

(No Model.)

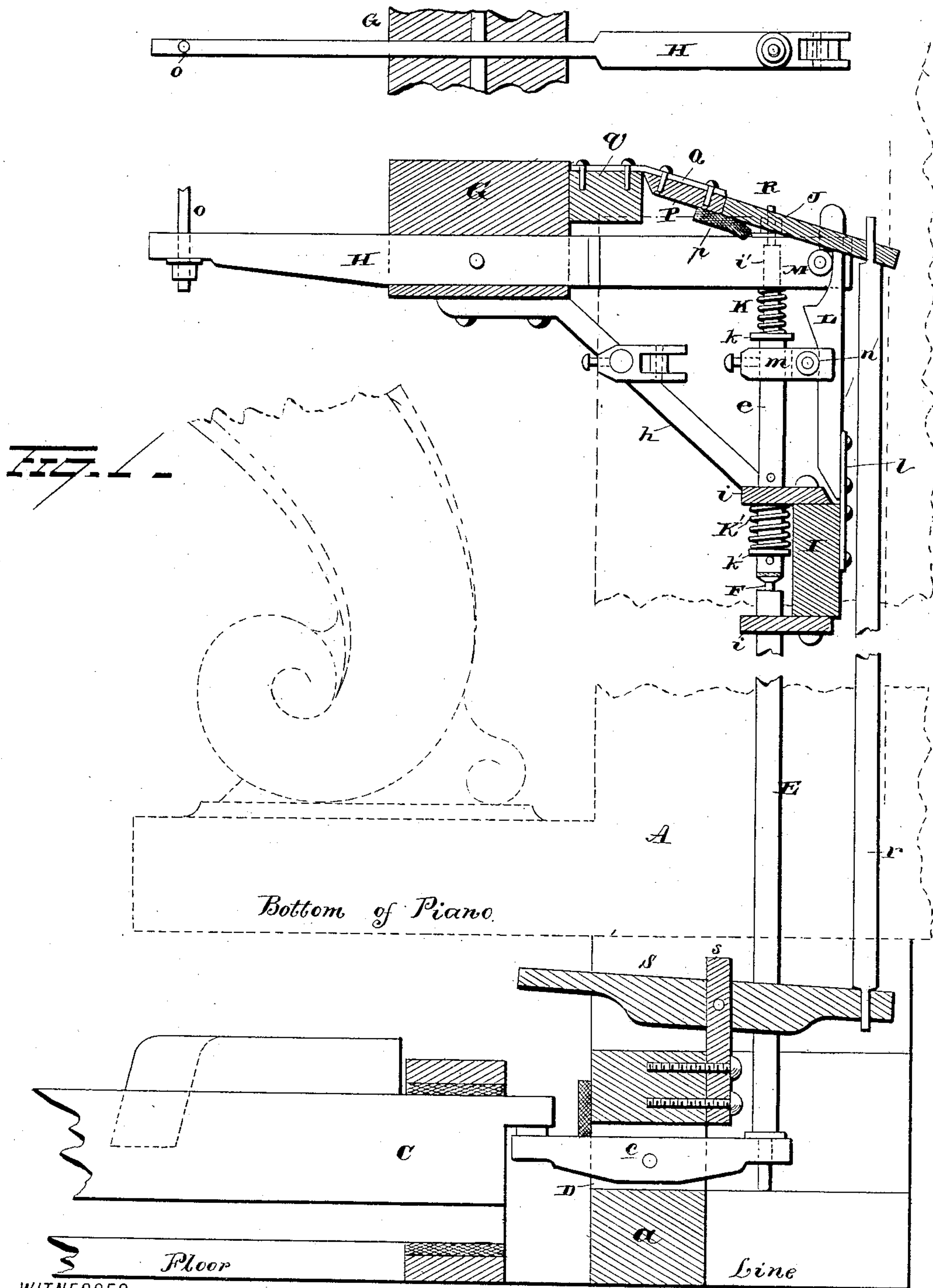
2 Sheets—Sheet 1.

J. SHAW.

PEDAL KEY ATTACHMENT FOR PIANOS.

No. 308,386.

Patented Nov. 25, 1884.



WITNESSES
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E. Howard.

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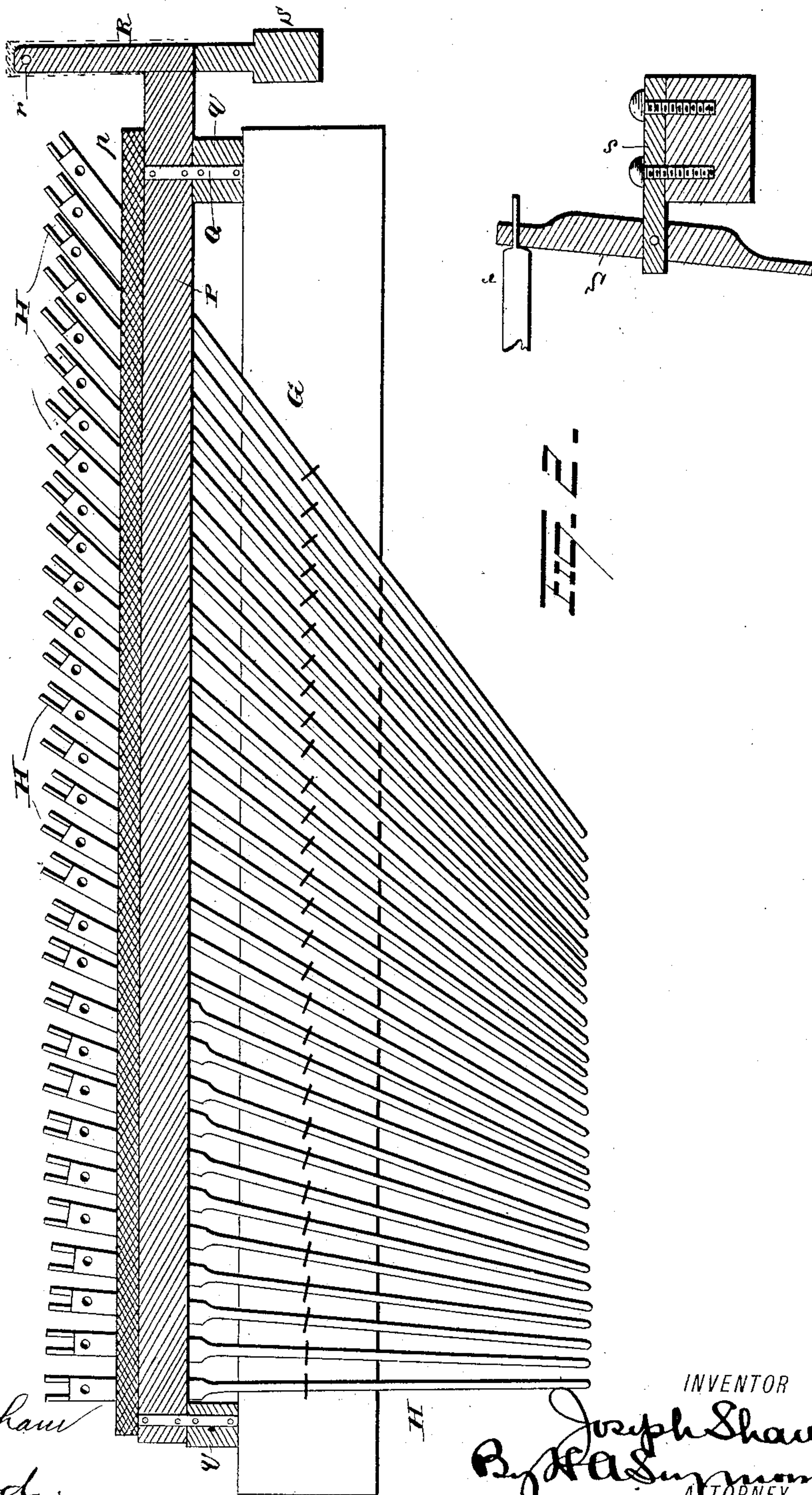
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UNITED STATES PATENT OFFICE.

JOSEPH SHAW, OF LEEDS, COUNTY OF YORK, ENGLAND.

PEDAL-KEY ATTACHMENT FOR PIANOS.

SPECIFICATION forming part of Letters Patent No. 308,386, dated November 25, 1884.

Application filed September 10, 1884. (No model.) Patented in England January 2, 1884, No. 468.

To all whom it may concern:

Be it known that I, JOSEPH SHAW, of Leeds, in the county of York, England, have invented certain new and useful Improvements in Pianos, (for which I have obtained English Letters Patent No. 468, of January 2, 1884;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in pianos, the object of the same being to provide an improved pedal-key system whereby a perfectly crisp and uniform note is produced in whatever manner the pedal is put down, and a perfect immunity from damage is obtained, no matter with what force the pedal be struck, a further object being to provide an improved pedal crescendo attachment which shall afford a simple and perfect crescendo or diminuendo for the pedal-key system.

With these ends in view my invention consists in certain features of construction and combination of parts, as will hereinafter be described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents a vertical transverse section of a piano embodying my improvements, and Fig. 2 is a plan view.

A represents the piano-case; *a*, a rail running lengthwise of the piano, and together with suitable end supports (not shown) forming a support for the case A and for a row of foot-pedals, C. The pedals C are secured to the ends of levers *c*, the latter being pivotally secured in suitable slots, D, formed in the rail *a*. In the rear ends of the levers *c* the ends of the lower stickers, E, are loosely secured, the upper ends of said stickers resting in contact with the lower ends of the upper stickers, *e*. In the upper ends of the stickers E adjusting-screws F are set for the purpose of increasing or diminishing the force of the stroke, as will appear.

G represents an upper rail running horizontally, or nearly so, lengthwise of the instrument, and provided with recesses or slots, in which an upper set of levers, H, are pivoted. To the rail G outside of the action the upper ends of iron braces *h* are firmly se-

cured, said braces forming a support for the horizontal rail I, which is firmly secured to their lower ends. Forwardly-extending rails *i* are secured to the upper and lower portions of the rail I, which rails are perforated to admit the upper ends of the lower stickers and lower ends of the upper stickers, respectively. The upper ends of the upper stickers, *e*, have an easy sliding motion in perforations *i'*, formed in the upper set of levers, H, near their rear ends, and nuts J on the projecting ends of the stickers prevent the same from drawing out. The rear ends of the levers H are held in contact with said nuts J when the parts are in their normal condition by means of spiral springs K, located on the stickers *e* immediately beneath the levers H, said springs K resting on collars *k*, rigidly secured on the stickers. A second set of spiral springs, K', are located on the stickers *e* beneath the upper guide-arm, *i*, said springs resting on collars or pins *k'* near the lower ends of the stickers. The rear ends of the levers H are bifurcated to receive the upper ends of the catches L, the latter being secured at their lower ends to the rail I by spring-joints *l*, which serve to press the catches in contact with rollers M, mounted on axles connecting the branches of the levers H, as shown. An adjustable block, *m*, carrying an anti-frictional roller, *n*, is secured on each of the stickers *e*, the rollers *n* resting in contact with the front edges of the catches L. A notch in the upper end of the catch L receives the roller M, and thereby holds the rear end of the lever H against upward motion, while the edge in contact with the roller *n* is oblique or curved forwardly, so that the upward motion of the block *m* on the sticker *e* will force the catch backwardly and release the lever H. To the front end of the lever H the pull-down wire or rod *o* is secured, which rod is also attached to the keys.

The operation is as follows: The foot when pressed down on the pedal C elevates the rear end of the lever *c*, and hence the stickers E and *e*, thereby compressing the springs K and K'. As the spring K becomes compressed, the upward motion of the block *m*, with roller *n* in contact with the front edge of the catch L, has caused the catch to recede sufficiently to release the lever H, the rear end of which now moves quickly upward in response to the ten-

sion of spring K, and pulls down on o, causing a clear note. The spring K' exerts its tension in forcing the stickers downwardly to their normal position instantly the foot is lifted from the pedal.

From the above it will be seen that the execution of that part of the stroke which acts directly upon the hammer is in no way influenced by the manner in which the foot is pressed upon the pedal, whether slowly, quickly, harshly, or gently. The tension of the spring K will inevitably determine the character of the note, thus not only causing the sound to be clear, decided, and uniform, but preventing damage to the keys and wires from harsh or overpowerful strokes.

To obtain a crescendo or diminuendo in conjunction with the note pedal system above described, I provide a rail, P, running lengthwise of the instrument just above the rear ends of the levers H, with a strip of thick felt, p, which is secured to the lower edge of the rail, and held in contact with the levers H by spring-hinges Q, which latter secure the rail, P to rearwardly-projecting blocks or arms g on the rail G. The rail P is also provided with a rearwardly-extending operating-arm, R, secured thereto at one end. A short foot pedal or lever, S, is pivoted to a suitable support, s, a little above and in front of the pedals C. The rear end of lever S is connected with the rear end of arm R by the rod r. The pedal or lever S is preferably located in a position convenient for the use of the right foot of the player. The felt p, when allowed to rest in contact with the levers H, serves to counteract the force of the spring K and produce a soft sound, but when raised from the levers by the pressure of the foot on S allows the full sound to be produced. Thus different degrees of pressure on S admit of different volumes of sound, and a perfect crescendo or diminuendo is produced at the pleasure of the player, and the action of the pedal S is entirely independent of the action of the pedals C.

It is evident that slight changes may be made in the form and arrangement of the several parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. A pedal-key attachment for pianos, consisting, essentially, of a lower series of levers or foot-pedals, an upper series of levers, stickers connecting the upper and lower series of levers, springs on the stickers for actuating the upper set of levers and returning the pedals, latches or escapements for holding and releasing the upper set of levers, and devices connecting the upper set of levers with the keys, substantially as set forth.

2. In a pedal-key attachment for pianos, the combination, with a set of foot-pedals pivotally secured to the piano case or support, and a set of spring-actuated levers pivotally secured to a rail and connected with the keys, of adjustable stickers connecting the said pedals and levers, an escapement-latch adapted to engage the levers, and an arm or block connected to the sticker for releasing the latch, substantially as set forth.

3. The combination, with a system of pedal-keys, of a crescendo attachment consisting, essentially, of a strip of felt secured to a spring-pressed rail, and a foot-pedal connected to the rail and adapted to elevate the same, in the manner and for the purpose substantially as set forth.

4. The combination, with a series of levers operated by foot-pedals and adapted to operate the keys, of a strip of felt secured to a rail, and a foot-pedal connected to the rail for the purpose of elevating the same, substantially as set forth.

5. The combination, with a series of spring-actuated levers indirectly operated by foot-pedals, of a strip of felt secured to a rail located above the levers, said felt being held in contact with the levers by springs, and a foot-pedal connected with said rail, whereby the felt is elevated from the levers at will, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOSEPH SHAW.

Witnesses:

JOHN LOWE,

EDWARD WHITELEY,

Solicitor's Clerks, Leeds.