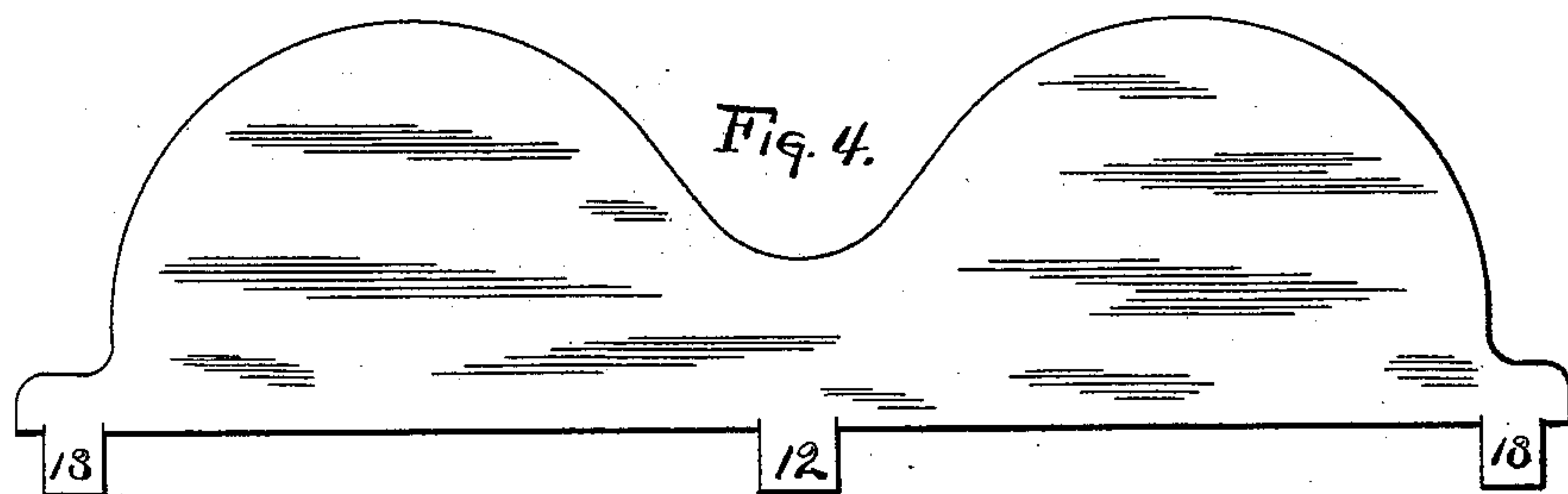
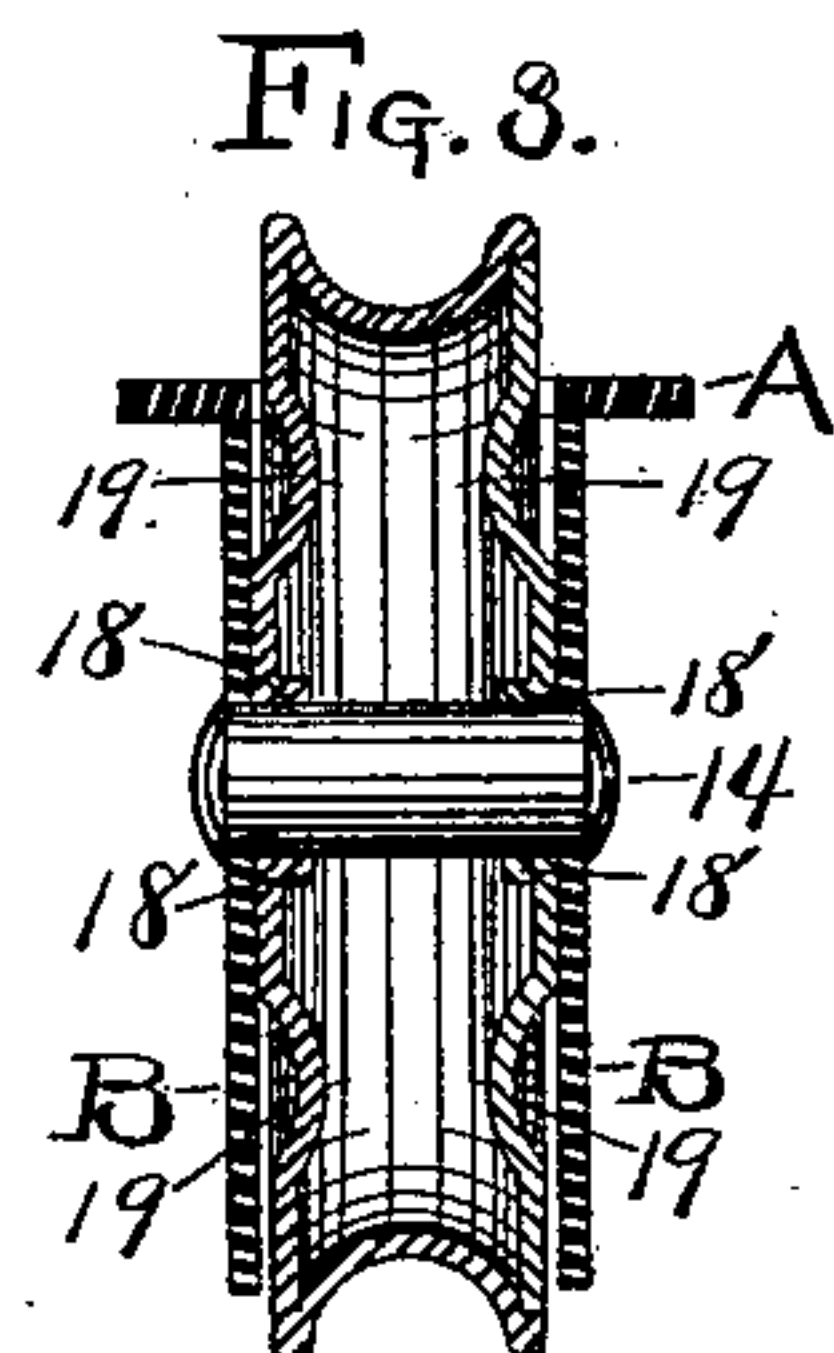
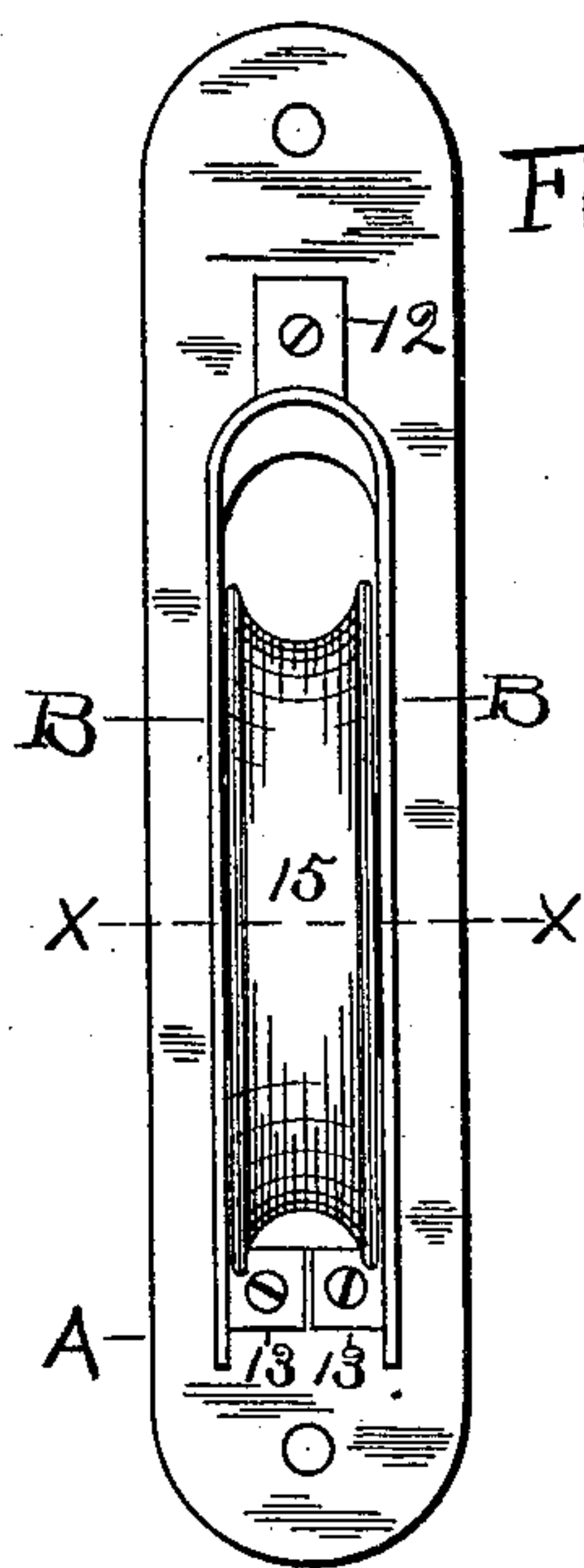
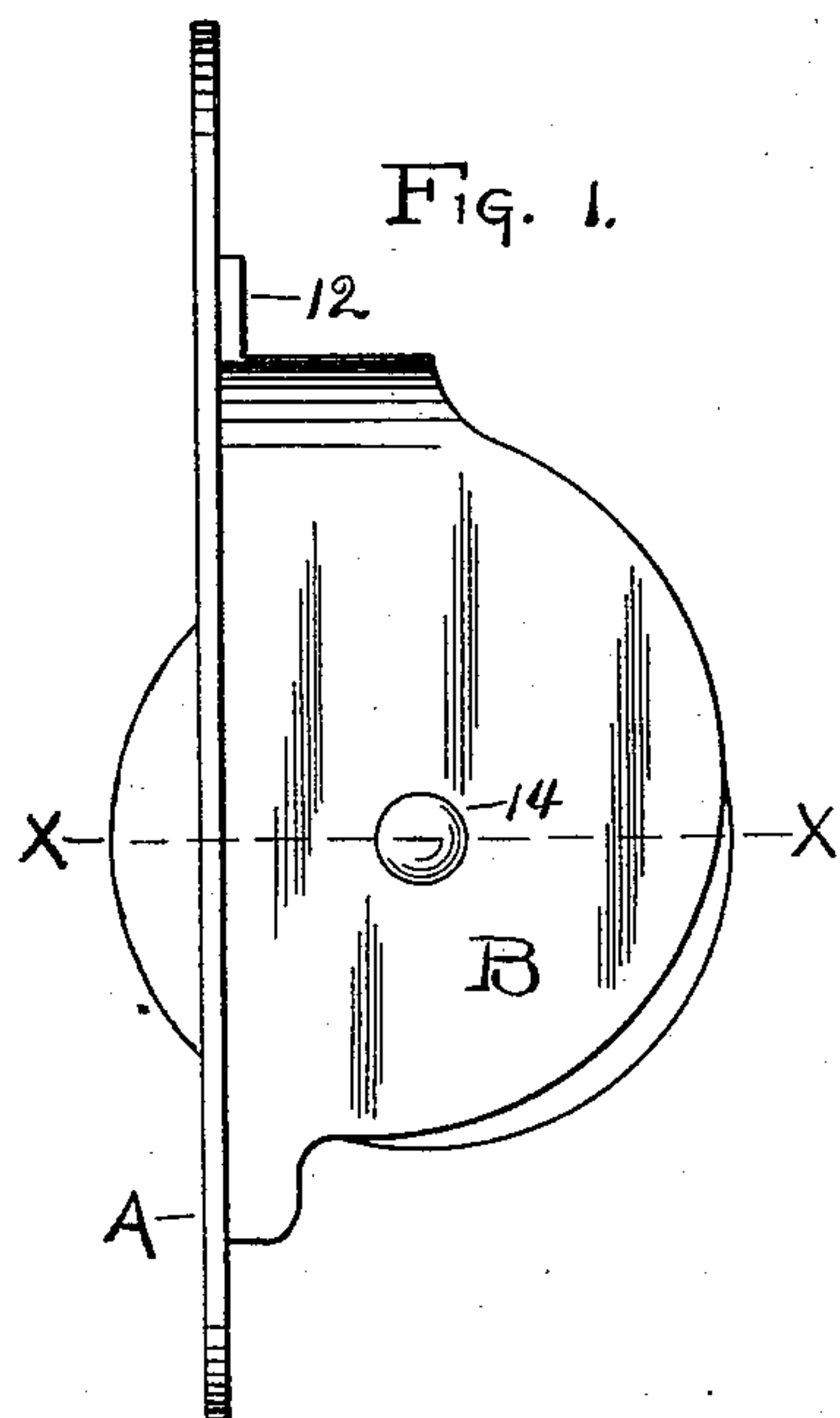


C. M. BURGESS.  
SASH CORD GUIDE.

No. 487,712.

Patented Dec. 13, 1892.



WITNESSES.

Edward W. Bush,  
F. H. Griswold.

INVENTOR.

Charles M. Burgess,  
By James Shepard  
ATTY.

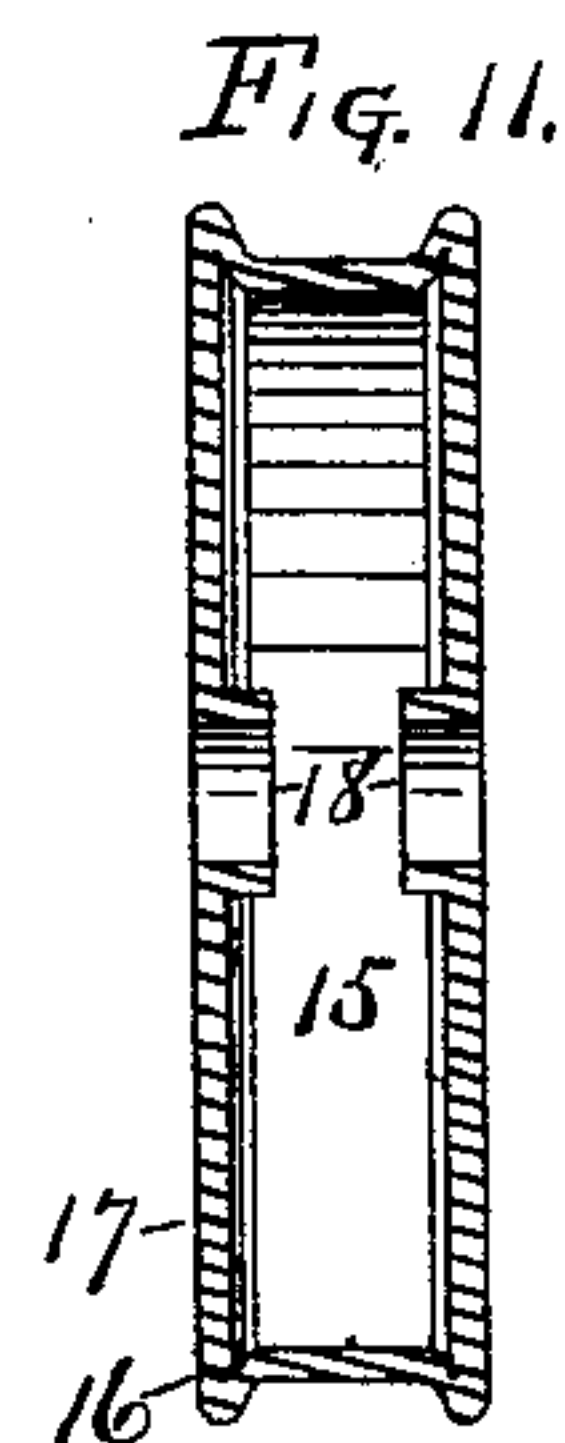
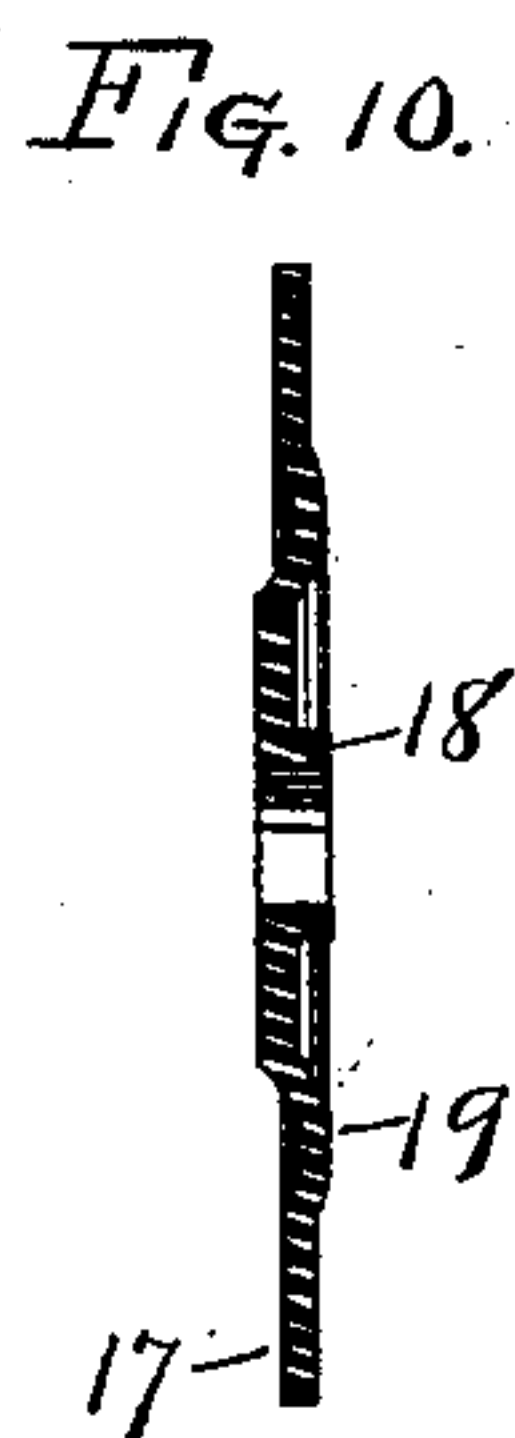
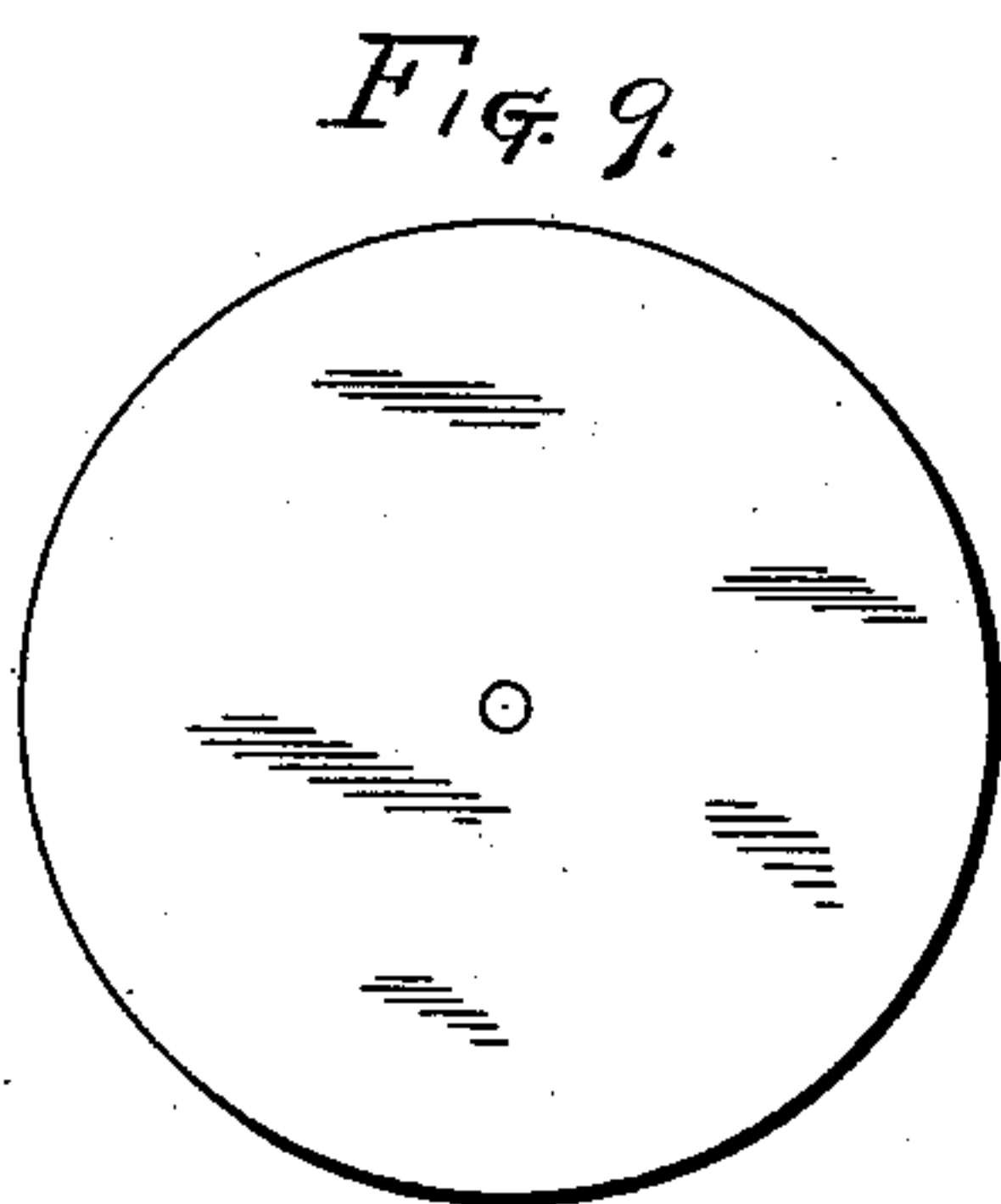
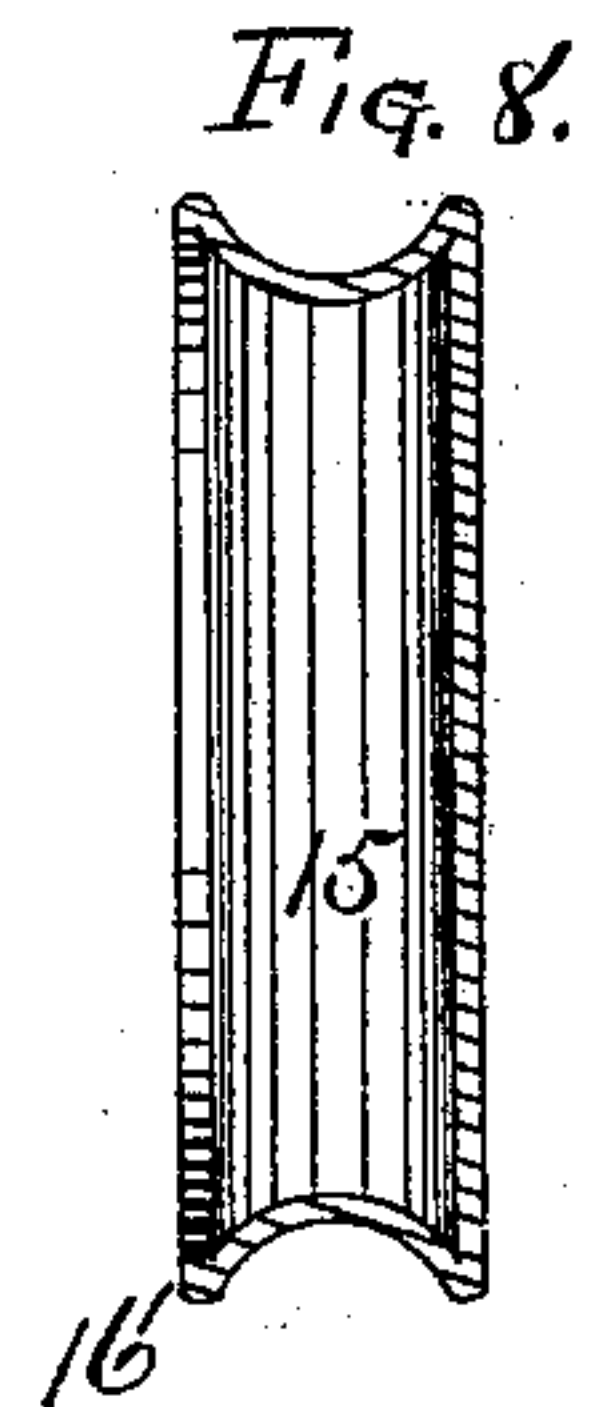
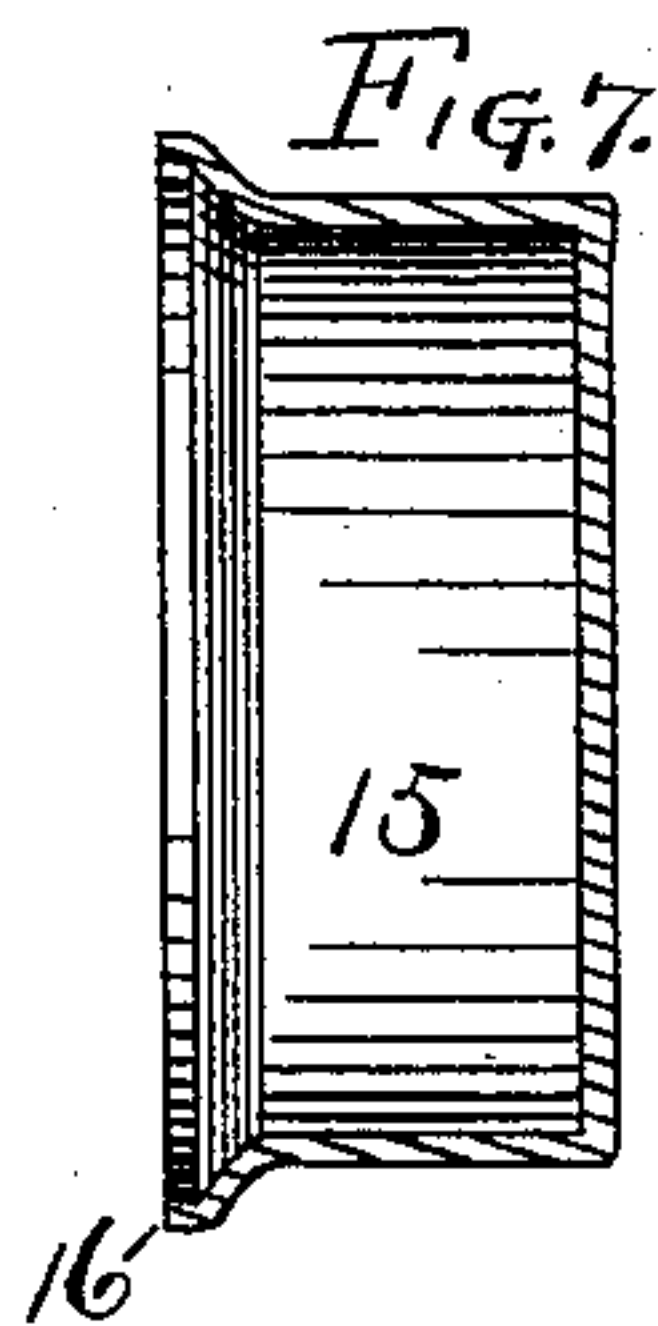
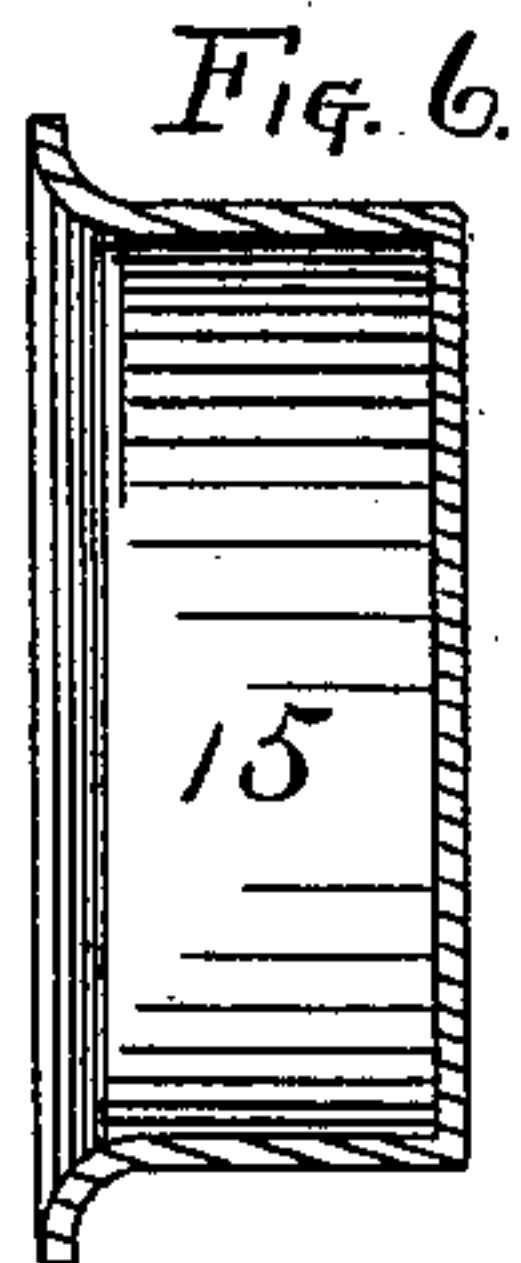
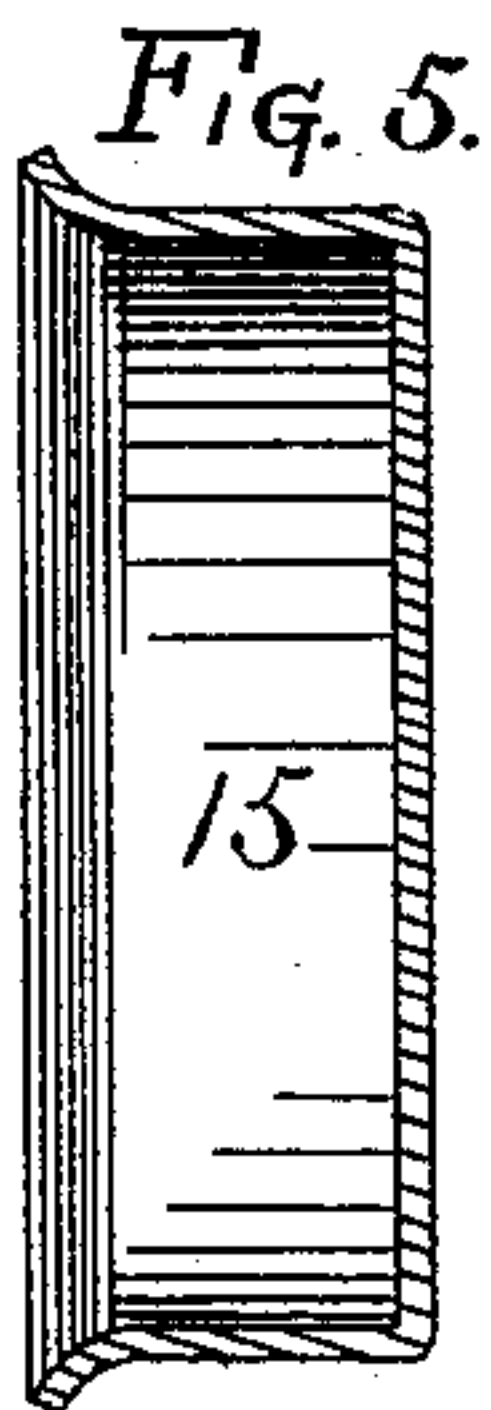
(No Model.)

2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

CHARLES M. BURGESS, OF NEW BRITAIN, CONNECTICUT, ASSIGNOR TO THE  
RUSSELL & ERWIN MANUFACTURING COMPANY, OF SAME PLACE.

## SASH-CORD GUIDE.

SPECIFICATION forming part of Letters Patent No. 487,712, dated December 13, 1892.

Application filed August 12, 1892. Serial No. 442,922. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES M. BURGESS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sash-Cord Guides, of which the following is a specification.

My invention relates to improvements in sash-cord guides; and the objects of my improvements are economy in the construction and efficiency in operation and to construct both the frame and the pulley of said guide from sheet metal.

In the accompanying drawings, Figure 1 is a side elevation of my sash-cord guide. Fig. 2 is a rear elevation of the same. Fig. 3 is a horizontal section on the line *x x* of Figs. 1 and 2. Fig. 4 is a plan view of the blank from which I form the main portion of the pulley-frame. Fig. 5 is a transverse section of one of my pulley-blanks, showing the result of the first bending operation. This blank is to form the edge and one side of the pulley. Fig. 6 is a like view of the same blank, showing the next step in the bending operation. Fig. 7 is a like view of the same, showing the third step in the bending operation. Fig. 8 is a like view of the same, showing the fourth and last step in the bending of this blank into form. Fig. 9 is a side view of the blank from which I form the other side of my pulley. Fig. 10 is a transverse section of the same after being swaged into form, and Fig. 11 is a transverse section showing a modified form of my pulley.

A designates the face-plate of the frame, which is of ordinary form.

B designates the sides or cheeks of the frame in which the pulley is supported and which, with the face-plate, constitute the frame. I form these cheeks from a blank substantially of the form shown in Fig. 4, said blank being provided with lugs 12 13 13, as shown. These lugs are bent on a line substantially coincident with the straight edge of the blank, so as to stand at right angles to the cheeks, as shown in Fig. 2. The blank is bent by doubling upon itself at the narrow neck or middle portion. The parts thus formed are placed in the position shown in Figs. 1 and 2, and then secured together by rivets or

screws passing through the lugs into the face-plate. The cheeks B B are also perforated at the proper points to receive the axle-pin 14 for the pulley.

I form the pulley for my sash-cord guide from two pieces of sheet metal, one piece forming one side and edge of the pulley, while the other piece forms the other side of the pulley. The blanks for both of these pieces are first cut in the form of a disk, and the blank for the part 15 of the pulley is struck up into a cup-shaped form, substantially as shown in Fig. 5. It is next struck in another die to draw the metal still farther and turn the edge out more nearly at right angles to the sides of the cup, after which the surplus metal is trimmed off, thereby producing the blank, as shown in Fig. 6. This blank is then struck in other dies to turn up the flange at the open or mouth end of the cup to receive the other part of the pulley 17. The part at the base of this flange on the inside of the cup constitutes an interior supporting-shoulder. This blank is then struck in dies to change it from the form shown in Fig. 7 to that shown in Fig. 8. In thus striking it into this form it is held between divided dies or clamps, which press diametrically on the edge of the pulley to give a proper surface for forming the grooved edge, and by a flat die, which strikes the solid bottom or side of the cup (the right-hand side in Fig. 7) to reduce the blank in thickness, changing it from the form shown in Fig. 7 to that shown in Fig. 8.

The companion part 17 of the pulley is formed from a disk-blank 9, having a small perforation in its center, which disk is struck in dies, so as to force the metal inwardly around said central perforation and form a boss 18 to receive the axle-pin 14, and preferably at the same time to form the annular bead 19. In forming this bead I also change the shape of the disk so that the central portion which surrounds the boss 18 projects slightly farther to one side than does the portion of the disk which surrounds said bead, so that the edge of the pulley will not bind on the frame. I also strike the solid or side portion of the part 15 in like manner to form the same central boss and bead to make the edge of the pulley thinner, as shown in Fig. 3.



The parts being so formed, the part 17 is placed within the flange 16 prepared for it in the part 15, with the edge of said part 17 abutting against the inner wall of said flange, while the side of said part 17 adjacent to said flange rests against said interior supporting-shoulder. The parts are then put in a lathe and the edge of the flange 16 spun down sufficiently to hold the part 17 in place. The change in thus spinning down the flange 16 is so small as to be incapable of illustration in the drawings. The pulley thus formed is secured within its frame by the pin 14 in the ordinary manner.

While I prefer to form the annular bead in the sides of my pulley, it is evident that the same is not essential. I have also shown the pulley in Figs. 2, 3, and 8 as having substantially a circular groove at the edge, whereby the pulley is adapted for a round cord or chain; but it is evident that, if desired, I may form the edge of the pulley in the form of an angular groove adapted to receive a strap or flat chain, and I have illustrated such a pulley in Fig. 11. This pulley is formed in like manner from two disks of sheet metal, one disk forming one side of the pulley and the edge, while the other disk forms the other side or cap, which is held in place by the flange 16, as before described. In this pulley I have not shown the annular bead; but it may be made in said pulley, if desired.

I claim as my invention—

1. In a sash-cord guide, the frame consisting of the face-plate A, and the cheeks B B, formed from a piece of sheet metal doubled upon itself at the middle portion and provided with lugs 12 13 13, by means of which it is secured to said face-plate, substantially as described, and for the purpose specified.

2. The herein-described pulley, consisting of the parts 15 and 17, of sheet metal, the part 15 being in the form of a cup, the bottom of which constitutes one broad side of the pulley, while the part corresponding to the sides of said cup extends inwardly from each corner in the form of a peripheral groove, and the other part 17, which constitutes the remaining side of the pulley, being set into and secured to said part 15, substantially as described, and for the purpose specified.

3. A sheet-metal pulley consisting of the cup-shaped part 15, forming one broad side and periphery of the pulley, having a flange 16 and adjacent interior supporting-shoulder, and the part 17 forming the remaining side of the pulley and having its edge abutting against the inner wall of said flange, while its side adjacent to said flange rests against said supporting-shoulder, substantially as described, and for the purpose specified.

CHARLES M. BURGESS.

Witnesses:

THOS. S. BISHOP,  
M. S. WIARD.