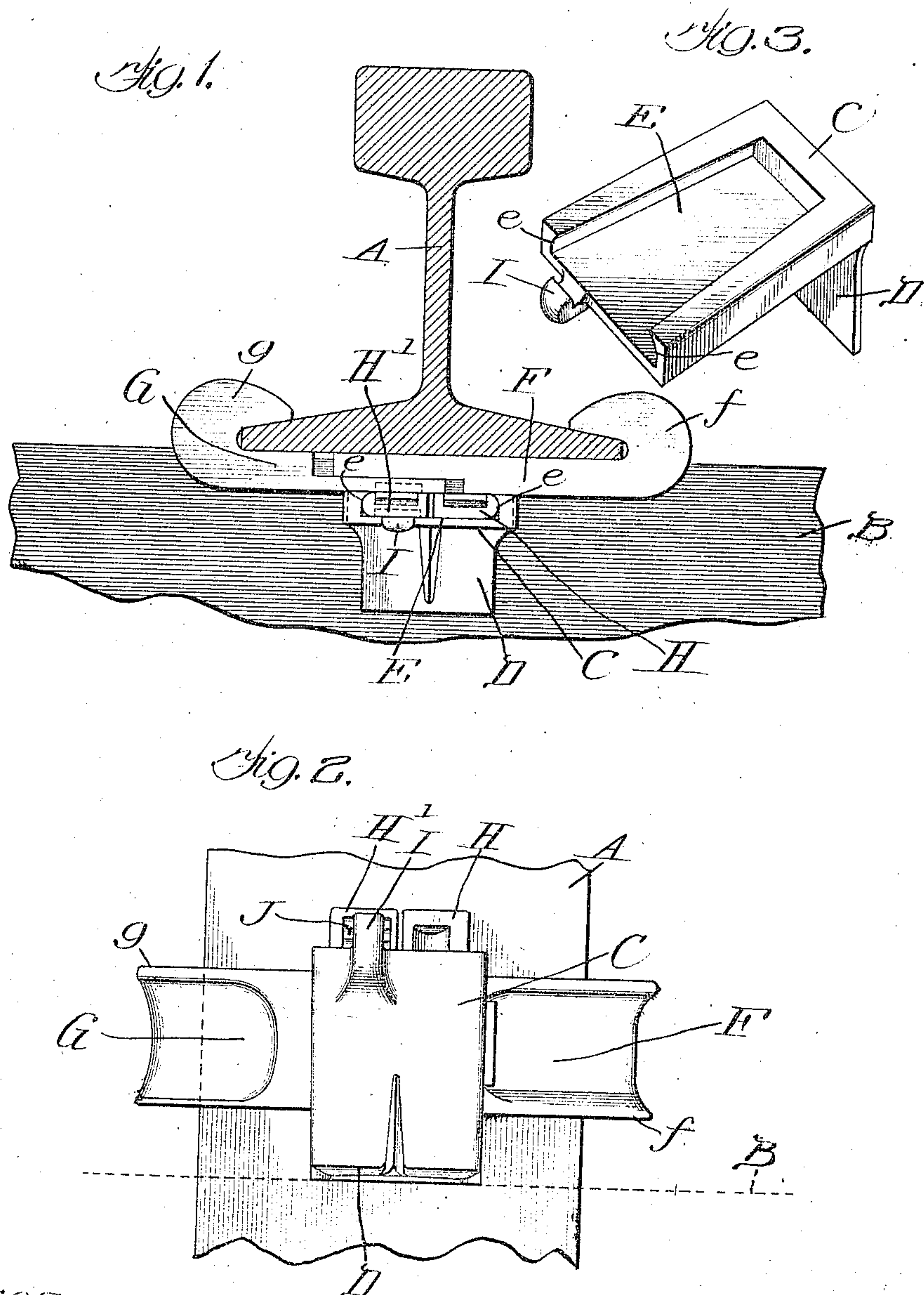


998,590.

H. H. SPONENBURG.
RAIL STAY.
APPLICATION FILED APR. 8, 1911.

Patented July 18, 1911.
2 SHEETS—SHEET 1.



Witnesses:

Jno. H. Nelson Jr.
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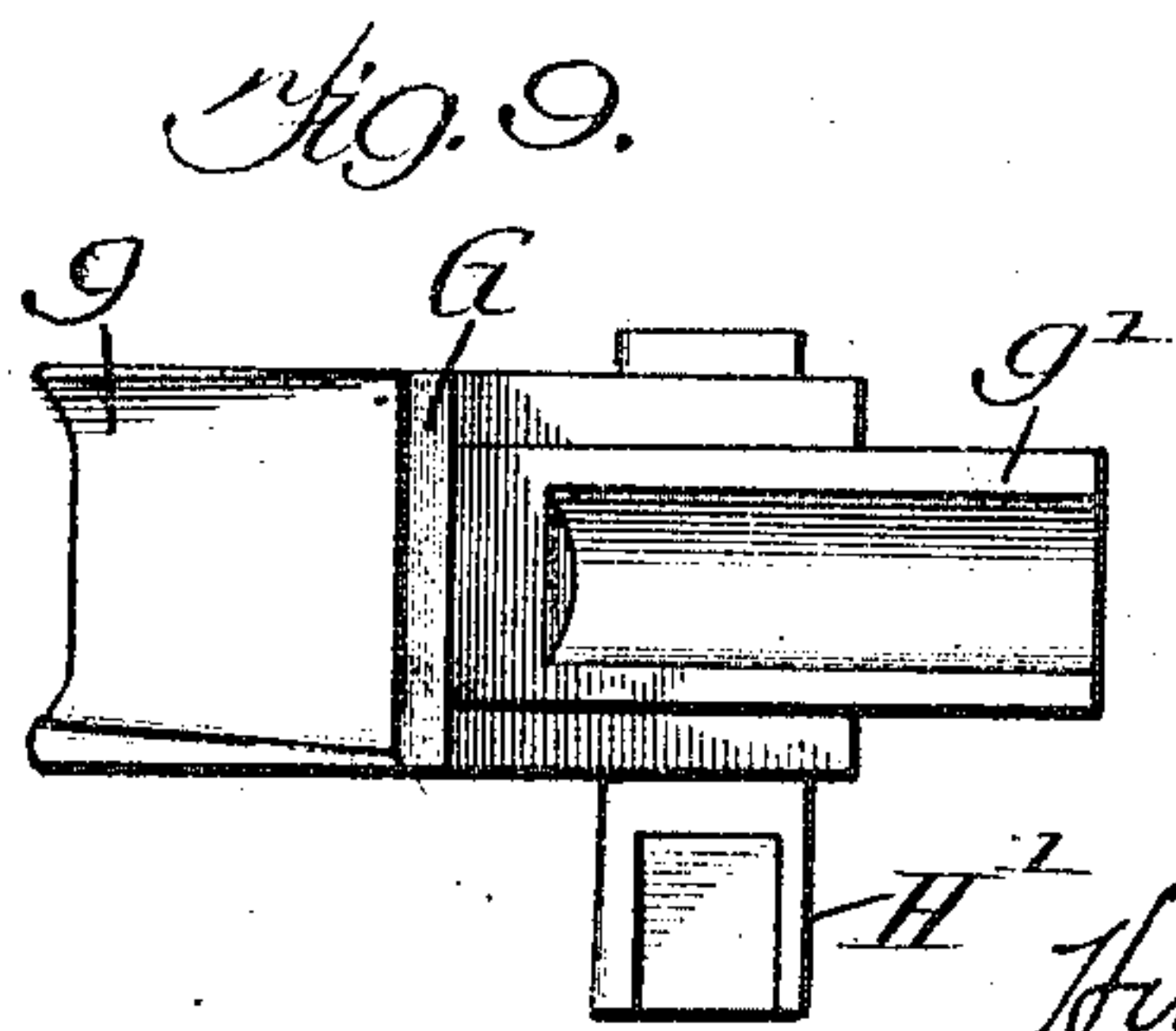
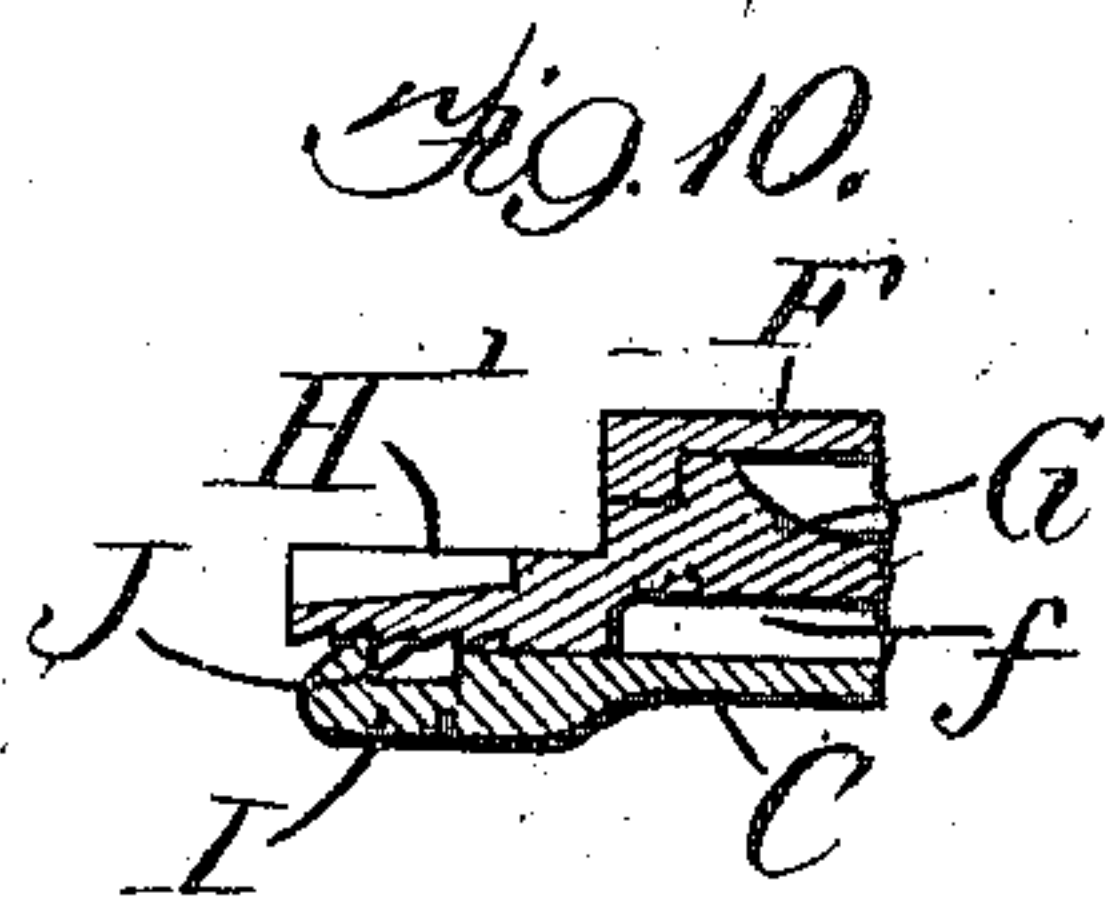
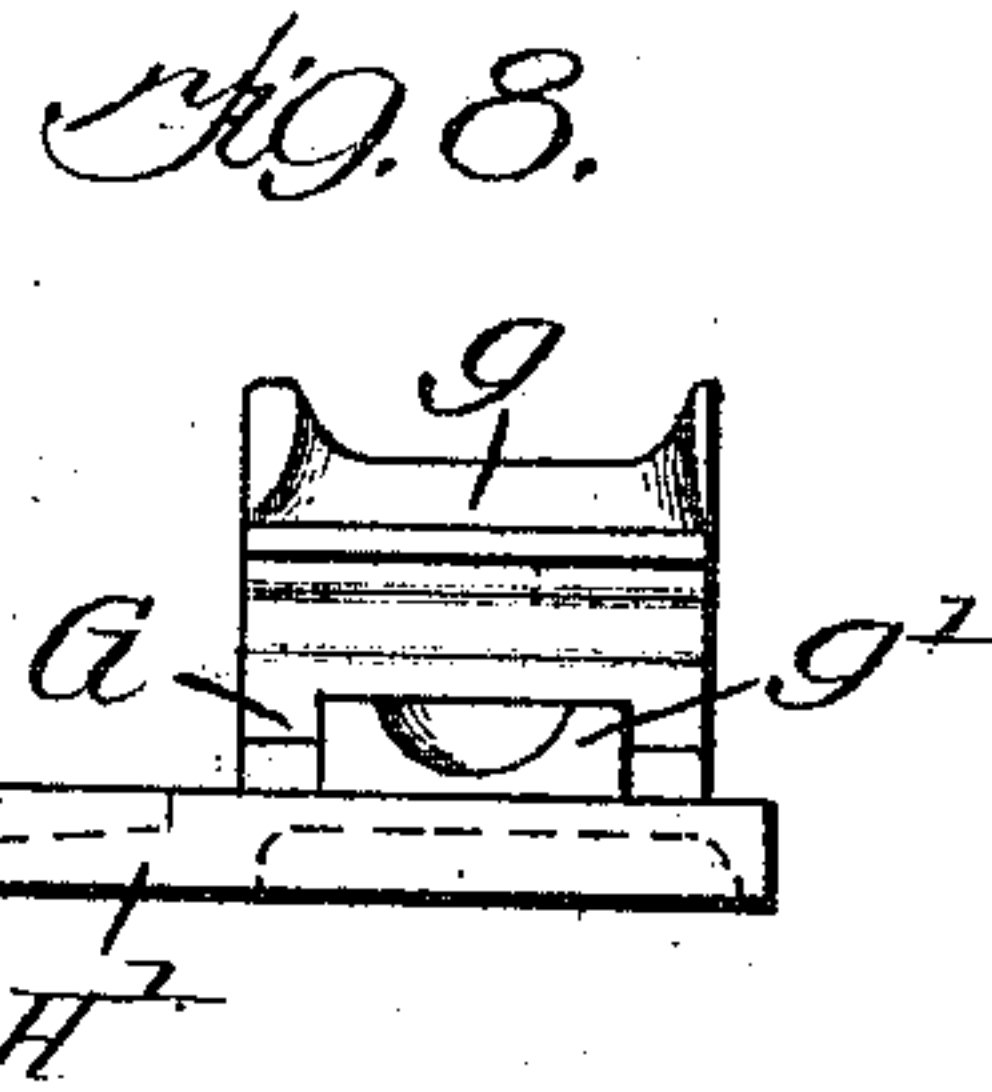
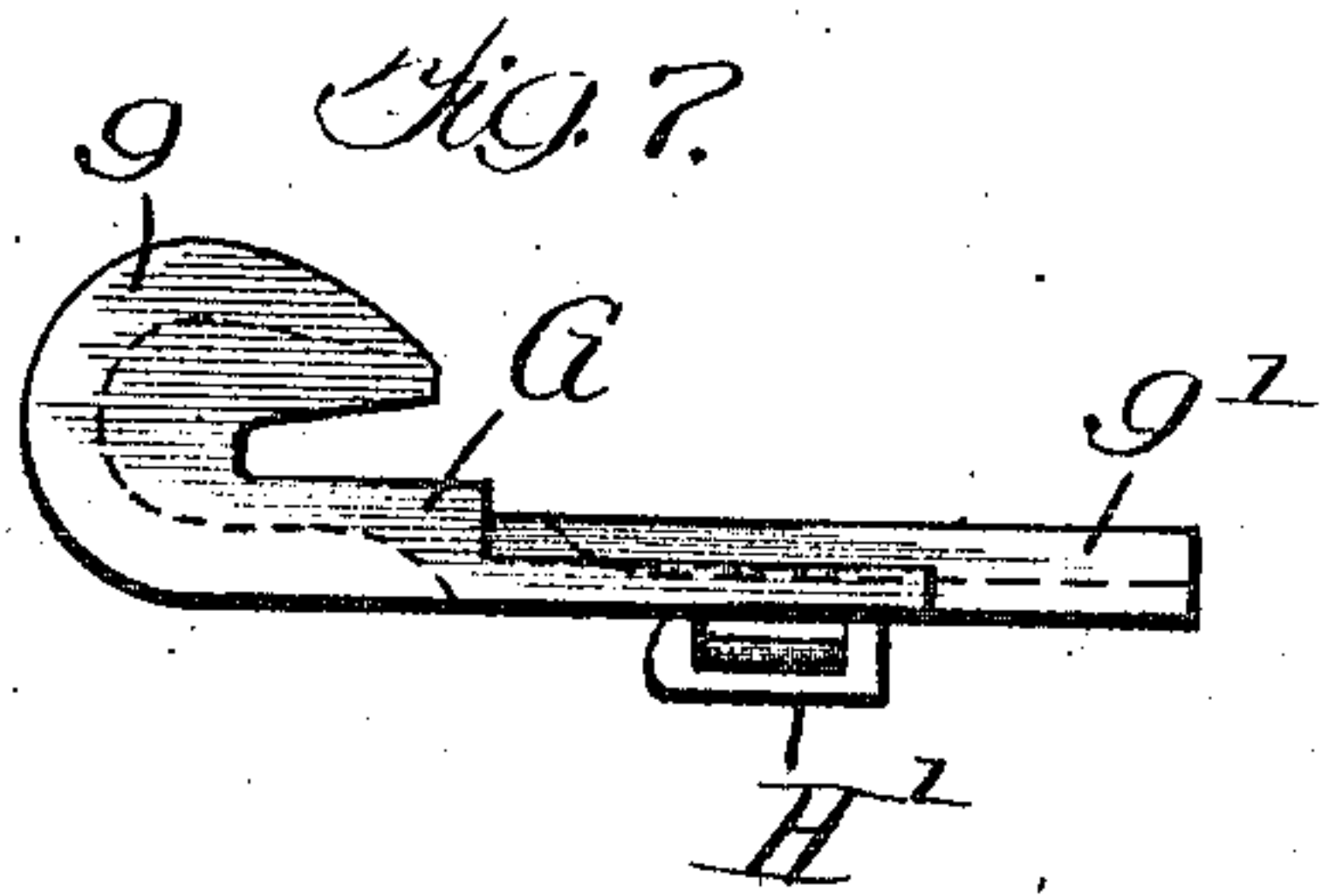
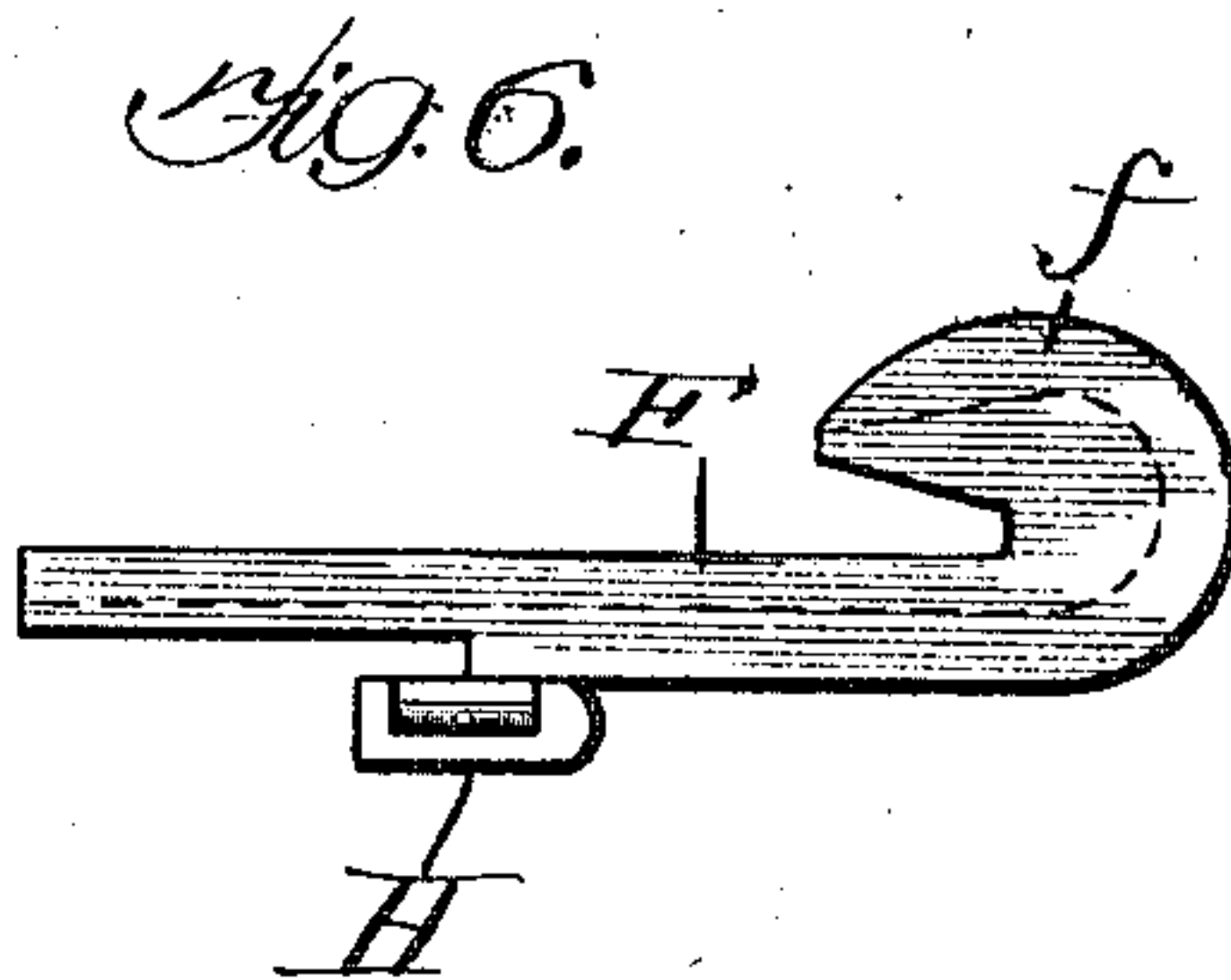
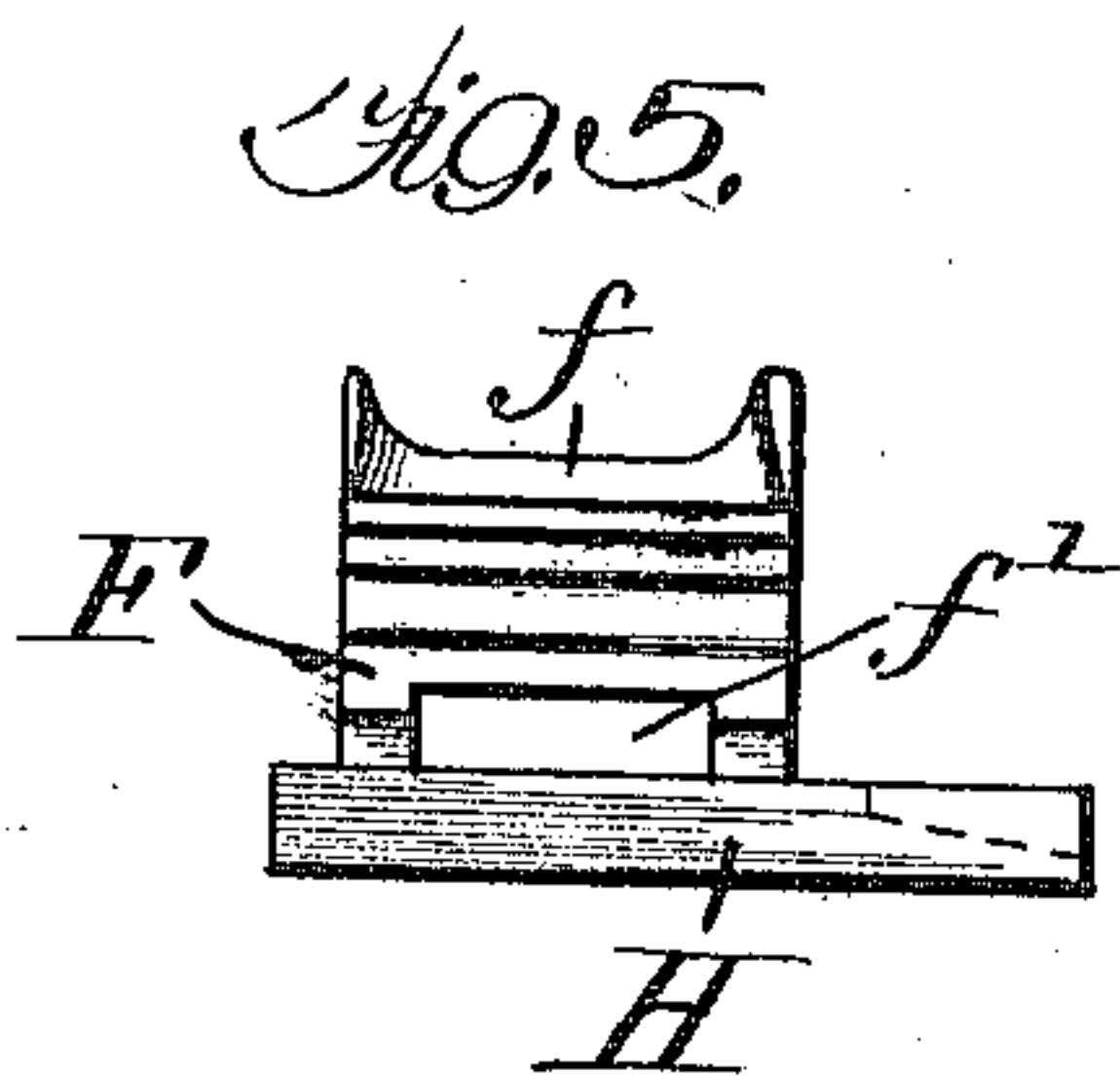
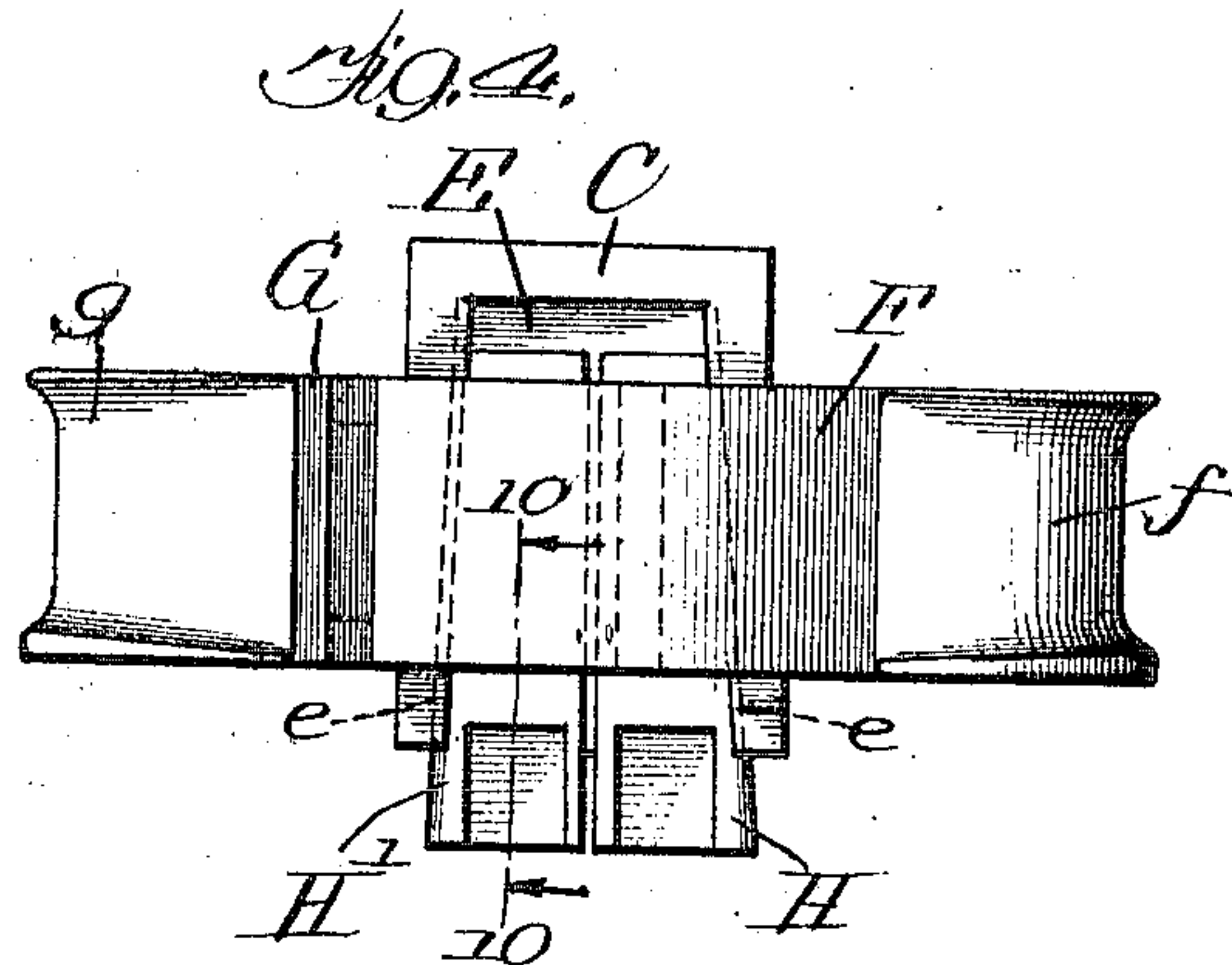
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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RAIL-STAY.

998,590.

Specification of Letters Patent. Patented July 18, 1911.

Original application filed October 20, 1910, Serial No. 588,152. Divided and this application filed April 8, 1911. Serial No. 619,862.

To all whom it may concern:

Be it known that I, HIRAM H. SPONENBURG, a citizen of the United States, residing at Gurnee, in the county of Lake and State of Illinois, have invented certain new and useful Improvements in Rail-Stays, of which the following is a specification.

My invention relates to articles known as rail stays, rail anchors or anti-creepers of the type consisting of two or more elements, one of which is provided with a tie abutment, or other means for giving the stay a fixed position with respect to the road bed, which said elements are arranged so as to be capable, by a relative movement of the same, of being clamped to the rail base with a frictional grip; and the invention has for its object to provide in a rail stay of this general character, a novel and improved device for holding or locking said relatively movable parts against reverse or loosening movement.

The device in question is one of the locking means shown in my application Serial No. 588,152, filed October 20, 1910, but is not claimed therein, the present application being a division of the aforesaid application.

It will be apparent from the following description that the locking device claimed herein might be used in connection with other forms of rail stays or anchors than the particular form shown.

The invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a sectional elevation showing the stay provided with the locking device of my invention applied to a rail; Fig. 2, an inverted plan view of the parts shown in Fig. 1; Fig. 3, a view, in perspective, of the tie-abutting member; Fig. 4, a plan view of the stay; Figs. 5 and 6, end and side views, respectively, of one of the jaw members, Figs. 7, 8 and 9, a side view, an end view, and a plan of the other jaw member, and Fig. 10, a sectional view taken on line 10—10 of Fig. 4, looking in the direction of the arrows.

Like characters of reference indicate like parts in the several figures of the drawings.

Referring to the drawings, A designates a rail and B one of the cross ties on which it is supported.

The stay consists of a tie-abutting member

C formed preferably with the flange D and on its upper surface with the tapered recess E and, of two jaw-carrying members F and G formed with the jaws *f*, *g* and provided on their under surfaces with the wedges H, H', respectively, adapted to fit into the tapered recess E in the tie-abutting member C, the rim portions of the latter lying along the edges of the recess being preferably undercut as indicated at *e*. The jaw member F is formed with an opening *f'* (Fig. 5) and the jaw member G with a tongue *g'* which extends through said opening. In this manner the jaw members are linked together so that the forward movement of one carries the other with it. Because of the wedge action of the jaw members on the tie abutting member a forward movement of the jaws brings them closer together against the rail base.

The device is applied to the rail by driving the wedges of the jaw members into the recess in the tie-abutting member until a firm grip of the jaws on the rail base is obtained. Any tendency of the rail to creep is self checking due to the fact that a forward movement of the jaws necessitates a movement inwardly.

The locking device, which is shown as applied to one of the jaw members only (this being sufficient, due to the fact that these members are linked together), consists of a tooth I which projects backwardly from the tie abutting member C and engages with a series of teeth J formed on the bottom of the jaw member G. Obviously, if desired, the element I might be formed so as to provide more than one tooth.

The locking device above described may be constructed so as to be manipulated in two different ways. If the tooth I be formed so that it will be engaged by the teeth J when the wedges are driven into recess E it will be displaced a trifle in riding over the teeth J and will spring back into one or other of the notches between the teeth so as to prevent a reverse or unclamping movement of the wedges. As this displacement has to be very slight it is possible to get this result even when the jaw member is made of malleable iron. If, however, the tooth I is constructed, either intentionally or by accident, or because of rough handling or other

cause, is found to stand out of engagement with the teeth J when the device is assembled on the rail, the engagement may be made either by bending up the tooth, which can be
 5 done by inserting a crowbar under it, or by bending the wedge down so that it comes into contact with the tooth. My invention contemplates either having the tooth stand in the path of the wedge and utilizing the
 10 slight flexibility of the tooth to make a proper locking engagement, or making the tooth I so that it stands out of contact with the teeth J and bending one or other of the elements so as to make the engagement.

15 I have used the term "teeth" to describe the formations I and J, but it will be understood that the term is intended to denote any serrations or other forms adapted to provide an engagement of the general sort
 20 shown.

It has been proposed to provide a lock for the relatively movable elements of a rail stay consisting of a ratchet and pawl or tooth of spring steel. Such a lock is objectionable
 25 because of the liability of the spring to break, particularly under the strains to which it is likely to be subjected. It has also been proposed to construct a stay of parts pivoted together and provide the overlapping parts
 30 with a ratchet and tooth mechanism and make the pivotal connections loose enough so as to allow the tooth to move over the ratchet. This construction is objectionable because a pivoted structure is not well cal-
 35 culated to stand the great strains put upon rail stays and also because the looseness of the wedges makes it impossible to get a perfectly positive lock which will not rattle loose with the vibration of the rail. Of
 40 course if it be attempted to form with the coengaging teeth the contacting surfaces of two elements, one of which slides over the other, the teeth prevent any rigid engage-
 45 ment of the parts with each other and with the rail base. My locking device, however, does not involve any of these difficulties. While it may have some slight flexibility it has not the objection that a spring pawl or
 50 tooth has. The lateral arrangement of the tooth with respect to the member on which it is formed, that is, the formation of the tooth as a projection from the edge of said member permits a rigid engagement between
 55 said member, in the case shown, the tie abutting member, and the other member or members of the stay, to-wit, the jaw-carrying members. The wedges H can be driven as tightly as may be desired into the recess in the member C regardless of the tooth I which
 60 either yields in riding over the rack formed on the under side of one of these wedges, or is constructed so as to stand away from said teeth and be afterward engaged therewith.

I do not claim herein the structure of the
 65 rail stay herein shown except in connection

with means, specific or generic, for locking the relatively movable parts together as the rail stay by itself is claimed in my application above mentioned.

I claim:

1. A rail stay comprising in combination a stationary member, two jaw-carrying mem- 70
 bers, and means for positively locking the jaw-carrying members in their respective operative positions with relation to the sta- 75
 tionary member when tightened into clamping position upon a rail.

2. A rail stay comprising in combination, a stationary member, two jaw-carrying mem- 80
 bers, and means for positively locking the jaw-carrying members to the stationary member.

3. A rail stay comprising in combination, a tie abutting member, two jaw-carrying 85
 members, coengaging means on said members which draws the jaw-carrying members together when moved toward the tie against which the tie-abutting member bears, and means for positively locking said jaw mem- 90
 bers when tightened to clamping position.

4. A rail stay comprising in combination, a tie abutting member, two jaw-carrying 95
 members, coengaging means on said members which draws the jaw-carrying members together when moved toward the tie against which the tie-abutting member bears, and means for positively locking said jaw-carry-
 ing members to said tie-abutting member.

5. A rail stay comprising in combination, a tie-abutting member, two jaw-carrying 100
 members, coengaging means on said members which draws the jaw-carrying members together when moved toward the tie against which the tie-abutting member bears, said jaw-carrying members being linked one to 105
 the other so that they move together, and means for locking one of said jaw-carrying members to the tie abutting member.

6. A rail stay comprising in combination, a tie-abutting member, two jaw-carrying 110
 members, coengaging means on said members which draws the jaw-carrying members together when moved toward the tie against which the tie-abutting member bears, said jaw-carrying members being linked one to 115
 the other so that they move together, and means for locking one of said jaw-carrying members to the tie-abutting member comprising a rack and a tooth which engages said rack. 120

7. A rail stay comprising in combination, a tie-abutting member, two jaw-carrying 125
 members, coengaging means on said members which draws the jaw-carrying members together when moved toward the tie against which the tie-abutting member bears, said jaw-carrying members being linked one to
 the other so that they move together, and means for locking one of said jaw-carrying 130
 members to the tie-abutting member, com-

prising a rack on said jaw-carrying member, and a tooth on the tie-abutting member.

8. In a rail stay, the combination with a tie-abutting member, of means constituting
5 a rail clamp comprising a jaw-carrying member having movement with respect to said tie-abutting member longitudinally of the rail, one of said two specified members being provided with a tooth and the other
10 of said members being provided with a part adapted to be bent into locking engagement with said tooth after the device has been assembled and clamped upon a rail.

9. In a rail stay, the combination with a
15 stationary member, of two jaw-carrying members having relative movement with respect to said stationary member, one of said members being provided with a tooth and another of said members being provided
20 with an integrally cast part normally out of contact with said tooth when the parts are assembled but adapted to be bent into locking engagement with said tooth after the parts have been assembled.

25 10. In a rail stay, the combination with a tie-abutting member formed with a tapered undercut channel on its upper surface, of jaw-carrying members, one of which is formed with a tongue and the other with a
30 groove adapted to receive said tongue, both being formed with transverse wedges adapted to be received in the channel in said tie-abutting member, a tooth which projects from the edge of said tie-abutting
35 member, and a rack on the under side of one of said wedges.

40 11. A rail stay comprising a plurality of relatively movable clamping members, a tooth on one of said elements which projects from the edge thereof and is adapted to be bent a trifle, and a plurality of teeth on the

other element with which said tooth is designed to engage.

12. A rail stay comprising a plurality of relatively movable clamping elements, a
45 tooth integrally formed on one of said elements so that it projects from the edge of the same, which tooth is adapted to be bent a trifle, and a plurality of teeth on the other element with which said tooth is designed
50 to engage.

13. A rail stay comprising a plurality of relatively movable clamping members, a
tooth on one of said elements which projects from the edge thereof and is adapted to be
55 bent a trifle, and a plurality of teeth on the other element with which said tooth is designed to engage, said elements formed so as to have a wedge action one upon the other.

14. A rail stay comprising a stationary
60 member, two jaw-carrying members, and means for positively locking one of said jaw-carrying members to the stationary member consisting of a tooth formed so as to project from the edge of said stationary
65 member, and a series of teeth formed on said last mentioned jaw-carrying member.

15. A rail stay comprising a stationary
member, two jaw-carrying members, and
70 means for positively locking one of said jaw-carrying members to the stationary member consisting of a tooth formed so as to project from the edge of said stationary member, a series of teeth formed on said
75 last mentioned jaw-carrying member, and means for linking the jaw-carrying members together.

HIRAM H. SPONENBURG.

Witnesses:

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D. A. WEALE.