

Oct. 7, 1930.

G. L. MOORE ET AL

1,777,990

ANTICREEPER FOR RAILS

Original Filed Oct. 4, 1927

4 Sheets-Sheet 1

Fig. 1.

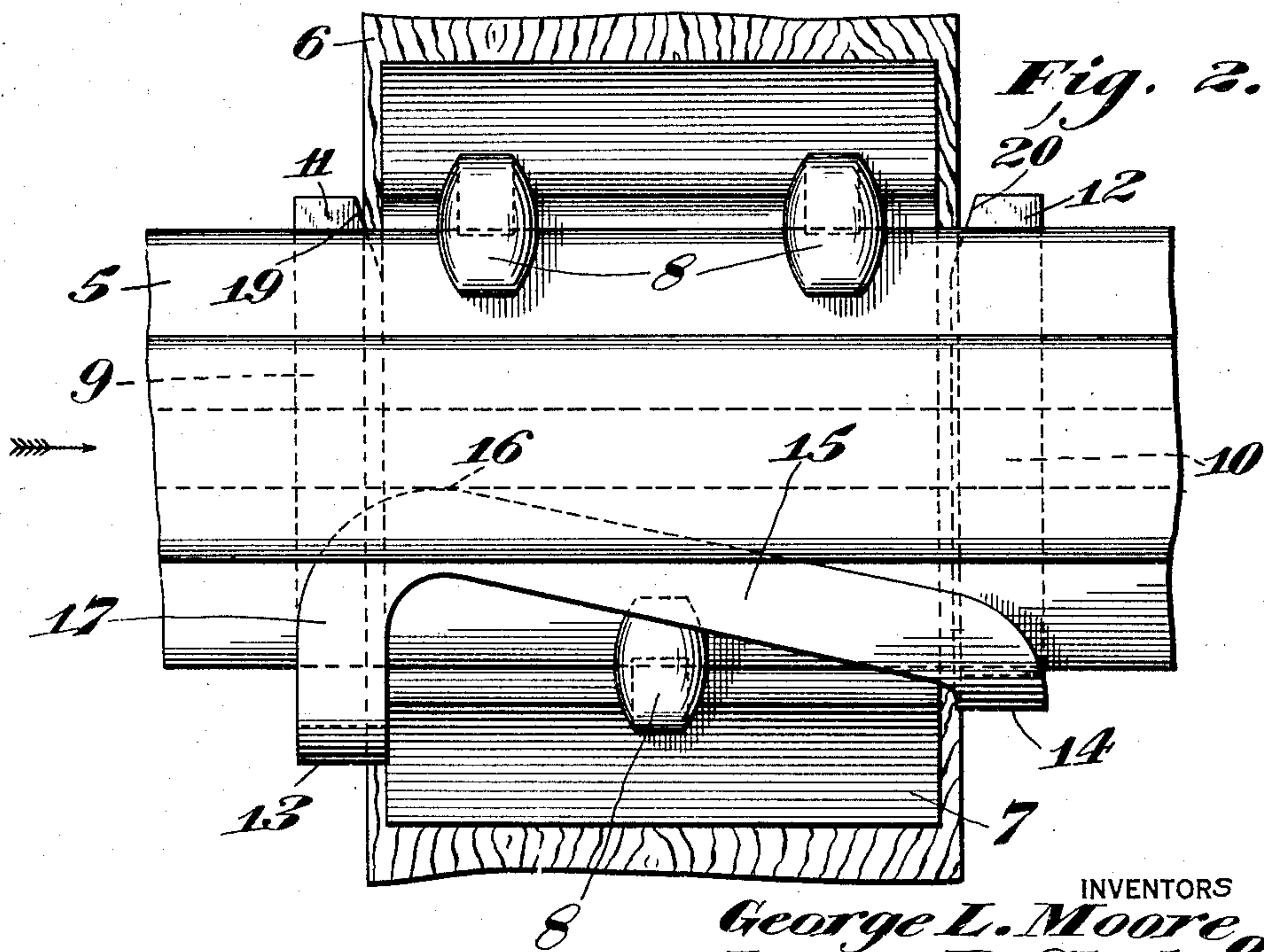
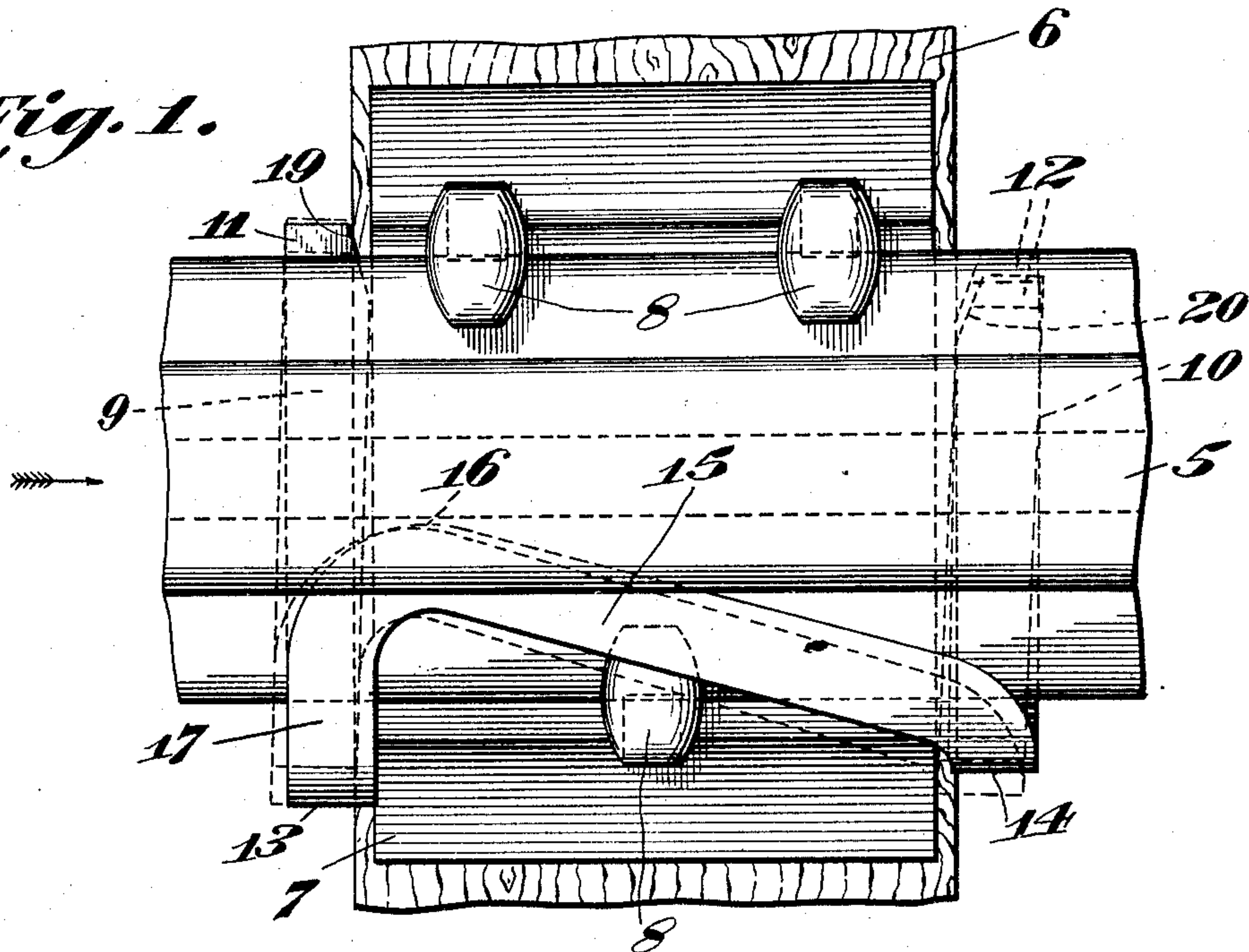


Fig. 2.

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Fig. 3.

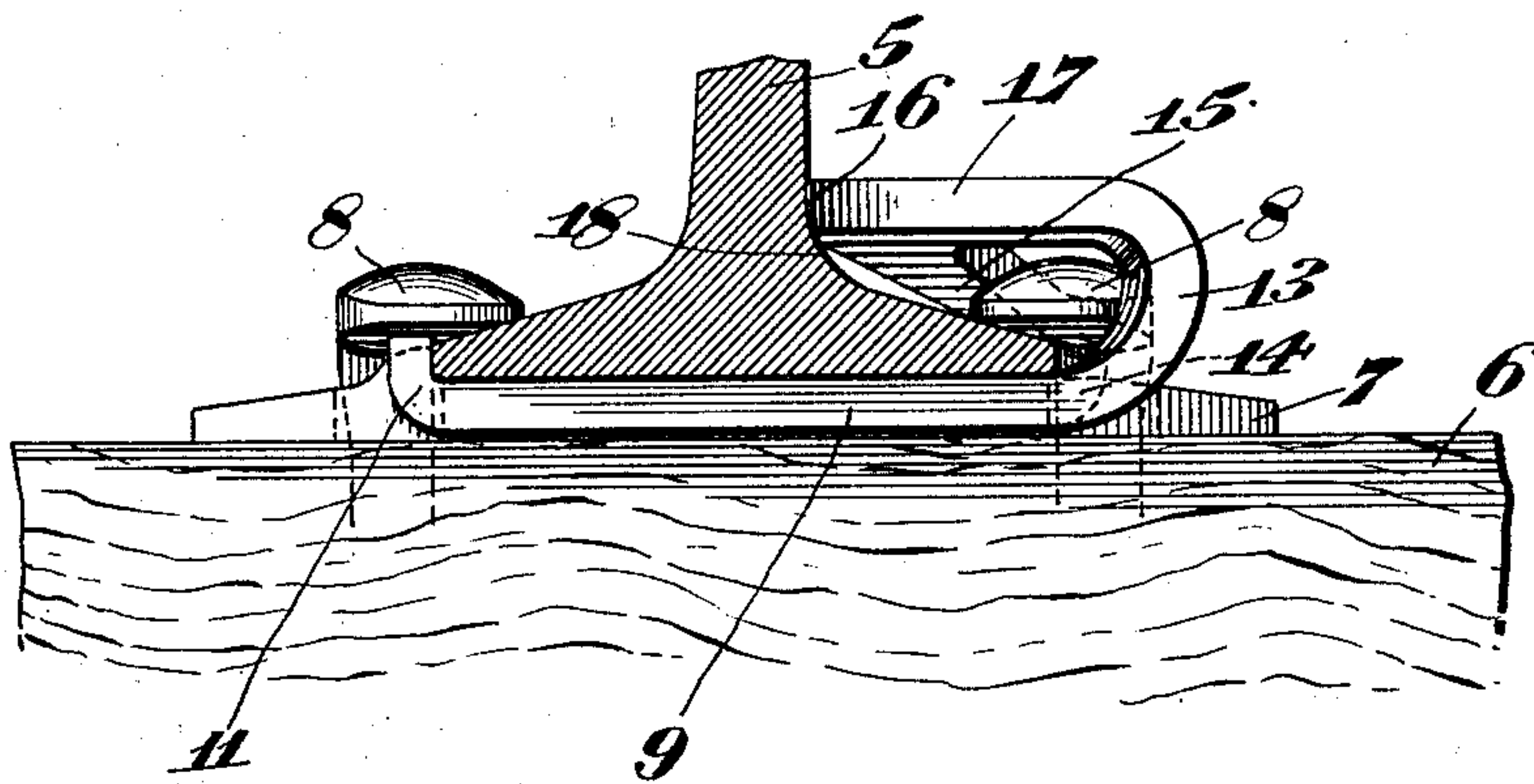
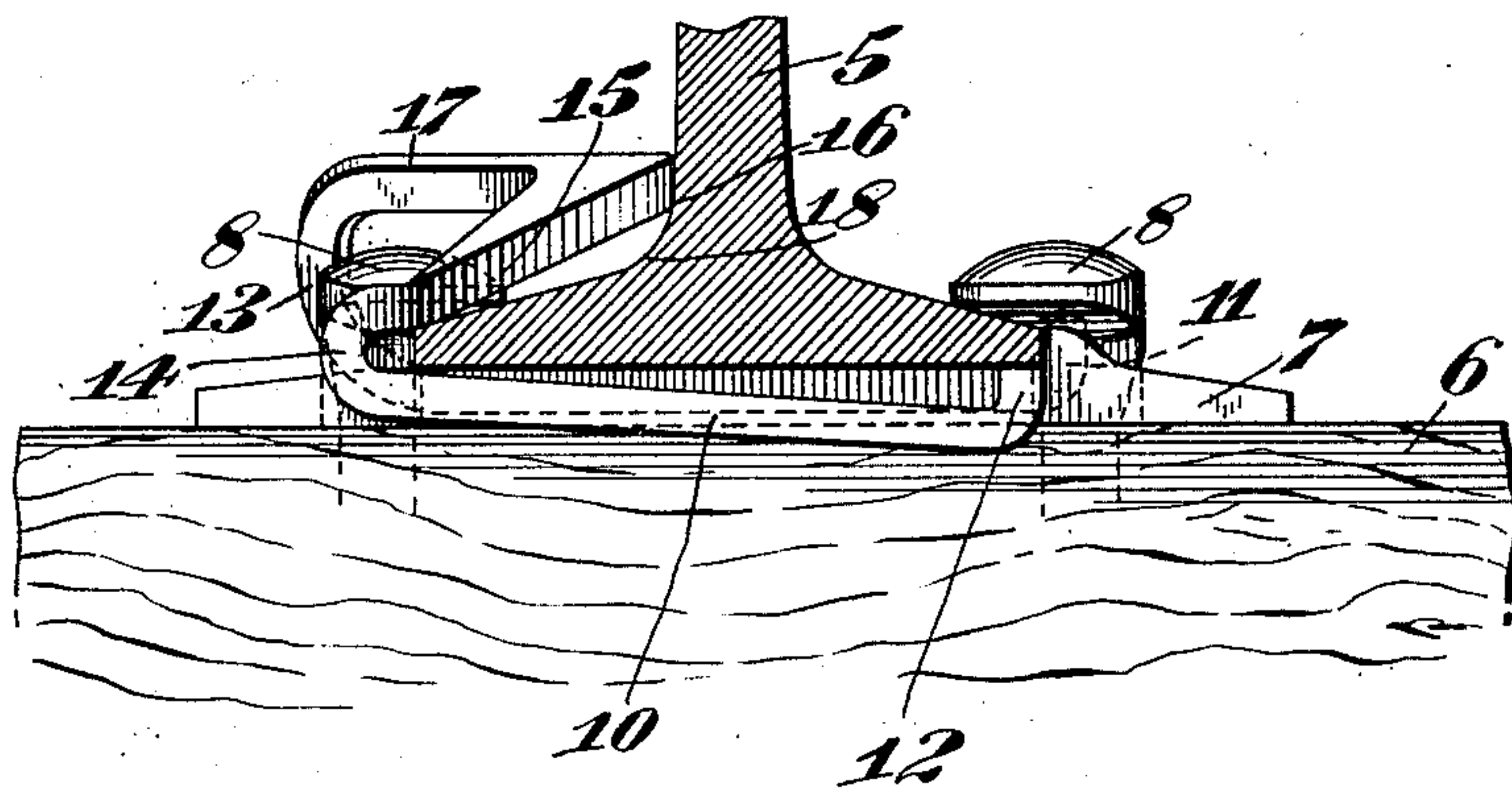


Fig. 4.



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Fig. 5.

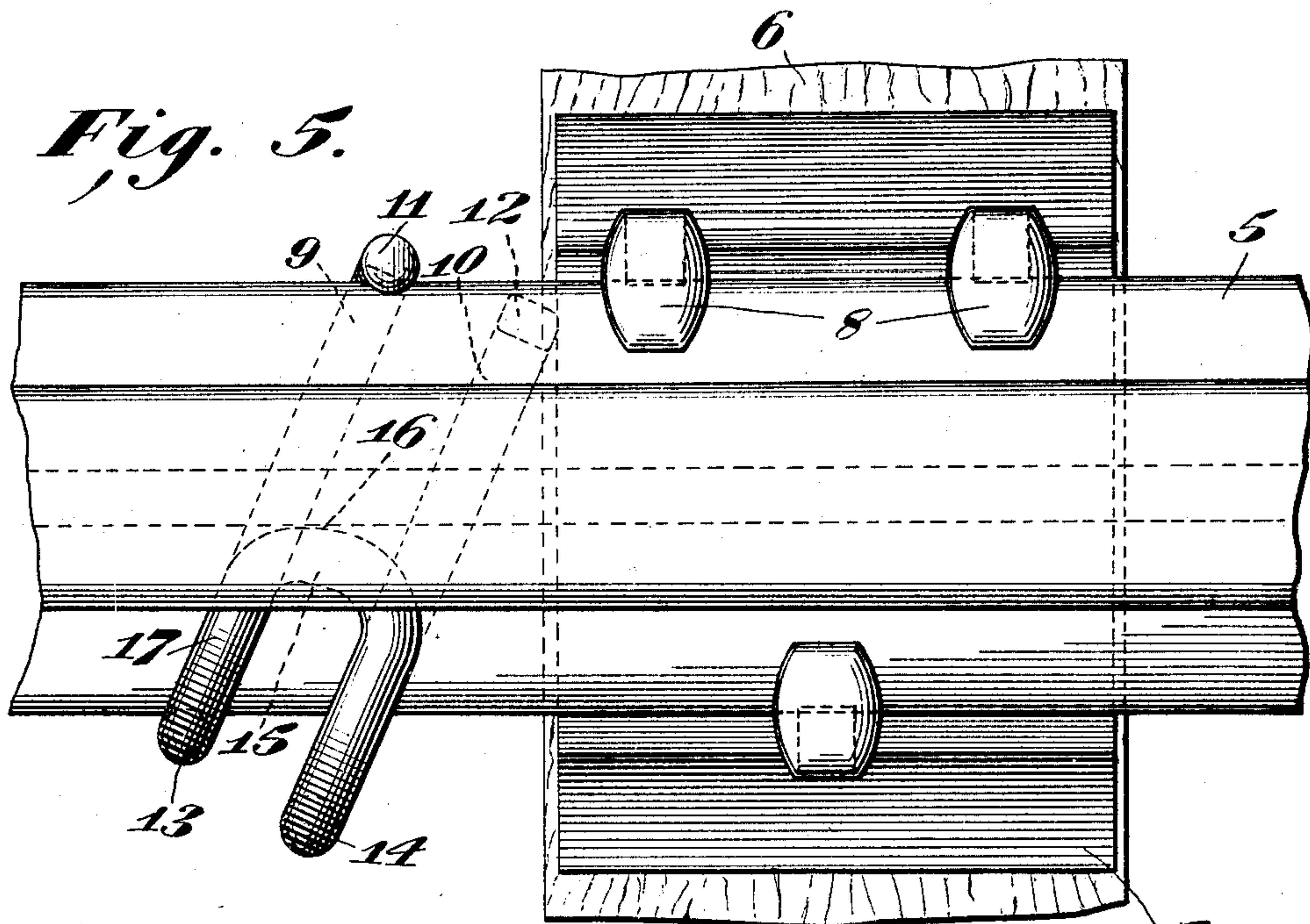
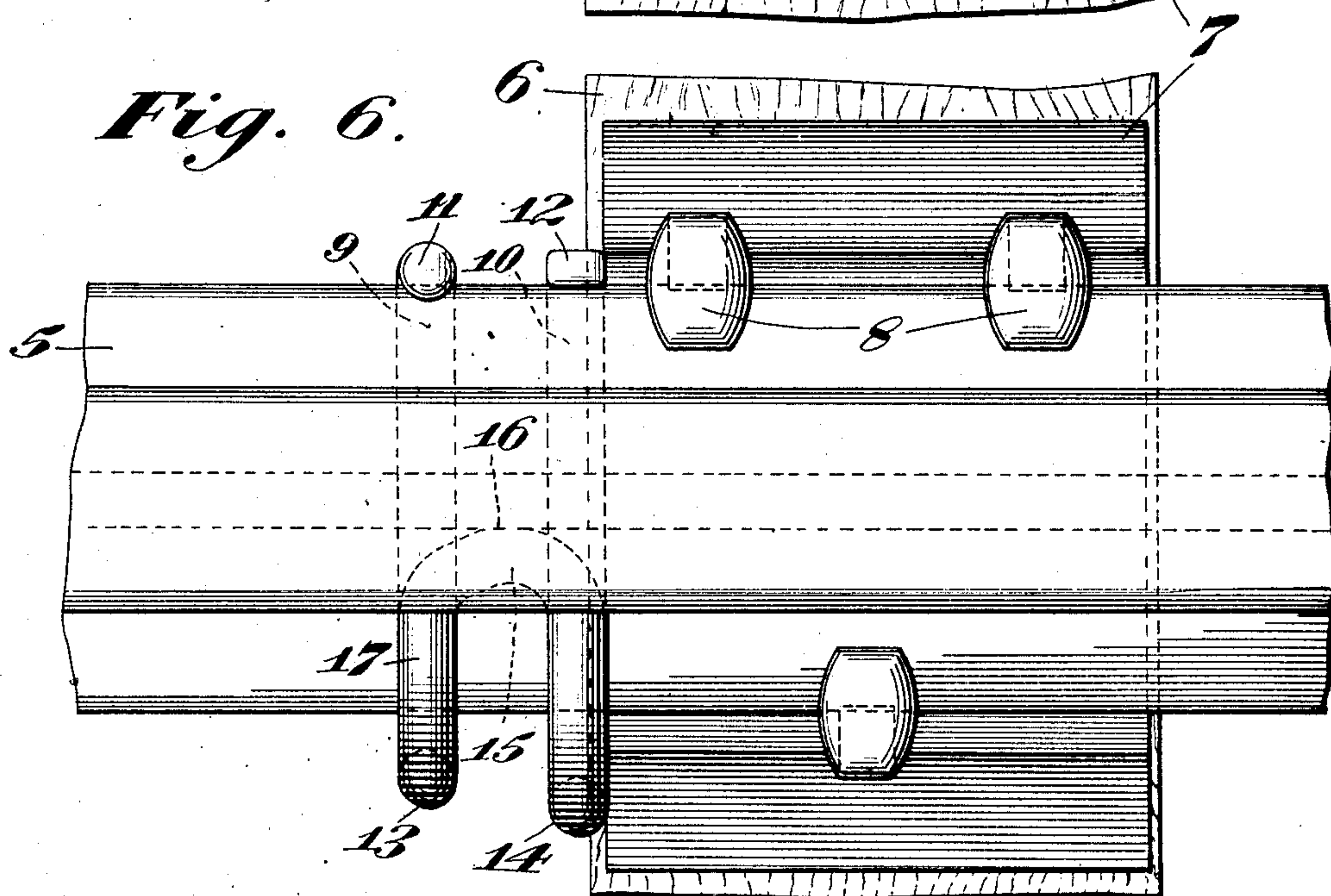


Fig. 6.



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4 Sheets-Sheet 4

Fig. 7.

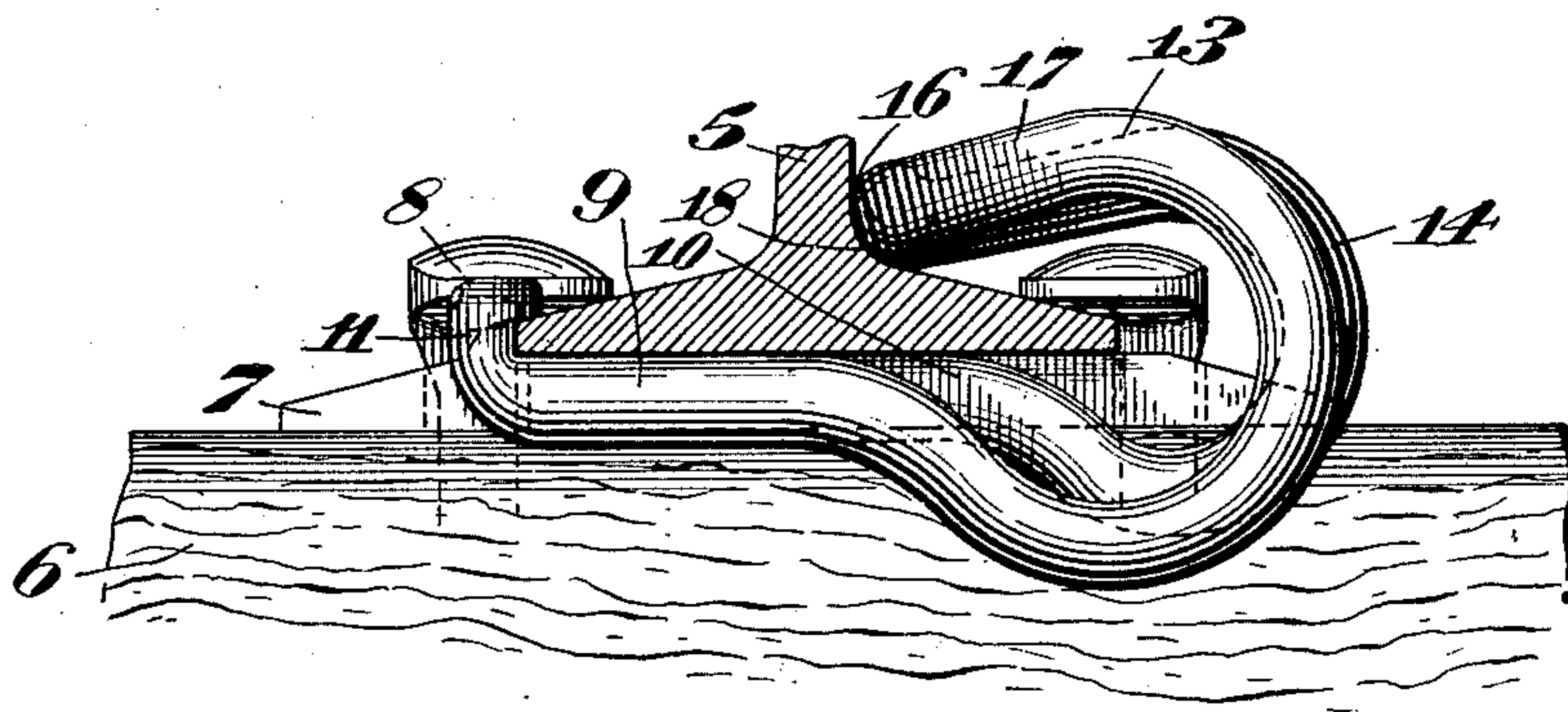
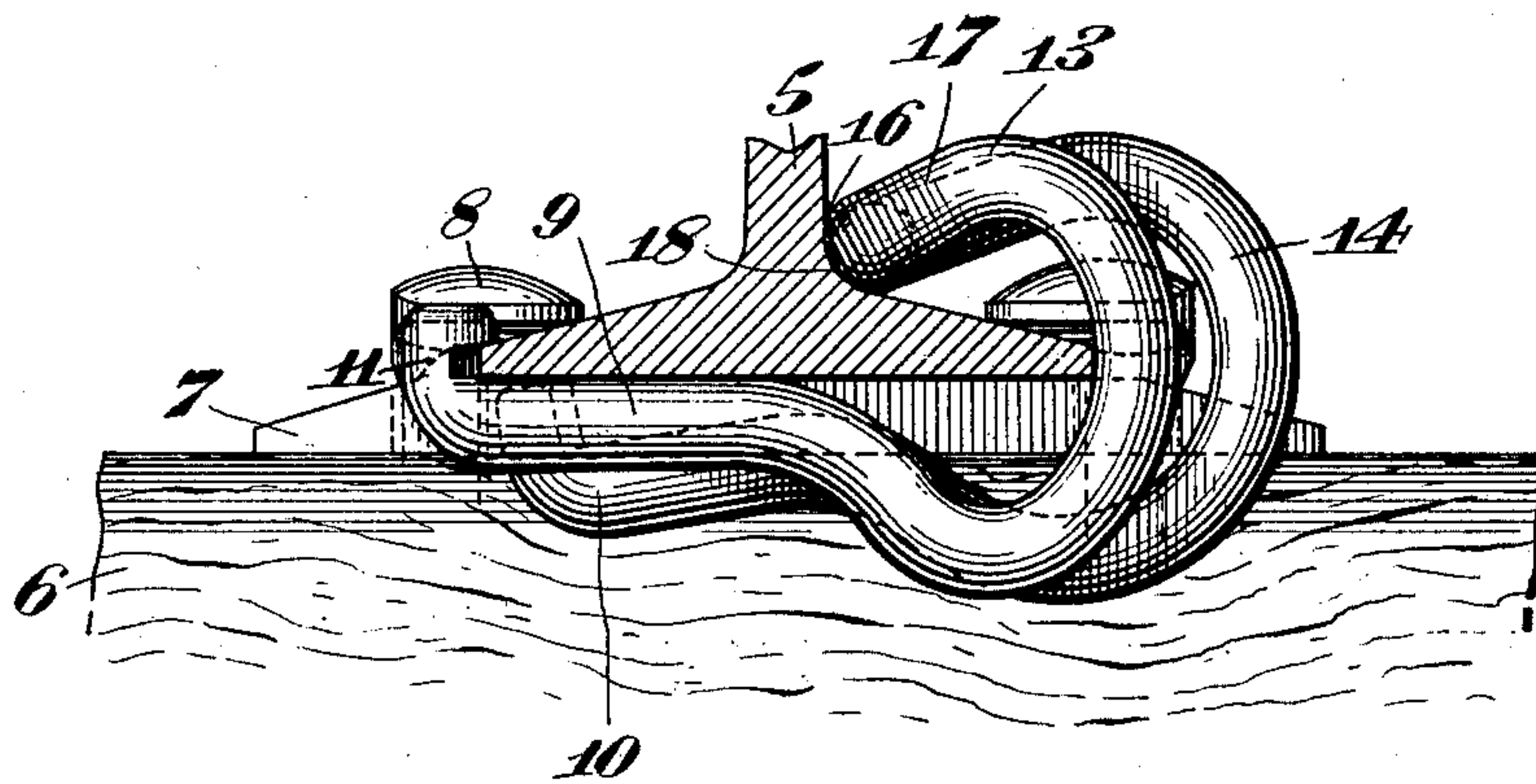


Fig. 8.



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UNITED STATES PATENT OFFICE

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ANTICREEPER FOR RAILS

Continuation of application Serial No. 223,985, filed October 4, 1927. This application filed August 15, 1928. Serial No. 299,804.

This application is a continuation of our application Serial No. 223,985, filed October 4, 1927.

Our invention relates to rail anchors, or anti creepers for rails and particularly to the one-piece type, constructed to extend beneath the rail base, which when applied to a railroad rail, in a position to abut against a tie plate or cross tie will check the longitudinal creeping of the rail in the direction of the traffic moving over it.

An object of our invention is to provide a rail anchor formed of a single piece of metal which is easily applied to the rail base, efficiently grips same, and cooperates with a stationary part of the road bed to prevent the rail from creeping.

A further object of our invention is to provide a rail anchor, which is applied to a railroad rail by distortion and will be held in operative position by the tendency of the anchor to resume a condition from which it was sprung when applied to the rail.

A further object of our invention is to provide an improved one-piece rail anchor adaptable to rails having base flanges of different thicknesses and widths.

Another object of our invention is to provide a one-piece rail anchor which will check the longitudinal creeping of the rail in either direction of traffic.

The novel features of our invention will be more fully understood from the following description and claims taken with the drawings, in which:

Fig. 1 is a plan view of a portion of a railroad rail, a tie plate, a cross tie supporting the same and a rail anchor in its initially assembled positions;

Fig. 2 is a plan view similar to Fig. 1, showing the rail anchor in its operative position on the rail;

Fig. 3 is a view of one end of the rail anchor in its operative position on the rail;

Fig. 4 is a view of the other end showing one position of the rail anchor relative to the rail while being applied thereto.

Fig. 5 is a plan view of a portion of a railroad rail, a tie plate, a cross tie supporting

the same and a rail anchor in a modified form in its initially assembled position;

Fig. 6 is a plan view similar to Fig. 5, showing the modified form of anchor in its operative position on the rail;

Fig. 7 is a view of one side of the modified form of anchor in its operative position on the rail; and

Fig. 8 is a view of the other side of the modified form showing one position of the rail anchor relative to the rail while being applied thereto.

Referring to the drawings: 5 indicates a railroad rail, 6 a cross tie, 7 a tie plate, and 8 a spike.

A rail anchor embodying our invention is preferably made by bending a bar of steel to the form shown in the drawings and comprises two under rail portions 9 and 10, having upturned ends 11 and 12, respectively, for engaging one edge of the rail base. The two under rail portions 9 and 10 are connected by their continuation into upwardly and inwardly bowed end portions 13 and 14 adapted to extend beyond the opposite edge of the rail base and over the top of the flange in spaced relation thereto, and an intermediate bar portion 15 extending longitudinally of the rail, said bar portion being adapted at one end 16 to abut against the web of the rail and to connect bowed portions 13 and 14.

It will be noted from Figs. 2 and 6 that our device when in operative position on the rail, grips the rail at three points, namely, at the upturned ends 11 and 12 engaging one edge of the rail base and at a point 16 where the bar 15 abuts against the web of the rail.

To this end the anchor is so proportioned that when the anchor is in its initially applied position, as shown in Figs. 1 and 5, the end 11 engages the edge of the base flange and point 16 abuts the web of the rail while end 12 is spaced short of the edge of the base flange, and in order to bring the device into gripping position, the under rail portion 10 must be moved transversely of the rail thereby flexing portions 15 and 17, causing the anchor to grip the rail.

As shown in Fig. 3, the lateral portion 17 extending inwardly from the bowed end por-

tion 13 is in spaced relation to the under rail portion 9, which provides a clearance adapted to receive the rail base flange. The portion 16 abuts the web of the rail at a point which practically constitutes the point of tangency formed by the vertical face of the web 5 and fillet 18. The outwardly inclining direction of the fillet resists any tendency of the portion 16 to slip downwardly when in operative position, as it would have a wedging effect to spring portion 16 outwardly relative to portion 11. In the case of the modified form as shown in Fig. 7, the portion 16 bears directly on the normal face of the fillet.

The bowed end portion 14 is proportioned to provide a clearance and room for the reception of the rail flange when applying the anchor to the rail and to this end the interior or clearance space is sufficient to extend beyond and over the edge of the flange to allow for varying thicknesses and widths of base flanges. The beveled portion 19 is to facilitate assembling, hereinafter explained, and beveled portion 20 is to provide a symmetrical appearance to that of portion 19.

As shown on the drawings, the rail 5 is mounted on a tie plate which is secured to a cross tie 6 by means of spikes 8, the tie plate constituting an abutting member for the anchor. It should be understood that the rail may be mounted directly on a tie and the tie may constitute an abutment for the anchor.

When applying our anchor to a rail as shown in Figs. 1, 2, 3 and 4, the under rail portions 9 and 10 are passed transversely under the rail, the anchor straddling the cross tie, until the upturned end 11 engages the edge of the base flange, and the over flange portion 17 is in spaced relation to the base of the rail. In this position, end portion 12 is spaced short of the edge of the rail base, as shown by dotted lines in Fig. 1. Upon further transverse movement of end 14, the portion 17 is brought into contact with the web of the rail and the anchor is given a rotatory movement about the fulcrum point 16 which draws up end 11 against the edge of the base flange to the position shown by full lines in Fig. 1. Force is now required to snap end 12 over the base flange and this is accomplished by striking end 14 with a hammer or other suitable tool, and the anchor assumes a position as shown in Fig. 2. This last mentioned operation flexes portions 15 and 17, thereby causing the anchor to grip the rail at points 11, 12 and 16, and hold it in operative position by reason of the tendency of the anchor to resume a condition from which it was sprung when applied to the rail.

As heretofore mentioned beveled portion 19 is to provide a clearance between the end 11 of the anchor and the tie plate or tie when in initial assembled position and at the same time allows greater angularity of position

and freedom of application of the device to the rail.

When the anchor is operatively applied to the rail, as shown in Fig. 2, the under rail portion 9 is positioned to abut against the edge of the tie plate 7 to prevent the creeping of the rail in the direction of the arrow. Upon the creeping of the rail in the reverse direction, the under rail portion 10 is brought to bear against the tie plate, thus providing anchorage in either direction of travel.

While we have shown one form of our anchor abutting a tie plate, it will be obvious that said plate is not necessary for its successful operation, and that the anchor will function as well abutting a cross tie.

The application of the modified form as shown in Figs. 5, 6, 7 and 8, would be practically the same as that above described, with the exception that instead of straddling the cross tie it is applied to the rail in a position to abut against one side only of the cross tie. Fig. 5 shows the anchor in its initially assembled position, and Fig. 6 shows it in its operative position on the rail.

From the foregoing description it will be seen that we have devised an improved rail anchor which is rigid and simple in construction, is easily applied to the rail base and efficiently grips same to check the creeping tendency of the rail in one or either direction of travel. Our device is particularly adaptable to rails having base flanges of different thicknesses and widths inasmuch as its gripping action is not dependent upon the thickness of the flange, and due to the long arms between the point of contact at the web of the rail and the gripping points at the edge of the base flange, its gripping ability is not materially affected by changes in widths of base flanges.

A device constructed in accordance with our invention has several advantages over many so-called one-piece anchors, for instance, some single-piece anchors become ineffective when the rail to which they are applied becomes worn or corroded and must be replaced due to their limited flexibility, whereas, a device employing our invention is not dependent upon thickness or width of base flange for its gripping action. Furthermore, many one-piece anchors resist the creeping of the rail in one direction only, while our device may be adapted to function efficiently in either direction, and again, certain one-piece anchors cannot be replaced effectively after having been removed, due to their initial distortion, while our device can be removed and replaced repeatedly without affecting its gripping ability.

While we have shown our invention in but two forms, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various other changes and modifications without departing from the spirit

thereof, and we desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art or as are specifically set forth in the appended claims.

5 Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

10 1. A rail anchor for rails, comprising members adapted to extend beneath the rail and having means thereon extending upwardly and inwardly over a flange of the rail base, upturned ends formed on said members, and a member connecting said extending means at their inwardly directed extremities.

15 2. A rail anchor for rails, comprising members adapted to extend beneath the rail and having upturned ends formed thereon adapted to engage an edge of the rail base, means at the other ends of said members adapted to extend over the other edge of the rail base, and a member connecting said extending means at their inwardly directed extremities.

20 3. A rail anchor for rails, consisting of under rail members having upturned ends formed thereon to engage an edge of the rail base, bent portions at the other ends of said members extending upwardly and inwardly over the other edge of the rail base, and means connecting said bent portions adapted to abut the web of the rail.

25 4. A rail anchor for rails, comprising a plurality of spaced under rail members adapted to extend transversely of the rail, means on said under rail members adapted to engage an edge of the rail base, bent portions at the other ends of said members adapted to receive the opposite flange of the rail base, and a flexible member intermediate said bent portions.

30 5. A rail anchor for rails, comprising a plurality of under rail members having upturned ends adapted to engage one edge of the rail base, and means connecting the other ends of said members adapted to abut the web of the rail.

35 6. A rail anchor for rails, comprising a plurality of under rail members having upturned ends adapted to engage one edge of the rail base, and means connecting the other ends of said members adapted to abut the web of the rail, whereby said connecting means is sprung when said anchor is applied to a rail to effect a gripping and holding action on the latter.

40 7. A rail anchor for rails, comprising two under rail arms having upturned ends adapted to engage one edge of the rail base, bent portions in continuation with said arms to project beyond and over the flange of the rail base, and a flexible member intermediate said bent portions, said flexible member adapted to be in longitudinal relation to the rail and in contact with its web when the anchor is in operative position on the rail.

45 8. A rail anchor for rails, comprising

under rail arms extending transversely of the rail having upwardly projecting ends adapted to engage one flange edge of the rail base, looped portions in continuation with said arms adapted to freely receive the opposite flange of the rail base, and a flexible connecting member intermediate of said looped portions adapted to coact with the web of the rail, whereby the anchor will grip the rail at a plurality of points at one edge of the base flange and abut against the web of the rail when in operative position on the rail.

9. A one-piece rail anchor for rails adapted to straddle a fixed element of the road bed and to grip one edge of the rail base flange and the web of the rail when in operative position.

10. A one-piece rail anchor for rails adapted to straddle a cross tie and to grip the edge of the base flange and coact with the web of the rail when operatively applied thereto.

11. A one-piece rail anchor for rails, consisting of under rail members adapted to straddle and abut a tie plate, said members having upward projecting ends adapted to engage an edge of the base flange of a rail, and means connecting the other ends of said members adapted to abut the web of the rail when the anchor is in operative position on the rail.

12. A one-piece anchor for rails, comprising under rail members adapted to abut either side of a cross tie and end portions formed thereon to engage an edge of the rail base, and looped portions continuing from said members adapted to extend upwardly and inwardly over the opposite edge of the rail base, and a member connecting said looped portions adapted to coact with the web of the rail, whereby the anchor will grip the edge of the base flange and the web of the rail when the anchor is in operative position.

13. A single-piece anchor for rails, consisting of two under rail members adapted to be disposed on opposite sides of a cross tie and adapted to abut the latter, gripping means formed on said members to engage an edge of the rail base, looped portions continuing from said members adapted to extend over the opposite base flange, a member connecting said looped portions adapted to be disposed longitudinally and above the top of the base flange and coact with the web of the rail, whereby when the anchor is applied to the rail said connecting member is flexed, causing the anchor to grip the rail.

14. A rail anchor for rails, made of a single-piece of metal comprising spaced under rail members having ends adapted to grip an edge of the base flange on opposite sides of a cross tie, means at the other ends of said members to extend over the opposite edge of the base flange, and an intermediate por-

tion connecting said means, said intermediate portion adapted to coact with the web of the rail at a point intermediate said spaced members to effect the gripping action of the anchor.

5 15. A rail anchor for rails, made of a single piece of metal, comprising under rail members adapted to be disposed longitudinally of a cross tie on opposite sides thereof and in abutting relation thereto, said under
10 rail members having ends adapted to grip an edge of the base flange, means connecting the opposite ends of said members adapted to coact with the web of the rail, whereby during
15 the initial application of the anchor to a rail the gripping end of one of the said members is out of alignment with the edge of the base flange during said application and involves a distortion of said connecting means to com-
20 plete the application of the anchor thereby producing a frictional gripping action between the latter and the rail.

16. An anti-creeper for rails having a plurality of arms adapted at their ends to grip
25 an edge of the rail base, means connecting said arms adapted to contact with the web of the rail, whereby the anti-creeper will be held in frictional engagement at three points on the rail when in operative position.

30 17. The combination with a railroad rail and a stationary part of the road bed, of a device having an under rail portion at each side of said stationary part, said device being held in frictional engagement with said rail
35 by means gripping the edge of the base flange and the web of the rail when in operative position.

18. The combination with a railroad rail and a tie plate spiked to a cross tie, of a de-
40 vice having an under rail portion at each side of the tie plate, said device being held in frictional engagement with said rail by means gripping one edge of base flange and the web of the rail when in operative posi-
45 tion.

19. The combination with a railroad rail and a cross tie, of a device having an under rail portion at each side of the cross tie, said device being held in frictional engage-
50 ment with said rail by means gripping one edge of the base flange and the web of the rail when in operative position.

20. An anchor comprising spaced rail en-
55 gaging members, means joining said engaging members, and a fulcrum means adapted to engage the rail, one of said members being adapted to be moved transversely of the rail into engagement therewith and another of said members being adapted to be moved
60 transversely of the rail and about said fulcrum means into engagement with the rail and effect a gripping action of the anchor on the rail.

21. An anchor comprising a pair of rail
65 engaging members having portions thereof

adapted to extend over the base flange, means connecting the extending ends of said members, and fulcrum means disposed in-
intermediate said members adapted to engage the rail.

22. An anchor comprising a pair of rail
70 engaging members, and means connecting said members, one of said members having an element adapted to engage one side of a rail and the other of said members having
75 an element adapted to engage the same side of the rail but normally disposed in offset relation to the first mentioned element, whereby when said members are moved
80 transversely on the rail relatively to each other to bring said elements into alignment the anchor is distorted and effectively grips the rail while tending to assume its original condition.

23. A unitary anchor comprising a pair of
85 members adapted to extend beneath the base of a rail, each of said members having an element at its end adapted to engage the same side of the rail, and means adapted to engage the rail at the side opposite to the
90 first mentioned side, the distance between said means and one of said elements being normally less than the distance between their respective points on the rail effectively to
95 be engaged thereby; the anchor being capable of distortion to increase the first mentioned distance.

In testimony whereof we hereunto affix our signatures.

GEORGE LOOP MOORE. 100
JAMES ROBERT STEELE.

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