(No Model.)

E. W. SYLVAN.

ATTACHMENT FOR MUSICAL INSTRUMENTS.

No. 397,877. Patented Feb. 12, 1889.

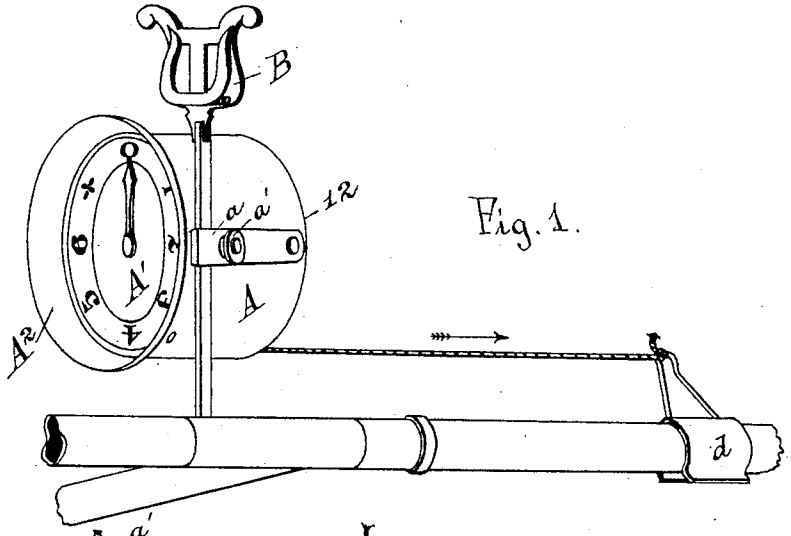


Fig. 1.

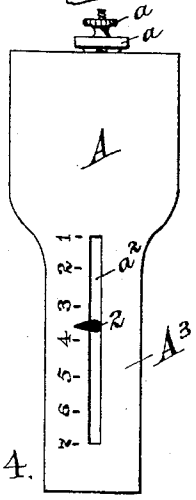


Fig. 4.

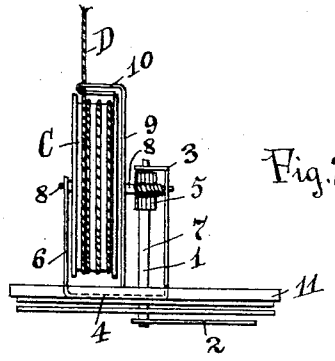


Fig. 2.

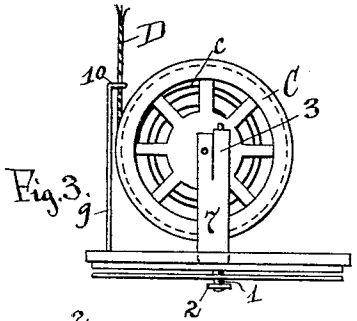


Fig. 3.

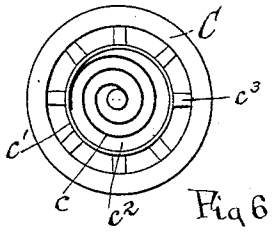


Fig 6.

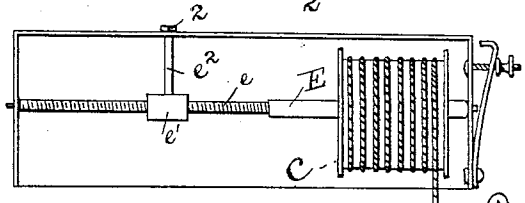


Fig. 5.

Witnesses:
Edward E. Clement
Saml. D. Jacobson

Inventor.
Emil W. Sylvan
by Lewis Abraham
Attorney.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EMIL WILLIAM SYLVAN, OF SAVANNAH, GEORGIA.

ATTACHMENT FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 397,877, dated February 12, 1889.

Application filed September 27, 1888. Serial No. 286,624. (No model.)

To all whom it may concern:

Be it known that I, EMIL WILLIAM SYLVAN, a citizen of the United States, residing at Savannah, in the county of Chatham and State of Georgia, have invented a new and useful Improvement in Attachments for Musical Instruments, of which the following is a specification.

My invention relates to attachments for musical instruments, and has for its object the provision of means whereby visual indication shall be made showing the distance that the sliding tube of a trombone has been moved to produce required musical notes.

In carrying out my invention I provide a spring-controlled pointer that is caused to move upon a dial or within the slot of a horizontal plate, said dial or plate being provided with numerals or symbols that indicate the exact distance that the sliding tubes have been withdrawn, all as hereinafter particularly described, illustrated in the drawings, and specifically pointed out in the claims.

Referring to the accompanying drawings, in which like letters of reference point out similar parts on each figure, Figure 1 is a perspective view of the device, illustrating means for attachment to a music-rack, the pointer standing at zero, and showing the operative cord with its end clip embracing one arm of the sliding tubes of a trombone. Fig. 2 is a view of the device with the casing removed. Fig. 3 is a similar view in a direction at right angles to Fig. 2. Fig. 4 represents a modified form wherein a pointer is adjusted to move on a right line within a slot having an indicating-scale adjusted thereto. Fig. 5 is an interior view of Fig. 4. Fig. 6 is a detailed view of the operative spring, its boxing, and attached rotating disk.

In the drawings, A represents the casing of the device, which is supplied with a clip, *a*, for connection to a music-rack, B, the screw-nut *a'* admitting of its firm adjustment in proper position. Near its forward end the case is provided with a dial, A', having peripheral indicating-numerals common in analogous devices. The dial is recessed a short distance from the forward end of the casing and is covered with a transparent panel, A^2. Upon the face of the dial, mounted upon a spindle, 1, is a pointer, 2. Said spindle is journaled at its opposite end within the overturned orificed flange 3 of a plate, 4, as more particularly hereinafter described. At the end of the spindle, near where journaled to the flange 3, is a worm-wheel, 5, for a purpose presently set forth.

4 is a plate bent at right angles to its base, forming uprights 6 7. Part of the upright 7 is returned to form an upper flange, 3, which is orificed for reception of the rear end of the spindle 1. The uprights 6 7 are pierced for reception of the axle 8, the opposite ends of which are journaled within said uprights. The forward end of the axle 8 is provided with a screw, 8^x, which meshes with the worm-wheel 5 upon the pointer-spindle.

C is an open-ended drum, at one side of which is a boxed volute spring, *c*, the inner end of which is secured to the shaft or axle 8. Said spring is circumferentially surrounded by a ring or open box, *c'*, and is supported laterally on one side by the upright 6 and on the opposite side by a stationary disk or wheel, c^2.

The drum C has interiorly midway of its width and firmly attached thereto a disk or spoked wheel, c^3. The axle 8 passes through the hub of said wheel and is keyed or otherwise firmly held therein. One end of said axle is screw-threaded, and intermediate of its length is secured to the inner turn of the volute spring *c*, so that when the drum C is rotated the screw-thread will mesh with the worm-wheel 5 and cause the pointer to turn. As soon as said spring is relieved from tension it will return to its normal position, and the pointer will be brought to the zero-mark.

The device is actuated by a cord, D, which is wound round the flanged periphery of the drum C. From said periphery said cord passes through the loop 10 of a guide-wire, 9, extending upwardly from the lining-plate 11 of the dial. From the guide-loop the cord is thence led outwardly through an orifice of the disk 12, which forms the back of the case and is in parallel alignment with the plane of the dial-plate.

One end of the cord D is fastened to the

drum, its opposite end outward of the case being supplied with a spring-clutch, *d*, adapted to grasp a tube or slide of the trombone.

Thus far I have confined the description of my invention to the special construction illustrated in Figs. 1, 2, and 3.

A modified form of the device is shown in Figs. 4 and 5, which consists of an end incasement, A, to contain a drum, C. Said incasement is provided with a clip, *a*, and screw-nut *a'* for fastening the device to a music-rack, B. Extending from the end incasement is a flattened tube, A^3, provided with an elongated slot, a^2. Within the end incasement, A, is a drum, C, having a flanged periphery, round which is wound the operative cord D, led outwardly through a side orifice and supplied at its free end with a clutch, *d*, the latter not shown in the drawings. Lengthwise of the incasement and its extension is journaled a rotatable shaft, E, screw-threaded part of its length, as seen at *e*. The drum C is firmly keyed at one end of the shaft, so that it will turn therewith when the operative cord is actuated. The drum C, Fig. 5, is interiorly provided with a volute spring, *c*, as previously described. Upon the shaft E is a screw-threaded nut, *e'*, from which extends outwardly and through the slot a^2 a pointer-arm, e^2, the terminal end of which is turned at right angles to said arm to form a pointer, 2.

From the foregoing description, in connection with the drawings, the nature and object of my invention will be readily understood by all conversant with analogous devices. Its operation is as follows: A music-rack, B, of the ordinary form is connected to an arm of a trombone in the usual manner. Upon said rack is attached one of my visual scale-indicators, the connection being made by means of the screw-controlled clip *a*. The cord D, extending outward of the device, is supplied with a terminal clutch, *d*, which is sprung over the two-armed sliding tube or slides of the trombone, whereby said cord is drawn taut. As one or more of said tubes or slides is withdrawn by the musician, it will extend the cord D, which will tighten the volute spring and cause the drum C to revolve, thereby moving the pointer, which will progress round the dial or along the slot a^2, and thereby visually indicate the length that said sliding tube has been elongated. When the instrument is operated in a reverse direction, the tension of the spring being released, the effect will be to wind the cord around the flanged periphery of the drum, and the retroactive progress of the sliding tube will be indicated by the pointer in the same manner as when projected outwardly in direction of the arrows.

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

1. The within-described device for indicating the length of the withdrawal of the sliding tube of a trombone, which consists of a boxed volute spring connected to and inclosed within a drum, said spring being connected at its inner turn to the spindle of a pointer, in combination with an operating-cord wound round the periphery of the drum, said cord having a terminal clutch adapted to grasp the sliding tube of the instrument, whereby as extended the pointer will move along an indicating-scale on the face of the device, as and for the purpose intended, substantially as described.

2. As a new article of manufacture, a trombone-note indicator having on its face a visual scale and a pointer adjusted to point out on said scale the length that the sliding tube of the instrument is extended, said pointer operated by a cord having at one end a terminal clutch adapted to grasp the sliding tube externally, the opposite end of said cord being wound round an incased drum inclosing a boxed volute spring, whereby as said cord is distended the pointer will move along the indicating-scale, as and for the purpose intended, substantially as described.

3. The within-described device for measuring the notes of a trombone by means of an indicating-scale, consisting of a casing, A, inclosing a drum, C, which surrounds a boxed volute spring, *c*, one end of said spring secured to the drum, the opposite end being fastened to the spindle 1 of a pointer, 2, said drum having wound round its periphery an operating-cord, D, led from thence outside of the casing, and having a terminal clutch, *d*, adapted to grasp the sliding tube of the instrument, all in combination with a face-scale having inscribed thereon suitable ordinals or analogous symbols that indicate the proper position the tube should rest in in order to produce a given perfect note, substantially as described.

4. The within-described device for removable attachment to a trombone, consisting of the following members, constructed, arranged, and adjusted as illustrated and described: a tubular casing, A, having an outer clip, *a*, supplied with a screw-nut, *a'*, said casing being supplied at one end with a dial, A', having peripheral indicating-scale covered with a transparent panel, A^2, and provided with a pointer, 2, extending from the terminal end of a spindle, 1, a volute spring, *c*, inclosed within a box which is surrounded by a circumferentially-flanged drum, C, said spring fastened at its inner turn to an axial shaft, 8, screw-threaded at one end, meshing with a worm-wheel, 5, of the spindle 1, and plate 4, having parallel uprights 6 7, orificed for journaling therein the opposite ends of the axial shaft 8, substantially as described.

EMIL WILLIAM SYLVAN.

Witnesses:
J. F. BROOKS,
M. A. O'BYRNE.