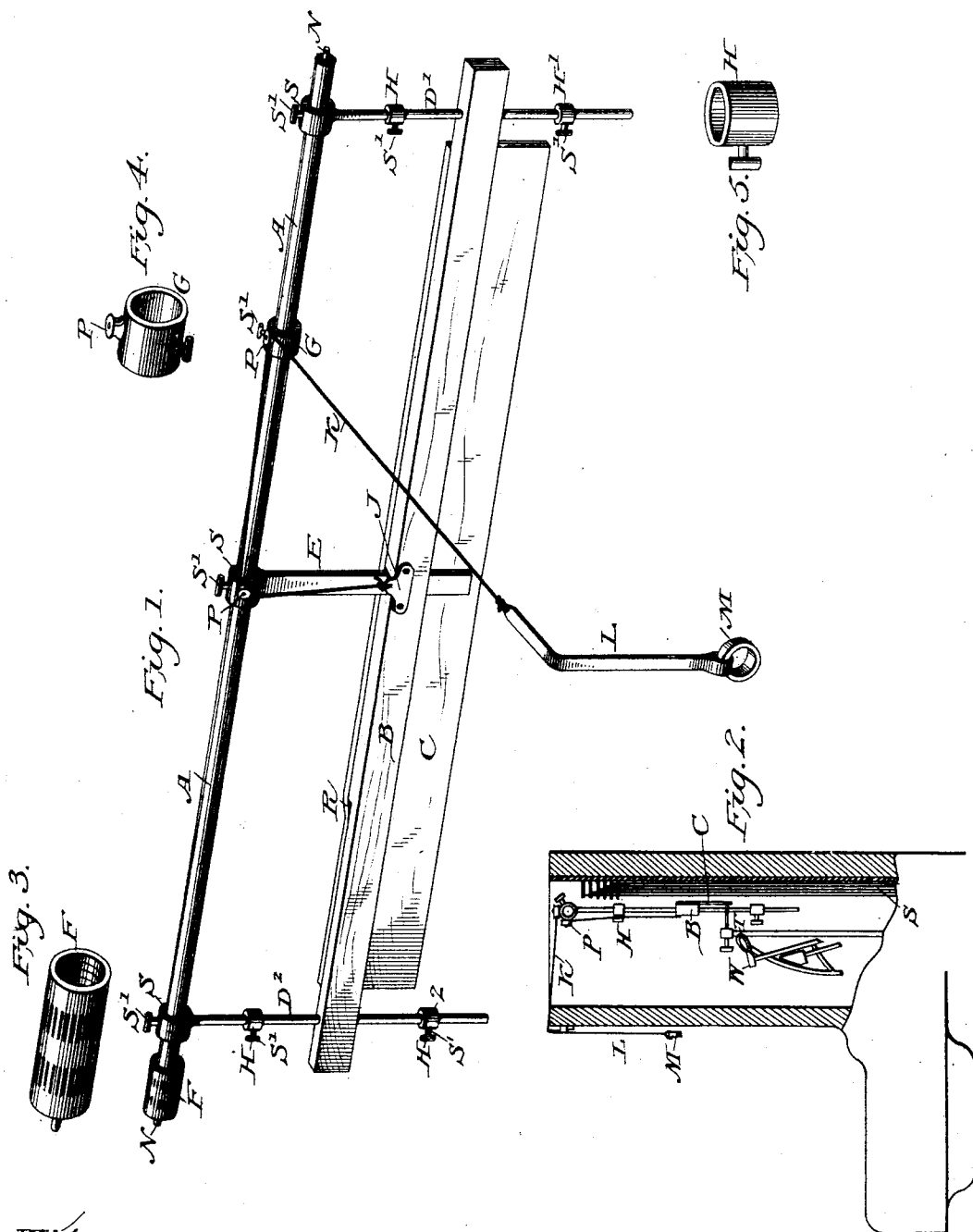


(No Model.)

L. A. BETTENDORF.
PIANO MUTE.

No. 511,747.

Patented Jan. 2, 1894.



Witnesses.

L. B. Smith.
Geo. T. Dorrance.

Inventor.

L. A. Bettendorf

UNITED STATES PATENT OFFICE.

LEO A. BETTENDORF, OF ST. PAUL, MINNESOTA.

PIANO-MUTE.

SPECIFICATION forming part of Letters Patent No. 511,747, dated January 2, 1894.

Application filed March 28, 1893. Serial No. 467,962. (No model.)

To all whom it may concern:

Be it known that I, LEO A. BETTENDORF, a citizen of the United States, residing in the city of St. Paul, county of Ramsey, and State of Minnesota, have invented certain new and useful Improvements in Piano - Mutes, of which the following is a specification.

My invention relates to improvements for suspending an adjustable and controllable apron of felt or other suitable fabric or material between the hammers and strings of a piano by which the volume of sound of the instrument may be reduced from a loud to a soft tone when desired; and the object of the invention is to provide adjusting mechanism for suspending the apron in a way that will admit of its being used or not at the pleasure of the player without the necessity of entirely removing the attachment at any time. This object I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1, shows in perspective a side elevation of the improvements; Fig. 2, a partial sectional elevation of an upright piano with my improvements attached to it. Figs. 3, 4 and 5, show detached views of devices used in connection with the improvements.

In such drawings A designates a round or angular bar to which, near its ends, are connected pendent rods D D by means of sleeves S which may slide on the bar and be held in positions of adjustment by set-screws S'; and at or about the middle of the bar A is suspended a flat bar or arm E by means of a similar sleeve S engaging the bar and held in position by means of a set-screw S'.

B is a slat, preferably of wood, having near its ends holes for the passage of the rods D, and at the center a suitable hole for the passage of the flat bar E; so that the slat B may be made to slide in vertical direction and be guided by the pendent members or rods D and E. To this slat is attached an apron C which may be of felt or other textile fabric or of any material adapted to serve as a mute for diminishing the volume of sound when placed between the hammers and strings at the points of striking.

On the rods D are adjustable sleeves H one above and one below the slat B on each rod, and these are provided with set-screws S', for

holding them in adjustment. The purpose of these sleeves is that of shortening or lengthening the extent of vertical movement of the slat B and so to adjust its movement to the necessities of a particular piano in which the device may be placed. The upper sleeves H prevent the slat from being raised farther than necessary when the mute is lifted from the striking point of the hammers; and the two lower sleeves prevent it from sliding downward off the rods or from descending below operative position.

At the middle of the slat is attached to a plate J, the end of a cord K which passes upward over a pulley P, on the sleeve S, thence along the bar A over a second pulley P on an adjustable sleeve G having a set-screw S' for holding it in place; and thence the cord passes toward the front of the piano and is attached to a ribbon L which latter extends through the opening between the cover and front of the piano; to the outer end of this ribbon is attached a ring M which may be held by a hook at the front of the piano; or other suitable devices may be provided for holding the cord in place when the mute is elevated.

The bar A has a pointed projection N at one end and at its opposite end is provided with a cap F operating on a threaded portion of the bar and having on its outer end a pointed projection N, whereby the two pointed ends may be forced into the wooden case of the instrument by turning the cap F.

In use the apron is suspended in front of the strings V of the piano, preferably about a quarter of an inch removed therefrom, and in order that a uniform distance may be preserved between the apron and strings, the slat B is cut away, as shown at R, where the bass strings overlap the other strings of the piano. In pianos which have braces protruding in front of the strings the apron may be cut at such points to permit it to hang straight. The attachment having been put in place the player may lower the mute to operative position between the strings V and hammers W, by releasing the cord K and permitting the slat B to descend by gravity.

When the use of the mute is to be dispensed with it may be readily raised above operative position by drawing upon the cord K and fastening the ring M.

The apron in addition to diminishing the sound and tone of the piano, also serves the purpose of preserving the hammers from wear occasioned by striking directly against the strings.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a piano-mute, a horizontal bar, rods pendent therefrom, a mute and its carrier arranged to slide on the rods, and a cord and pulleys for raising and lowering the mute substantially as set forth.

2. In a piano-mute, the combination with the pendent rods on which a mute carrier may slide, of a bar for supporting them and having at one end an extensible device by which such support may be lengthened to engage the walls of the piano to hold the bar in place.

3. In a piano-mute, a fixed bar, pendent rods adjustably supported thereon, a mute-

carrier arranged to slide on the rods, adjustable sleeves on the rods for regulating and limiting the sliding movement, and a cord and connections for raising and lowering the mute, substantially as set forth.

4. In a piano-mute, the combination with the mute-carrier and its supporting bar, of pendent rods independently adjustable on the bar, and means for causing the mute-carrier to slide a controllable distance on the rods, for the purpose set forth.

5. In a piano-mute, a supporting bar, a mute-carrier suspended therefrom, a cord and pulleys for raising and lowering the latter, and a sleeve adjustable on the bar and having one of said pulleys connected to it, substantially as set forth.

LEO A. BETTENDORF.

Witnesses:

W. F. DICKINSON,
HARRY A. HAGEMAN.