

No. 753,441.

PATENTED MAR. 1, 1904.

J. M. STAPLES.  
RAIL JOINT.

APPLICATION FILED JUNE 1, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig 1.

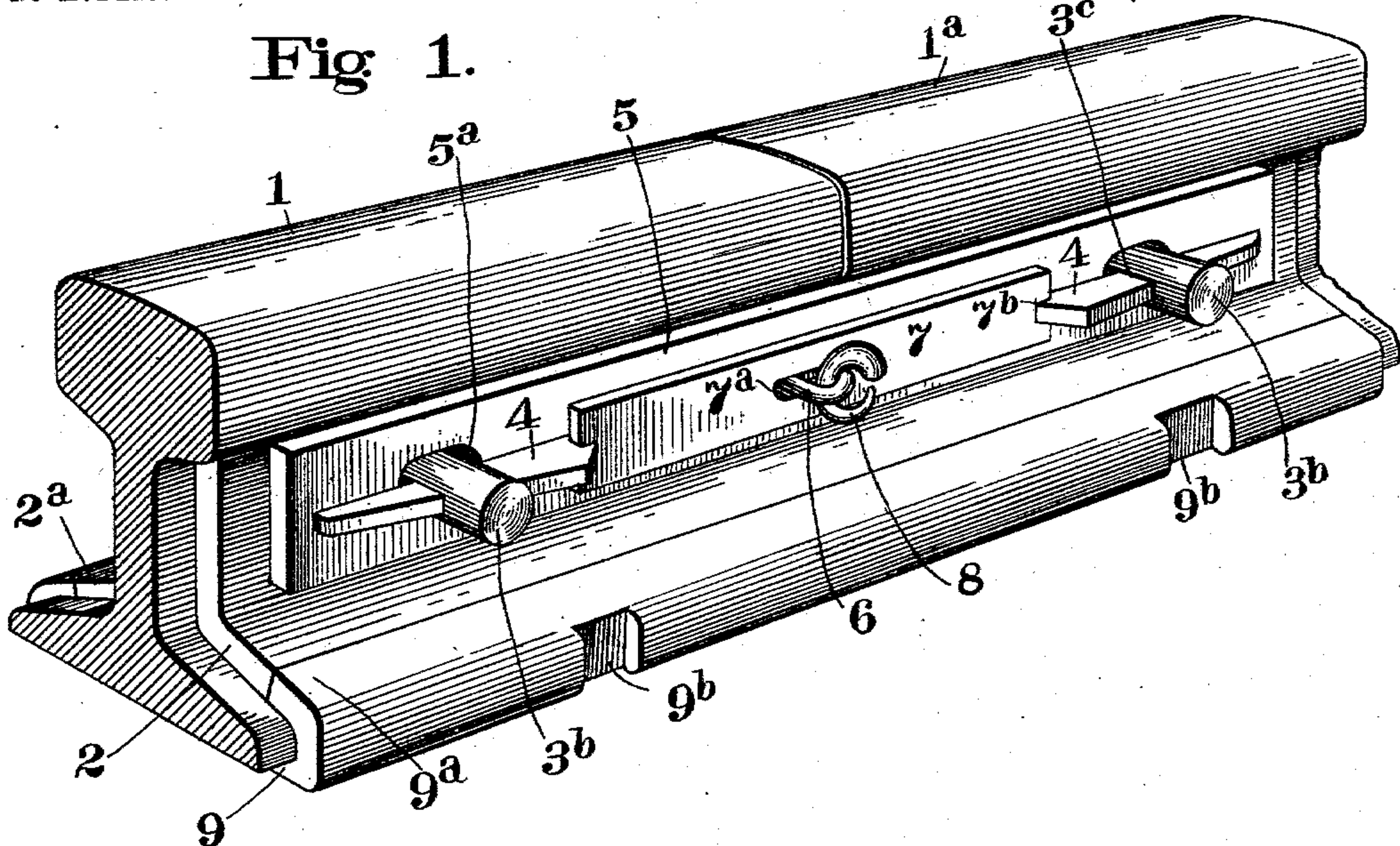


Fig 2.

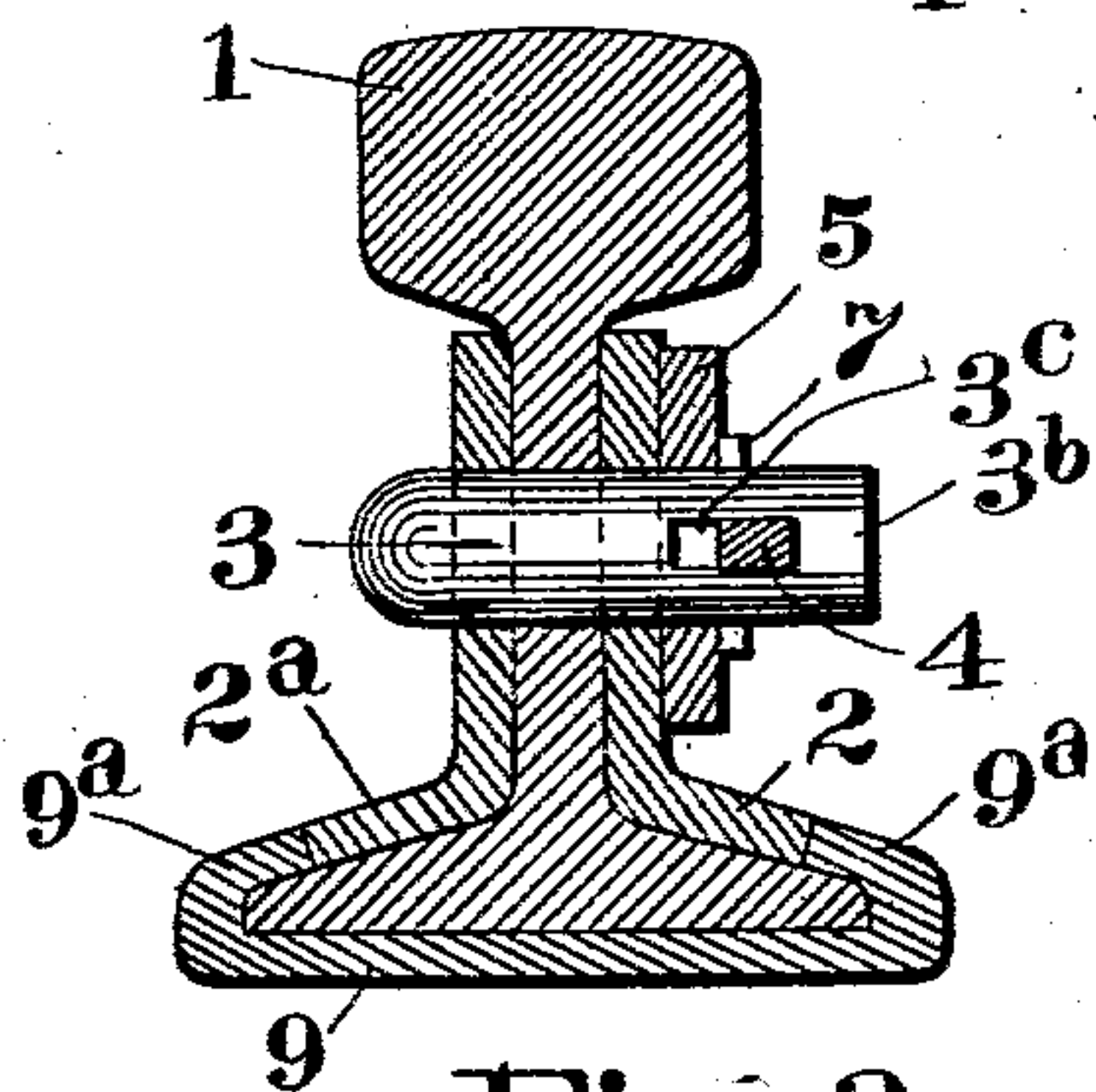
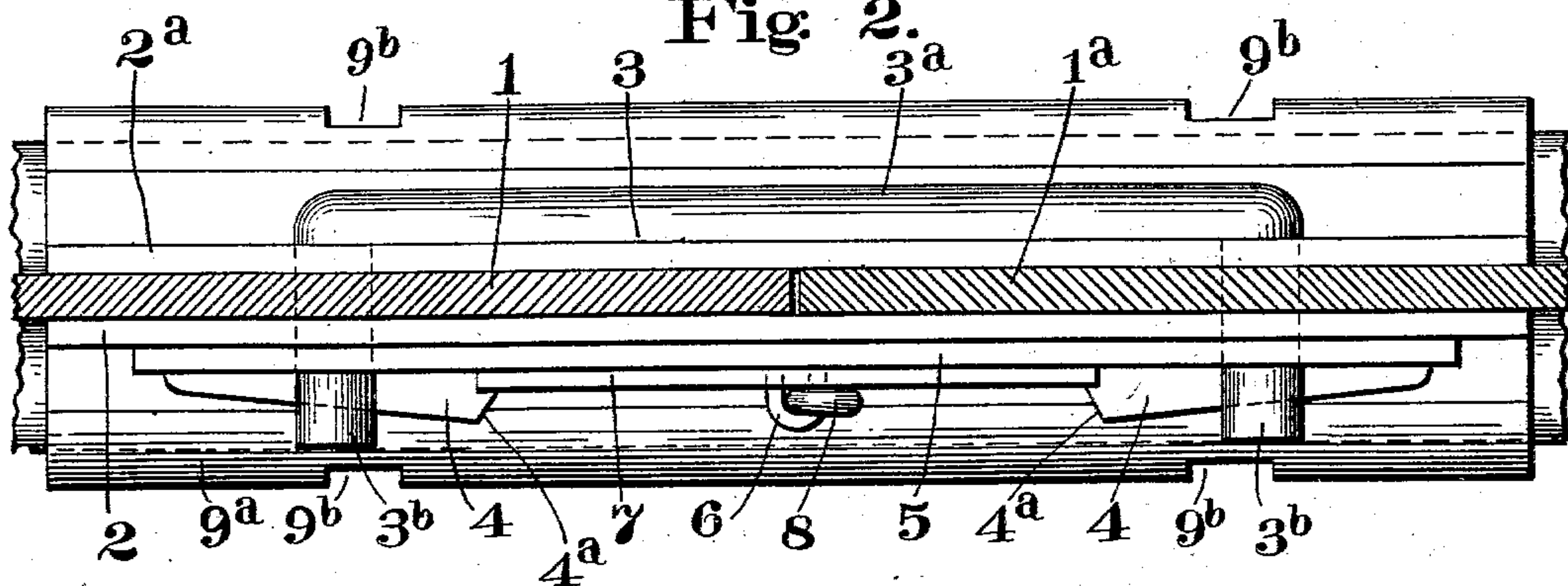


Fig 3.

Witnesses

*Rey C. Bowen*  
*E. V. Blandif*

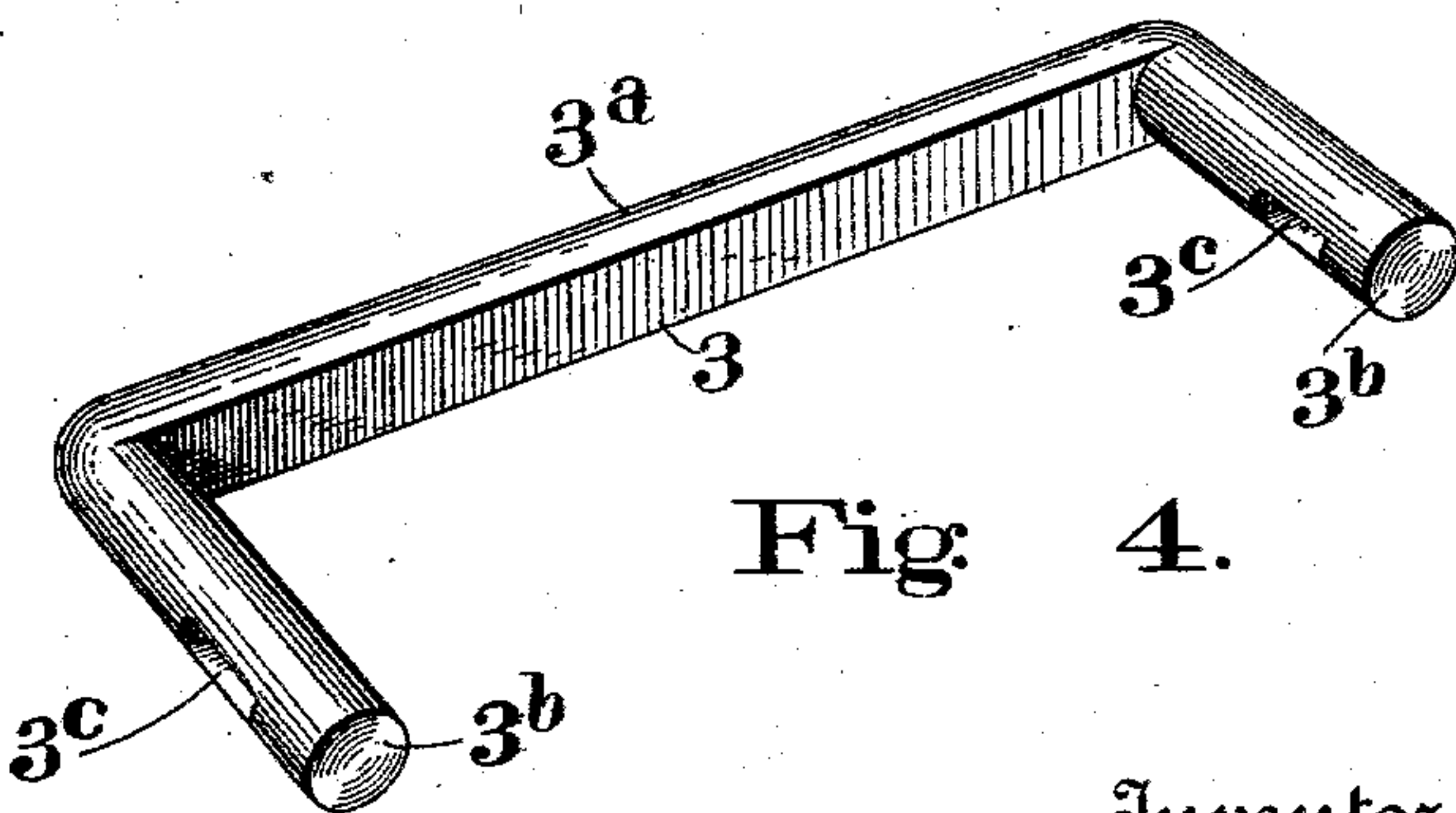


Fig 4.

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2 SHEETS—SHEET 2.

Fig 5.

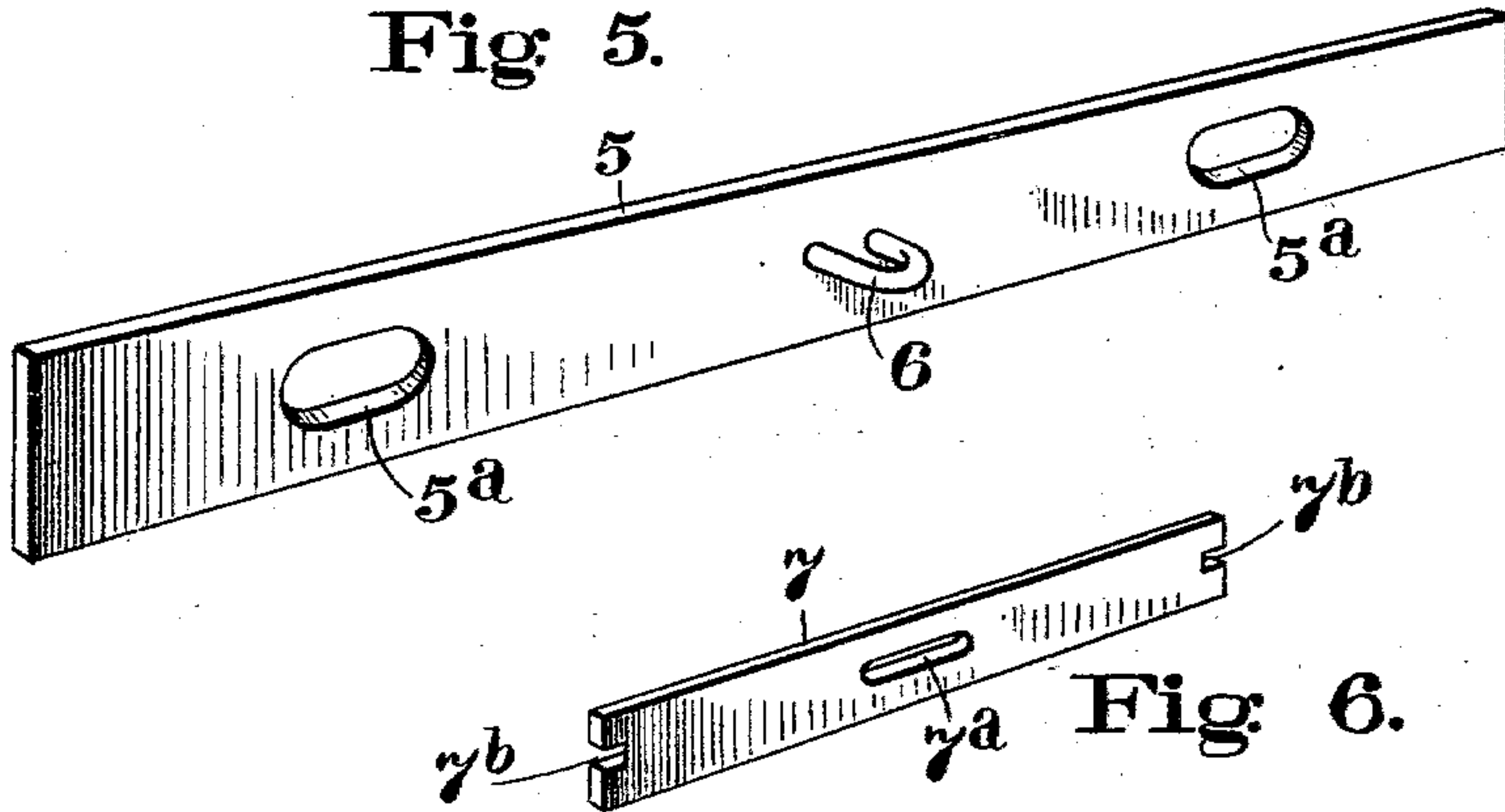


Fig 7.

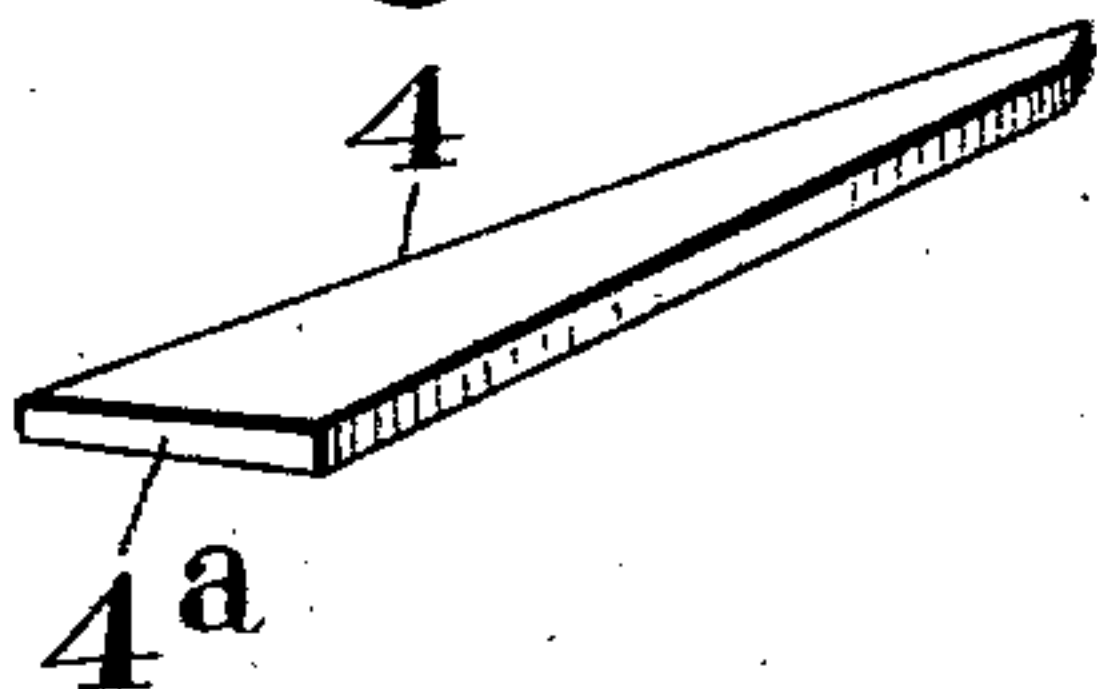


Fig 8.

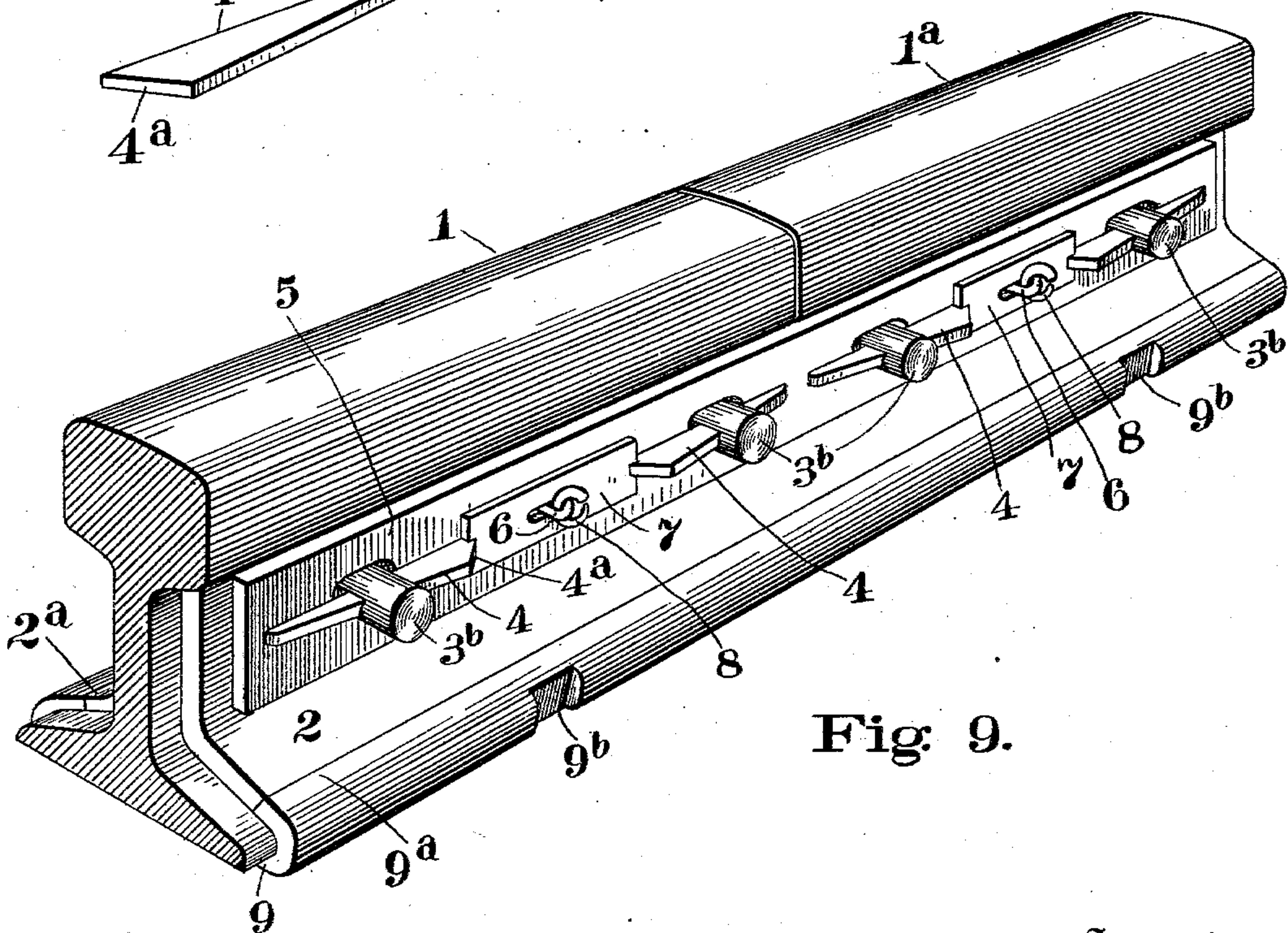


Fig 9.

Witnesses  
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# UNITED STATES PATENT OFFICE.

JOHN M. STAPLES, OF PHILADELPHIA, PENNSYLVANIA.

## RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 753,441, dated March 1, 1904.

Application filed June 1, 1903. Serial No. 159,655. (No model.)

*To all whom it may concern.*

Be it known that I, JOHN M. STAPLES, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in rail-splices.

It has for its object, among others, to provide a rail-joint which is simple and can be readily and quickly adjusted, thus saving much time in the construction of railroads. At the same time the joint is so constructed that it is impossible for the parts to become loose, thus preventing rattling sounds as the cars pass over the rails.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a perspective view of a pair of rails, showing the ends of one of my improved yoked bolts projecting through the fish-plate; the web of the rails, and my key-plate and held in place by my improved locking device. Fig. 2 is a top plan view thereof with a part of the rail removed. Fig. 3 is a cross-sectional view thereof. Fig. 4 is a perspective view of my yoked bolt. Figs. 5, 6, 7, and 8 are perspective views of the key-plate, locking-plate, key, and fastening-ring, respectively. Fig. 9 is a perspective view similar to Fig. 1, showing a modified form of the yoked bolt with four prongs instead of two in use.

Referring more particularly to the drawings, 1 1<sup>a</sup> are the rails, 2 2<sup>a</sup> the fish-plates, and 3 is my yoked bolt, having a back portion 3<sup>a</sup> and prongs 3<sup>b</sup>. Said back portion 3<sup>a</sup> is preferably D-shaped in cross-section, the surface abutting against the fish-plate being flat, while the exterior portion is rounded. The prongs 3<sup>b</sup> are provided with slots or keyways 3<sup>c</sup> through their ends to receive the tapering keys 4, which are beveled at their larger ends, as at 4<sup>b</sup>. The key-plate 5 is provided with apertures 5<sup>a</sup> for the prongs of the yoke-bolt, and said plate in practice is placed in position

before the keys are inserted and acts as a bearing for the same. Said key-plate carries, preferably near its center, a staple 6, secured thereto in any suitable manner and adapted to have the key-locking plate 7, provided with a slot 7<sup>a</sup> for that purpose, placed thereon. This key-locking plate has a slot or cut-out portion 7<sup>b</sup> in each end to fit the end of the keys, and it is secured in place on the staple of the key-plate by the open ring 8, which is preferably tapering longitudinally and rounded transversely, so that it may make a close fit and take up any wear of the parts.

My fish-plate extends on the top surface of the flanges of the rails to within about an inch and one-half of the edges of said flanges. The bed-plate 9 is made with upturned and overlapping flanges 9<sup>a</sup>, which when the joint is placed in position meet and make a close joint with lower edges of the fish-plates, thus preventing any horizontal movement of the heavy steel rails and avoiding all possible vertical movement of the joint. The bed-plate is made to slip easily upon the flange of the rails the full length of the fish-plates and is provided with slots 9<sup>b</sup> to receive the spikes.

In using my rail-splice the bed-plate is first slipped on one rail and then back over the other. The fish-plates are then adjusted, the yoke-bolt inserted from the outer side of the rails, and the key-plate placed over the projecting ends of the prongs on the inner side. The keys are then inserted in the ways in said prongs so that their larger ends face each other, and are driven up as tightly as possible, when the locking-plate is adjusted upon the staple carried by said key-plate, with the slots in its ends engaging the ends of the keys. The locking-plate is held in place by the locking-ring, which is inserted in the staple and turned until it is tight. Lastly, the bed-plate is spiked down, so that it extends the whole length of the fish-plates.

If preferred, I may use a yoke-bolt with four prongs, two for each rail, as shown in Fig. 9, in which case I use a key-plate with four apertures and two staples, one between each of the end pairs of holes, and two locking-plates and rings.

I do not limit myself to the details of con-



struction herein shown, as they may be varied at will and my invention still remain intact and be protected.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a rail-joint, a yoked bolt having a plurality of prongs adapted to pass through the fish-plates and webs of the rails and means for securing said yoked bolt in place comprising keys locked in position by a locking plate and ring.

2. In a rail-joint, a yoked bolt having a plurality of prongs adapted to pass through the fish-plates and webs of the rails and means for securing said yoked bolt in place comprising keys, a bearing-plate for said keys having a staple secured thereto and projecting therefrom, a locking-plate having a slot to receive said staple, the ends of said locking-plate bearing against the ends of said keys and a ring for securing said locking-plate in position.

3. In a rail-joint, a yoked bolt having a plurality of prongs adapted to pass through the fish-plates and webs of the rails and means for securing said yoked bolt in place comprising tapering keys having beveled surfaces at their larger ends and means for locking said keys in position.

4. In a rail-joint, a yoked bolt having a plurality of prongs adapted to pass through the fish-plates and webs of the rails and means for securing said yoked bolt in place, compris-

ing keys, a bearing-plate for said keys having a staple secured thereto and projecting therefrom, a locking-plate having a slot to receive said staple and other slots to fit the ends of said keys and a ring for securing said locking-plate in position upon said staple.

5. In a rail-joint, a yoked bolt having a plurality of prongs adapted to pass through the fish-plates and webs of the rails and means for securing said yoked bolt in place comprising keys, a bearing-plate for said keys having a staple secured thereto and projecting therefrom, a locking-plate having a slot to receive said staple, the ends of said locking-plate bearing against the ends of said keys, and a tapering ring adapted to tightly lock said locking-plate upon said staple.

6. In a rail-joint, the combination, with two rails, of a bed-plate extending entirely under the rails and over the edges of the flanges thereof, said bed-plate lying flat upon the upper surface of said flanges, and L-shaped fish-plates, fitting close to the web and flanges of the rails, each meeting and bearing against said bed-plate at a point on the upper surface of the flange of the rail intermediate of said web and the edge of the flange, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN M. STAPLES.

Witnesses:

MACOMB CLAYTON,  
H. W. McFASSEL, Jr.