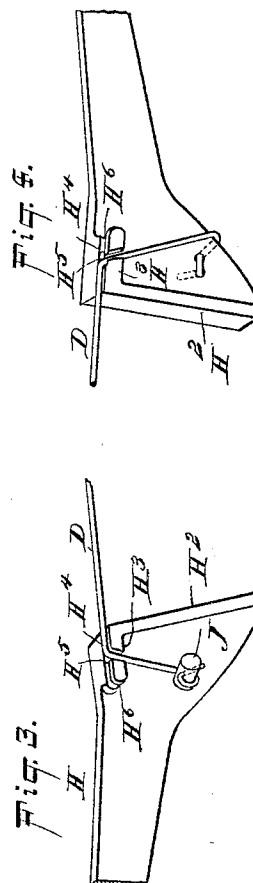
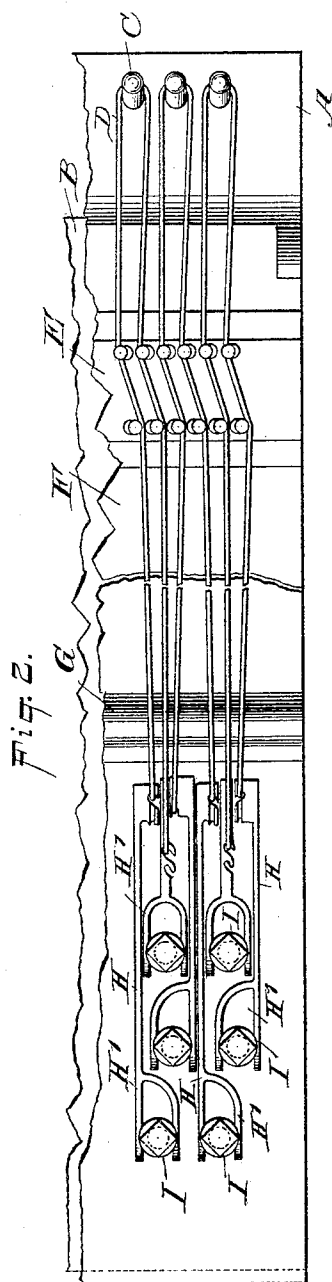
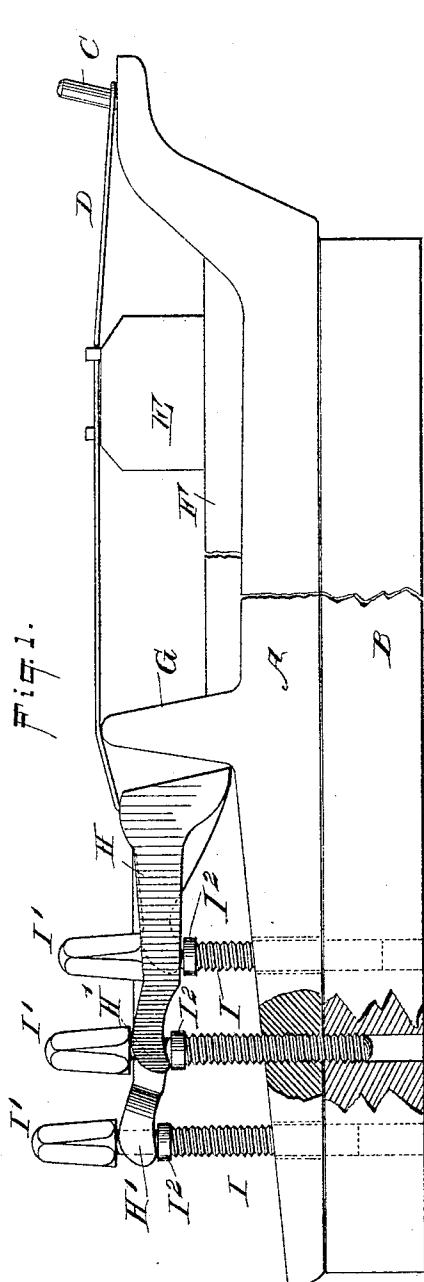


(No Model.)

D. M. WHITE.
TUNING DEVICE.

No. 521,688.

Patented June 19, 1894.



WITNESSES:

William Goebel.
Clara Louise Folsom.

INVENTOR

D. M. White
BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

DANIEL M. WHITE, OF BOSTON, MASSACHUSETTS.

TUNING DEVICE.

SPECIFICATION forming part of Letters Patent No. 521,688, dated June 19, 1894.

Application filed November 24, 1893. Serial No. 491,923. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. WHITE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Tuning Device, of which the following is a full, clear, and exact description.

The invention relates to stringed musical instruments, such as pianos, &c., and its object is to provide a new and improved tuning device which is simple and durable in construction and arranged to hold the strings more permanently at the proper tension, and to permit the operator to quickly and accurately tune the instrument without much exertion.

The invention consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

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 side elevation of the improvement with parts in section. Fig. 2 is a plan view of the same. Fig. 3 is a perspective view of the fulcrum end of one of the levers; and Fig. 4 is a similar view of a modified form of the same.

The metallic string plate A is held on the usual wooden pin block or support B connected with the other wooden parts of the piano frame. On one end of the string plate A are arranged the pins C for holding the strings D stretched over the bridge E held on the sounding board F and also stretched over the bridge G forming part of the string plate A, as plainly shown in Figs. 1 and 2. The outer ends of the strings D, after leaving the bridge G are each connected with a lever H, fulcrumed at the base of the bridge G on the string plate A, the free end of each lever being engaged by a wrest pin I screwing in the string plate A and extending into openings formed in the pin block B, the penetrating end of the wrest pin I being in frictional contact with the walls of the opening in the pin block B, so that any sound passing through the said wrest pin I also passes into the pin block B and consequently to the other wooden structural parts of the piano frame connected with the said pin block. Each of the levers H has its free end forked or slotted, as at H', and this end is engaged

by the head I' of the wrest pin and by a shoulder I² located a suitable distance below the head and engaging the under side of the forked end H' of the lever. The center of a wrest pin I is in alignment with its string D to prevent sidewise pulls on the string, wrest pin and lever. Now, it will be seen, by the operator turning the wrest pin I by engaging a wrench or tuning hammer on the head I' to screw the wrest pin downward, then a downward swinging motion is given to the lever so that the corresponding string D is stretched to raise the pitch or tone of that string. By turning the wrest pin in the opposite direction, that is, unscrewing it, the string D is slackened and consequently the pitch or tone is lowered.

In order to strengthen the fulcrum end of each lever H, I provide the forward edge thereof with a reinforcing rib H², as plainly shown in Figs. 3 and 4, the upper end of this rib terminating in an approximately horizontally-extending flange H³ formed on one side of the lever H. This flange H³ is provided on its top with a longitudinally-extending groove H⁴ forming a resting place for the string, the said flange being provided with one or more notches H⁵, through which the string end extends downward from the groove H⁴ to be fastened to a button J projecting from one side of the lever H, as shown in Fig. 3, or the said string end is laced in apertures in the lever, as indicated in Fig. 4. Now, it will be seen that when the string D is very slack and the lever H has swung with its outer free end downward to its limit, then the slack is taken up by removing the string from the corresponding notch H⁵ and placing it over the next following rear slot or over the grooved end H⁶ of the flange H³ so as to take up the slack of the string, and permit of holding the lever H approximately in a horizontal position, as shown in Fig. 1. The operator by then applying a wrench or tuning hammer to the head of the corresponding wrest pin can then swing the lever H downward to tune the string to the proper pitch. When levers are arranged in groups, as shown in Fig. 2, then the space left for the middle lever between the two outermost levers is not sufficient for a reinforcing rib H² and consequently the latter is dispensed with and the flange H³ is

formed on the side of the lever a suitable distance forward, as indicated in the said Fig. 3.

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

5 Patent—

1. A tuning device for stringed musical instruments comprising a metallic string plate having an integral bridge over which pass the strings, a series of L shaped levers having
10 their downward arms fulcrumed on the base of the said bridge, the said levers being provided at their sides with flanges in alignment with the strings and for connection with the same, a wooden pin block or support for the
15 said string plate and threaded wrest pins in engagement with the free ends of the said levers for adjusting the latter and consequently the pitch of the strings carried thereby, the said wrest pins screwing in the said string
20 plate and each extending in alignment with the corresponding string carried by its lever, the said wrest pins also extending into the said wooden pin block or support to transmit the sounds of the strings from the levers to
25 the wrest pins and to the said pin block or support, substantially as described.

2. A tuning device, comprising a metallic

string plate, having a bridge over which passes the string, a lever fulcrumed on the said bridge, a wrest pin screwing in the said plate
30 and engaging the free end of the said lever to impart a swinging motion to the latter when screwing the wrest pin up or down, and a flange formed on the said lever and having notches for the passage of the string to take
35 up the slack, substantially as shown and described.

3. A tuning device, comprising a metallic string plate, having a bridge over which passes the string, a lever fulcrumed on the said
40 bridge, a wrest pin screwing in the said plate and engaging the free end of the said lever to impart a swinging motion to the latter when screwing the wrest pin up or down, a flange formed on the said lever and having notches
45 for the passage of the string to take up the slack, and means, substantially as described, for fastening the end of the string to the said lever after leaving the corresponding notch in the said flange, as set forth.

DANIEL M. WHITE.

Witnesses:

H. D. WHITE,

WM. D. SERRAT.