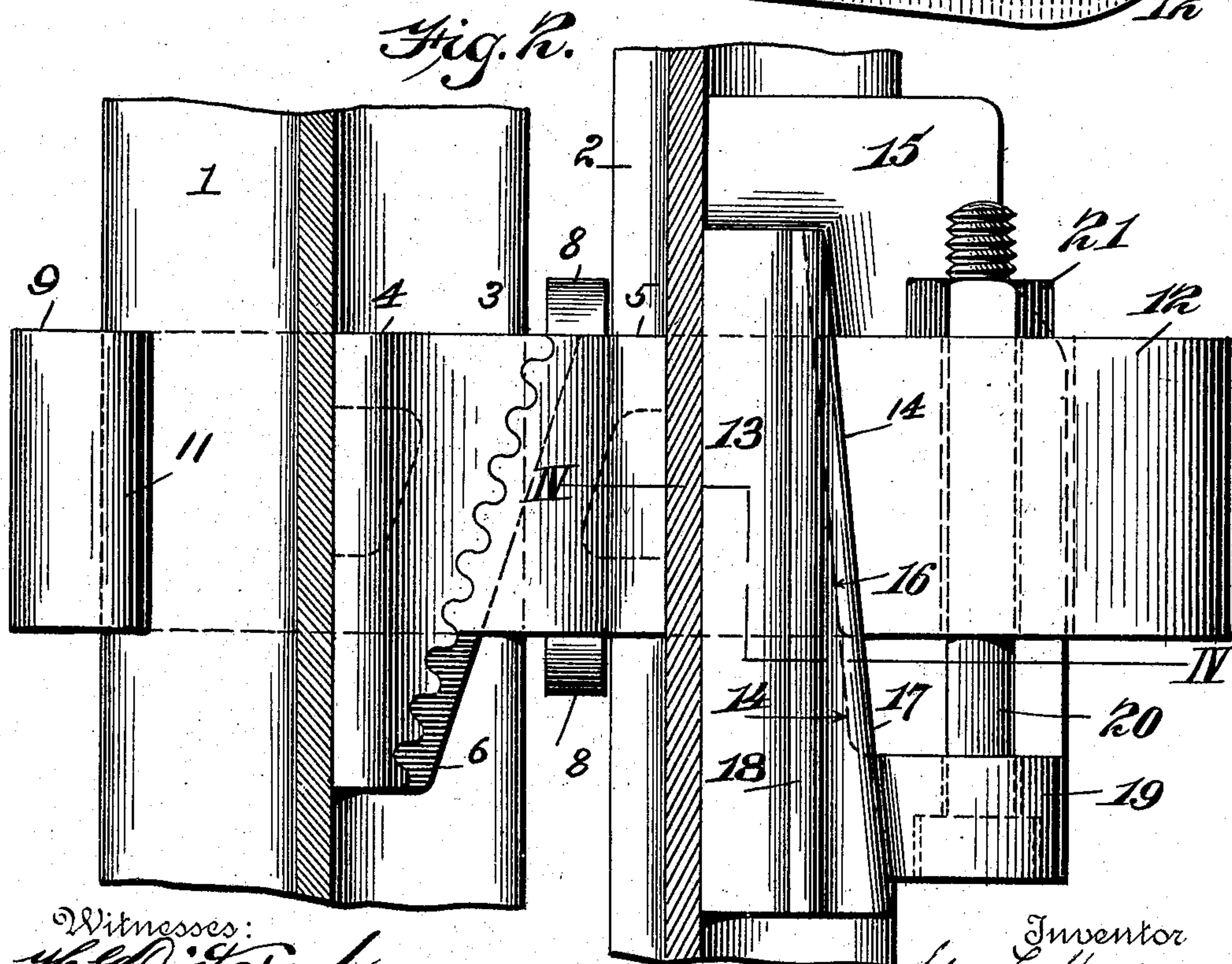
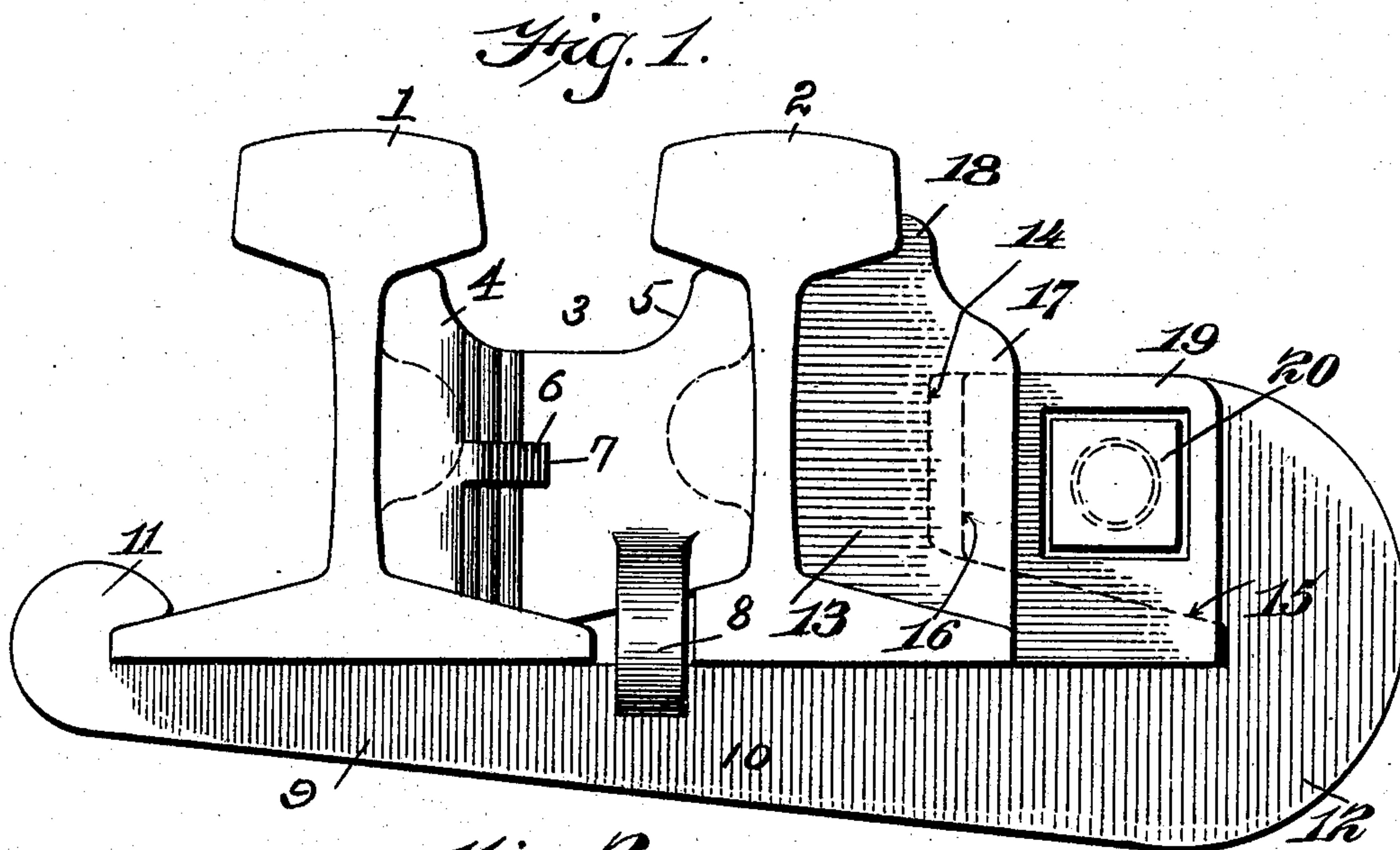


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GUARD RAIL CLAMP.
APPLICATION FILED AUG. 22, 1907.

899,694.

Patented Sept. 29, 1908.

2 SHEETS—SHEET 1.



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 2 SHEETS—SHEET 2.

Fig. 3.

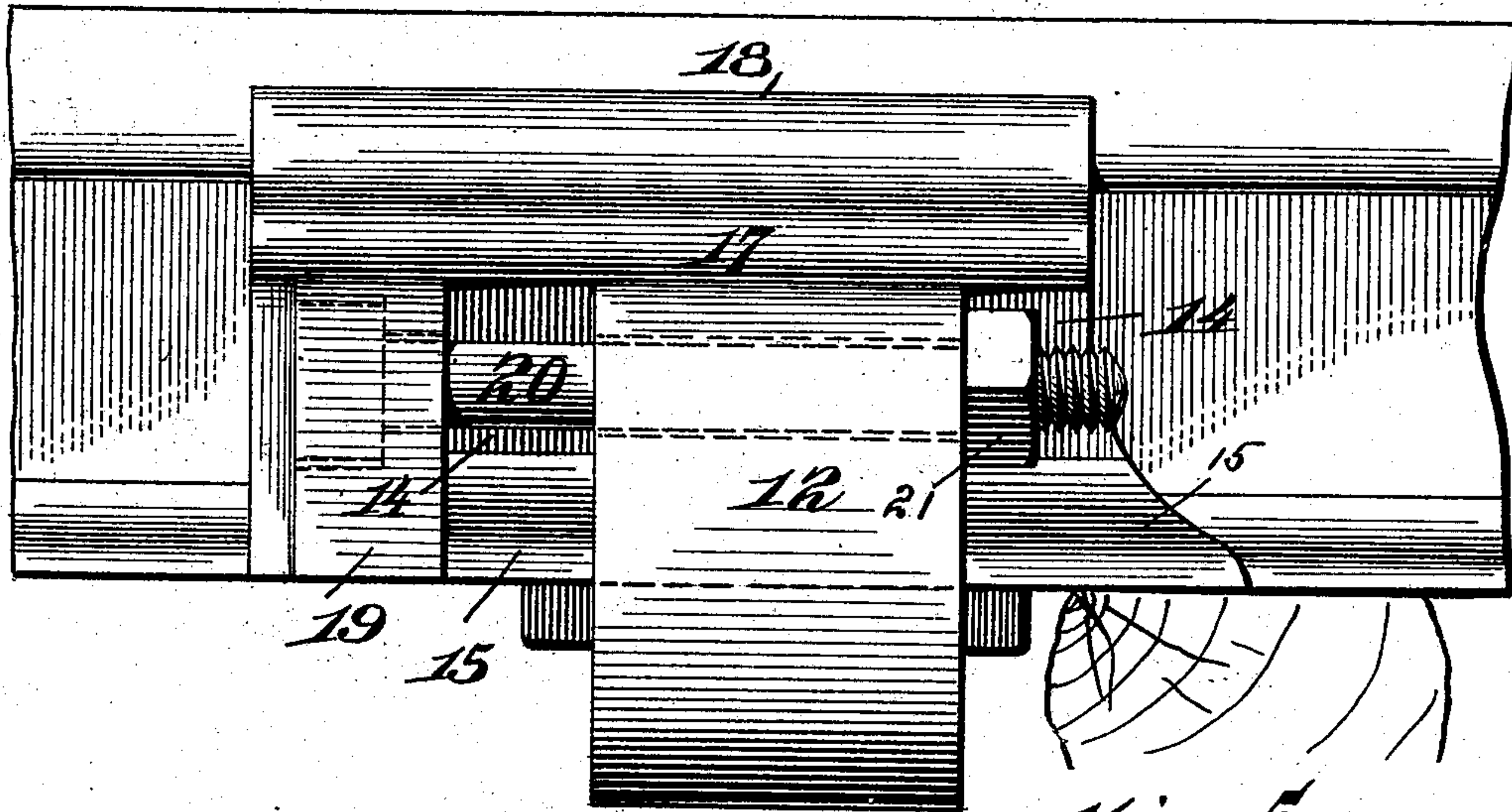


Fig. 5.

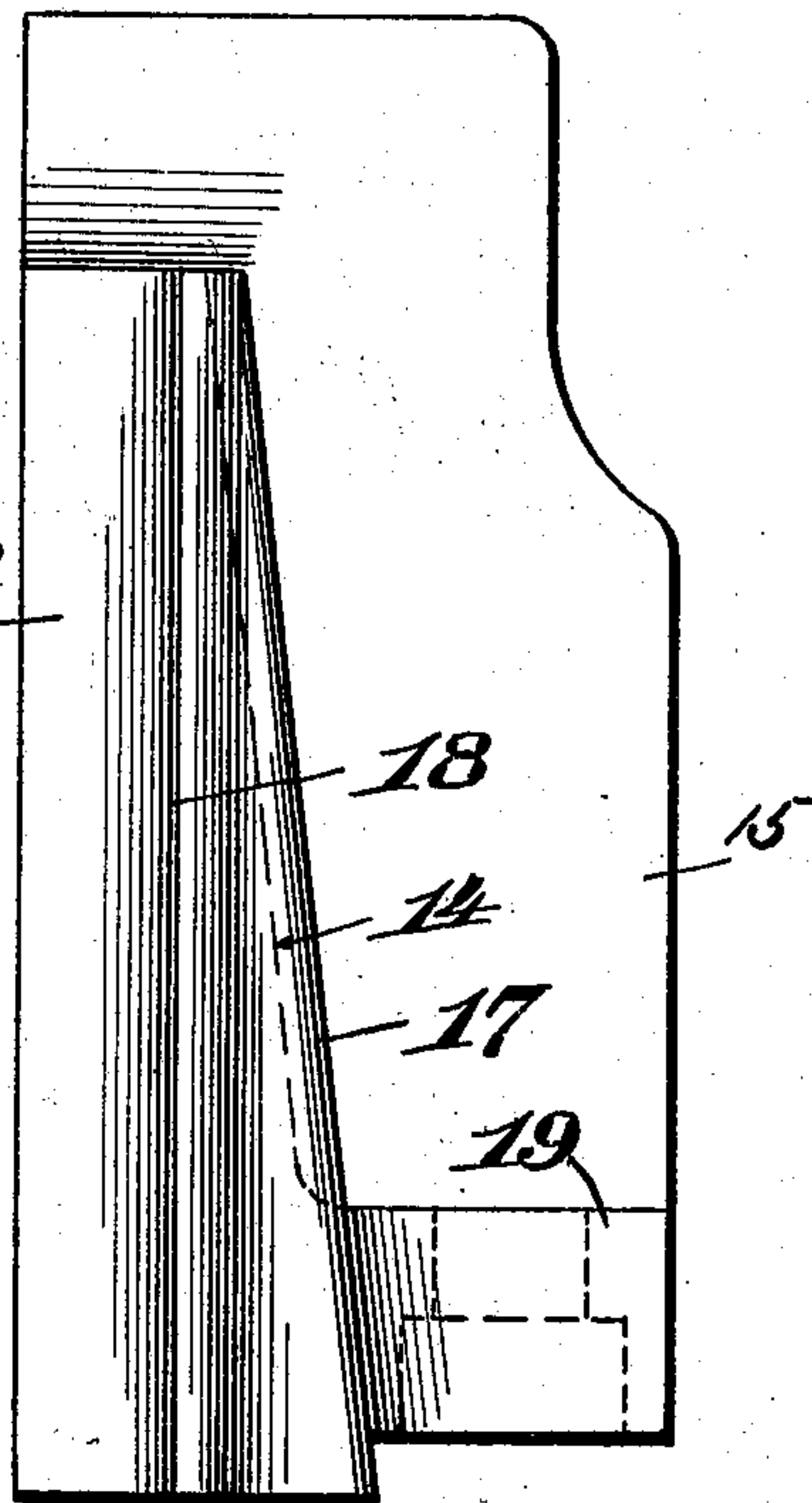
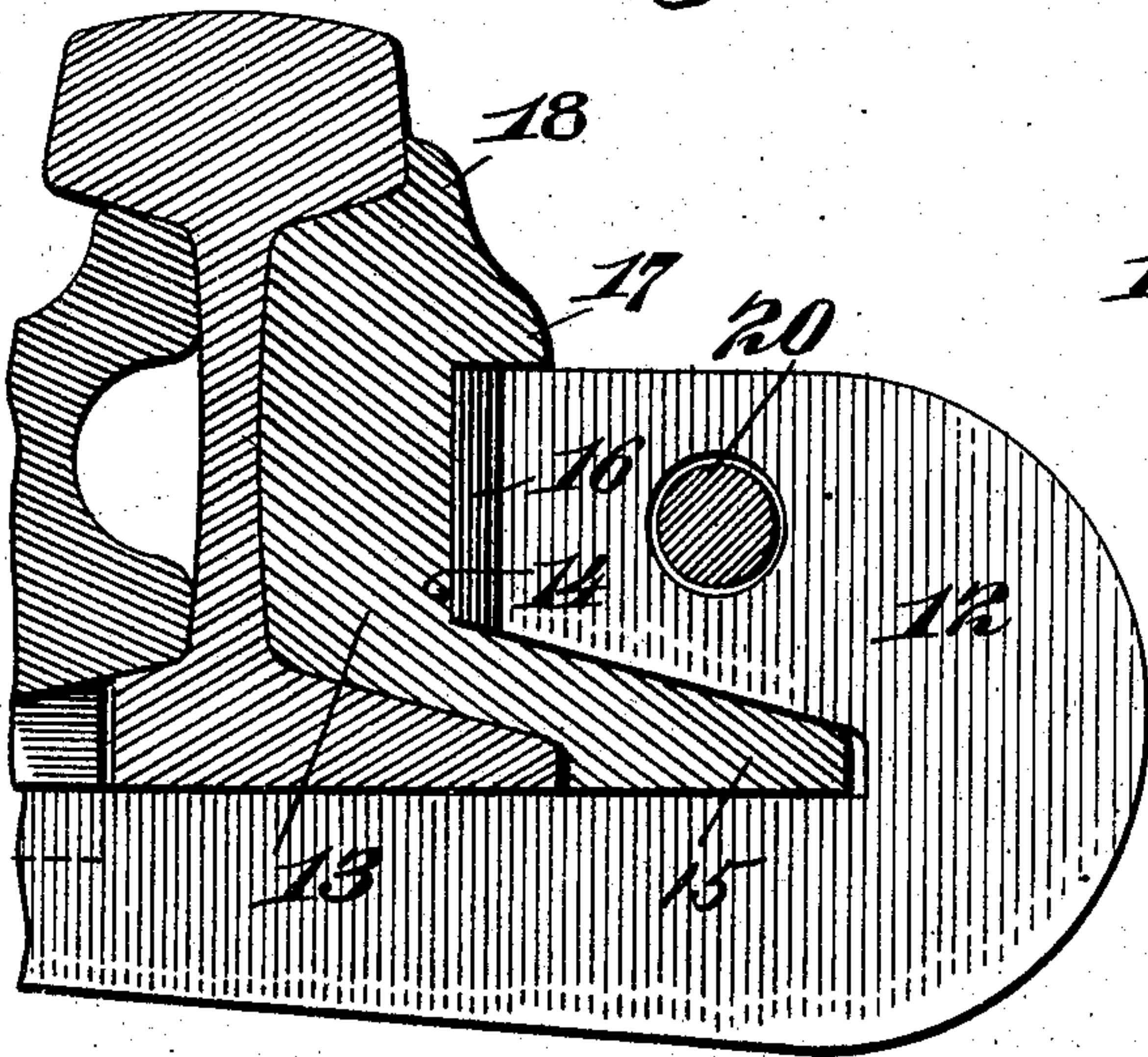


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE L. HALL, OF NEW YORK, N. Y.

GUARD-RAIL CLAMP.

No. 899,694.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed August 22, 1907. Serial No. 389,676.

To all whom it may concern:

Be it known that I, GEORGE L. HALL, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Guard-Rail Clamps, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is an end elevation of the device in position; Fig. 2 a plan view, the track and guard rails being shown in horizontal section; Fig. 3 side elevation of the device in position; Fig. 4 a vertical transverse sectional view on the line IV—IV of Fig. 2; Fig. 5 a detail plan view of the wedge.

This invention relates to that class of devices known as guard rail clamps, and which are used for the purpose of clamping a guard rail to the adjoining track rail, a filler block or spacing means being interposed between the two rails to hold them a fixed distance from each other.

One of the objects of this invention is to provide means by which the clamp may be rigidly held in position without spiking the clamping means to the tie, or keying or bolting it to the guard rail.

Another object of the invention is to provide means whereby the clamp will be held in place by a wedge and a tension device mounted on said wedge, and connected to the clamp bar to hold the wedge tightly in engagement with the clamp arm; and a further object of the invention is to provide means whereby the wedge may readily be locked in close engagement with the clamp arm to insure a great clamping effect on the rails.

It is well known that in devices of this character where a wedge is used to secure the clamp in place, a very slight movement of the wedge will loosen the clamp and render the entire device practically useless. The means heretofore used for holding the wedge against the co-acting parts were defective in that they did not provide for a convenient and efficient adjustment of the wedge to tighten the parts. This invention provides means for holding the wedge tightly in position and under a tension; and also provides means for increasing this tension and for taking up any slack which may occur between the wedge and the co-acting part of the device or the rails.

Referring to the various parts by numerals, 1 designates the track rail and 2 the

guard rail. To space the guard rail a suitable distance from the track rail I employ the two-part filler block 3. This block is composed of two parts, 4 and 5, which are separated vertically on a diagonal line, the adjoining surfaces thereof being ribbed and grooved vertically so that the two parts may be interlocked to prevent independent endwise movement of said sections or members. The member 4 is provided midway between its upper and lower edges with an outward extending horizontal rib 6 which extends the entire length of the block; and the co-acting member 5 is formed with a corresponding groove 7 to receive said rib, whereby the two members will be held against independent vertical movement. The member 4 is considerably longer than the member 5 to provide for a considerable range of adjustment. It will be seen that by adjusting the blocks on each other the guard rail may be spaced various distances from the track rail.

The shorter member 5 is provided with depending lugs 8 which engage the sides of the clamp bar proper to hold said member stationary during the adjustment of the clamp.

The clamp bar 9 is formed with a main horizontal portion 10 which extends under the two rails, as shown in Fig. 1. At one end this clamp bar is formed with a short upward extending hook 11 which is adapted to engage the edge of the base of the track rail. The other end of the bar is formed with a large upward extending yoke 12, and within said yoke, and against the adjoining side of the guard rail 2 is arranged a wedge by which the clamp bar is held in position. This wedge consists of a rail engaging part 13; a wedge-part 14, and the base part 15. The wedge part is formed with a vertical face 16 which engages the vertical face of the inner end of the yoke 12, and serves when the wedge is driven into place to draw all the parts of the clamp together. The base part 15 fits under the inwardly turned part of the yoke 12, and serves to hold the wedge in place and prevents it lifting or rising above the yoke. Along the upper edge of the vertical face of the wedge is formed a rib 17 which overlies the end of the yoke 12; and along the upper edge of the rail-engaging part is formed an upstanding rib 18 which lies against the head of the adjoining rail. The end of the base part 15 adjoining the ta-

pered end of the wedge is adapted to lie on the adjoining tie to assist in maintaining the clamp to its proper upright position.

The wedge is formed at its rear end with
 5 an outward extending vertical lug 19 which is horizontally perforated for the passage of a retaining bolt 20. The upturned part of yoke 12 is apertured horizontally to receive the bolt 20. On the bolt 20 and bearing
 10 against the rear side of the yoke 12 is nut 21 which serves to maintain a tension on the bolt and to hold the wedge in place.

It is to be noted that the bolt 20 is outside of the vertical plane of the wedge and that
 15 the wedge engages the yoke about midway the ends of the wedge. The point of engagement, however, between the yoke and the wedge must necessarily vary according to the adjustment of the wedge and the yoke.
 20 The result of thus locating the lug 19 near the rear end of the wedge and placing the bolt beyond the vertical plane of the wedge is that any strain on the bolt drawing the wedge into the yoke will tend to throw the
 25 small end of the wedge inward to the guard rail. This is important as it is desirable to maintain an inward pressure on the guard rail, thereby strongly tending to resist the outward strain on said rail. It is also desirable that the wedge engage the yoke about
 30 midway the ends of the wedge in order that it may be capable of a slight tilting action by which the smaller end of the wedge will be pressed firmly against the guard rail. It
 35 will, therefore, be seen that the action of the wedge under the tension of the bolt 19 is quite different from the action of devices wherein a wedge is drawn into wedging relation with its co-acting parts by a bolt con-
 40 nected to the smaller end of the wedge. In this arrangement of the parts the tilting or binding action of my device is not secured. Another advantage of the arrangement and construction of the parts of my clamp is that
 45 a very great range of adjustment may be secured by the use of a comparatively short wedge and that the bolt and the yoke do not extend beyond the length of the wedge. For this reason the length of the device along the
 50 tracks is only equal to the length of the wedge, and, therefore, its length does not vary by reason of the adjustment of the wedge in the yoke. This is of advantage in that the length of the device is at all times
 55 fixed.

In operation, after the filler block and clamp are properly arranged on a track rail and guard rail, the wedge is driven to place with a sledge or other means. When it is
 60 home a bolt is passed through the lug 19, and through the yoke 12, and the retaining nut screwed thereon. By this means the tension is maintained on the wedge to prevent it from moving longitudinally under vibrations
 65 of the rails. Should the wedge, for any rea-

son, become slightly loosened it is simply necessary to drive it home, and then tighten up the nut.

It will be thus seen that I have provided a simple clamp which may be readily applied, 70 and which when once in position will not become loosened or displaced through the vibrations of the rails.

Having thus fully described my invention what I claim as new and desire to secure by 75 Letters Patent is:

1. A rail clamp comprising a clamp bar provided at one end with means for engaging the base of a rail and at its other end with an
 80 upwardly extending yoke, a wedge formed with a track-engaging side and with an inclined side adapted to engage the clamp bar, and a bolt connected to the rear end of the wedge and to the clamp bar, said bolt being
 85 arranged outside of the vertical plane of the wedge.

2. A guard rail clamp comprising a clamp bar, a wedge formed with a rail engaging part and an inclined wedge part and a horizontal
 90 outwardly-extending base part said base part being adapted to engage the clamp, and to extend beyond the wedge part to engage a tie, and means adjustably connecting the wedge to the clamp bar, said means being
 95 connected to the rear end of the wedge and extending toward the point thereof and being shorter than the wedge, whereby said means will not project beyond the ends of the wedge.

3. The combination of a track rail, and a
 100 guard rail, a clamp bar provided with means at one end to engage a rail and at its other end with upwardly extending means to engage a wedge, a wedge adapted to engage the upward extending end of the clamp bar and
 105 the adjoining side of one of the rails, a bolt connecting the rear end of the wedge to the clamp bar to hold said wedge in position said bolt being of less length than the wedge and extending toward the point thereof, whereby
 110 it will not project beyond the ends of the wedge in any position of the wedge, and a filler block between the two rails.

4. A rail clamp comprising a clamp bar provided with means at one end to engage a
 115 rail and at its other end with a wedge-engaging part, a wedge adapted to engage the rail and one end of the clamp bar, an outwardly extending lug formed on the rear or larger end of the wedge, a bolt connected to said lug
 120 and extending toward the point of the wedge, said bolt being of less length than the wedge and adjustably connected to the clamp bar, whereby the bolt will be outside of the vertical plane of the wedge and will not extend
 125 beyond the ends thereof.

5. A guard rail clamp comprising a clamp bar, a wedge adapted to fit between the clamp and the rail, an adjustable means connecting the rear end of the wedge to the
 130

clamp bar, the connection between said adjustable means and the clamp bar being arranged at a point between the ends of the wedge and outside of the vertical plane of the wedge, whereby a strain on said adjustable means would tend to force the end of the wedge inwardly to the rail, substantially as described and for the purpose set forth.

6. A rail clamp comprising a clamp bar adapted to engage the rail, a wedge provided with one straight rail-engaging side and an inclined or tapered clamp bar engaging side, a bolt connected to the rear or larger end of said wedge and extending toward the point

thereof and passing through the clamp bar, and a nut screwed on said bolt and arranged to draw the wedge toward the clamp bar, whereby an outward strain on the point of the wedge will be directly opposed by the strain on the bolt.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 8th day of August 1907.

GEO. L. HALL.

Witnesses:

WM. R. DAVIS,
E. H. KAUFMANN.