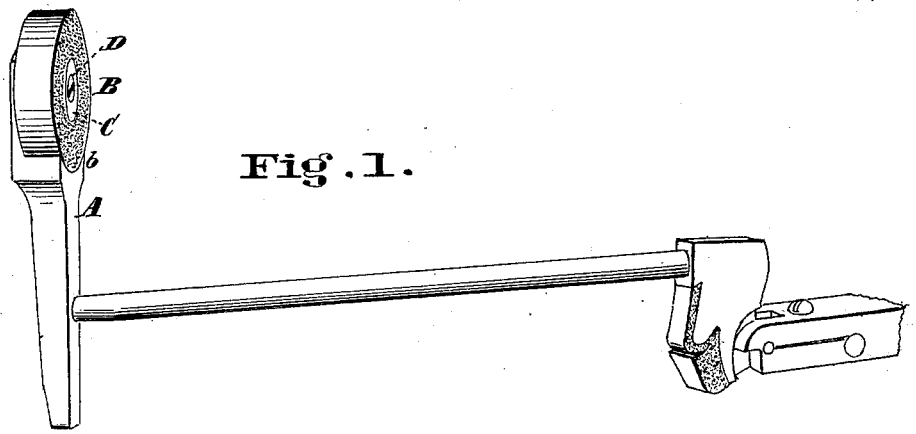


Fig. 1.

Fig. 2.

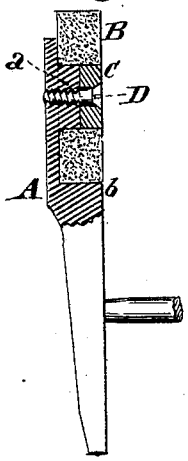


Fig. 3.

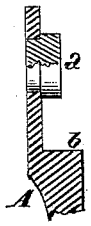


Fig. 4

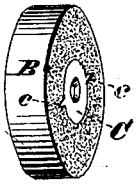
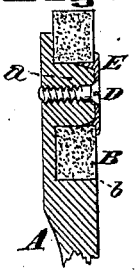


Fig. 5.



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UNITED STATES PATENT OFFICE.

ALVIN O. HALL, OF CINCINNATI, OHIO, ASSIGNOR TO HIMSELF AND GEORGE C. SMITH, OF SAME PLACE.

IMPROVEMENT IN PIANO-HAMMERS.

Specification forming part of Letters Patent No. **199,537**, dated January 22, 1878; application filed December 8, 1877.

To all whom it may concern:

Be it known that I, ALVIN O. HALL, of Cincinnati, county of Hamilton, State of Ohio, have invented an Improvement in Piano-Hammers, of which the following is a specification:

My invention relates to the construction of piano-hammers such as are shown in the patent granted George C. Smith and myself October 30, 1877, No. 196,712—that is, hammers having adjustable felt-covered disks, capable of presenting a surface of good soft felt for contact with the piano-strings after another part of the felt on the disk has been beaten hard by repeated blows; and my invention consists in a certain peculiar formation or construction of the hammer-head, the adjustable disk, and the means of connection between the two, by which the strain from each blow is received directly and solidly by the wooden hammer-head, and the fastening thus protected from the effects of the blows.

By my invention great simplicity and cheap manufacture are attained, and extreme lightness and stiffness of structure, while at the same time it affords the requisite capability for durability in use without deterioration.

Furthermore, my construction enables the hammer-head and disk to be thin, or, in other words, occupy but little space in cross-measurement.

Referring to the accompanying drawing, Figure 1 is a perspective view of a piano-hammer embodying my invention. Fig. 2 is an axial section through the hammer-head and disk. Fig. 3 illustrates a modification in the construction of the hammer-head, and Fig. 4 a modification in the construction of the disk. Fig. 5 is a modification of head and fastening.

A is the hammer-head, and B the adjustable disk of felt. A circular projection, *a*, is formed upon the hammer-head, as shown, which snugly fits the hole in the disk, and forms a hard center for the support of the felt at the proper distance from the periphery of the disk. This hard center does not extend entirely through the felt, for I fit into the felt a small disk, C, preferably of metal, which, when secured in place, provides a hard center for the felt under that portion of it not supported by the projection *a*.

When this disk C is made of wood, as in Figs. 1, 2, 3, and 5, it is glued firmly into the hole in the felt; and when made of metal it has ears *c*, as shown in Fig. 4, which, when forced into the felt, give the necessary means of security between it and the felt.

Both the disk C and the projection *a* are centrally perforated for the reception of the screw D, which passes through, as shown. This screw secures the disk in any position to which it may be adjusted.

I prefer that the hammer-head be so formed, as shown, that the felt rests snugly against a corresponding concave shoulder, *b*, so that the hard center *a* C is thereby assisted in the support of the blows on the disk.

I prefer that the projection *a* shall be formed in one piece with the hammer-head A; but it may be inserted into the hammer-head and firmly glued therein, as shown in Fig. 3.

In Fig. 5 the projection *a* extends entirely through the disk of felt, but is conical at the end, to admit the rim of a metallic washer, E.

I claim—

The adjustable-disk piano-hammer herein shown and described, having a head with a projection adapted to enter and support the disk, a disk having a hard center throughout part of its width, and a screw to secure the disk, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

ALVIN O. HALL.

Witnesses:

JOHN E. JONES,

J. L. WARTMANN.