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2,615,361

TROMBONE BALANCER

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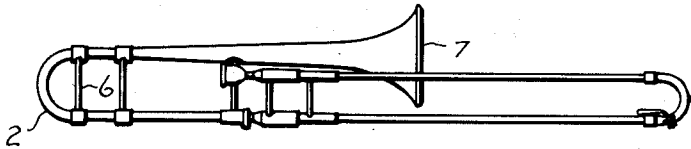


Fig. 1

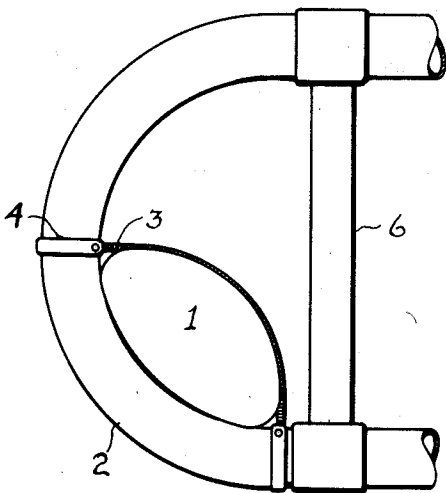


Fig. 2

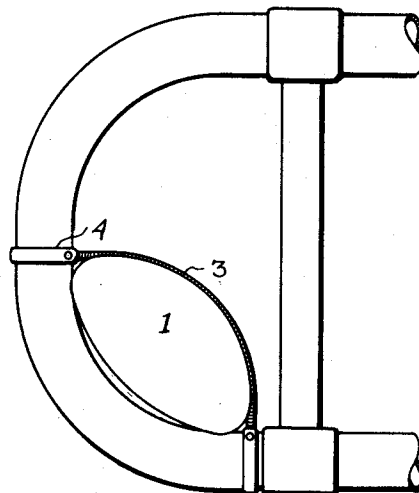


Fig. 3

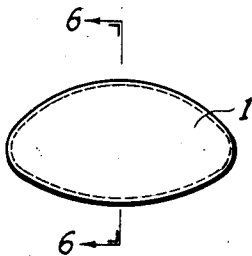


Fig. 4

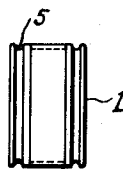


Fig. 5

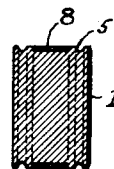


Fig. 6

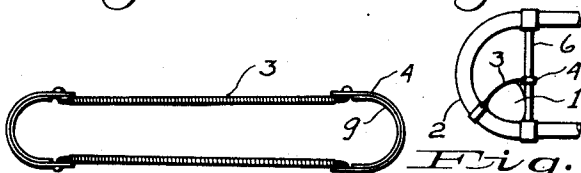


Fig. 7

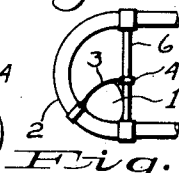


Fig. 8

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UNITED STATES PATENT OFFICE

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TROMBONE BALANCER

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2 Claims. (Cl. 84—395)

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This invention relates to new and useful improvements in trombone balancers, and it is among the objects thereof to provide a trombone balancer which can be readily attached or detached from the trombone.

It is a further object of the invention to provide a balancer for trombones which is adapted to be attached in a manner to not interfere with the fitting of the trombone in the carrying case, and which shall balance a trombone lengthwise without any substantial unbalancing sidewise.

A trombone weighs approximately two and one-half to three pounds and is extensible with its slide to approximately seventy inches. The instrument when played for any length of time becomes tiring to hold and tends to dip or point down, particularly so when mutes are inserted in the bell of the horn to produce varied tonal effects. To overcome this dipping or tipping tendency, it has heretofore been proposed to employ balancers on the tuning slide bow end of the trombone and these balancers have been of varying design and attached mainly to the cross bars of the tuning slide. In such positions they in some cases tend to unbalance rather than balance the trombone; that is to say, if a balancer is so mounted on the tuning slide that it will balance the trombone lengthwise, it has a tendency to tilt sidewise, thereby lessening the advantages of balancing lengthwise.

In accordance with the present invention, a balancer is employed of a shape to be attached to the bow of the tuning slide instead of the cross bars, and is located at the lower curvature of the slide bow to reduce side tilting.

The invention will become more apparent from a consideration of the accompanying drawing, constituting a part hereof, in which like reference characters designate like parts, and in which:

Fig. 1 is a side elevational view of a conventional type of trombone;

Fig. 2, a similar view of the bow of the tuning slide and cross bar with a balancer embodying the principles of this invention attached thereto;

Fig. 3, a similar view with a modified form of balancer;

Fig. 4, a side elevational view of the balancer;

Fig. 5, an end elevational view of the balancer;

Fig. 6, a cross sectional view of the balancer taken along the line 6—6, Fig. 4;

Fig. 7, a side elevational view of a spring device for attaching the balancer to the slide bow; and

Fig. 8 a side elevational view of the tuning slide

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bow with still another modified form of balancer.

The trombone shown in Fig. 1 is of the conventional type and constitutes no part of the present invention, which consists of a weight, generally designated by the numeral 1, Figs. 2 to 6 inclusive and Fig. 8, which is secured to the lower portion of the tuning slide bow 2 by a pair of springs 3 connected to metal bands 4 in the manner shown in Fig. 7. The bands 4 are clamped on the tuning slide bow 2 by merely snapping them over the outside of the bow in the manner shown in Fig. 2. The weight 1 is then inserted underneath the spring members 3 and the spring tension holds the clamping bands 4 in engagement with the slide bow which, in turn, holds the balancing weight 1 in the curvature of the bow. As shown in Figs. 4 to 6 inclusive, the weight 1 is provided with grooves 5 that engage the springs 3 to hold the balancer weight 1 in place.

In Figs. 2 and 3 are shown two types of weights, the weight in Fig. 2 being of large curvature substantially corresponding to the curvature of the tuning slide bow 2, while the weight in Fig. 3 is of a smaller curvature and contacts the tuning slide bow 3 at two points only. Fig. 8 shows still another form of weight which is of substantially triangular shape and in which one of the clamping bands 4 is attached to a cross bar 6. Whatever the form of the balancer weights or whether they are curved or grooved complementary to the surface of the slide bow, the utility of it is to provide a balance weight at the lower inside portion of the tuning slide bow where it will be most effective for balancing and not interfere with the fitting of the instrument in its carrying case.

As will be understood, the construction is such that a player may remove the balance weight instantly by simply pulling it away from the slide bow against the tension of the spring and slipping it out from under the springs. The clamping brackets 4 are then simply pulled off the slide bow. The balancing means may be proportional to the weight of the mutes that are placed in the bell 7 of the horn for varying the tonal effects. Leather or cork liners 8, Fig. 7, may be glued or fastened in the weights 1 and at 9 to clamps 4 to prevent scratching of the instrument.

It is readily seen from the foregoing description of the invention that the balance weight 1 when attached as shown in Figs. 2 and 3 provides a counterweight or balance for the tuning slide without appreciably effecting side tilting of the instrument as in cases where the balance weight is mounted in the center of the cross bar,

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as heretofore proposed. Also the location of the balance weight in the lower portion of the slide bow, instead of in the center of the slide bow as has been heretofore proposed, reduces side tilting. Additional advantages are that the above described trombone balancer will fit all of the popular makes of trombones, will not scratch the instrument, and can be attached and easily removed.

Although one embodiment of the invention has been herein illustrated and described, it will be evident to those skilled in the art that various modifications may be made in the details of construction without departing from the principles herein set forth.

I claim:

1. A trombone balancer comprising a weight having a contour adapted for engagement with the curved inner face of a trombone tuning slide bow and having attaching means comprising a pair of clips for engaging the tubular face of the tuning slide bow with a spring connection enveloping the balance weight for holding the same on the tuning slide bow.

2. A trombone balancer comprising a substan-

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tially oval shaped weight of a width approximating the thickness of the tuning slide bow and having one of its faces grooved substantially complementary to the curvature of the inner face of the tuning slide bow, and clamping means for mounting the balance weight on the lower portion of the tuning slide bow, said clamping means comprising a pair of substantially U-shaped clips attached to envelop the tubular surface of the tuning slide bow, the ends of the U-shaped clips being connected by resilient bands and said balance weight having grooves in its surface for engagement by said bands to detachably mount the weight on the lower inner face of the tuning slide bow.

THOMAS H. EBBERT.

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The following references are of record in the file of this patent:

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