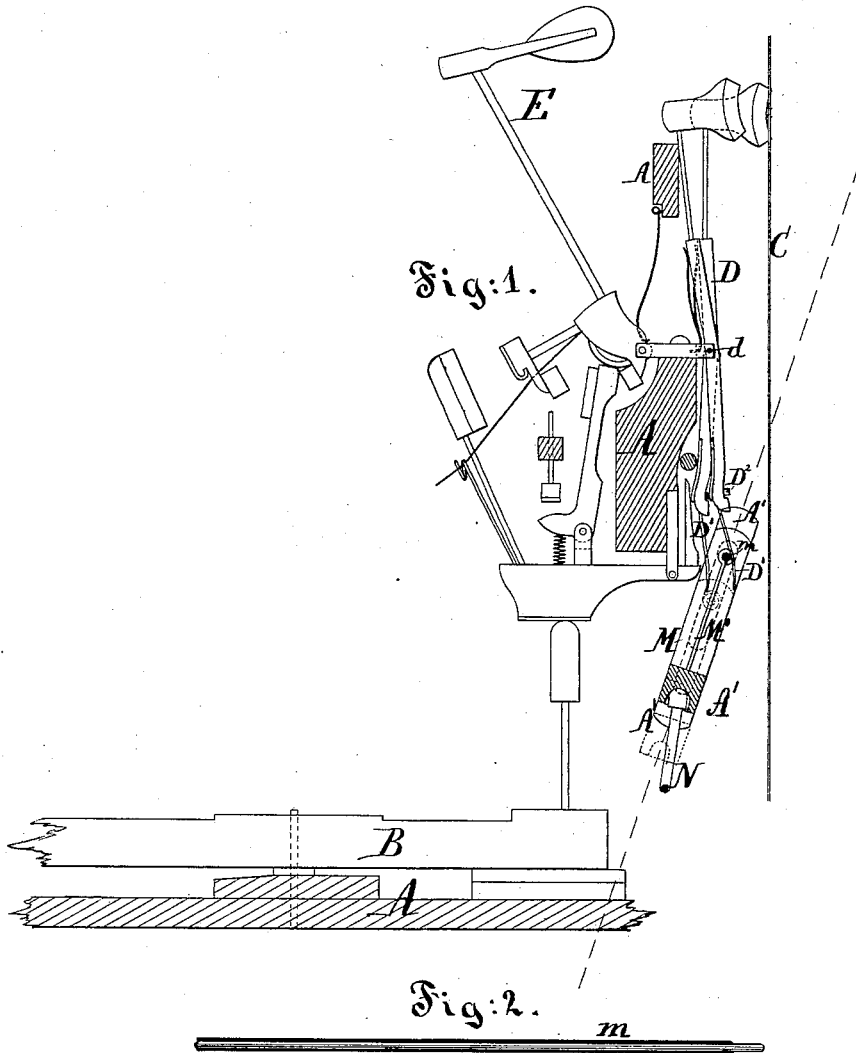


C. BOECKER & G. FINCK.
PIANO-ATTACHMENTS.

No. 194,509.

Patented Aug. 28, 1877.



Witnesses:

A. Leroy Gintner
Chas. C. Stetson

Inventors:

Charles Boecker
Gustav Finck
by their attorney
Stetson
New York.

UNITED STATES PATENT OFFICE.

CHARLES BOECKER AND GUSTAV FINCK, OF NEW YORK, N. Y., ASSIGNORS
TO CHARLES BOECKER AFORESAID.

IMPROVEMENT IN PIANO ATTACHMENTS.

Specification forming part of Letters Patent No. **194,509**, dated August 28, 1877; application filed
November 17, 1876.

To all whom it may concern:

Be it known that we, CHARLES BOECKER and GUSTAV FINCK, both of New York city, in the State of New York, have invented certain new and useful Improvements relating to Piano Attachments, of which the following is a specification:

The object of our construction is to conveniently hold up or away from the strings any number of the dampers at will. It works additional to and independently of the ordinary provision for holding away all the dampers. It serves in cases where only a few keys or any number less than the whole are to be "undamped" or played "forte," while the rest remain subject, as usual, to the restraint of the proper damper as soon as the key is liberated.

The means heretofore proposed for the purpose have operated on hooks fixed in the acting end of the damper.

Our improvement, on the contrary, serves by the aid of simple pins set in the back or opposite end of the damper.

Our improvement saves material and labor, and, by reason of the less weight of the damper, allows it to work more sprightly. Further, and especially, it mounts the mechanism in a part of the piano where there is more room for it, and free from liability to interfere with the motion of the hammers.

Our improvement applies to what are known as "upright pianos," and to any of whatever name in which the dampers and the other working parts are constructed and arranged in a corresponding manner, so as to afford a considerable space adjacent to the idle ends of the dampers.

The accompanying drawings form a part of this specification, and represent what we consider the best means of carrying out the invention as applied to an ordinary upright piano.

Figure 1 is a vertical section through the action-frame, showing the novel parts, with so much of the other parts as are necessary to indicate their relations thereto. The oblique dotted line aids to indicate the line of the oblique grooves or guides in which the frame slides up and down, which performs an important part. Fig. 2 is a portion of the rubber-covered wire on a larger scale.

Similar letters of reference indicate like parts in all the figures.

A are fixed parts; B, the keys; C, the strings, and D the damper, turning on centers *d*. E are the hammers. All these parts, as also all the parts not specifically described, may be of the ordinary construction, and may work in the ordinary manner, except in the point now to be explained.

D¹ is a wire set in the lower or idle end of each damper, and slightly bent and flattened, as shown. M is a yoke or frame analogous to a saw-frame, adapted to slide up and down in inclined guides A' on the piano-frame, being operated by a rod, N, which connects with a treadle. (Not represented.) A wire, *m*, coated with india-rubber, is stretched across the top of the yoke M, and supported at intervals by brackets M', forming a part of the yoke. The wire or cord *m* moves up and down in an inclined path as the proper treadle or other operating means acting on the rod N is depressed and released by the player. The yoke M and its connections rest with the wire *m* close below and a little back of the lower ends of the wire D¹.

When, at any moment, the player wishes to render a few keys "hard" or "forte," he presses on such keys, thus bringing their wires D¹ a little on the other side of the path of the wire *m*, and then, by acting on the treadle, elevates the yoke M, and with it the wire *m*, or an equivalent strip of sheet metal or the like extending across the yoke, as shown, thereby catching the wires D¹ of those dampers and holding them, so that those dampers are inoperative, and the corresponding keys are undamped or hard, while all others remain unaffected.

The inclination of the guides A' and the corresponding inclined travel of the yoke M and the wire or stop *m* carry the wires D¹ of the selected keys farther backward than their ordinary movement, and the entire mechanism is thus out of the way of the subsequent playing.

When thus conditioned all the keys may be played as usual, and only those the dampers of which are thus held will continue to sound after their respective keys are released.

On the liberation of the treadle or other

operating means acting on the rod N, the yoke M with its wire *m* immediately slides down in the guides A', and all the keys serve again, as usual.

The coating of the wire *m* with rubber may be effected by a coating of rubber cement, allowed to become partially dried, thus making the wire "tacky" or slightly adhesive, and then winding thereon a layer of rubber in the form of thread wound helically, or, if preferred, in the form of a sheet simply wrapped around and cemented. A little thickness of rubber will suffice.

Silk has been before used in analogous situations; but we have found the fibers of the silk liable to fray with use, and to involve difficulties which our rubber coating will avoid.

Any mechanism employed to engage with hooks on the working ends of the dampers is obviously liable to interfere with the motion of the hammers. This is particularly the case when arms are required at short intervals to support the wire, which, in such position, corresponds to our wire *m*. Such arms, standing in the necessarily narrow space between the hammers, involve the necessity for great care to avoid any slight derangement causing them to touch the hammers and impede their movement.

Our improvement allows ample space without possibility of mischief. It also greatly facilitates repairs of any of the parts.

Many modifications may be made without departing from the principle or sacrificing the usefulness of the invention. We prefer to connect the rod N to the yoke M by simply

socketing the rod into a cavity in the yoke, and providing an intermediate layer of felt liberally treated with black lead. But, instead of a single socket, the rod N may be branched and made to form the contact with the yoke at two or more widely-separated points. Such modification would tend to prevent the yoke from becoming twisted and bound. Springs may be employed to urge down the yoke M in addition to gravity.

We can employ a cord or even a strip of sheet metal in place of our wire *m*; but any material there employed should be coated with rubber to soften the contact of the extensions D¹ therewith.

We have shown a screw, D², as holding the extension D¹ in the idle end of each damper, and prefer to so hold them, although the device will serve if the wires are simply set firmly in any other manner.

We claim as our invention in pianos—

In combination with the yoke M, arranged to be moved across the path of the damper-extensions D¹, as shown, the rubber-coated wire *m*, adapted to arrest and hold any desired dampers out of use at will, and to soften the contact without liability to fraying, as herein specified.

In testimony whereof we have hereunto set our hands this 15th day of November, 1876, in the presence of two subscribing witnesses.

CH. BOECKER.
GUSTAV FINCK.

Witnesses:

A. HENRY GENTNER,
CHARLES C. STETSON.