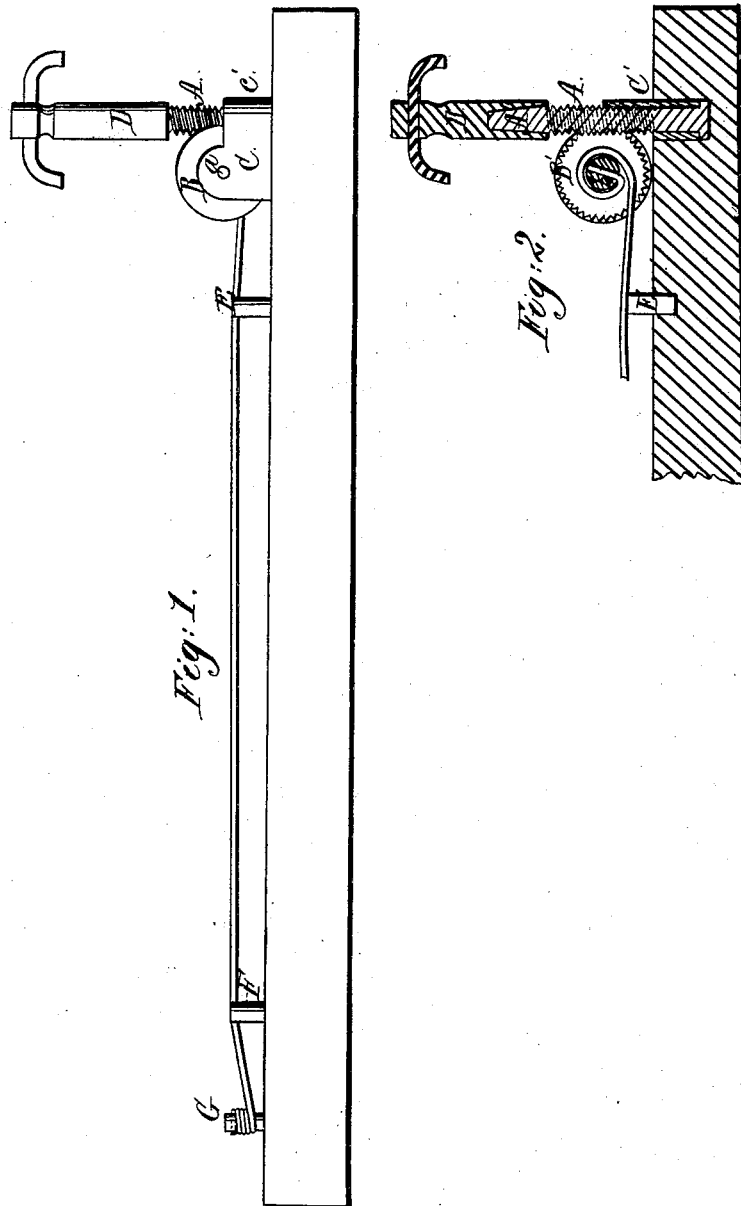


J. S. Ives,
Stringing Pianos,
No 3,403, Patented Jan. 6, 1844



UNITED STATES PATENT OFFICE.

J. SHALER IVES, OF BRISTOL, CONNECTICUT.

TUNING-PIN FOR PIANOFORTES.

Specification of Letters Patent No. 3,403, dated January 6, 1844.

To all whom it may concern:

Be it known that I, J. SHALER IVES, of Bristol, in the county of Hartford and State of Connecticut, have invented a new and
5 useful Manner of Straining the Strings in the Act of Tuning Pianofortes and of other Stringed Musical Instruments; and I do hereby declare that the following is a full and exact description thereof.

10 In my improved method of straining the strings of piano-fortes, &c., instead of the ordinary tuning pin, I employ, with each string, a tuning pin which has a screw cut on it, intended to operate as an endless screw
15 upon a wheel which turns on pivots in a proper metallic bearing. The worm wheel has a groove turned in it for the purpose of receiving the wire which is to be strained thereon. The lower part of the tuning pin
20 is inclosed by a metallic socket which is driven into the tuning pin block, where it is held permanently.

Figure 1, in the accompanying drawing, is a side view of a piano-forte string, with
25 the improved attachments; and Fig. 2, is a section through one of the pins, and through a worm-wheel.

A, is the tuning pin with a screw thread cut on it, which engages with a corresponding
30 thread on the face of the worm-wheel, B. This wheel turns on pivots, *a*, in the metal support, C, which may be made of sheet brass, or other suitable material, so bent as to form a socket at C', to receive
35 the lower end of the tuning pin, such socket

being driven into the tuning pin block, and holding the apparatus firmly in its place. The top, A'', of the tuning pin is squared, to receive the key, D.

In Fig. 2, the letter B', is placed upon the
40 part that would constitute one side of a groove turned in the worm-wheel to admit the string, and to form a shaft, *b*, on which it is to be wound, a hole being drilled
45 through said shaft to hold the wire, as shown in the drawing. It will be seen, that by this arrangement the wire may be effectually
50 tightened, that the strain may be given with the greatest exactness, and that the pin cannot be turned back by the tension of the
55 string.

E, and F, represent the bridges over which the string is strained.

Having thus fully described the manner in which I form the respective parts concerned in the tuning of piano-fortes, and
55 other instruments of a like character, and shown the operation thereof, what I claim as new therein, and desire to secure by Letters Patent, is—
60

The manner of forming and combining the tuning pin, the worm-wheel with its
65 groove, and the metallic support in which they turn, so as to receive and give tension to the respective wires, as herein set forth.

JOS. S. IVES.

Witnesses:

IVORY PECK,
JOSIAH T. PECK.