

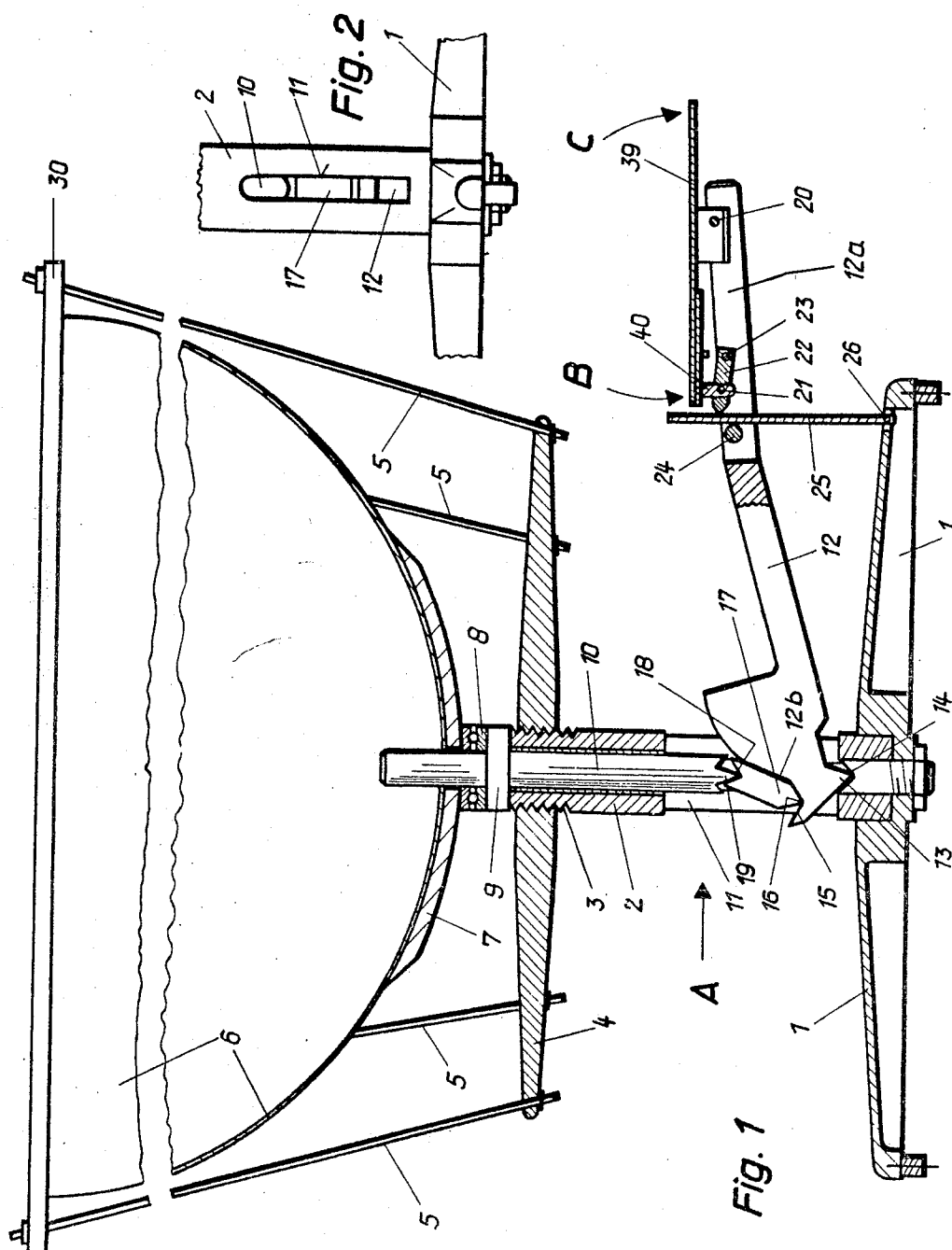
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KETTLE DRUM

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KETTLE DRUM

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The present invention relates to a kettle drum having a tension regulator for the skin of the drum to be operated by a pedal lever, in which the tensioning ring for the skin is connected by means of tension rods with a spider arranged underneath the kettle on the pedestal of the kettle drum.

Kettle drums of this kind, so-called pedal drums, are known, in which the spider is axially adjustable by means of the pedal relative to the kettle. Thereby the tensioning ring holding the skin on its periphery is adjusted relative to the edge of the kettle, thus varying the tuning of the kettle drum.

On the other hand kettle drums without a tuning pedal are known, which likewise comprise a spider connected with the tensioning ring by means of tension rods. In these so-called rotary drums the tensioning ring is mounted on a screw-thread of a column connected with the pedestal. The tuning of the kettle drum is here effected exclusively by turning the kettle.

Both these types of kettle drums have advantages and disadvantages. The pedal drums allow a quick adjustment of the pitch of the tone. However, since the pedal has been adjustable hitherto step-wise only by means of a toothed segment, the pitch of the tone had to be subsequently finely adjusted by means of an additional adjustment screw operated by a hand wheel. Moreover the actuating of the pedal required in general a considerable effort, since forces exceeding even 900 kg. had to be applied. The pedal mechanism was also complicated, heavy and unsightly.

It is the primary object of the present invention to provide a kettle drum which combines the advantages of the known rotary drums with those of the known pedal drums, while obviating their disadvantages. It is another object of the invention to provide a structurally simple and efficient pedal mechanism of good appearance, whose actuation requires a very small effort only.

With these and other objects in view which will become apparent later from this specification and the accompanying drawings, I provide a kettle drum comprising in combination: a pedestal, a column rigidly connected with said pedestal, a screw-threaded spindle integral with said column, a spider rotatably in screw connection with said screw-threaded spindle, a central rod arranged axially slidable in said column, a kettle mounted rotatably but restrained axially on said central rod, and having a free circumferential upper edge, a drum skin stretched over said circumferential upper edge, a tensioning ring in operation tightening said skin over said circumferential upper edge, tension rods connecting the outer ends of said spider with said tensioning ring, a recess being provided in said column, and a pedal lever extending into said recess and operatively engaging both said column and central rod, and when actuated axially moving said central rod and kettle mounted thereon relative to said column carrying said spider tension rods and tensioning ring, and thus varying the tension of said drum skin.

These and other features of my said invention will be clearly understood from the following description of a preferred embodiment thereof given by way of example with reference to the accompanying drawing, in which:

FIG. 1 is a longitudinal section of a kettle drum according to the invention, and

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FIG. 2 is a fragmentary view looking in the direction A in FIG. 1.

On a pedestal 1 a vertical column 2 is rigidly attached. On the latter a screw thread 3 is provided on which a spider 4 is mounted at whose outer ends tension rods 5 are attached. The upper ends of these tension rods 5 are attached in the usual manner on a tensioning ring 30, by means of which the skin of the drum is retained by being coiled up at the edge. Within the tensioning ring 30 the skin rests on the upper edge of the kettle. The kettle 6 rests, by means of a shell 7 serving as a reinforcement of the bottom and of a ball bearing 8, on a collar 9, which is rigidly arranged on a rod 10 mounted slidably in the axial direction in a bore of the column 2.

For varying the pitch of the tone of the drum, the kettle 6 together with the spider 4 and tension rods 5 may be turned about the column 2. The spider is thereby shifted axially relative to the kettle 6, whereby the tension of the skin is varied.

In the column 2 a longitudinal slot 11 is provided which extends over its entire length. The inner end of a pedal lever 12 engages in this slot. This end has a protruding knife edge 13 serving as a fulcrum and engaging in a wedge-shaped recess 14 at the lower end of the slot 11. The lever 12 has also a wedge-shaped recess 15, in which engages a knife edge serving as a fulcrum of an insert piece 17. This insert 17 has in turn a wedge-shaped recess 18 of the rod 10 in which engages a knife edge 19, serving as a fulcrum. The insert 17 is thus kept formed between the rod 10 and the lever 12. A shoulder 12b of the lever 12 serves as an abutment for the insert 17, when the latter is in its uppermost position. The arrangement described constitutes a toggle lever, one of whose lever arms is formed by the part of the pedal lever 12 that reaches into the slot 11, while the insert piece 17 forms the other lever arm. The lateral guidance of the lever 12 and insert 17 is effected by the side faces of the slot 11. The whole toggle lever system is arranged practically within the column 2 and almost invisible from outside. It does not require any servicing and is practically free from wear. By the toggle lever action as great mechanical advantage is attained between the pedal lever 12 and the rod 10, so that the effort required for the actuation of the pedal lever 12 is only small.

The outer end 12a of the pedal lever 12 is forked, and a pedal plate 39 is mounted thereon pivotally about a pivot pin 20. At the inner end of the pedal plate 39 an arm 40 is attached which is connected by a pivot pin 21 with a clamping lever 22, which in turn is pivotally mounted on the lever end 12a by means of a pivot pin 23. Moreover a transverse pin 24 is rigidly mounted on the lever portion 12a. Between the transverse pin 24 and the clamping lever 22 there protrudes a substantially vertical tongue 25 which is pivotally mounted on the pedestal 1 by means of a pin 26.

The arrangement just described constitutes a clamping safety catch. The same allows to arrest the pedal lever 12 which under the preloading of the skin always tends to move to its uppermost position, steplessly within the whole range of its angular path in any position desired. By turning the pedal plate 39 in the direction B the clamping lever 22 is pressed against the tongue 25. Thereby the pedal lever 12 is arrested by the friction between the components 24 and 22 of the one part, and the tongue 25 of the other part. By turning the pedal plate 39 in the direction C the clamping effect is abolished, and the pedal lever 12 can be turned into a different position. That part of the clamping lever 22, which contacts the tongue 25, may be provided with a sound-deadening and

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friction-increasing coating such as rubber, synthetic substances or leather.

When the pedal lever is turned e. g. downwards, the rod 10 is moved upwardly. Thereby the shell 7 with the kettle 6 is raised relative to the spider 4. The edge of the kettle thereby presses more strongly on the skin, whereby the tension thereof and thus the pitch of the tone is heightened. The tuning of the drum may accordingly be varied by turning the kettle as well as by actuating the pedal lever 12.

While I have described hereinabove and illustrated in the accompanying drawings what may be considered a typical and particularly useful embodiment of my said invention, I wish it to be understood that I do not limit myself to the particular details and dimensions described and illustrated; for obvious modifications will occur to a person skilled in the art.

What I claim as my invention and desire to secure by Letters Patent is:

1. A kettle drum comprising in combination: a pedestal, a column rigidly connected to said pedestal, screw threads on said column, a screw threaded spider rotatably mounted in screw connection with said screw threads on said column, a central rod arranged axially slidable in said column, a kettle mounted rotatably but restrained axially on said central rod and having a free circumferential upper edge, a drum skin stretched over said circumferential upper edge, a tensioning ring operative to tighten said skin over said circumferential upper edge, tension rods connecting said spider with said tensioning ring, a slot being provided in said column, an insert piece in said recess engaging said central rod, a pedal lever extending into said slot and operatively engaging both said column and said insert piece, said pedal lever when actuated effecting movement of said insert piece and thereby axially moving said central rod and kettle mounted thereon relative to said column carrying said spider, tension rods and tensioning ring, and thus varying the tension of said drum skin.

2. A kettle drum in accordance with claim 1, wherein said insert piece is held in position positively by means of said pedal lever and said central rod.

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3. A kettle drum in accordance with claim 2, wherein said pedal lever is provided with a wedge-shaped recess and said central rod is provided with an edge, and wherein said insert piece is provided with an edge and a recess for engaging the recess in said pedal lever and the edge of said central rod, respectively.

4. A kettle drum in accordance with claim 3, wherein said pedal lever is provided with an edge which is journaled in a recess in said column.

5. A kettle drum in accordance with claim 4, wherein said slot is longitudinal and the side walls thereof define lateral guides for said insert piece and said pedal lever.

6. A kettle drum in accordance with claim 1, comprising a tongue mounted on said pedestal and adapted to engage a projection on said pedal lever, a treadle pivotably mounted on said pedal lever, a clamping lever pivotably mounted on said pedal lever and adapted to engage said tongue, and means for pivotably connecting said treadle to said clamping lever, whereby upon movement of said treadle said clamping lever wedges said tongue against said projection on said pedal lever to arrest movement of said pedal lever caused by preloading of said drum skin.

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