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C. CHENU & L. GAUTREAU.

FASTENING RING FOR FLAT BOTTOMED RAILS.

(Application filed Apr. 12, 1901.)

(No Model.)

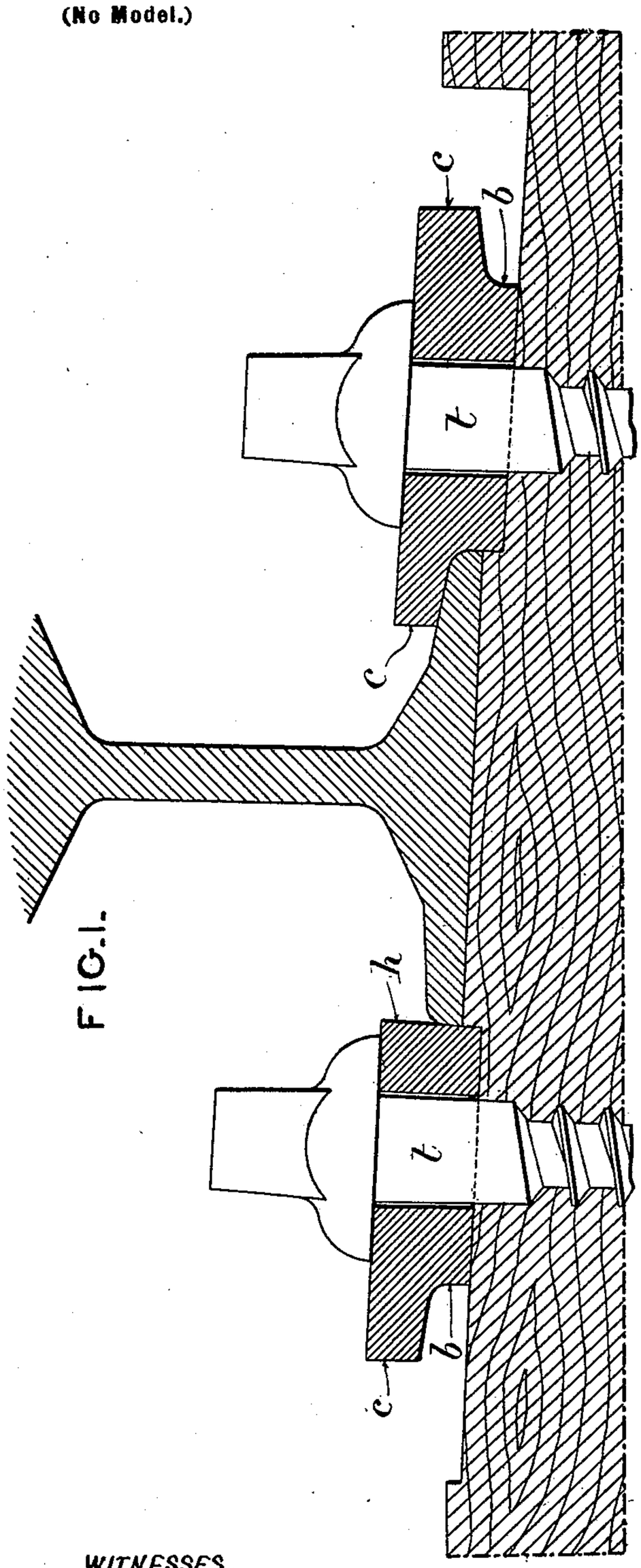

FIG. 1.

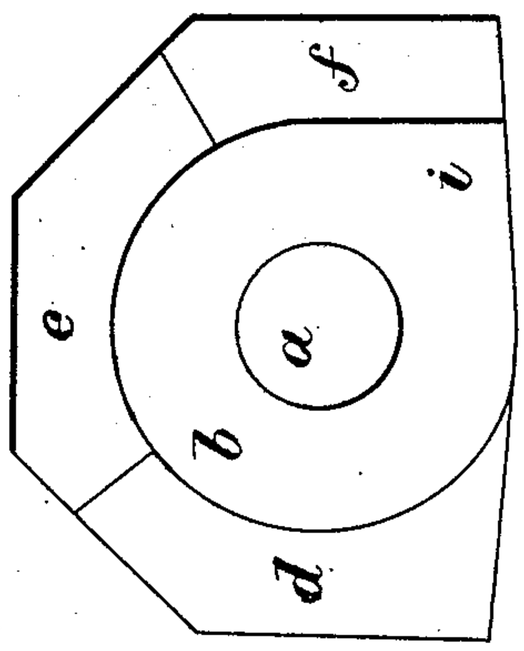

FIG. 3.

FIG. 4.

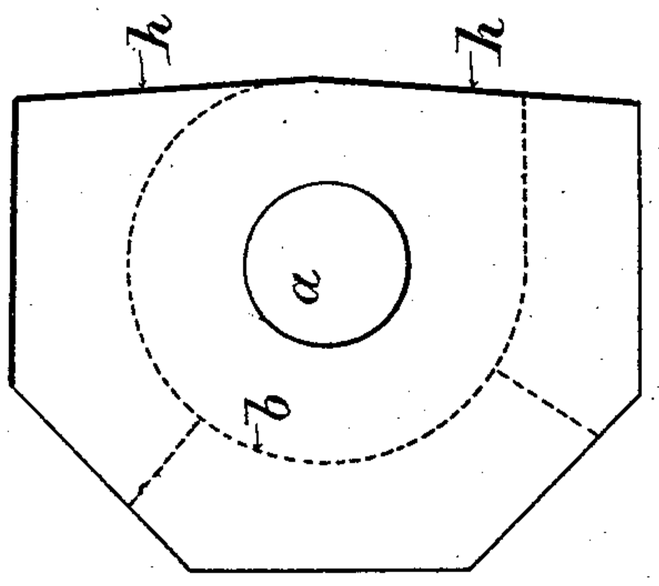

FIG. 2.

WITNESSES
Isabella Waldron.

INVENTORS
Charles Chenu
Léopold Gautreau
BY
Richards & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES CHENU AND LÉOPOLD GAUTREAU, OF PARIS, FRANCE.

FASTENING-RING FOR FLAT-BOTTOMED RAILS.

SPECIFICATION forming part of Letters Patent No. 689,537, dated December 24, 1901.

Application filed April 12, 1901. Serial No. 55,490. (No model.)

To all whom it may concern:

Be it known that we, CHARLES CHENU and LÉOPOLD GAUTREAU, civil engineers, citizens of the Republic of France, and residents of No. 17 Rue de Lancry, Paris, France, have invented certain new and useful Improvements in Fastening-Rings for Flat-Bottomed Rails, of which the following is a specification.

The object of the present invention is to provide for a fastening-ring for flat-bottomed rails, which is placed on the shank of the wood-screw or holding-bolt between the head thereof and the sleeper. By means of this ring the rails are constantly fastened to the sleepers, for the wear caused by the sinking of the wood under the rail-foot is taken up without any need of tightening again the screw. Besides, the fixing and removing of the rail are effected without it being necessary to unscrew the screws, so that the holes of the screws in the sleepers are not any more deformed by continuous screwing and unscrewing, which insures a greater firmness of the railway-line and a longer use of the sleepers.

The first result hereabove referred to is insured by the arrangement of the bottom surface of the ring, which is provided around its circumference with successive inclined planes arranged stepwise, which are successively pressed on the rail-foot according to requirements and without touching the wood-screws. The second result is insured by the arrangement of the ring, which has one of its edges vertically cut off, which allows without screwing the screw of bringing the ring to the position for which the rail cannot be removed.

In the accompanying drawings, Figure 1 represents a flat-bottomed rail fixed on its wooden sleeper and having on its right side a ring in its first position for the fastening and on its left side a ring in the position which allows of removing the rail. Fig. 2 is a top view of the ring. Fig. 3 is a bottom view of same, and Fig. 4 is an elevation view of same.

Our fastening-ring is made of one piece of metal—such as cast-steel, cast-iron, iron, &c.—and is perforated in the center for its whole length by a hole *a*, by means of which it can be placed on the shank *t* of the screw. It comprises a cylindrical base *b*, which rests by its plane face on the top of the sleeper, and a widened and polygonal part *c*, having its upper surface flat and its lower surface provided around the base *b* with inclined planes *d e f*, arranged stepwise. One of the sides *h* of the polygonal part is nearer the center than the other sides and constitutes a vertical cut-off surface formed by one single plane or by two planes slightly inclined one with relation to the other, as shown in the drawings.

The fastening-ring is used in the following manner: The ring is placed on the screw and the latter so screwed into the sleeper that each ring is fixed between the sleeper and the head of the screw. The cut-off portion is placed perpendicularly to the sleeper. The sleeper being then sent to the railway-line and placed in position, the rail is laid and the ring is turned a fraction of a turn by means of a key adapted to the polygonal portion *c* in order to cause said ring to press firmly on the rail-foot by means of its first inclined plane *d*. This is obtained without touching the screw. When the passing of the trains has produced a slight penetration of the rail-foot in the wood of the sleepers, instead of tightening the screw again, as hitherto customary, it is only necessary to turn the fastening-ring for a further fraction of turn without touching the screw in order to cause the ring to hold the rail-foot by means of its second plane *e*, and so on.

The cylindrical base *b*, instead of being entirely round, presents a nose or angular portion *i* next to the last inclined plane *f*. When the ring is turned for the fastening, this nose *i* meets with the vertical edge of the rail-foot and prevents the ring from turning farther than the inclined plane *f* by bringing the cut-off portion opposite the rail-foot.

In order to remove the rail, the ring is simply turned in the opposite direction until its cut-off portion is parallel to the rail, when the rail has only to be raised. This is also done without touching the wood-screw.

The cut-off portion will be generally formed, as shown in the drawings, by two vertical planes slightly inclined one with relation to the other, so as not to touch the rail-foot on

a too large surface and not to cause a too great friction during the laying and removing of the rail.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

1. A device for fastening flat-bottomed rails to wooden sleepers comprising a wood-screw *t* screwed into the sleeper in combination with a metallic ring placed on the shank of said wood-screw and tightened between the head thereof and the top of the sleeper, said ring being formed by a cylindrical base *b* which rests on the sleeper, and by a widened part *c* having its upper surface flat to receive the head of the screw and its lower surface provided around the base *b* with inclined planes *d*, *e*, *f* arranged stepwise, the widened part having besides a vertical cut-off portion *h*, substantially as and for the purpose set forth.

2. A device for fastening flat-bottomed rails to wooden sleepers comprising a metallic ring placed on the shank of the wood-screw or holding-bolt and tightened between the head thereof and the top of the sleeper, said ring comprising a cylindrical base *b* which rests on the sleeper and a widened and polygonal part *c* which can receive a key for the purpose of operating it, and one of the sides *h* of which is much larger than the other ones and forms a cut-off portion, the bottom of said widened part being formed by inclined planes *d*, *e*, *f* arranged stepwise around the base *b*, substantially as and for the purpose set forth.

3. A device for fastening flat-bottomed rails to wooden sleepers comprising a metallic ring placed on the shank of the wood-screw or holding-bolt between the head thereof and the top of the sleeper and formed by a widened part *c* provided with inclined planes *d*, *e*, *f* arranged stepwise around the circumference of its lower surface and having a vertical cut-off portion *h* and by a cylindrical base *b* which rests on the sleeper and which has next to the last inclined plane *f* a nose or angular portion which stops the turning of the ring in the direction of the fastening, substantially as and for the purpose set forth.

In witness whereof we have hereunto set our hands in presence of two witnesses.

CHARLES CHENU.
LÉOPOLD GAUTREAU.

Witnesses:
LOUIS MOSES,
EDWARD P. MACLEAN.