(No Model.)

H. W. WHITE.

KEY FOR STRINGED INSTRUMENTS.

No. 360,186. Patented Mar. 29, 1887.

Fig. 2.

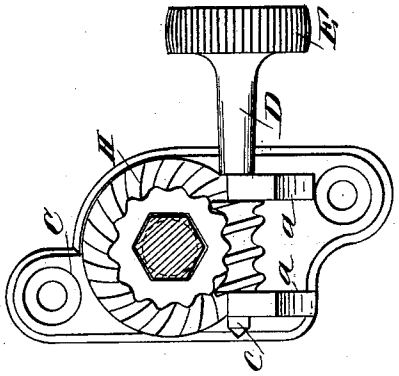


Fig. 4.

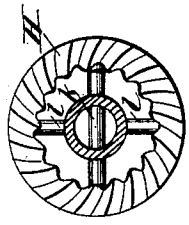


Fig. 1.

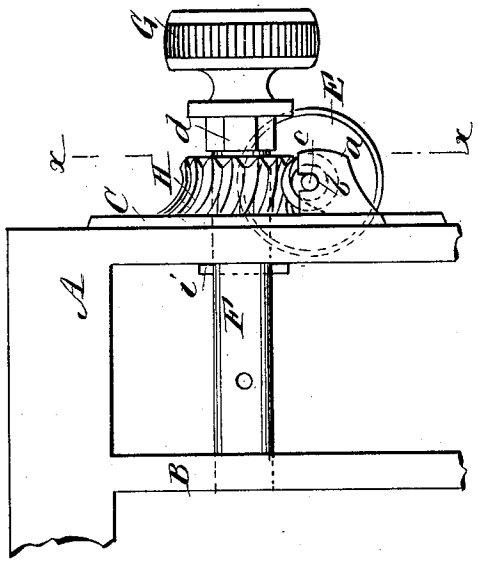
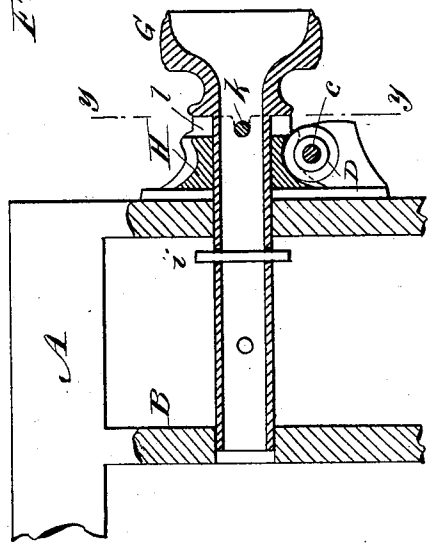


Fig. 3.



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HIRAM W. WHITE, OF YANKTON, DAKOTA TERRITORY.

KEY FOR STRINGED INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 360,186, dated March 29, 1887.

Application filed January 20, 1886. Serial No. 189,227. (No model.)

To all whom it may concern:

Be it known that I, HIRAM W. WHITE, of Yankton, in the county of Yankton and Territory of Dakota, have invented a new Improvement in Keys for Stringed Instruments, of which the following is a full, clear, and exact description.

My invention relates to the construction of that class of devices employed to hold one end of the string of a stringed instrument, and at the same time impart a proper tension to cause the string to vibrate to produce a note of the proper pitch and tone, the object of the invention being to provide a key by which the slack in the string may be quickly taken up, and by which, after the approximate proper tension has been obtained, the exact tension required may be had by a gradual taking up or loosening of the string; and the invention consists of certain novel constructions and combinations of parts, to be hereinafter explained, and specifically pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a portion of the instrument-head, representing one of my improved keys as in position for use. Fig. 2 is a sectional view of the key removed from the head, the view being taken on line *x x* of Fig. 1. Fig. 3 is a sectional plan view of a modified construction; and Fig. 4 is a sectional view taken on line *y y* of Fig. 3, the worm and supporting-plate not being shown.

Referring now to the construction illustrated in Figs. 1 and 2, A represents a portion of the instrument-head, which, as usual, is provided with a number of keys and with a central bar, B. The keys are held to the head by a plate, C, from which there project brackets *a a*, formed with bearings *b b*, for the spindles *c c* of the worm D, which worm is formed with a milled head, E. The string is wound upon a hollow tube, F, which is passed through the plate C, the side of the instrument-head, and into an aperture formed in the central bar, B, by which the projecting end of the tube is supported. Upon the end of this tube there is a milled thumb-nut, G, just back of which there is a polygonal collar, *d*. A concave-faced pinion, H, having a flat face, which fits closely against the plate C, and a central aperture, through which the tube F passes, and a polygonal recess, within which the collar *d* fits, is arranged as shown in Figs. 1 and 2—that is to say, so that its teeth will be engaged by the worm D, the concave toothed face of the pinion fitting against the inner side of the worm.

In placing the parts together, the worm is first mounted in its bearings, and the pinion is then brought into engagement with the worm, after which the tube is passed through the pinion and placed in position with its projecting end resting in the recess formed in the central bar, B. After the parts have been so placed, a pin, *i*, is passed through the tube in a position so as to allow the collar *d* to be withdrawn from engagement with the recess and the pinion, but to prevent any further withdrawal of the tube. When the collar has been withdrawn to the position just named, which is the position in which the parts are shown in Fig. 1, the tube F may be readily turned to take up all slack in the string attached thereto, after which the tube is forced inward, so that the collar *d* will enter the recess in the pinion, when, by turning the worm, the required nicety of adjustment may be obtained.

In Figs. 3 and 4 the pinion H is represented as having a projecting collar provided with four notches, *l l*, formed in right-angular lines, and arranged to be engaged by a pin, *k*, carried by the tube F, and, in fact, almost any proper formation by which the pinion in the tube could be thrown into and out of engagement could be employed.

With such a key as I have described it will be seen that the parts might be applied to either right or left handed keys, all that is required for the change being an inversion of the position of the worm.

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

In a stringed instrument, the combination of the shaft mounted to have a sliding movement in its bearings and carrying a loosely-mounted pinion, and provided with means to effect the coupling of the pinion therewith, and the worm engaging or gearing with said pinion and having its shaft supported in open-ended sockets of brackets, substantially as and for the purpose set forth.

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Witnesses:

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