

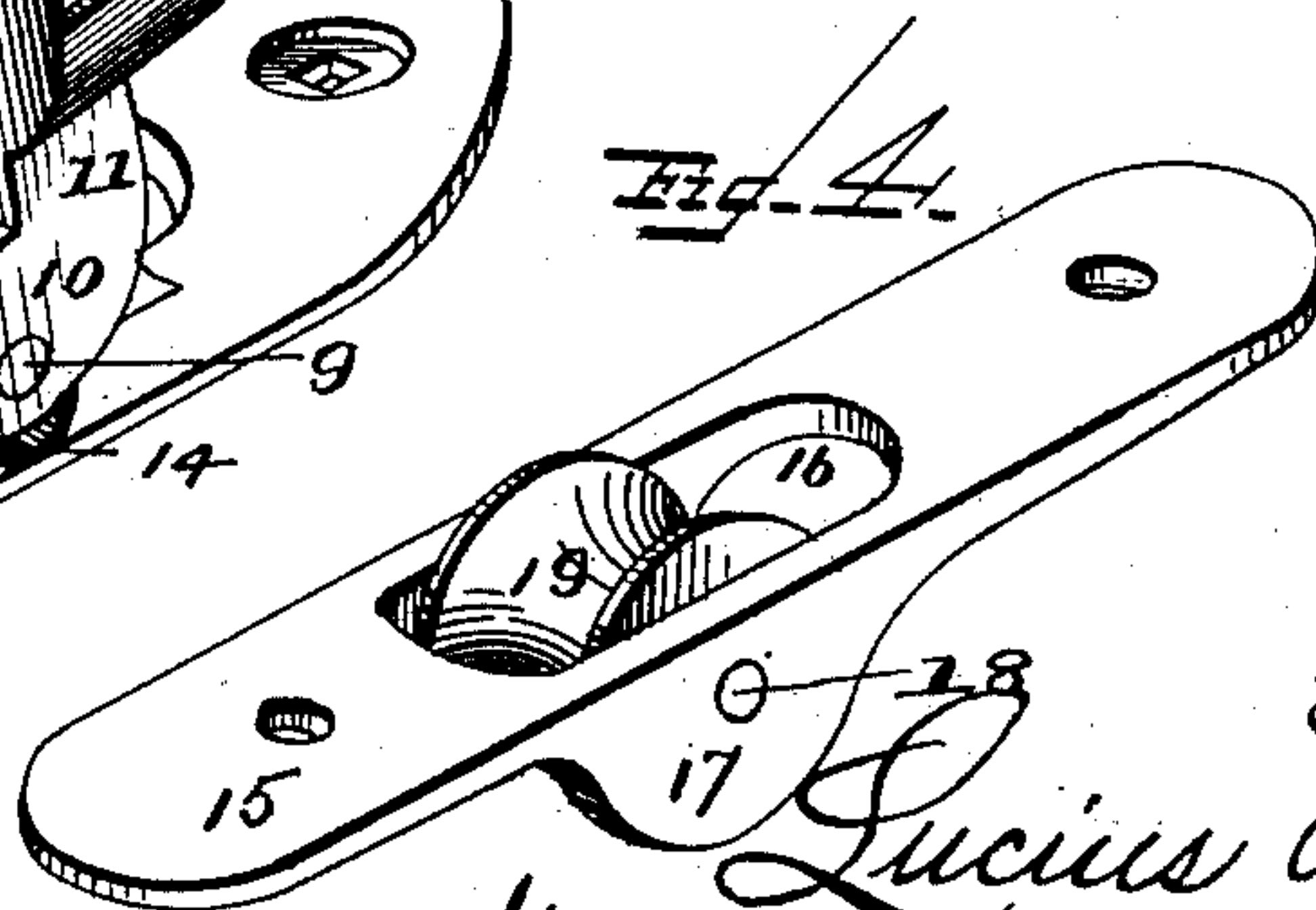
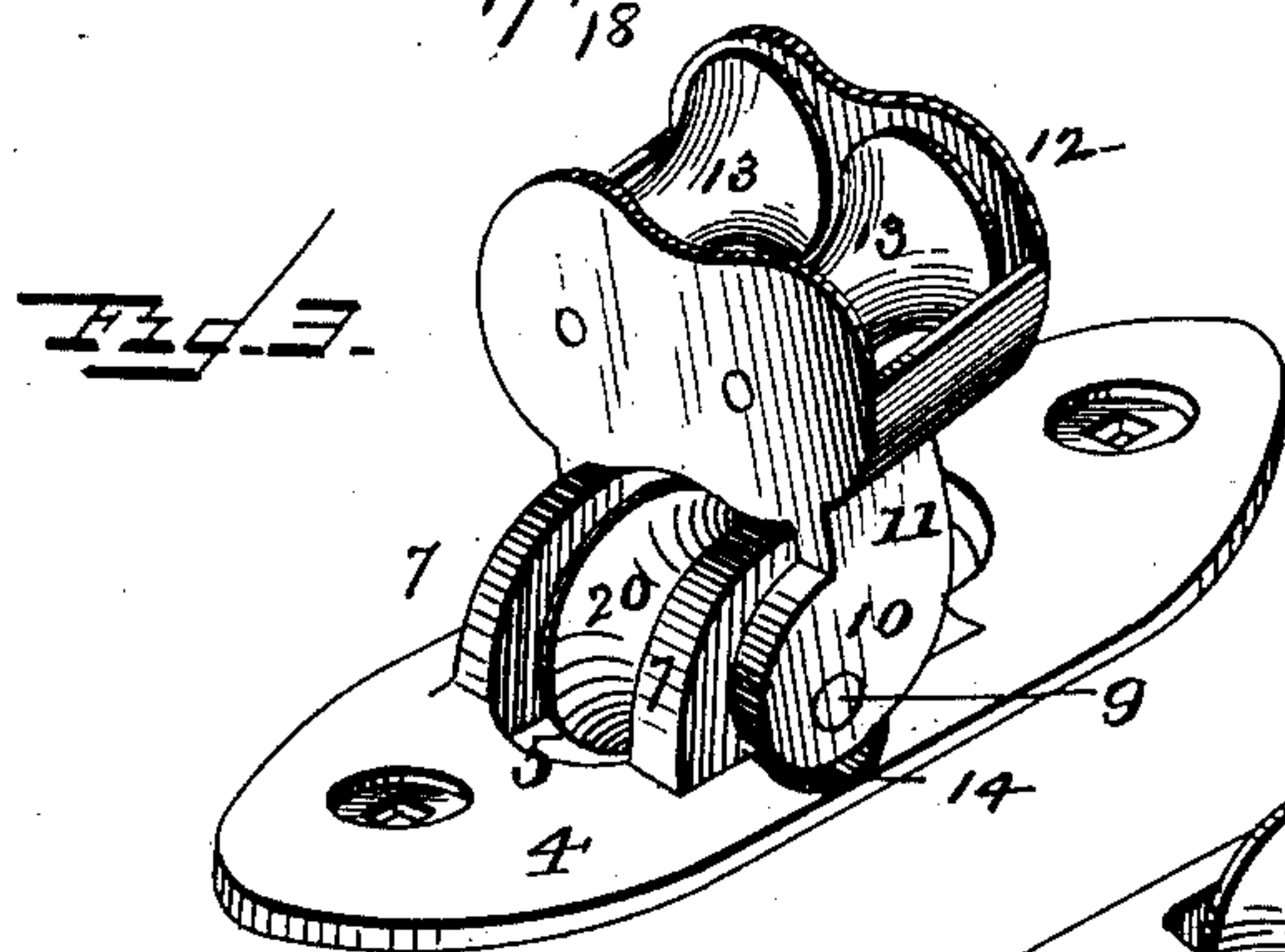
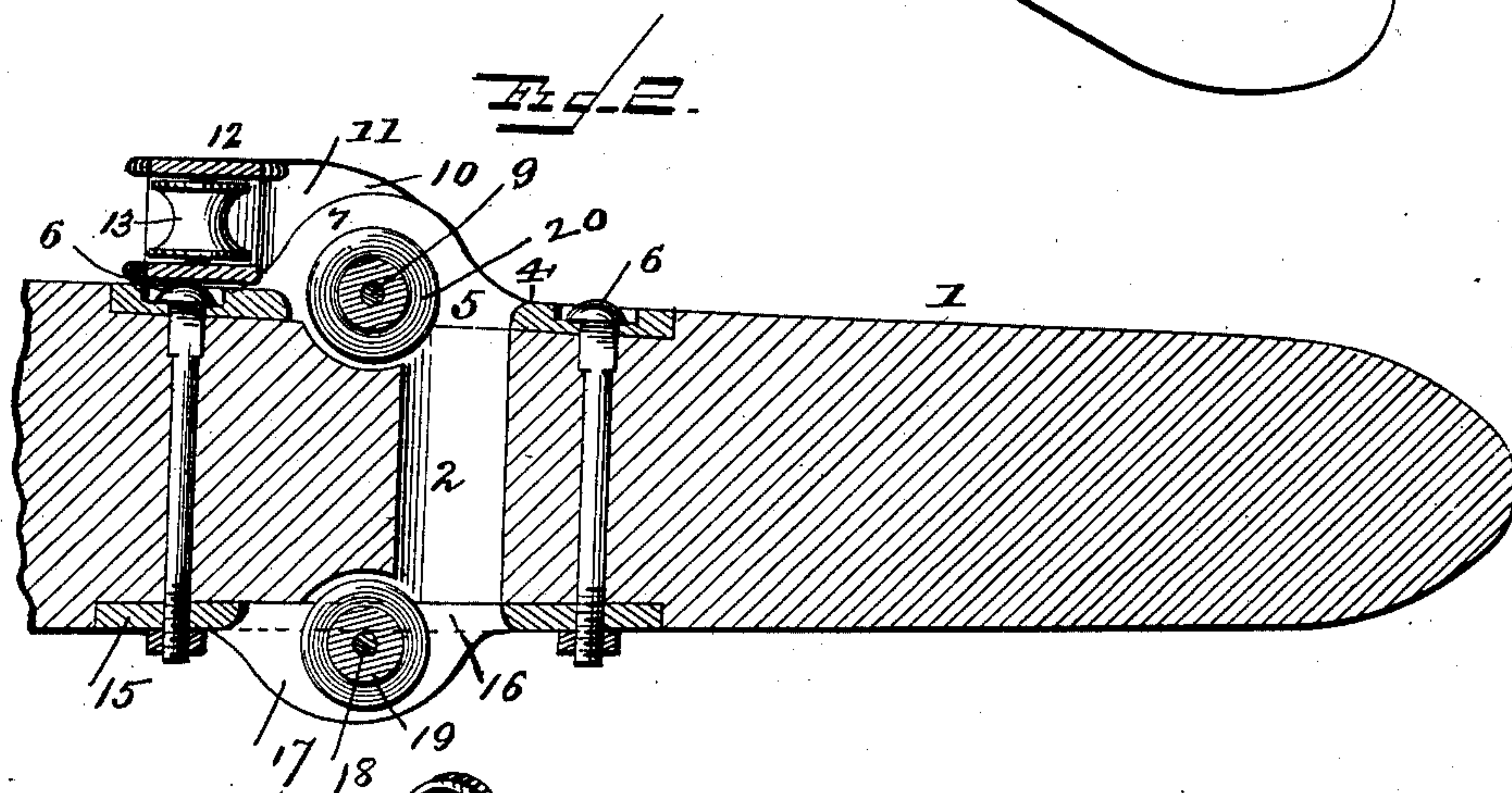
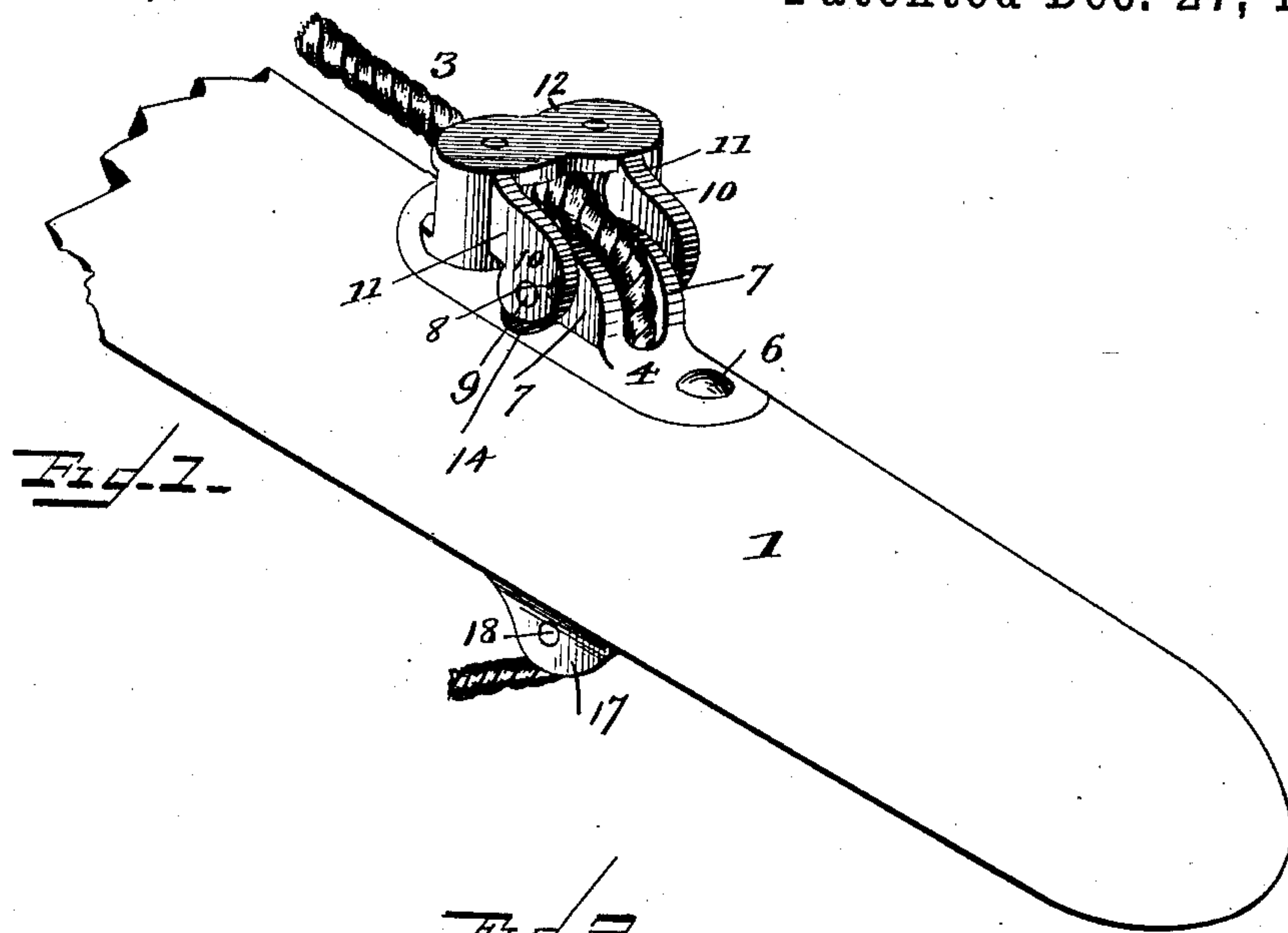
(No Model.)

L. DYER.

ANTI FRICTIONAL LEADER FOR THE SHEETS OF SAILS.

No. 375,696.

Patented Dec. 27, 1887.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

LUCIUS DYER, OF MILLBRIDGE, MAINE.

ANTI-FRICTIONAL LEADER FOR THE SHEETS OF SAILS.

SPECIFICATION forming part of Letters Patent No. 375,696, dated December 27, 1887.

Application filed August 5, 1887. Serial No. 246,195. (No model.)

To all whom it may concern:

Be it known that I, LUCIUS DYER, a citizen of the United States, and a resident of Millbridge, in the county of Washington and State of Maine, have invented certain new and useful Improvements in Devices for Removing Lateral Friction from a Rope or Chain Passing Through a Spar or Beam; 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, which form a part of this specification, and in which—

Figure 1 is a perspective view of one end of a yard or spar provided with my improved anti-frictional device for conveying the sheet. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a perspective detail view of the upper casting and frame, and Fig. 4 is a similar view of the lower casting.

Similar numerals of reference indicate corresponding parts in all the figures.

My invention has relation to that class of anti-frictional devices for conveying or leading the sheet from the sail through a yard or spar, or for conveying a rope through any pole or bar and reducing any lateral friction upon the same; and it consists in the improved construction and combination of parts of such a device, as hereinafter more fully described and claimed.

In the accompanying drawings, the numeral 1 indicates the yard, boom, spar, or whatever pole to which the device is applied, and this "spar," as I will term it, although it may be a spar of a vessel or any other wooden boom, is formed with a transverse perforation, 2, through which the sheet 3, which may be of rope or chain, is rove, the said sheet, although termed a "sheet" for the sake of convenience, being any rope or chain which may be employed for hoisting or drawing purposes.

A plate or casting, 4, having a short slot or perforation, 5, is secured upon the upper side of the spar with its perforation registering with the perforation in the spar, the surface of the plate being flush with the surface of the spar, and two bolts, 6, pass through the plate and the spar, securing the former to the latter.

Two lips, 7, having perforations 8, project

upward from the sides of the slot or perforation in the plate, and a small sheave or pulley, 20, is journaled upon a bolt, 9, passing through the lips or ears and through the downwardly-curved and perforated ends 10 of two arms, 11, projecting from a frame, 12, having two pulleys or sheaves, 13, journaled in it upon shafts parallel to the planes of the arms and at right angles to the sides of the frame, the frame being pivoted with the curved arms upon the bolt and swinging upon it. The upper side of the plate or casting is formed at the outer sides of the perforated lips or ears with two recesses, 14, into which the lower ends of the arms project, the said recesses being of such a shape that they will prevent the frame from tilting outward when raised to stand above the pulley between the ears.

A narrow plate or bar, 15, is secured upon the underside of the spar, having a slot or perforation, 16, registering with the lower end of the perforation of the spar, and this plate has two perforated ears or lips, 17, into which the ends of a bolt, 18, are secured, a pulley or sheave, 19, being journaled upon this bolt, and the sheet is passed through the perforation in the spar, passing under and around the pulley in the lower plate and around and over the pulley in the upper plate, and thereupon between the pulleys in the frame, being secured at that end to the clew or cringle of the sail, or to whatever object the lateral motion of which it is wished to overcome for the sheet.

It will be seen that any friction between the sheet and the sides of the perforation in the spar, which would be if the swinging frame with the pulleys did not exist, will be borne by the pulleys in the swinging frame, and the frame will have a sufficient play in a plane parallel to the axis of the spar to allow the sheet to freely play in the plane of the axis of the spar and of the pulleys in the same, while the pulleys in the swinging frame will bear the friction caused by the sheet swinging in any other plane.

It will also be seen that the spar will not be as much weakened by only having a perforation bored through it for the passage of the sheet, in place of the usual slot, in which a sheave of a diameter greater or as great as the diameter of the spar is journaled, such a slot weakening the spar considerably and giving it

a tendency to split, besides a tendency to break at the slotted place.

By having the pulley upon the under side of the spar journaled between the perforated ears or lips the said pulley is brought sufficiently below the under side of the spar to keep the sheet clear of the same and to do away with the necessity of having a chock or chafing-block upon the under side of the spar to keep the sheet clear from chafing same.

The construction of the upper plate with the swinging frame pivoted with its arms to the perforated ears by the pivotal bolt for the pulley or sheave is simple and durable, the entire device being constructed so as to be as simple and durable as possible, and it follows that the device may be used in different forms of hoisting devices, and in similar devices in which it is desirable to remove all lateral friction of a rope or chain, as well as in spars, yards, or booms of vessels.

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

In a device for removing lateral friction from

a rope or chain passing through a spar or beam, the combination of the spar having a transverse perforation, a plate secured upon one side of the spar and having a perforation registering with one end of the perforation in the spar, and having a pulley journaled upon a bolt in two perforated ears at the sides of the perforation, a frame having two pulleys journaled in it and having two curved arms pivoted with their perforated ends upon the ends of the bolt for the pulley, a plate upon the other side of the spar having a perforation registering with the perforation in the spar, and having a pulley journaled between lips or ears at the sides of the perforation, and a sheet passed around the pulleys and through the perforation and between the pulleys in the frame, as and for the purpose shown and set forth.

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

LUCIUS DYER.

Witnesses:

NELSON C. WALLACE,
BARTLETT L. SWANTON.