

(No Model.)

2 Sheets—Sheet 1.

G. S. KNAPP
DRUM.

No. 254,143.

Patented Feb. 28, 1882.

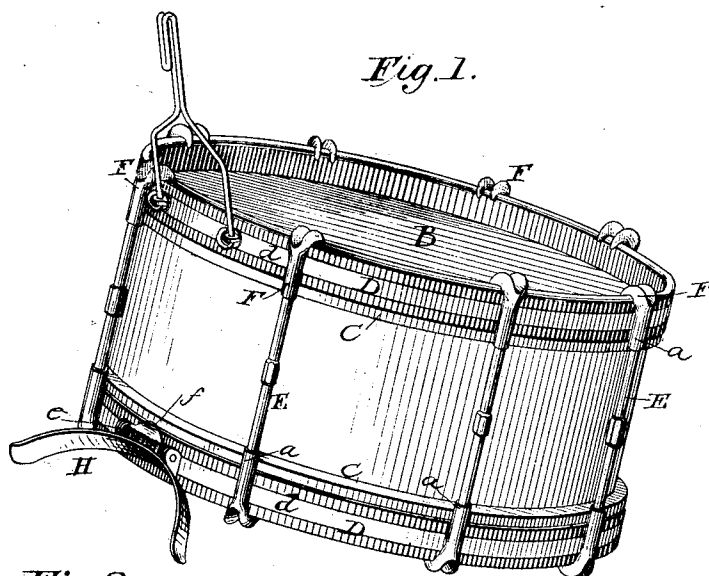


Fig. 2.

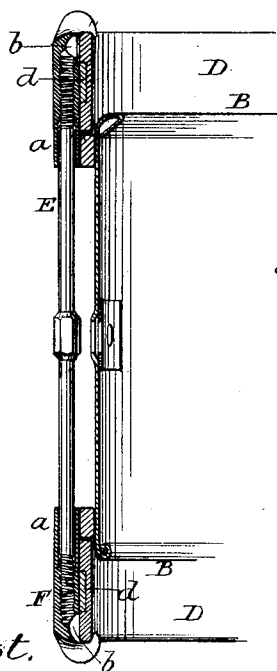
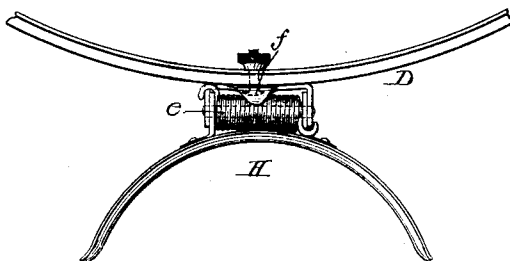


Fig. 3.



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2 Sheets—Sheet 2

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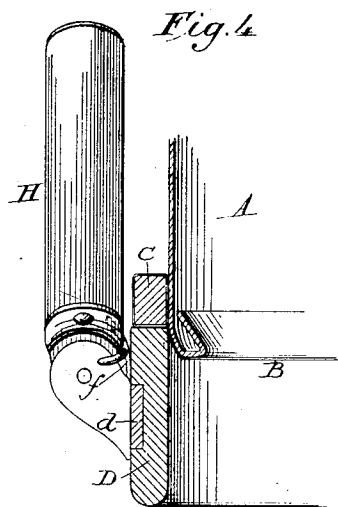


Fig. 4.

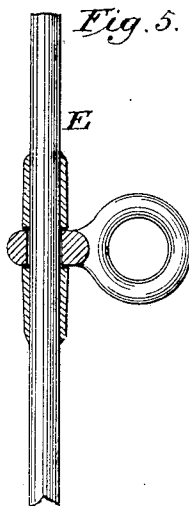


Fig. 5.

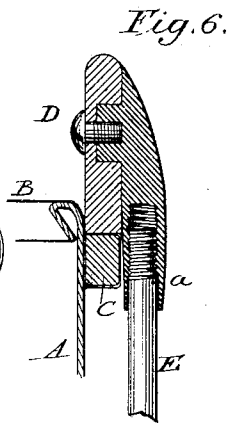


Fig. 6.

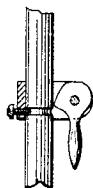


Fig. 10.

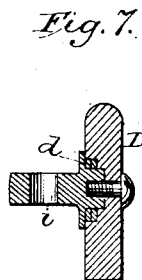


Fig. 7.

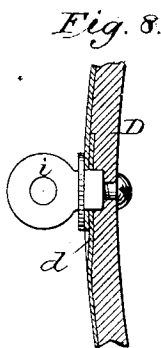


Fig. 8.

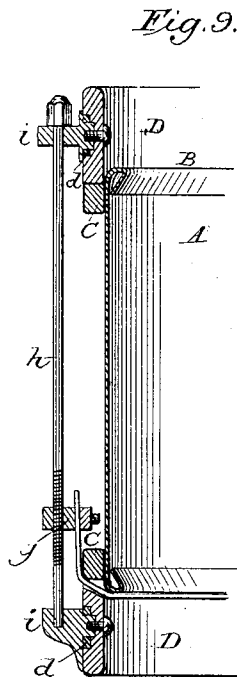


Fig. 9.

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UNITED STATES PATENT OFFICE.

GEORGE S. KNAPP, OF CHICAGO, ILLINOIS.

DRUM.

SPECIFICATION forming part of Letters Patent No. 254,143, dated February 28, 1882.

Application filed June 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. KNAPP, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Drums, of which the following is a specification.

The objects of my invention are to provide a cheap and simple means of tightening or straining drum-heads quickly, which shall be unaffected by changes in the atmosphere, and which shall strain the heads uniformly in all directions; to provide an improved knee-rest which shall be held securely in position when in use, and which may be folded up and secured out of the way when not in use; to provide a device for tightening the snare-strings which shall not be affected or thrown out of position by the strain to which it is subjected.

The first part of my invention consists in straining-rods provided at opposite ends with right and left threads entering hooks which engage over the respective loops of the drum, in the peculiar manner of constructing the hooks, and in providing one of the straining-rods with a swiveled loop or ring by which to carry the drum.

The second part of my invention consists in a knee-rest pivoted to the drum and provided with a spring by which it is held normally in an operative position, and in combining therewith a spring-lip or equivalent detent by which the rest may be locked in its inoperative position out of the way.

The third part of my invention consists in the mounting of the clamp by which the snare-strings are tightened upon a screw which is sustained at its two ends upon guides or ears attached to the hoops of the drum.

The invention also consists in minor features, which will be hereinafter described in detail.

Referring to the accompanying drawings, Figure 1 represents a perspective view of my improved drum; Fig. 2, a vertical cross-section through one side of the same, illustrating the construction of the tightening device. Fig. 3 is a plan view, showing the construction and attachment of the knee-rest. Fig. 4 is a vertical cross-section through one side of the drum, showing the knee-rest in its folded or closed position. Fig. 5 is a cross-section, showing the manner in which the suspending-ring is at-

tached to one of the tightening-rods. Fig. 6 is a cross-section, illustrating a modified construction of the tightening device. Figs. 7 and 8 are respectively a vertical and a horizontal section, showing the manner in which the suspending-hook is attached to the metallic band screwed in the hoops of the drum. Fig. 9 is a vertical section through one side of the drum, showing the device for tightening the snare-strings.

A represents the body of the drum, made, as usual, of a sheet-metal cylinder with open ends, upon which heads B are stretched. The edges of the body are curled or rounded inward in order to provide a smooth surface over which to strain the heads; but these edges, instead of being made of a circular cross-section, as usual, are rounded inward in a manner illustrated in Fig. 2, in order to give a more gradual curve and a wider bearing to sustain the heads, the extreme edge being turned downward on the inside, as represented, to sustain the bearing. The heads B are brought downward, as usual, on the outside of the body and secured to flush hoops or rings C, which are forced inward, as usual, to strain the heads by means of hoops D, applied over and around the ends of the body. The straining of the heads is secured by drawing the two hoops B toward each other, as usual; but, instead of making use of the ordinary device for this purpose, I employ a series of longitudinal straining-rods, E, the opposite ends of which are provided with right and left hand threads and seated within hooks F, adapted to engage over the hoops D, as clearly represented in Figs. 1 and 2. The rods E are provided at the center with angular bosses or enlargements to receive a wrench, the turning of each rod serving to draw the hooks on its opposite ends toward each other, and thus drawing the hoops D inward.

The hooks F are made, preferably in the form represented in Figs. 1 and 2, each with two claws or hooks to engage over the hoop. Each hook is constructed, as shown, with a long tubular neck, *a*, into which the end of the straining-rod is screwed. As shown in Fig. 2, the inner end of the neck *a* is bored out smoothly and of sufficient size to admit the unthreaded portion of the rod, the construction being such that whenever the end of the rod is engaged

with the screw-thread in the hook the entire threaded portion of the rod will be concealed and protected by the neck *a*, as is plainly represented in Fig. 2. This protection of the screw-thread is an important feature of my construction, for the reason that it prevents the thread from injury, protects the same from being rusted, and admits of its being kept in a thoroughly lubricated condition without soiling the person or clothing of the user. The extended bearing of the neck upon the smooth exterior portion of the rod is also advantageous, in that it prevents the parts from being thrown out of line or bent inward toward the drum by the strain to which they are subjected. By making use of the left and right hand threads I am enabled to provide for a wide adjustment of the hooks without rendering the parts objectionably long or heavy, and at the same time secure the tightening of the drum by one-half the rotations which would otherwise be required.

By means of my tightening device I am enabled to apply a perfectly uniform strain to the head in all directions, and thus to prevent the hoops from being drawn downward at one point more than at another—a difficulty constantly encountered in the use of the ordinary tightening devices.

It will be noticed on reference to Fig. 2 that the necks *a* of the tightening-hooks bear upon the exterior hoops across the entire width of the latter, this construction preventing the hoops from spreading or being thrown outward at the inner edges, and at the same time preventing the tightening hooks and rods from swaying inward toward the body under the strain to which they are subjected. The exact form of the tightening-hooks is not material, provided they retain substantially the mode of action herein described and shown.

Instead of having the hooks engage over the edges of the hoops, as shown in Fig. 1, they may be provided with side lips or hooks for attachment to the outer face of the heads, as represented in Fig. 6.

In constructing the hooks it is preferred to core them out or cast them with a recess, *b*, in the inner face, as represented in Fig. 2. When thus constructed the drill by which the hole is made in the neck will encounter the opening, and thus provide an outlet through which the air and chips may escape while the screw-thread is being cut.

In practice it has been found exceedingly difficult to tap the hooks, unless provision is made for the escape of the air and chips in advance of the tap, the bursting of the hooks having frequently occurred in the absence of the opening or vent for the escape of the air.

In order to give the hoops of the drum additional strength and to provide for the attachment of the various devices mounted thereon, I provide each hoop, as shown, with an encircling band of metal, *d*, preferably seated in a groove or recess therein, as shown. This band, which should be drawn snugly to its

place, is made secure in any suitable manner; but it is preferred to unite the ends, as shown in Figs. 7 and 8, by means of a stud passed through them and secured by means of a screw applied from the inside. The outer end of this stud may be fashioned into an eye to receive one arm of the suspending-hook or one end of the rod by which the snare-strings are tightened.

As a means of steadying and holding the drum in position when in use, I provide the curved metal knee-rest *H*, provided with ears, which are connected by a horizontal pivot to corresponding ears of the drum, as shown in Figs. 1 and 4, a spiral spring, *e*, being applied around the pivot-pin to urge the rest outward to the position in which it is used. This spring admits of the rest being folded inward out of the way, and serves also to give an easy yielding motion when the drum is in use, allowing the rest to adapt itself to the varying position of the drum.

In order to hold the rest in its folded position *I*, provide a spring lip or detent, *f*, which engages over the rest when the latter is folded, as shown in Fig. 4.

The manner of forming the hinged joint, of applying the spring, and of constructing the detent may be modified at will, my invention embracing any form of spring and any form of detent or catch which will answer the purposes named.

Passing next to the device for straining the snare-strings, as represented in Figs. 1 and 8, it will be seen that the strings are secured, as usual, between two clamping-plates, *g*, one of which is mounted upon a longitudinal screw, *h*, which is sustained at both ends by means of ears or lugs *i*, attached to the hoops of the drum. By thus mounting the screw it is sustained at both ends, and is prevented from being bent or drawn out of position or out of shape by the strain to which it is subjected. The lugs which sustain the screw may be applied in any suitable manner; but it is preferred to extend them into the metallic hoops and secure them by screws on the inside, as represented in the drawings.

Referring next to the carrying-ring for carrying the drum when not in use, as shown in Fig. 5, it is applied loosely to the middle of one of the straining-rods *E* and secured in place by means of two sleeves or hoops screwed firmly upon the rod, as shown.

The plate by which the knee-rest is connected to the drum may be attached to the latter by a pivot, as shown in Fig. 3, to allow the position of the rest to be changed as may be demanded by the different positions or inclinations in which the drum may be carried. The pivot may be left free or threaded and provided with a thumb-nut by which to secure the rest in position. It will of course be understood that the pivot is independent of and at right angles to the one which permits the rest to close against the drum.

When desired, the straining-rods *E* may be

provided with folding arms or keys by which to turn them, said arms being constructed and pivoted thereto in the manner shown in Fig. 10, or in any equivalent manner.

5 Having thus described my invention, what I claim is—

1. As an improvement in drums, the combination of the hoops, the hooks or jaws engaging with the hoops, and the straining-rods provided with right and left threads, as described and shown.

2. In a drum, the combination of the threaded straining-rods and the hooks or jaws provided with the extended necks adapted to cover and protect the screw-threads of said rods, as shown.

3. In a device for stretching the head of a drum or similar instrument, the hook provided with the recess *b*, as and for the purpose described.

4. As an improvement in drums, the wooden straining-hoops provided with a circumferential groove, and the metal band seated in said groove, as described and shown, whereby the hoop is prevented from springing and the band supported in position to receive the devices attached thereto.

5. In combination with a drum and hinged knee-rest, a spring arranged, substantially as described, to urge the same to an open position.

6. In combination with a folding knee-rest upon a drum, a detent or locking device arranged to operate, substantially as described, to keep the knee-rest in a folded or closed position.

7. The combination of the drum-body and the straining-hoops provided with bearing-plates *i i*, the threaded rod *h*, seated in said plates, the snare-strings, and the clamping-plate *g*, secured to the ends of the strings and mounted upon the screw-rod, as described and shown.

8. In combination with a drum, a knee-rest having a pivotal connection therewith, the pivot having its axis in substantially a radial line with reference to the body of the drum.

9. In combination with the drum and the straining-rods applied thereto, folding arms applied to the rods, substantially as shown.

GEORGE S. KNAPP.

Witnesses:

P. T. DODGE,
GEO. F. GRAHAM.