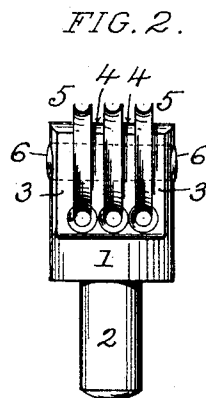
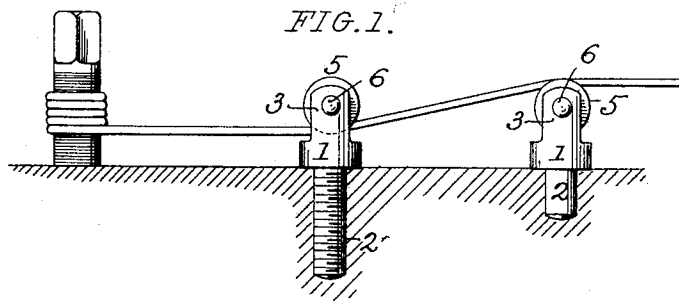


(No Model.)

J. W. REED.
PIANO AGRAFFE.

No. 464,994.

Patented Dec. 15, 1891.



ATTEST:

Alanson H. Reed.

by

M. W. Byrne.

INVENTOR:

John W. Reed,

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Attorney.

UNITED STATES PATENT OFFICE.

JOHN W. REED, OF CHICAGO, ILLINOIS.

PIANO-AGRAFFE.

SPECIFICATION forming part of Letters Patent No. 464,994, dated December 15, 1891.

Application filed June 29, 1891. Serial No. 397,772. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. REED, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Piano-Agraffes; 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.

This invention relates to the agraffes for piano-fortes, the object of the present improvement being to provide an improved construction of such agraffes, in which the frictional resistance to the passage of the strings during the operation of tuning the piano is reduced to a minimum, and the sudden jerking of the strings, as well as the frequent stretching or elongation of the strings between the tuning-posts and the string-bridges, is entirely avoided. I attain such object by the construction of parts illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation illustrating my improved agraffe in use both as an agraffe proper and as a string-bearing agraffe, and Fig. 2 an enlarged front elevation of the agraffe detached.

Similar numerals of reference indicate like parts in both views.

Referring to the drawings, 1 represents the main base, having a pendent extension or shank 2, screw-threaded or otherwise, by which the agraffe is attached in place on the piano-frame.

In the present invention the upward extension of the agraffe is preferably comb-shaped, so as to form the series of vertical pivot-bars 3 and 4, between which is arranged the series of independent anti-friction rollers or sheaves 5, that constitute the string-bearings

for the agraffe, and are secured in place by a transverse pivot pin or screw 6, that passes through the pivot-bars 3 and 4 and the axis of the rollers or sheaves, as clearly indicated in the drawings.

Usually there will be three rollers or sheaves used in each agraffe to correspond with the usual three-string arrangement to each note in an octave of the piano; but it is evident that my invention is capable of modification to suit any other arrangement of the piano-strings, and in some cases the intermediate bars or posts 4 may be omitted without departing from the spirit of my invention.

I am aware that prior to my invention the strings of pianos have been arranged to pass around sheaves that were made adjustable to strain or tune such strings conjointly, such forming the subject-matter of German patent No. 20,016. I therefore make no claim to any such arrangement; but,

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

1. A piano-agraffe comprising a base 1, pendent shank 2, upwardly-extending pivot-bars 3, and anti-friction sheaves 5, the same forming a bearing for the individual strings, in combination with individual tuning-pins, substantially as set forth.

2. A piano-agraffe comprising a base 1, pendent shank 2, upwardly-extending pivot-bars 3 and 4, and a series of anti-friction rollers or sheaves 5, journaled between said bars, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. REED.

Witnesses:

ROBERT BURNS,
ALANSON H. REED.