

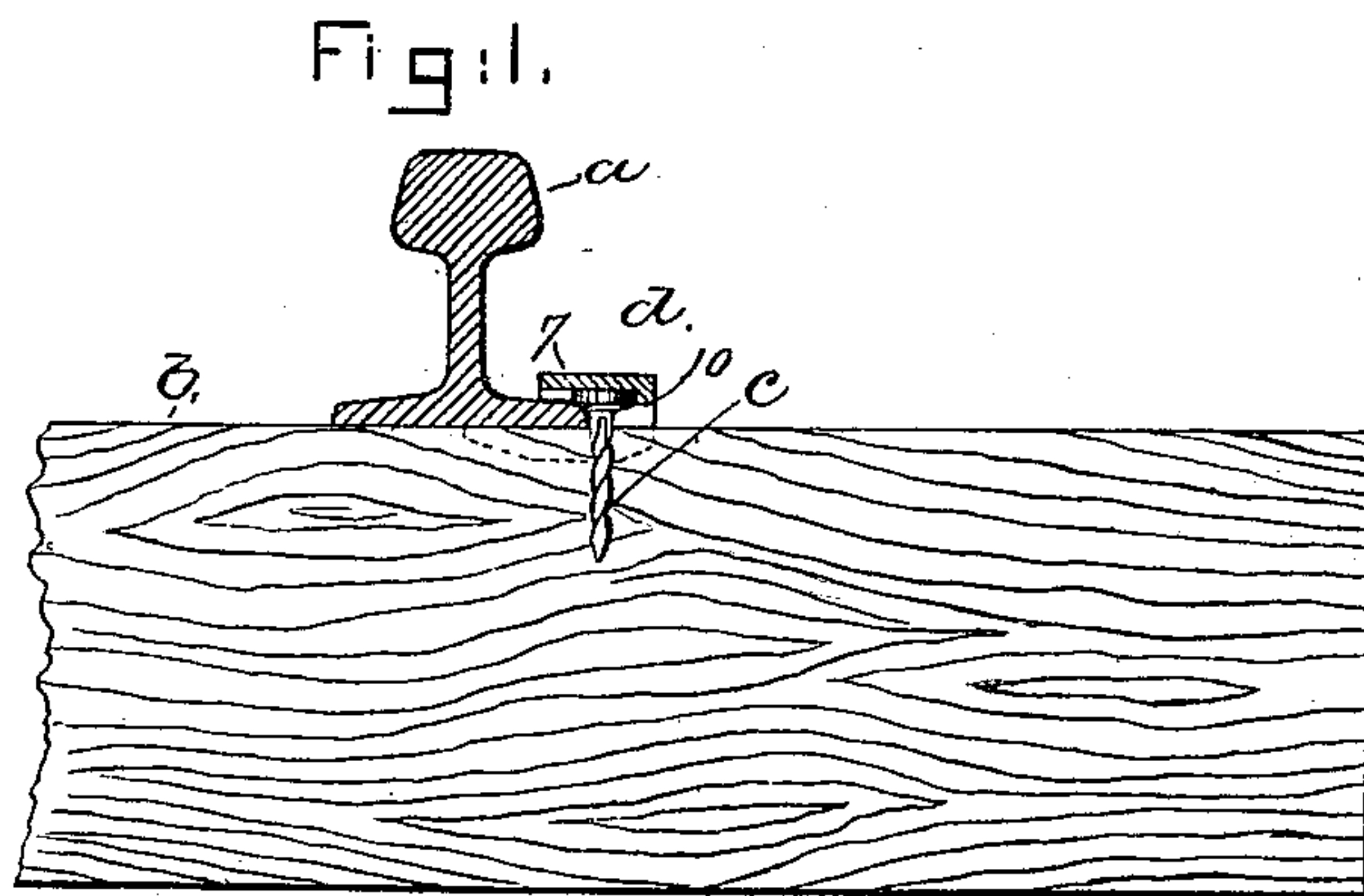
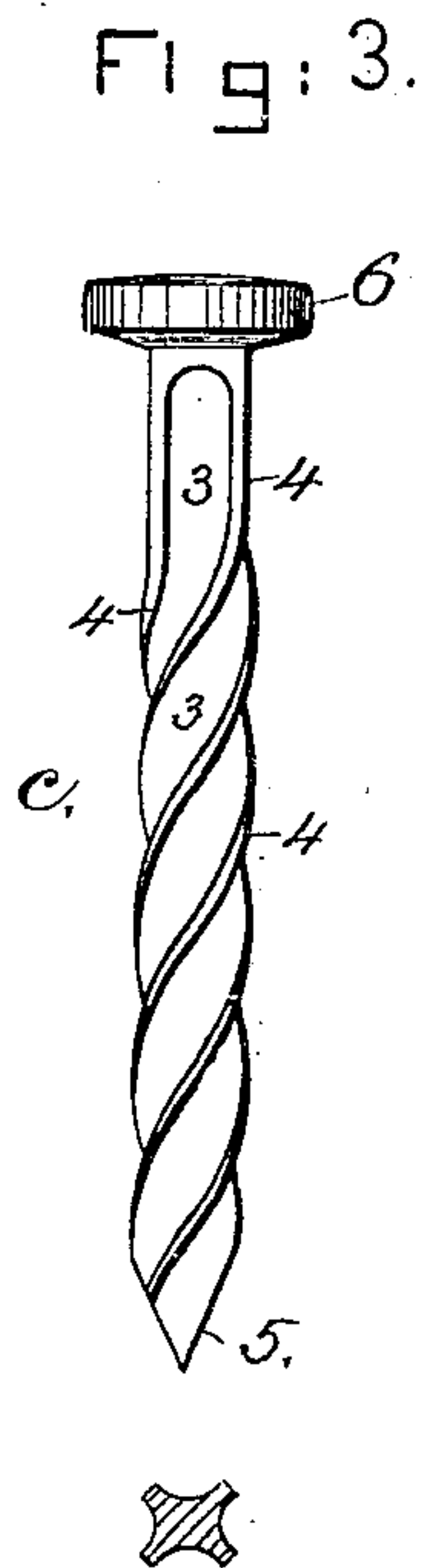
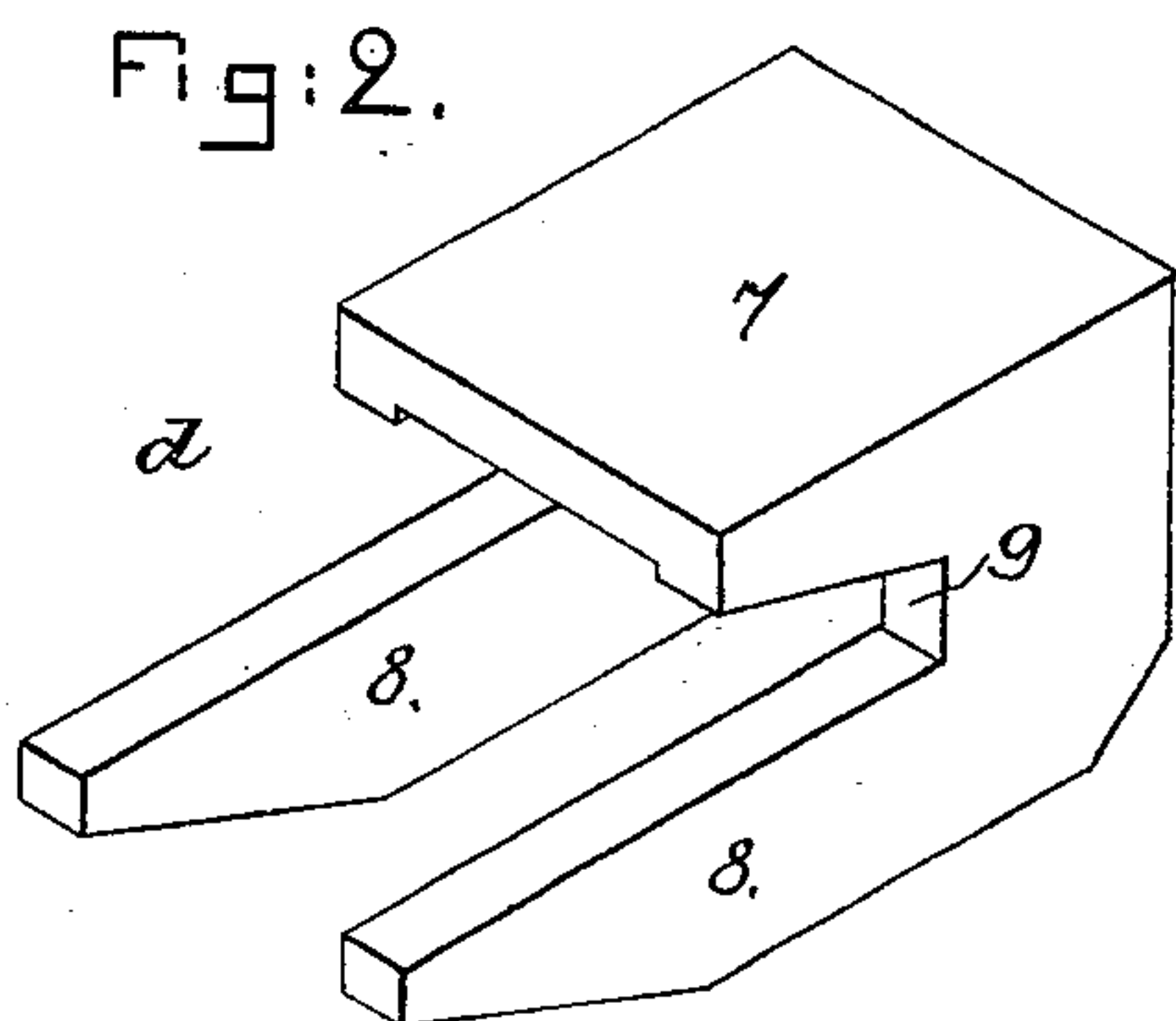
(No Model.)

G. GRAY.

FASTENING OR CHAIR FOR RAILS.

No. 262,404.

Patented Aug. 8, 1882.



WITNESSES.

L. T. Connor.

John F. C. Prunkert

INVENTOR

Gorham Gray.

by Crosby & Gregory Attys

UNITED STATES PATENT OFFICE.

GORHAM GRAY, OF BOSTON, MASSACHUSETTS.

FASTENING OR CHAIR FOR RAILS.

SPECIFICATION forming part of Letters Patent No. 262,404, dated August 8, 1882.

Application filed December 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, GORHAM GRAY, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Fastenings or Chairs, of which the following description, in connection with the accompanying drawings, is a specification.

My invention relates to a fastening or chair for rails, it consisting essentially of a piece of iron, steel, or other suitable material having prongs to be driven into the sleeper, so as to lie horizontally beneath the rail, the said prongs extending from a bridge-like portion connecting them, and adapted to bear upon the head of the usual fastening-spike, which has been driven previous to the insertion of the said prongs. The weight of the rail and load supported on it thus bears directly upon the upper surface of the said prongs, and is transmitted therefrom through the bridge-like portion to the head of the spike, so that the said load tends to sink the spike more deeply into the sleeper instead of depressing the rail below the head of the spike in the usual manner, and thus permitting the rail, when the load passes off from it, to react upward on the spike and tend to withdraw or loosen it.

A chair of this nature may be used in connection with spikes of common construction; but will preferably be employed in combination with a spike made of a bar of metal having fluted or concaved sides to produce salient edges, its lower portion being twisted to make the said edges spiral or helical, so that as the nail is driven it rotates, and cannot be withdrawn without a reverse rotation. The spike has a round head projecting equally on all sides of it, and the shank or body of the spike is not twisted for a short distance beneath the said head, which is made to co-operate with certain portions of the before-mentioned chair, as will be hereinafter fully described.

Figure 1 is a sectional view of a rail fastened to the sleeper in accordance with this invention; Fig. 2, a perspective view of one of the fastening-chairs on a larger scale; and Fig. 3 a side elevation of one of the spikes, such as are preferably employed in carrying out this invention.

The rail *a* is supported upon the sleeper *b*, and fastened thereto by a spike, *c*, the head of which overlaps the flange of the rail in the

usual manner. As herein shown, the spike *c* (see Fig. 3) consists of a bar of metal having its sides fluted, as shown at 3, so as to leave salient edges 4; the lower portion of the said bar which enters the sleeper being twisted, as shown, and provided with a V-shaped or chisel-like point, 5. The bar is not twisted for a short distance beneath its head, which is round, and projects equally from all sides of the bar, so that it will engage the flange of the rail at whatever angle the spike may be presented thereto. The chisel-point 5 of the spike is, however, made parallel with the sides of the upper untwisted portion beneath the head, which is of such length that when the spike is started with its edge 5 parallel with the rail the head will engage the flange of the rail when one of the faces of the upper portion of the spike is parallel with the said rail, as shown in Fig. 1.

The chair *d* (shown in Fig. 2) consists of a bridge-like portion, 7, having two prongs or pointed wings, 8, which, when their points are inserted beneath the flange of the rail and the chair is driven toward the rail, will become embedded in the wood of the sleeper, as shown by the dotted line, Fig. 1. The upper face of the prongs 8 will then lie beneath the rail, the said prongs or wings being recessed, as shown at 9, Fig. 2, beneath the bridge portion 7 to receive the flange of the rail. When the chair *d* is driven into place, with its prongs 8 embedded in the sleeper beneath the rail, the bridge portion 7 will rest upon the head of the spike *c*, as shown in Fig. 1, the said head being of proper width to just fit between the pointed wings 8. A downward projection, 10, (see Fig. 1,) at the rear side of the bridge portion 7 of the chair, by its engagement with the head of the spike, forces the said head laterally over the edge of the rail-flange if the shank portion of the spike be not already in contact with the said flange.

It will be evident (referring to Fig. 1) that the downward pressure of the train passing over the rail *a* will be received upon the prongs 8, and transmitted therefrom through the bridge portion 7 of the chair *d* to the head of the spike *c*, and that by means of the said spike and chair the rail and sleeper are positively locked together.

In practice one of these fastenings will be

used at each side of the rail on each sleeper, as is the case with the spikes now commonly in use.

I claim—

5 1. A fastening or chair for rails, consisting of prongs or pointed wings adapted to be embedded in the sleeper beneath the rail, and a bridge-like portion connecting the said wings and adapted to rest on the head of the rail-
10 fastening spike, whereby downward pressure on the rail is transmitted to the spike, substantially as and for the purpose described.

2. In a fastening or chair, the combination of the prongs adapted to be driven into the
15 sleeper beneath the rail, the bridge portion arranged, as described, to rest on the top of the spike, and the projection 10 thereon for engaging the head of the spike and forcing it
20 laterally over the flange of the rail, substantially as described.

3. In a fastening for railway-rails, the fastening-spike *c*, having its lower portion fluted, spirally twisted, and provided with a chisel-edge, and having its upper end untwisted and provided with a head projecting on all sides, 25 combined with the chair *d*, having prongs and a connecting bridge-like portion provided with a projection, 10, as described, the said prongs being adapted to pass beneath the rail, and the bridge-like portion being adapted to rest 30 upon the head of the spike and overlap the flange of the rail, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GORHAM GRAY.

Witnesses:

JOS. P. LIVERMORE,
B. J. NOYES.