(No Model.)

J. D. LEGAULT.

DRUM.

No. 423,060. Patented Mar. 11, 1890.

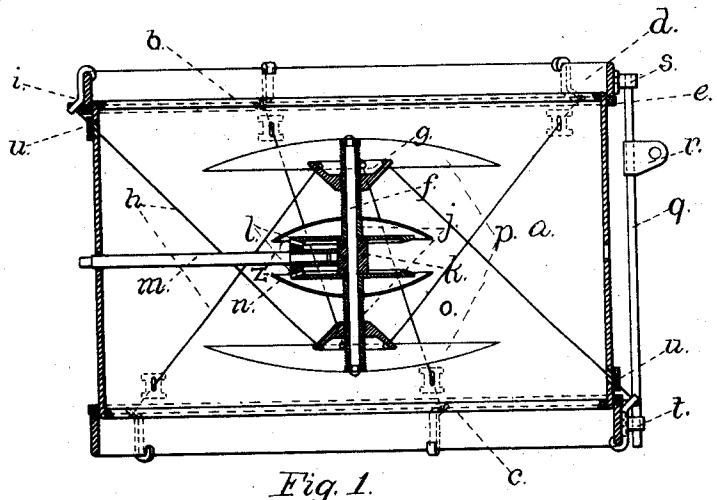


Fig. 1.

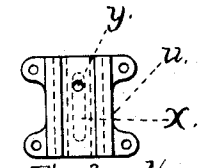


Fig. 3.

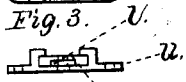


Fig. 4. w.

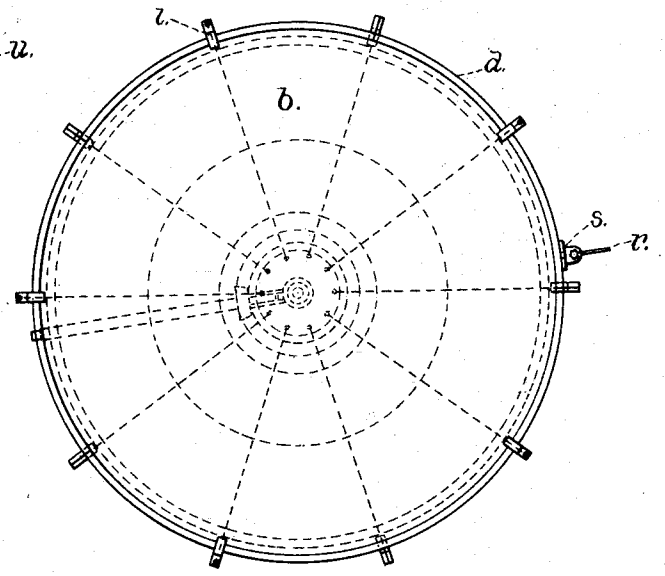


Fig. 2.

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UNITED STATES PATENT OFFICE.

JOSEPH D. LEGAULT, OF PORTLAND, MAINE, ASSIGNOR OF ONE-HALF TO ELIJAH R. BOND, OF SAME PLACE.

DRUM.

SPECIFICATION forming part of Letters Patent No. 423,060, dated March 11, 1890.

Application filed April 5, 1889. Serial No. 306,050. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH D. LEGAULT, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Drums; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of musical instruments called "drums." Its object is to increase, prolong, and improve the tone.

It consists in improved means for tightening the head, metallic cups suspended within the barrel to increase the sound, and wooden cups to prolong the sound, and suitable mechanism, as hereinafter more fully set forth, for operating these parts.

In the drawings herewith accompanying, Figure 1 is a section; Fig. 2, a plan; Figs. 3 and 4 details showing clips placed on the outside at those points in the barrel through which the tightening-cables pass, and same letters show like parts.

The barrel of the drum *a* is made in the usual way, having head *b* and bottom *c*, with tightening-hoops *d*. Within the drum is suspended a rod *f*, having a metallic cup or disk *p* on each end. On rod *f* are gears *l*, having threaded shoulders *j*, said gears being beveled and free to revolve on said rod *f*. Between the gears *l* is a block *k*, which holds them at a constant distance from each other. Upon the threaded shoulders *j* are nuts *g*. Hooks *i* are placed on the tightening-hoops at the head and bottom at suitable distances about the drum. Connecting these hooks *i* and the nuts *g* are cables *h*, said cables passing through the barrel of the drum. A key-stem *m* extends out through the barrel of the drum, its inner end being stepped in the block *k*. The key-stem has a beveled gear *n*, adapted to engage the beveled gears *l*, as shown in Fig. 1.

Attached to the shoulders of the gears are hollow cups *z*, the concave sides toward each other. These cups *z* should be made of wood or other resonant substance, and should be close together. By this arrangement of cups the vibrations are prolonged.

To prevent the air within the drum from escaping through the holes in the barrel when the cables *h* pass out, a clip *u* is placed over the hole and made air-tight, or as nearly so as possible. In a groove in this clip is a slide *w* in the bottom *f*, which is a rubber or other elastic substance *v*. Beneath slide *w* in the clip is a long slot *x*, and in the slide is a hole *y*. The cable thus passing through hole *y*, slot *x*, and rubber is, by reason of the elasticity of the rubber, closely hugged by the rubber, and thus the air is prevented from escaping, and yet, by means of the slide and slot, the cable is free to be tightened without bending.

In order that the drum may be tightened and loosened by the mechanism herein described without being warped or twisted out of shape by the rigidity of the carrying-rod, I place the rod *q* at the side, one end being held solidly in swivel *s* and the other end being loose in a hole in the head of swivel *t*, as seen in Fig. 1, the swivels being attached to the head and bottom hoops, respectively. Thus when the drum is tightened or loosened the carrying-rod offers no resistance perpendicularly by reason of its loose end nor laterally by reason of its swivels.

The operation of this improved tightening device is as follows: When the key-stem is turned, the gear on said stem causes the gears *l* to revolve also. As the gears *l* revolve, the nuts *g* on said gears *l* approach or recede, as the case may be—*i. e.*, if the drum is to be tightened, the key is turned so as to cause the threaded nuts to recede from each other, and vice versa. By this method of tightening the drum its pitch can be raised or lowered at will, even while the drum is in operation, this being especially true of a bass-drum, where only one hand is used in beating, the other being free to operate the key. The membrane of the head is folded around a ring *e*, upon which the hoops *d* rest, the hooks *i* also bearing upon the said membrane. Thus a complete circuit between the head

and bottom of the drum is formed—viz., hooks *i* on the head-rods *h* extending to nut *g* at the bottom, thence through rod *f* to nut *g* at the head, thence through rod *h*, extending to the hooks on the bottom and the membrane of the bottom. Vibrations are thus communicated from the head membrane to the bottom.

The metallic cups *p*, suspended within the drum, increase the tone and give a ringing sound to the drum when beaten. The disks *z* at the center, being placed as near together as possible consistent with the operation of the gears, prolong the duration of the vibrations.

Having thus described my invention and its use, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a drum, the combination, with barrel, heads, and tightening-hoops, as set forth, of a rod suspended within the barrel, gears with threaded shoulders adapted to revolve on said rod, threaded nuts on the said shoulders, cables attached to the nuts, passing out through the barrel and terminating in hooks, and a key-stem having a gear-wheel adapted to engage the beveled gears aforesaid, the stem being loosely stepped in a block between the gears, substantially as and for the purposes set forth.

2. In a drum, metal plates attached one to each end of a rod suspended within the drum-barrel, said rod being supported by the tightening-cables, as and for the purposes set forth.

3. The combination, with a drum, of wooden cups placed near together within the drum-barrel for prolonging the vibrations, substantially as set forth.

4. The combination, with a drum having tightening-cables passing through the barrel, of clips having a slot in the bottom, a slide running in grooves in the clips and having an elastic filling, the cable passing through the slide and filling, substantially as set forth.

5. The combination, with a drum, of a carrying-rod, one end rigidly attached to a swivel at one end of the drum, the other end of the rod passing loosely through a swivel at the other end, substantially as set forth.

6. The combination, with a drum having barrel, membraneous heads, and tightening-hoops, of a metallic circuit connecting the membrane of one head with that of the other and formed by passing the tightening-cables through the barrel at points near the tightening-hoops, substantially as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOSEPH D. LEGAULT.

Witnesses:
ELGIN C. VERRILL,
NATHL. W. STAPLES.