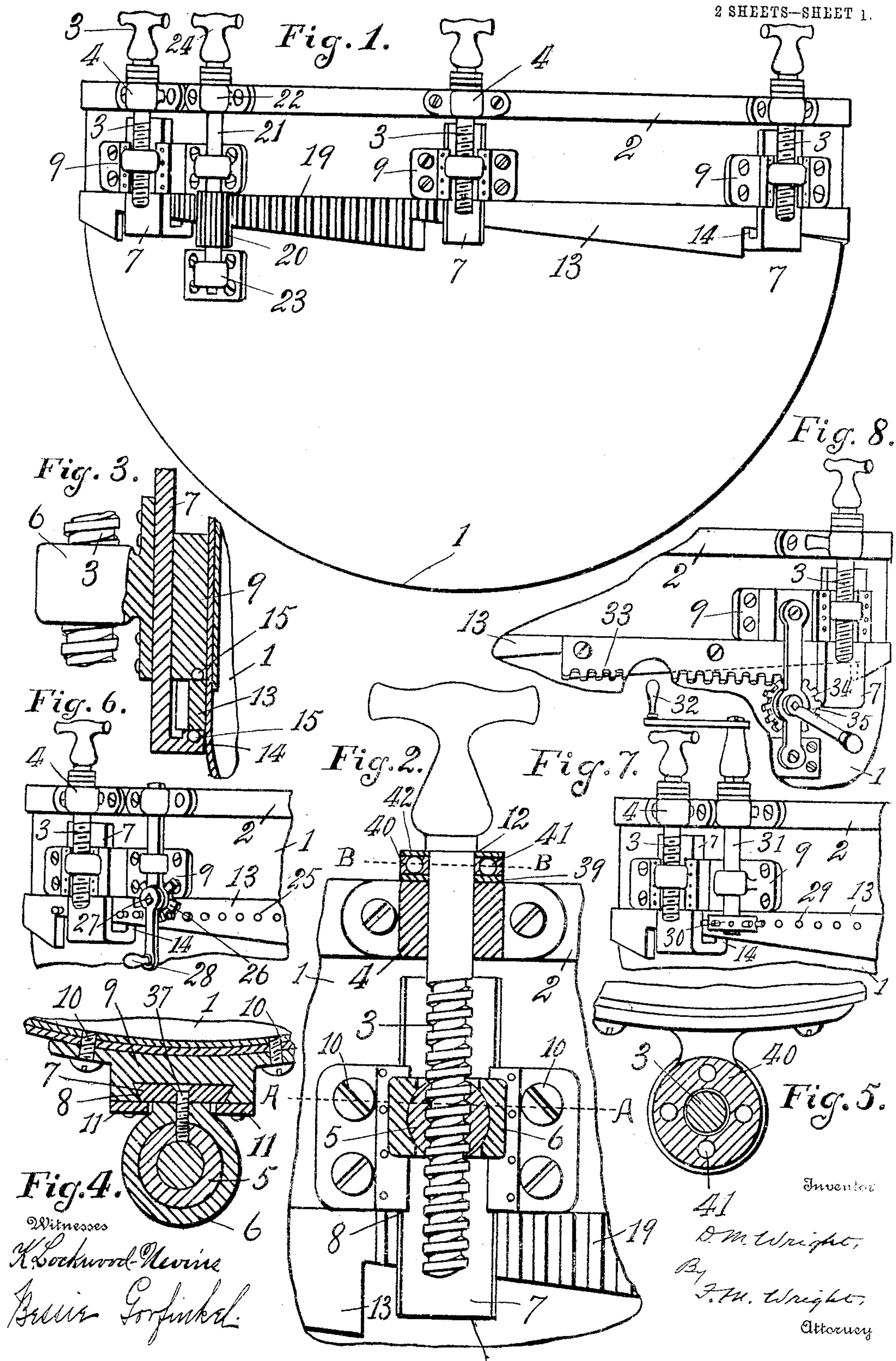


D. M. WRIGHT.

KETTLEDRUM.

APPLICATION FILED JAN. 16, 1905.

2 SHEETS—SHEET 1.



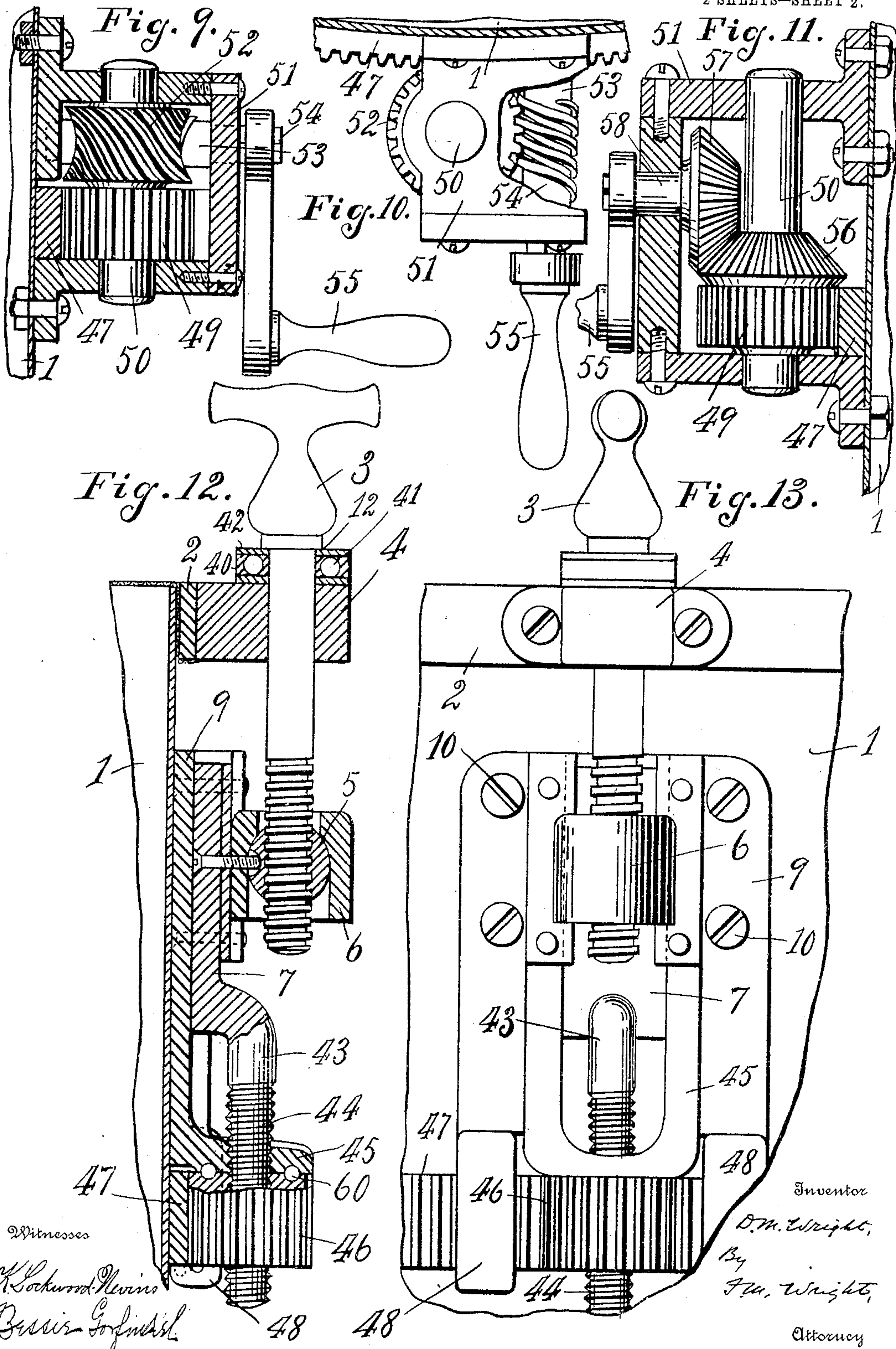
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2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

DEXTER M. WRIGHT, OF SAN FRANCISCO, CALIFORNIA.

KETTLEDRUM.

No. 805,768.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed January 16, 1905. Serial No. 241,250.

To all whom it may concern:

Be it known that I, DEXTER M. WRIGHT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Kettledrums, of which the following is a specification.

My invention relates to improvements in kettledrums, the object of my invention being to provide improvements which will permit of rapidly tuning the kettledrum to any desired pitch and also improved means for stretching the skin evenly over the head of the drum.

My invention therefore resides in the novel construction, combination, and arrangement of parts for the above ends hereinafter fully specified, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a kettledrum equipped with my improvements. Fig. 2 is an enlarged vertical section through one of the adjusting-screws. Fig. 3 is a vertical section through the upper portion of the side of the drum, taken in front of the adjusting-screws. Fig. 4 is a horizontal section on the line A A of Fig. 2. Fig. 5 is a horizontal section on the line B B of Fig. 2. Fig. 6 is a broken side elevation of a modified form of the invention. Fig. 7 is a similar view of a further modification. Fig. 8 is a similar view of a third modification. Fig. 9 is a vertical section of a portion of the drum, showing in side elevation a further modification of the means for rotating the band. Fig. 10 is a top view of the same. Fig. 11 is a view similar to Fig. 9 of a further modification. Fig. 12 is a vertical section of a modification of the means for adjustment. Fig. 13 is a front view of the same.

Referring to the drawings, 1 represents the copper shell or body of the drum, approximately hemispherical in form.

2 is the upper ring, which passes over the edge of the skin and is used in the manner well known in the art to tighten said skin by drawing down said ring or to loosen the skin by permitting the ring to rise. The ring is moved up or down by means of a suitable number, as six, of adjusting-screws 3, which are smooth at their upper portion and pass through smooth bearings 4, secured upon said upper ring, while their lower portions are

threaded and screwed into approximately globular nuts 5, (see Fig. 2,) retained within bearings 6, secured to vertical slides 7. These slides move in undercut guideways 8 on plates 9, secured to the drum-body by screws 10. 11 represents strips which overhang the edges of said slides and additionally secure them in place. Shoulders 12 upon the screws 3 engage the upper sides of the bearings 4, causing the ring 2 to be drawn down with the slides 7 when the latter are moved bodily downward. In order to move all these slides downward simultaneously, and thus also to move the ring 2 downward and tighten the skin, there is provided a band 13, loosely encircling the drum and having its lower edge formed into a series of inclined planes in number corresponding with the number of plates. This band passes between the lower inwardly-turned end 14 of each vertical slide 7 and the lower edge of the fixed plate 9, and between said band and slide and plate are interposed ball-bearings 15. Thus when said band is revolved around the drum in one direction the sliding plates are drawn down and the skin is tightened, and, conversely, when moved around the drum in the opposite direction the plates are allowed to rise, and the skin is loosened.

In a modification shown in Figs. 12 and 13 the plate 7 has a downward extension 43, the lower end of which is formed into a screw 44. This screw passes through a hole in an extension 45 from the fixed plate 9, and upon said screw, beneath said plate, turning against ball-bearings 60, is screwed a nut 46, formed on the exterior with gear-teeth. These gear-teeth are engaged by the teeth of a band 47, which passes around the drum and is supported by downward extensions 48 from the plate 9. By turning said band in one direction all the nuts 46 are correspondingly turned and all the plates drawn down, thus tightening the skin. When the band is turned in the opposite direction, the skin is loosened. In order to so revolve the band around the drum, several devices may be used, which are applicable either to the wedging-band shown in Fig. 1 or to the band shown in Figs. 12, 13.

In Fig. 1 the band has in a portion thereof ratchet-teeth 19, which are engaged by a pinion 20 upon the end of a vertical shaft 21, revolving in bearings 22 23 and turned by means of a handle 24.

In Fig. 6 the band has a series of pins 25,

which are engaged by a pin-wheel 26 upon a horizontal shaft 27, operated by a handle 28.

In Fig. 7 the band has a series of holes 29, engaged by a pin-wheel 30 on a vertical shaft 31, operated by a handle 32.

In Fig. 8 the band has vertically-extending ratchet-teeth 33, which are engaged by a pinion 34 upon a horizontal shaft 35, operated by a handle.

In Figs. 9 and 10 a further modification is shown as applied to the form of band shown in Figs. 12 and 13, although it is equally applicable by giving proper dimensions to the parts to that shown in Fig. 1. In this construction the band 47 is rotated by a pinion 49 on a vertical shaft 50, having bearings in a frame 51, secured upon the drum, and carrying a worm-wheel 52, which is rotated by a worm 53 upon a horizontal shaft 54, turned by a handle 55. This construction gives a slow but accurate adjustment and is well adapted to be employed with the wedging-band shown in Fig. 1, in which case on account of the slow movement produced the wedges may be made half the length there shown, the rest of the band being plain.

In the modification shown in Fig. 11, which is likewise shown as employed in connection with the band illustrated in Figs. 12 and 13, said band is operated by a pinion 49 upon a shaft 50, having bearings in the frame 51, as before; but this shaft is now rotated by means of a bevel-gear 56 thereon operated by a bevel-gear 57 on a horizontal shaft 58.

The object of providing the six screws (more or less) is to insure a uniform tightening of the skin over the head of the drum. By screwing in these screws the skin is drawn down all around the drum with such a degree of tightness as to produce a uniform tone at all points therearound, so that the result is a tone of good quality. These screws for this purpose are, broadly, old and common in the art; but it has been found that owing to the copper shell or body of the drum being quite thin the strain of a screw upon said copper body has a tendency to cause said shell to buckle, the part being the lower and upper bearings for the screws bending inward. This of itself would not be of such great importance; but it causes the lower bearing to incline inward upwardly out of the line of the screw, and thereby would in the old construction, in which the screw was threaded directly into the bearing, result in a binding on the screw. This I avoid by providing in the lower bearing a nut 5, through which the screw passes, said nut being rounded on the outside, as shown, so as to permit it to turn easily in the bearing. Thus if the bearing itself tilts inwardly owing to the strain on the copper shell the nut will turn in the opposite direction in the bearing, preventing binding on the screw. In order to prevent

the nut falling out of bearing, it is formed with a hole into which projects a stud 37 from the inner side of the bearing. The globular form of the nut permits it to turn in all directions in the bearing and prevents binding on the screw whatever be the deformation of the shell 1.

It is important to be able to adjust the skin of the drum silently. For this purpose I provide an antifriction device for each screw, comprising a plate 39, resting upon the upper bearing, ball-carrier 40, balls 41 in sockets in said carrier, and a plate 42, upon which the shoulder on the screw rests. When the screw is turned, the upper plate revolves upon the balls, which in turn revolve upon the lower washer.

I claim—

1. In a kettledrum the combination with the shell of the drum of the adjusting-ring, a plurality of adjusting-screws adapted to bear down upon said ring, means external to said shell for simultaneously drawing down all of said adjusting-screws, and means for independently adjusting each screw, substantially as described.

2. The combination of the adjusting-ring, a plurality of adjusting-screws adapted to bear down upon said ring, means for simultaneously drawing down all of said adjusting-screws, comprising a band around the drum, operatively connected with each screw, means for moving said band around the drum, and means for independently adjusting each screw, substantially as described.

3. The combination of the adjusting-ring, a plurality of adjusting-screws adapted to bear down upon said ring, means for simultaneously drawing down all of said adjusting-screws, comprising a vertically-sliding plate attached to each screw, a band around the drum operatively connected with each plate, and means for moving the band around the drum, and means for independently adjusting each screw, substantially as described.

4. In a kettledrum, in combination with the shell of the drum, a ring around the shell, bearings on said ring, lower bearings, screws sliding smoothly through the bearings on said ring and having screw-threaded connections with the lower bearings, and means for simultaneously moving the lower bearings, substantially as described.

5. In a kettledrum, in combination with the shell of the drum, a ring around the shell, smooth bearings thereon, lower bearings, movable nuts therein, and screws passed through said upper bearings and screwed into the nuts in the lower bearings and means for simultaneously moving the lower bearings, substantially as described.

6. In a kettledrum, in combination with the shell of the drum, a ring around the shell, smooth bearings thereon, lower bearings,

movable nuts therein, screws passed through
said upper bearings, and screwed into the
nuts in the lower bearings, and studs connect-
ing said nuts with the lower bearings while
5 permitting angular movement of the nuts,
substantially as described.

7. In a kettledrum, in combination with the
shell of the drum, a ring around the shell,
lower bearings, screws for drawing said ring
10 down to said bearings, said screws having
shoulders and the ring having bearings for

the screws, and antifriction devices between
said shoulders and bearings, substantially as
described.

In witness whereof I have hereunto set my 15
hand in the presence of two subscribing wit-
nesses.

D. M. WRIGHT.

Witnesses:

FRANCIS M. WRIGHT,
BESSIE GORFINKEL.