

M. DELANEY.
Piano Tuning-Pins.

No. 152,470.

Patented June 30, 1874.

Fig. 1.

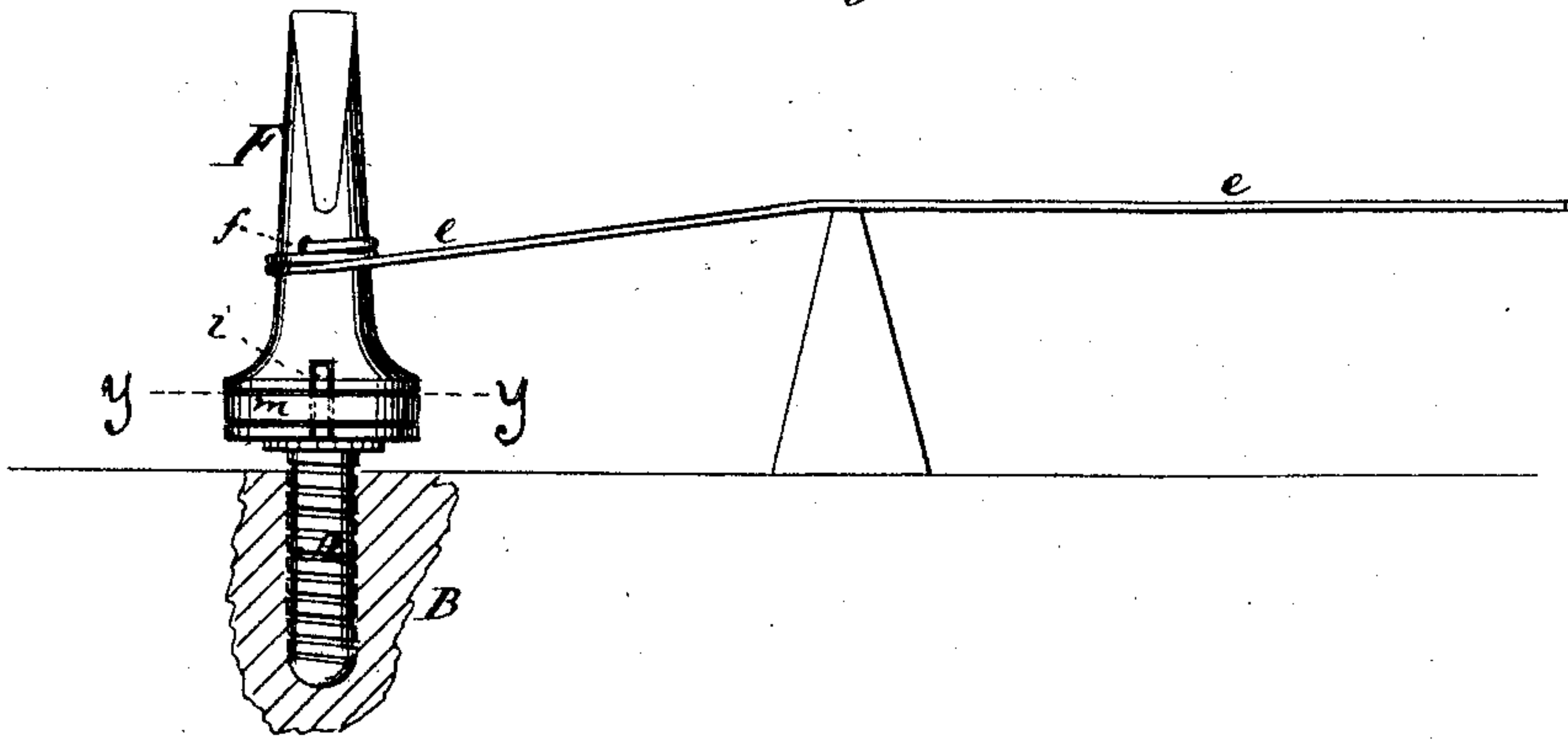


Fig. 2.

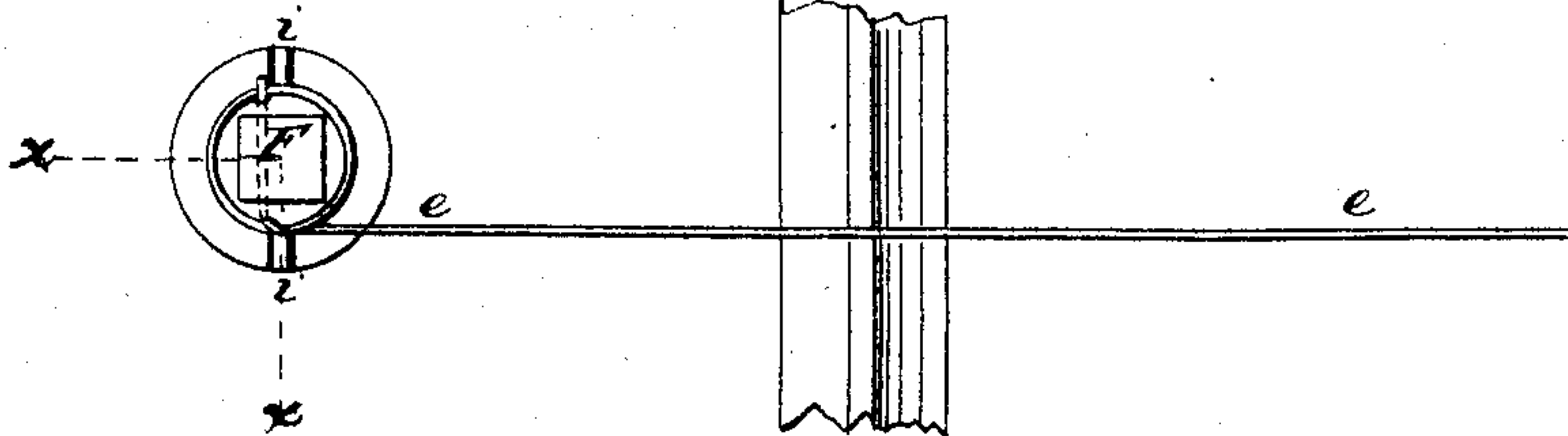


Fig. 3.

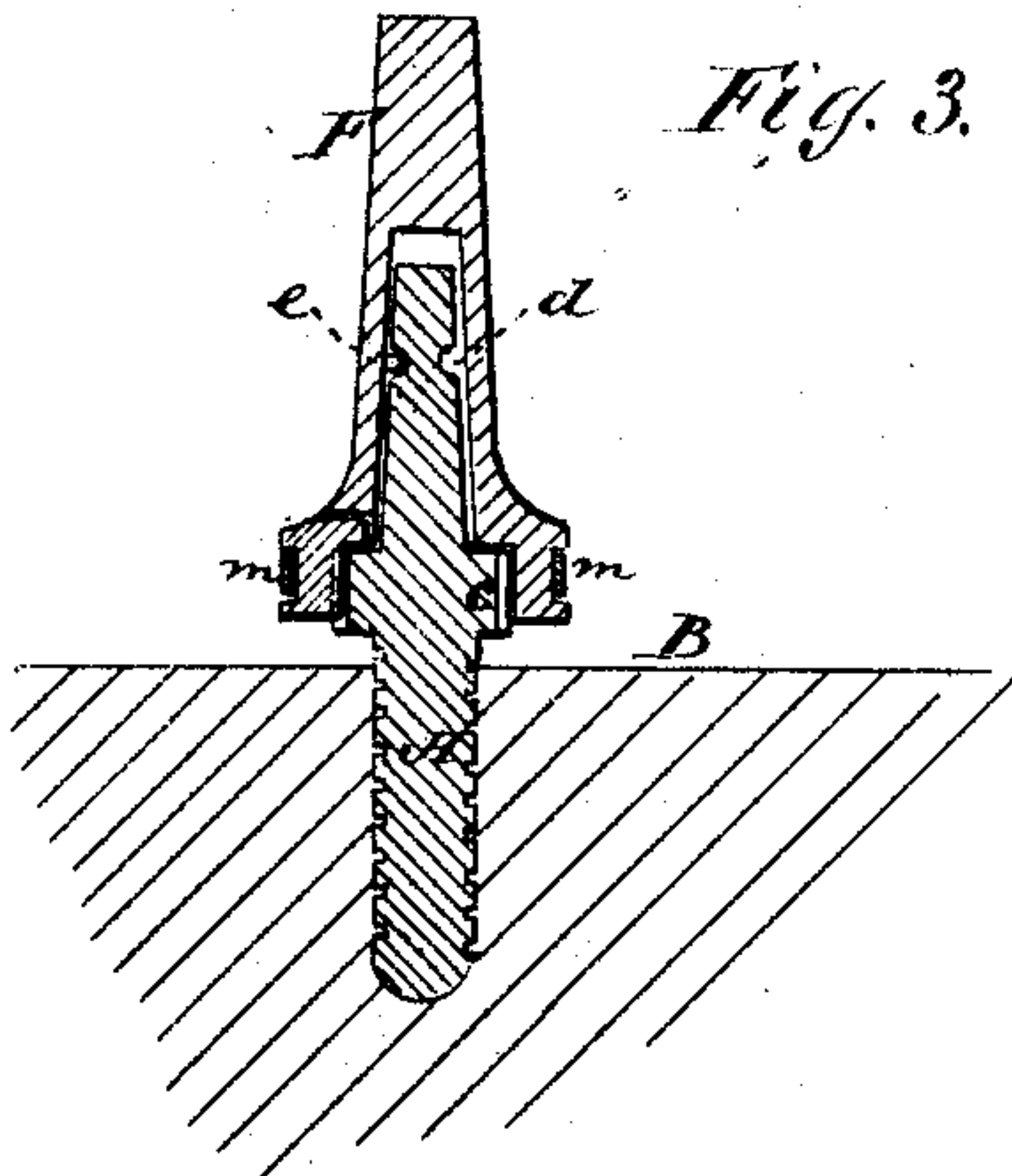


Fig. 4.

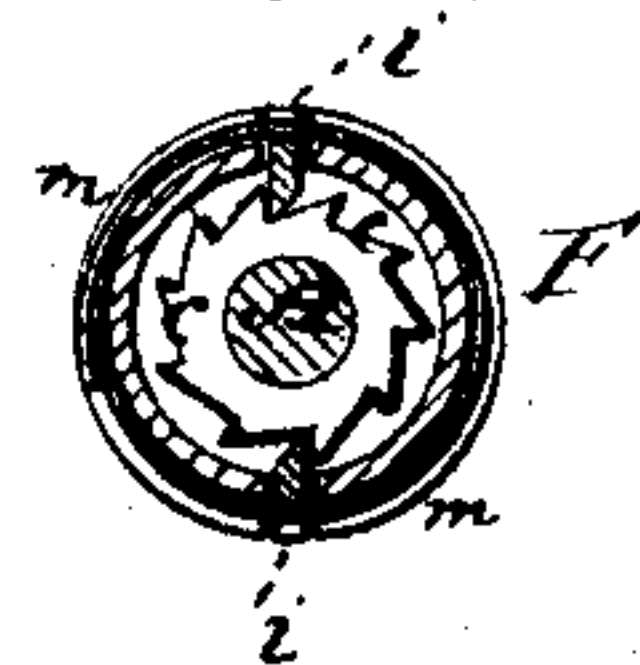
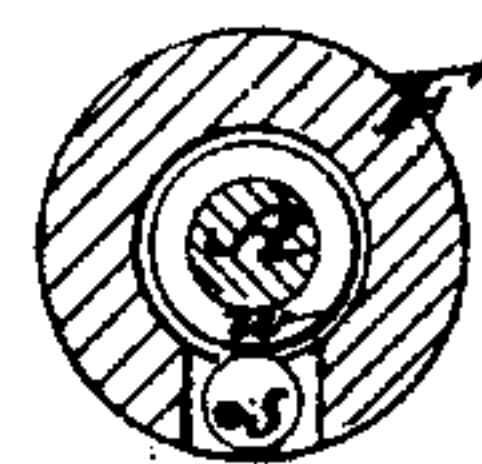


Fig. 5.



Witnesses.

E. Way.
Jacob Felber

Inventor.

Matthew Delaney
his attorney
J. M. Vint

UNITED STATES PATENT OFFICE.

MATTHEW DELANEY, OF NEW YORK, N. Y.

IMPROVEMENT IN PIANO-TUNING PINS.

Specification forming part of Letters Patent No. **152,470**, dated June 30, 1874; application filed May 8, 1874.

To all whom it may concern:

Be it known that I, MATTHEW DELANEY, of the city and county of New York, in the State of New York, have invented new and useful Improvement in Pianos; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

It is customary in the construction of pianos to secure the ends of the strings to what are called the tuning-pins, which are simple metallic pins, the lower ends of which are generally formed with a shallow screw-thread, and driven firmly into the wooden support, and in tuning the piano it is usual to turn these pins bodily with the tuning-key. Thus made and operated, in tuning the piano, the pins have to be turned in and out, (as every tuner and manufacturer knows,) and the result is that the pins are apt to become slightly loosened in their seats or bearings in the wood into which they are screwed.

This evil it has been sought to remedy by appliances intended to avoid any back movement of the pins, and designed at the same time to enable the tuner to turn the pin with such accuracy and minuteness of motion as to render unnecessary any letting back of the string; but all such contrivances have so far, I believe, proved impracticable, for the reason, among others, that there is not room in the usual and necessary arrangement of the pins for the additional mechanism employed.

I propose by my invention to afford a means by which, without interfering at all with the present arrangement of the tuning-pins, and without any complication of mechanism, the tuner may turn the pin to which the string is secured back and forth, as usual, with his key without ever unscrewing (or turning out) the screw-like shank of said pin, which enters and is held fast in the wooden bed piece or support; and to this end and object my invention consists in making the tuning-pins in two parts, so constructed and combined as to turn one upon the other, and also both together on the same (vertical) axis of motion, and so that in turning one part on the other (to wind up the string, for instance) the part turned cannot recede, while to permit any recession, both parts

of the pin have to be turned and the shank be screwed into its seat in the wooden support, all as will be hereinafter more fully explained; and my invention further consists in certain improvements in the details of construction of the kind of tuning-pin just alluded to, as will be hereinafter more fully described.

To enable those skilled in the art to make and use my invention, I will proceed to more fully describe the construction and operation of my improved tuning-pin for pianos, referring by letters to the accompanying drawings, in which—

Figure 1 is an elevation, Fig. 2 a top view, Fig. 3 a vertical section, (at *x x*, Fig. 2,) and Fig. 4 a horizontal section, (at the line *y y* of Fig. 1,) of one of my improved tuning-pins. At Fig. 5 is illustrated in horizontal section a modification to be presently explained.

In the several figures I have designated the several parts by the same letter of reference.

A represents the shank or main portion of my duplex pin. This shank A is made, as seen, with a fine left-handed screw-thread cut in its lower portion, and is adapted to enter and hold fast in the usual wooden support or bed-piece B. Near the middle of the shank A is formed a ratchet-wheel or disk portion, *c*, (for purposes to be presently explained,) and near its top is cut or turned in it an annular groove, *d*, in which lies the string or wire *e* of the piano when strung up on the tuning-pin. F is the upper part of the device, which, as seen, consists of a hollow stud adapted to fit over and surround the upper portion of the shank A, and to receive and hold, in a hole, *f*, made through it, the wire or string *e*, which is wound thereon in the manner in which the string is usually wound on the tuning-pin. The base of this part F is made of such shape and size as to encircle or incase the ratchet-wheel or toothed disk portion *c* of the shank A, and is provided with two radially-sliding fingers or pawl pieces, *i i*, (see Fig. 4,) which are pressed inward or toward the center of said ratchet-wheel by an encircling spring-band, *m*, arranged in the periphery of the base or case-like portion of the part F, and interlock or engage with the teeth of said wheel *c* or ratchet-disk.

The operation of the device or contrivance

just described will be understood to be as follows: The lower screw-threaded portion of the shank A being firmly inserted or screwed into the wooden supporting-piece B, as usual, and the top portion F being adjusted or placed on the said shank A, as seen, the wire or string *e* has its end passed through the eye or hole *f* of part F, and is wound upon the latter, as illustrated. The eye or hole *f* passes through the part F a little to one side of its center, and at such an elevation or point that when the wire *e* is passed through said hole it will pass into the annular channel *d*, formed in the upper part of shank A. This passage of the wire *e* through said groove *d* of the shank A effects a perfect retention of the parts A and F together endwise, while they are permitted to move circumferentially or to rotate one on the other. It will be understood, now, that in order to tighten up or wind up the wire or string *e* it is only necessary to apply the usual turning-key to the top of the part F and turn it in the usual manner, by which turning of the key the part F will be rotated upon the shank A, the pawl-fingers *i i* of the said part F engaging with the teeth of the ratchet portion *c* of the now stationary shank A and preventing said part F from returning or turning back under the strain of the string. In order to let back or render less taut the string or wire *e*, the key is turned in the opposite direction to that just supposed; but as the part F cannot turn backward on the shank A, but is locked, in this direction, to the ratchet portion *c* of said shank by the pawl-fingers *i i*, it follows that the whole device will now be turned together or bodily backward and the string be thus loosened. As the thread on the shank A is left handed, it follows that in thus bodily turning the whole fixture backward the shank A will be only the more tightly screwed into the wooden base or bed piece B. Since, then, the turning of the tuning-key in one direction can only turn the part F on the shank A, and the turning of said key in the other direction only can turn the shank A, in the manner explained, it follows that under no circumstances will the shank A be ever unscrewed any, and hence no tendency to loosen the pin in its seat in the plate B can ever occur. The screw of the shank A will be always entering—never withdrawing.

Of course, in carrying out my invention, the gist of which rests in the idea of making the pin in two parts, the upper one turning in one direction only on the other, and such other part so turning in the wood as to be always screwing in, the relations of the parts may be

reversed so that the top part would turn in the reverse direction and the thread on the shank A be made right-handed in lieu of left, as described. And instead of the double pawl-fingers *i i*, arranged and operating as described, a different form of ratchet and pawls can be applied, or some other means of interlocking the parts A and F in one direction of rotation, and having them free to turn in the other direction, may be adopted.

At Fig. 5 I have shown a means for this purpose composed of a simple friction-wheel, *s*, hung eccentrically on a stud or pin in the base of the part F, and adapted to roll against and wedge onto the periphery of a plain wheel or collar, *w*, formed on the shank A. It will be obvious that numerous devices may be employed and devised for the purpose just explained.

It is desirable to have the ratchet, if one be used, made with the teeth pretty fine, but the tuner is in no manner dependent upon the motions of the upper part F, only in the adjustment of the string, since he effects the tuning by combining the motions of said part F with a partial rotation of the shank A at pleasure, counteracting any excess of motion in one direction by a slight movement in the other direction.

Having so far explained my invention that any one skilled can make and use it, what I claim as new, and desire to secure by Letters Patent, is—

1. A tuning pin consisting of the shank or main portion A having the disk or ratchet C, and the hollow stud F, provided with the pawls *i i*, constructed and arranged substantially as described.

2. A tuning-pin composed of two parts so combined and operating together that the string may be tightened or slackened by turning one part on the other, or the two parts together, substantially as hereinbefore set forth.

3. In a tuning-pin formed of two parts, one turning within the other, the annular groove *d* formed in one part, and the string-hole or eye *f* in the other, for the purpose of effecting the retention of the parts endwise only by means of the wire or string, substantially as set forth.

In testimony whereof, I have hereunto set my hand and seal this 7th day of May, 1874.

MATTHEW DELANEY. [L. S.]

In presence of—

J. N. MCINTIRE.

JACOB FELBEL.