

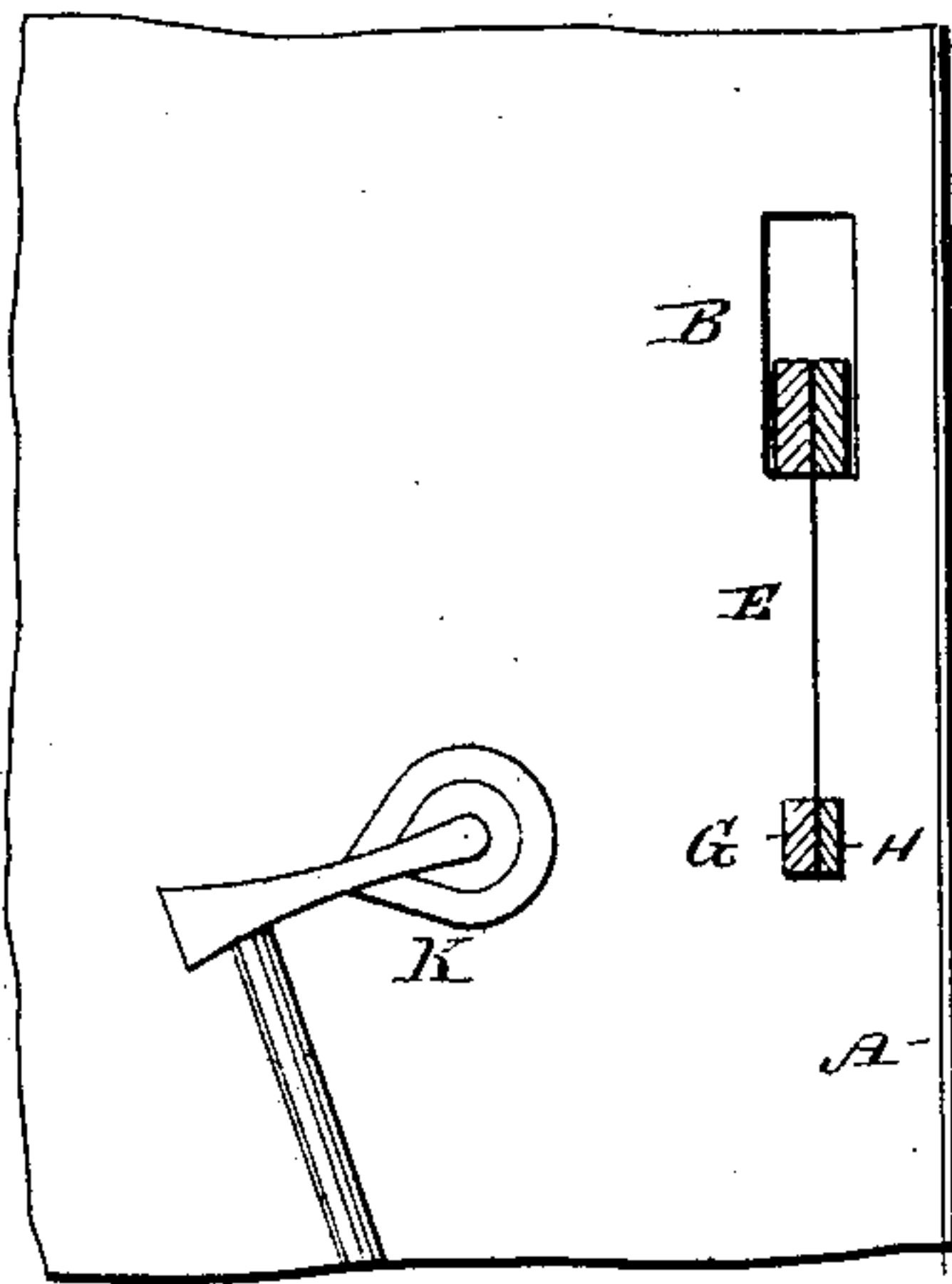
(No Model.)

E. HÖFINGHOFF.  
PIANO FORTE ATTACHMENT.

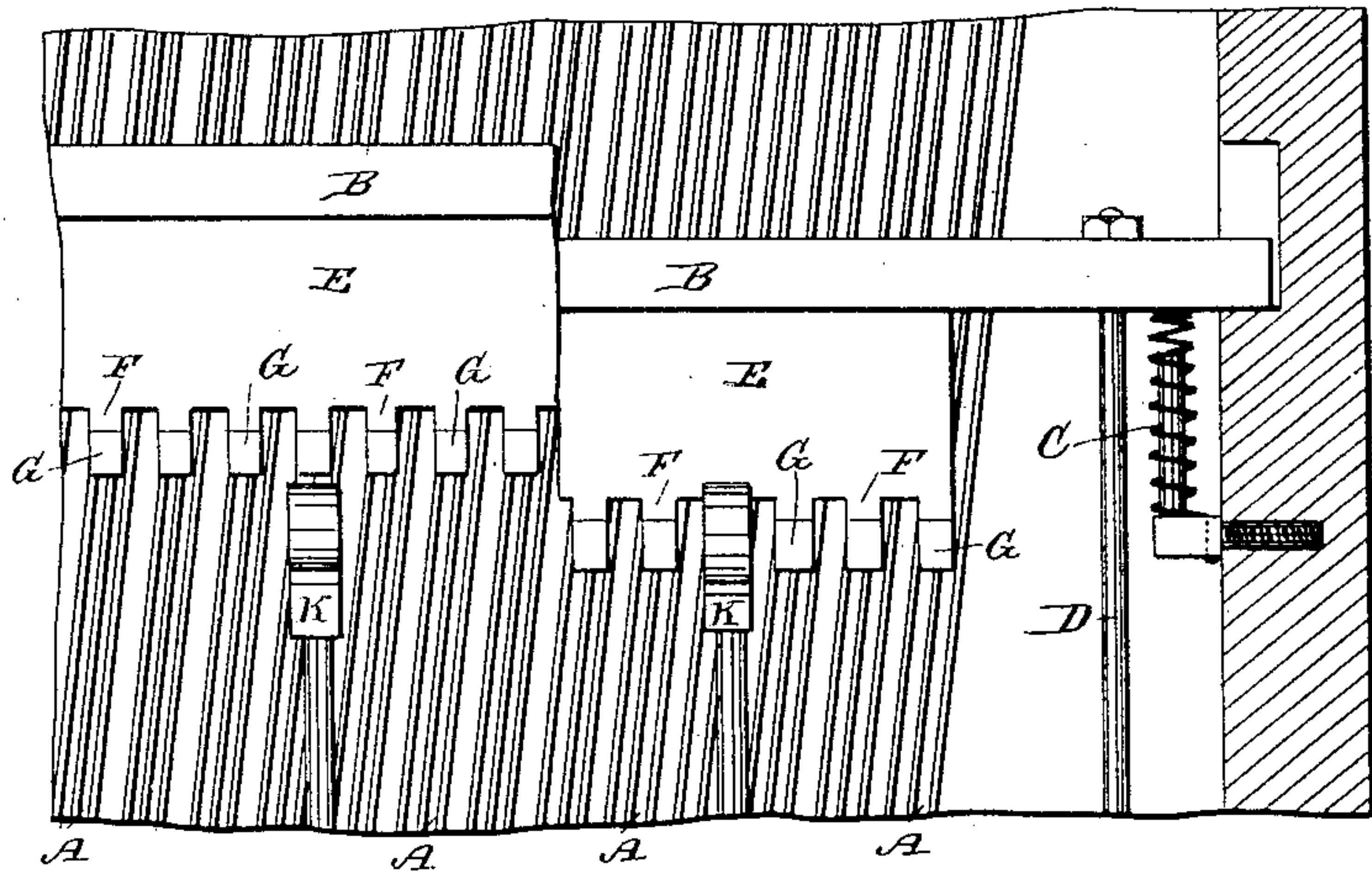
No. 308,495.

Patented Nov. 25, 1884.

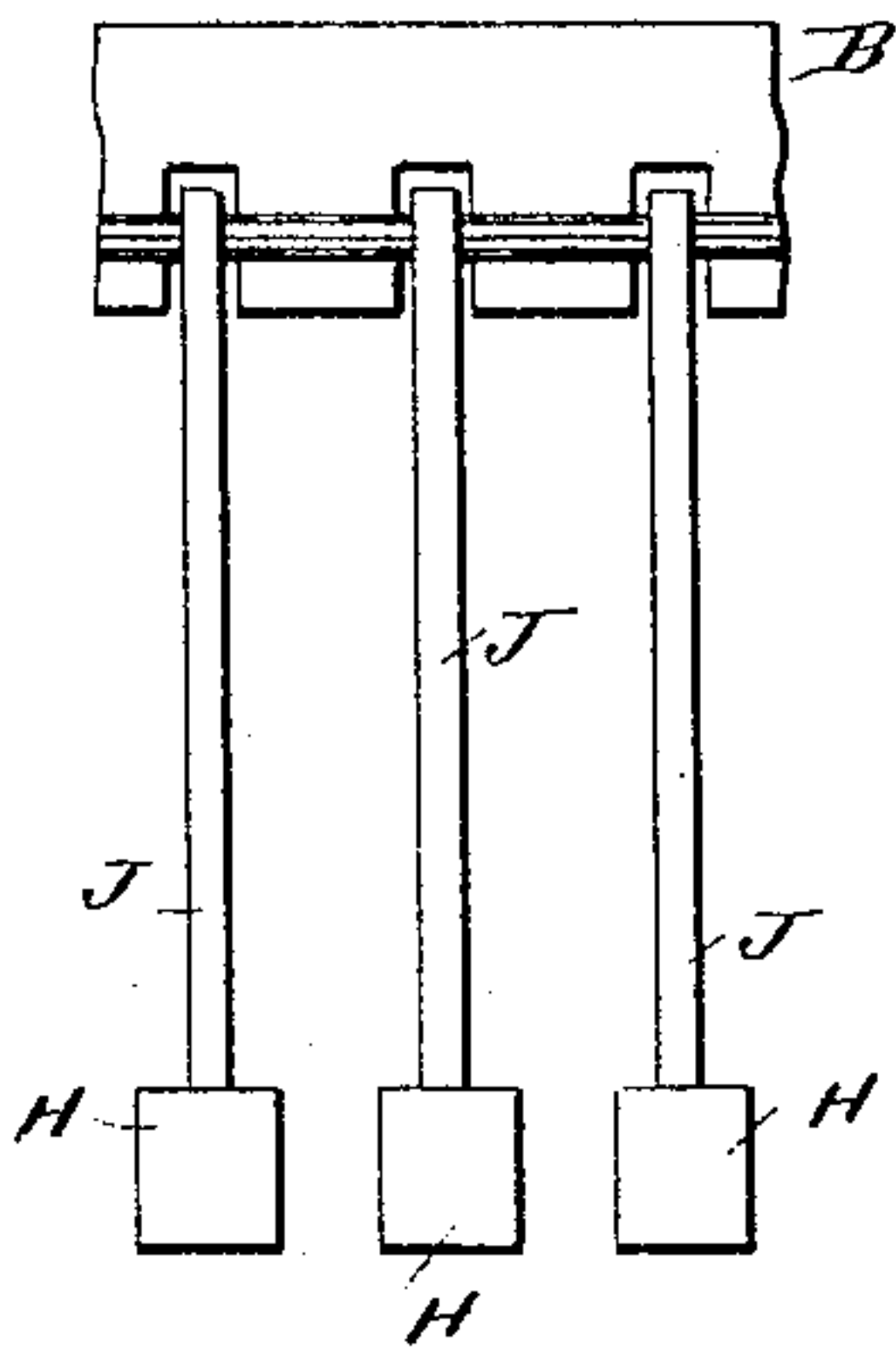
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EMIL HÖFINGHOFF, OF BARMEN, GERMANY.

## PIANO-FORTE ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 308,495, dated November 25, 1884.

Application filed February 15, 1884. (No model.) Patented in Germany August 28, 1883, No. 3,803, and in France September 25, 1883, No. 145,337.

*To all whom it may concern:*

Be it known that I, EMIL HÖFINGHOFF, of the town of Barmen, Germany, have invented a new and useful Improvement in Piano-Fortes, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved attachment for piano-fortes, by means of which attachment tones resembling those produced on a harp, or tones produced by a quartet of string instruments, (violin, alto, violoncello,) or tones resembling those of the organ or harmonium can be produced.

The invention consists in the combination, with a piano, of a bar held to be movable across the strings, to which bar a series of tongues are fastened, which tongues have rubber pieces on the surfaces facing the strings. By interposing the tongues between the hammers and strings the tones of the piano are changed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a cross-sectional elevation of my attachment for piano-fortes. Fig. 2 is a face view of the string-frame of a piano provided with my improved attachment, the attachment being shown in different positions. Fig. 3 is a face view of a modification of the attachment.

In front of the strings A a horizontal bar, B, is held, which is pressed upward by springs C, and is connected by a rod, D, with a pedal for moving it downward.

To the bar B a strip, E, of flexible material is secured, which projects downward, and has its lower edge notched to form a short tongue, F, for each string or cluster of unison-strings A.

To the front surface of each tongue F a hard lining, G, is secured, and to the rear surface of each tongue F a piece of soft rubber, H, is fastened. If desired, the pieces G and H can be secured to the lower ends of independent tongues or strips J, suspended from the bar B, as shown in Fig. 3. This tongue-strip and its rubber face and the independent strips and

their rubber faces form the auxiliary hammers in contradistinction to the ordinary hammers K.

If the tones of the harp, harmonium, organ, or quartet of stringed instruments are to be produced, the bar B is lowered by means of the pedal, thereby bringing the tongues F or J in such positions that the felt hammers K will strike the pieces G on the tongues, and will thus cause the rubber pieces H to strike the strings, whereby the desired tones, strongly resembling those of the above-described instruments, will be produced. As soon as the pedal of the bar B is released, the springs C raise the bar B and auxiliary hammers to such an extent that the hammers K cannot strike the tongues. If desired, the bar B can be connected with one of the two pedals usually provided on pianos.

I have shown my improved attachment combined with an upright piano; but it can also be applied, with slight modifications, on square and grand pianos.

In using my improved attachment, the player plays "arpeggio" when the harp tone is to be produced, and "legato" for the production of the tones resembling the organ and harmonium tones. It will be understood that this similarity of tone exists only so far as the color or character of the sound of the harmonium and organ is concerned, and cannot be referred to the prolonged sounding of these instruments.

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

1. The combination, in a piano provided with ordinary hammers and strings, of a series of auxiliary hammers suspended from a sliding bar parallel with the springs, and constructed and arranged as described, whereby they may be interposed between the ordinary hammers and strings, each of said auxiliary hammers having a hard plate on one face and a rubber plate on the opposite face for contacting, respectively, with the ordinary hammers and the strings, substantially as set forth.

2. The combination, in a piano provided with the ordinary strings and hammers, of



auxiliary hammers, the tongues of which are arranged in a continuous row and formed of flexible material, and the heads of which are made of soft india-rubber at the side facing the strings and of a hard material at the side facing the ordinary hammers, and constructed as described, whereby they may be interposed between the ordinary hammers and strings, substantially as set forth.

EMIL HÖFINGHOFF.

Witnesses:

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