

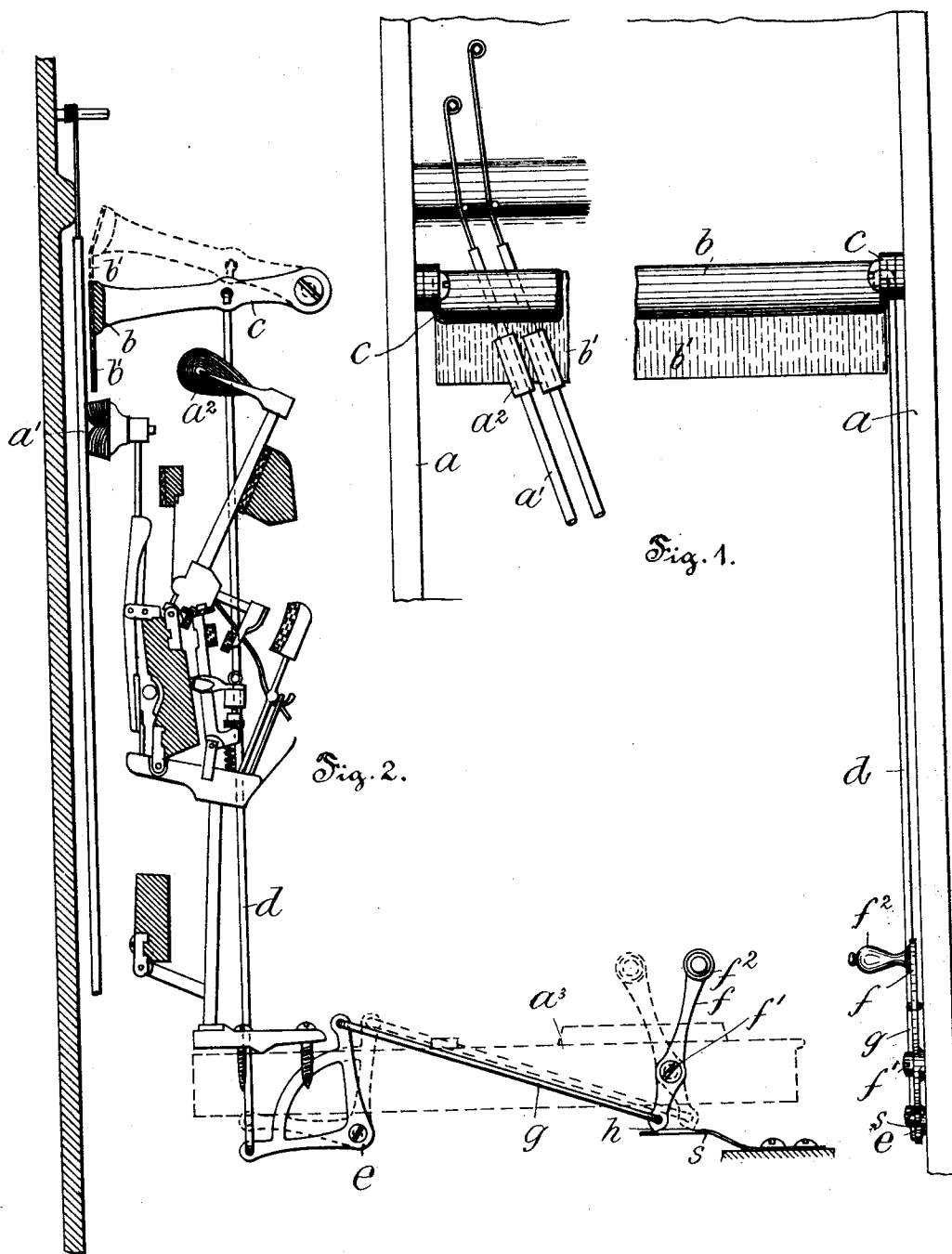
(No Model.)

O. R. TREFZ.

MUFFLING ATTACHMENT FOR UPRIGHT PIANOS.

No. 476,842.

Patented June 14, 1892.



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# UNITED STATES PATENT OFFICE.

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## MUFFLING ATTACHMENT FOR UPRIGHT PIANOS.

SPECIFICATION forming part of Letters Patent No. 476,842, dated June 14, 1892.

Application filed March 9, 1892. Serial No. 424,277. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO R. TREFZ, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Muffling Attachments for Upright Pianos, of which the following is a specification.

My invention has relation in general to muffling attachments for pianos, and more particularly to mechanism for shifting the muffling device or curtain into and out of action.

The principal objects of my invention are, first, to provide an efficient and comparatively inexpensive muffling attachment for upright pianos, whereby sound may be deadened or muffled without in any wise affecting the action of the instrument; second, to provide simple, durable, and compact mechanism accessible from the keyboard for shifting the muffling device or curtain into and out of operative position; third, to provide such mechanism with means for automatically retaining the muffling device and its accessories in both operative and inoperative positions.

My invention consists of a movable muffling device provided with a curtain adapted for insertion between the hammers and wires, an operating-rod for said device, a bell-crank lever connected with said rod, a pivotal hand-lever accessible from the keyboard, and a link connecting the bell-crank and hand-levers.

My invention further consists of a movable muffling device provided with a curtain adapted for insertion between the hammers and wires, an operating-rod for said device, a bell-crank lever connected with said rod, a pivotal hand-lever accessible from the keyboard, a link connecting the bell-crank and hand-levers, and a spring-and-knuckle bearing for automatically retaining the muffling device in operative or inoperative position.

My invention further consists of the improvements hereinafter described and claimed.

The nature and objects of my present invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a front view of so much of the interior of an upright piano as is necessary to illustrate a muffling device embodying features of my invention in application thereto; and Fig. 2 is a side view of the right-hand end of Fig. 1, illustrating in full lines the position of the parts of the mechanism of the muffling device when the latter is in operative position and showing in dotted lines the position of the parts when the muffling device is in inoperative position.

In the drawings, *a* is a portion of the respective end walls of the case of an upright piano.

*a'* are the strings, *a<sup>2</sup>* are the hammers, and *a<sup>3</sup>* are the keys.

*b* is a muffler-bar provided with a curtain or apron *b'*, adapted for insertion between the hammers *a<sup>2</sup>* and strings *a'* in order to deaden or muffle the sound of the piano. In the present instance this muffler-bar *b* is carried by the free ends of a twin pair of rocker-arms *c*, pivotally connected with the respective end walls of the piano-case. However, this bar *b* may be supported in any preferred manner that will afford it a sufficient range of motion to permit of the insertion or withdrawal of the curtain *b'* from between the hammers *a<sup>2</sup>* and strings *a'*.

*d* is an operating-rod, connected at its upper extremity with one of the rocker-arms *c* and at its lower extremity with a bell-crank lever *e*, pivotally connected with one of the end walls of the case.

*f* is a hand-lever pivotally connected at *f'* with the end wall of the case *a* and provided at the upper end with a hand-knob *f<sup>2</sup>*, accessible from the keyboard to the hand of the pianist.

*g* is a link pivotally connected at one extremity to the bell-crank lever *e* and at the other extremity to the hand-lever *f*.

*s* is a spring secured at one end to the casing and having its free extremity in engagement with a knuckle *h*, formed at the lower end of the hand-lever *f*.

When it is desired to muffle the sound of the piano—for example, when the pianist is practicing and wishes to avoid annoying others—the hand-lever *f* is pushed by the pian-

ist into the position shown in full lines in Fig. 2. This movement of the hand-lever *f* causes the link *g*, bell-crank lever *e*, and rod *d* to shift the muffler-bar *b* into position for  
 5 permitting the apron or curtain *b'* to occupy a position between the strings *a'* and hammers *a*<sup>2</sup>, so that the latter impinge upon or against the apron *b'* instead of against the strings *a'*, whereby the sound of the piano is  
 10 diminished or muffled without in any wise interfering with the action of the instrument. The apron *b'* may be shifted out of range of the hammers *a*<sup>2</sup> by pushing the lever *f* in the reverse direction, whereupon the full sound  
 15 or tone of the piano is restored. In either case the spring *s* contacts with one of the operative faces of the knuckle-bearing *h*, and thus automatically maintains the parts in the required position until they are again shifted  
 20 by the hand of the pianist.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a muffling attachment for upright pianos, of a curtain or apron  
 25 adapted for insertion between the hammers

and wires, link-work for operating said curtain or apron, a pivotal hand-lever having one extremity accessible from the keyboard and the other extremity provided with a  
 30 knuckle and attached to said link-work, and a spring for engaging said knuckle, substantially as and for the purposes set forth.

2. The combination, in a muffling attachment for upright pianos, of a curtain or apron  
 35 adapted for insertion between the hammers and wires, link-work for operating said curtain or apron, a pivotal hand-lever having one extremity connected with said link-work and the other extremity accessible from the  
 40 keyboard, and a spring-and-knuckle bearing for automatically retaining the curtain or apron in operative or inoperative position, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my  
 45 signature in the presence of two subscribing witnesses.

OTTO R. TREFZ.

Witnesses:

RICHARD C. MAXWELL,  
 HERMANN BORMANN.