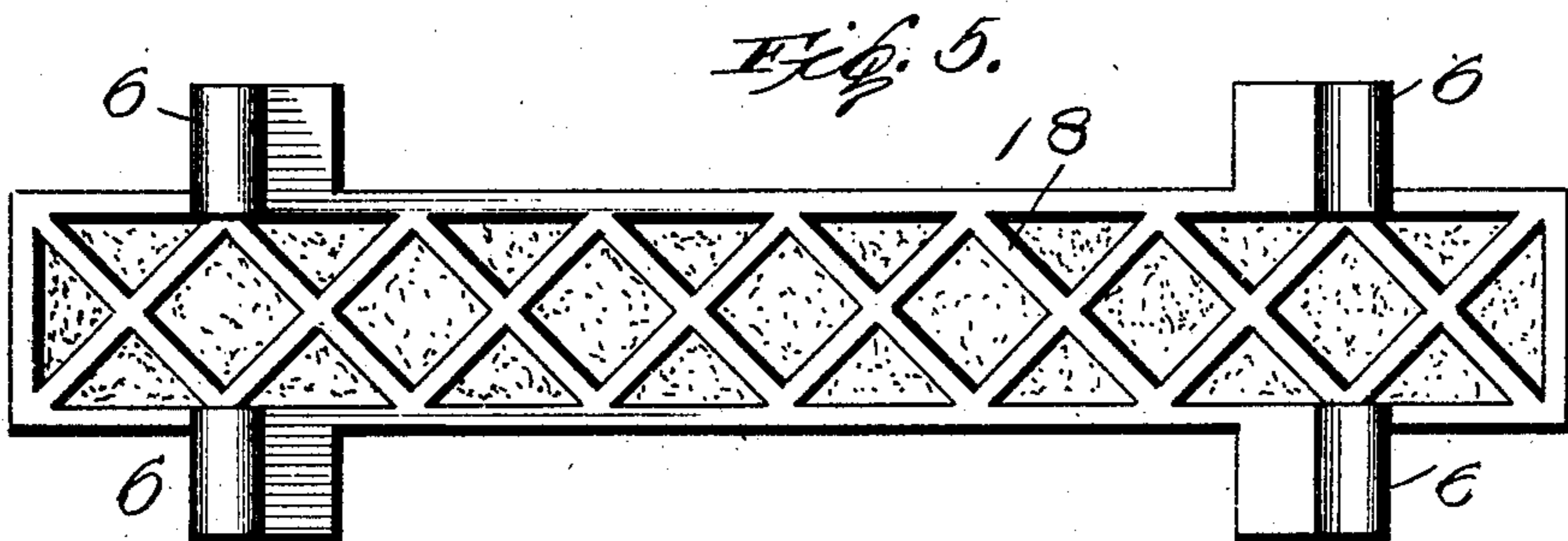
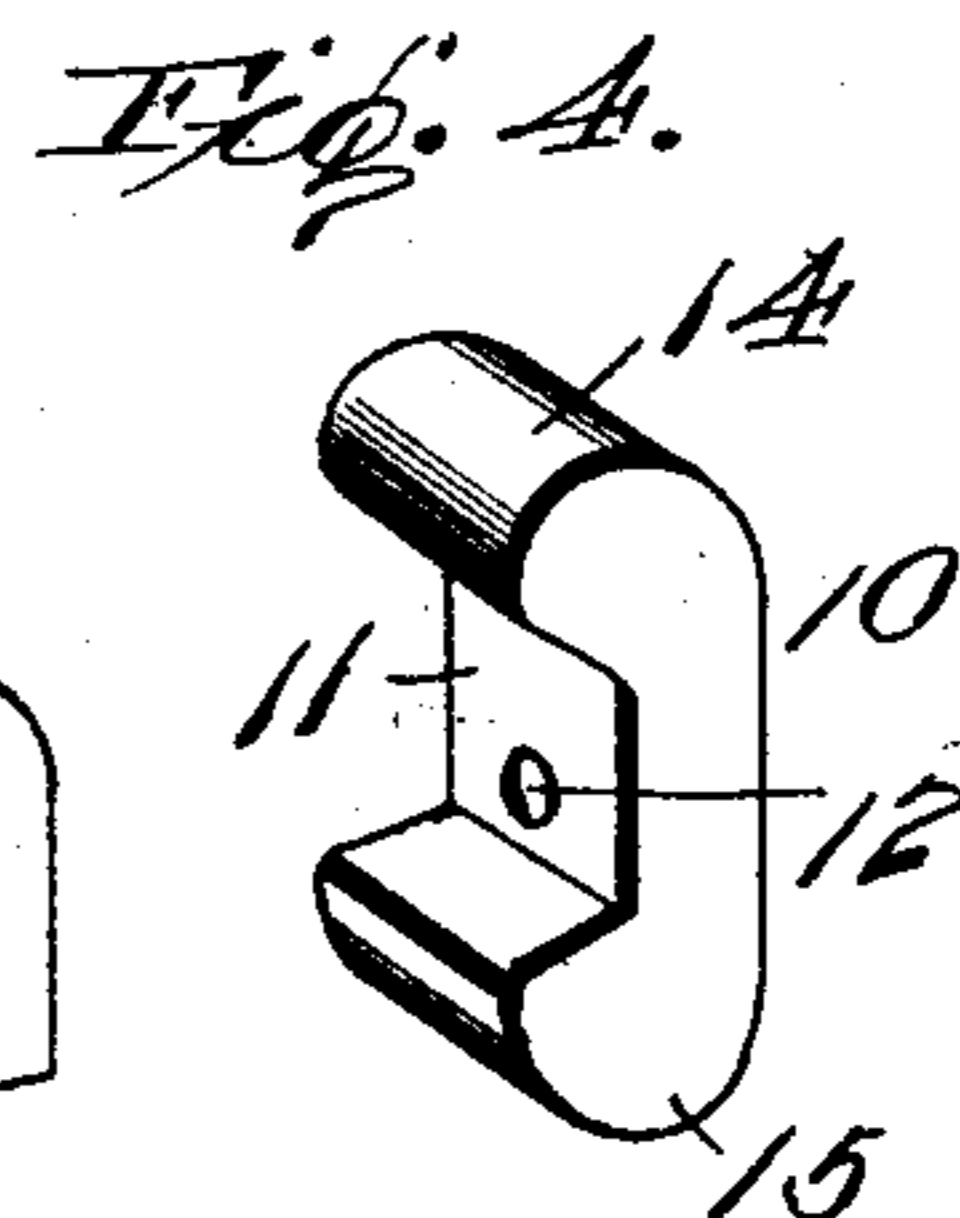
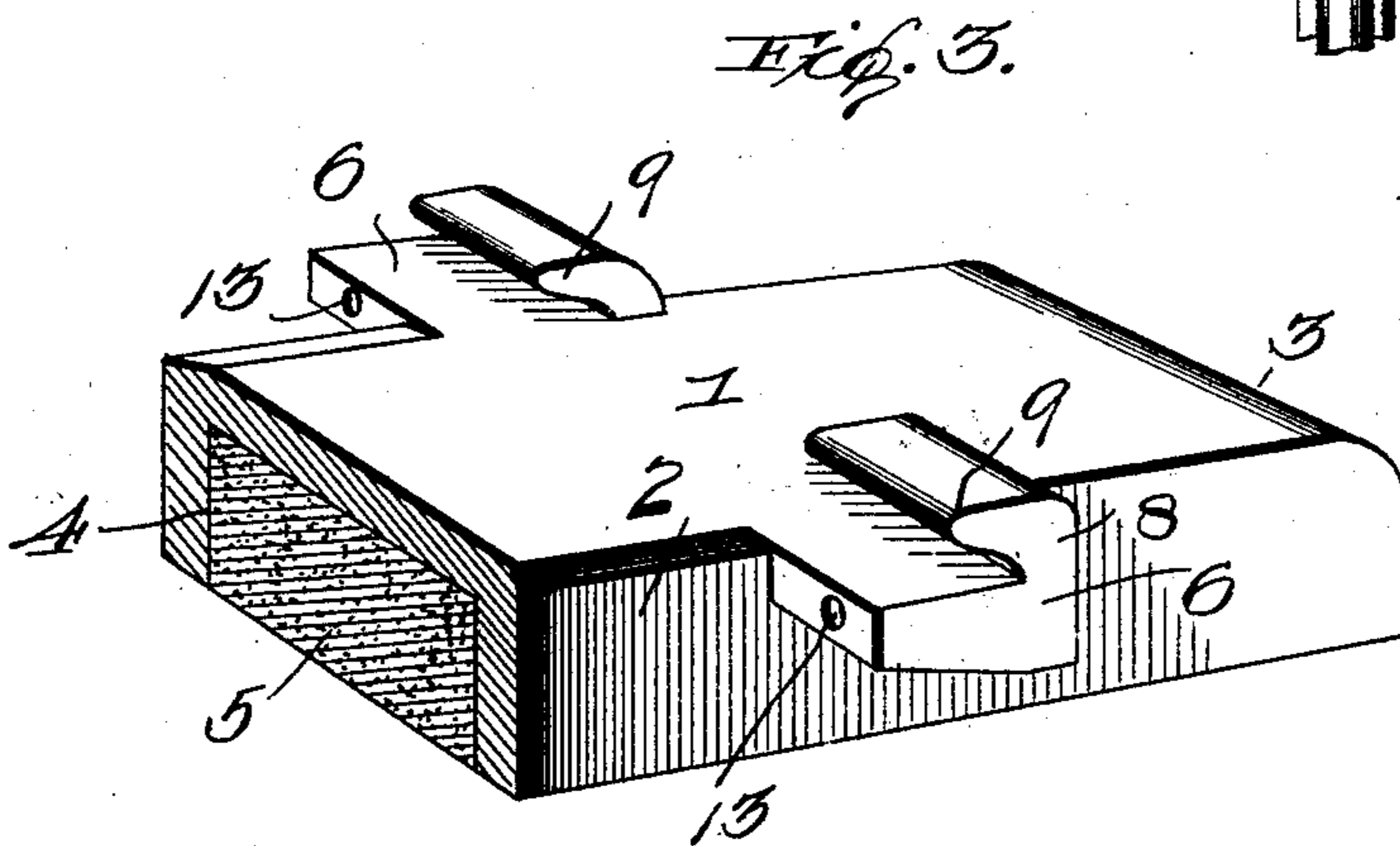
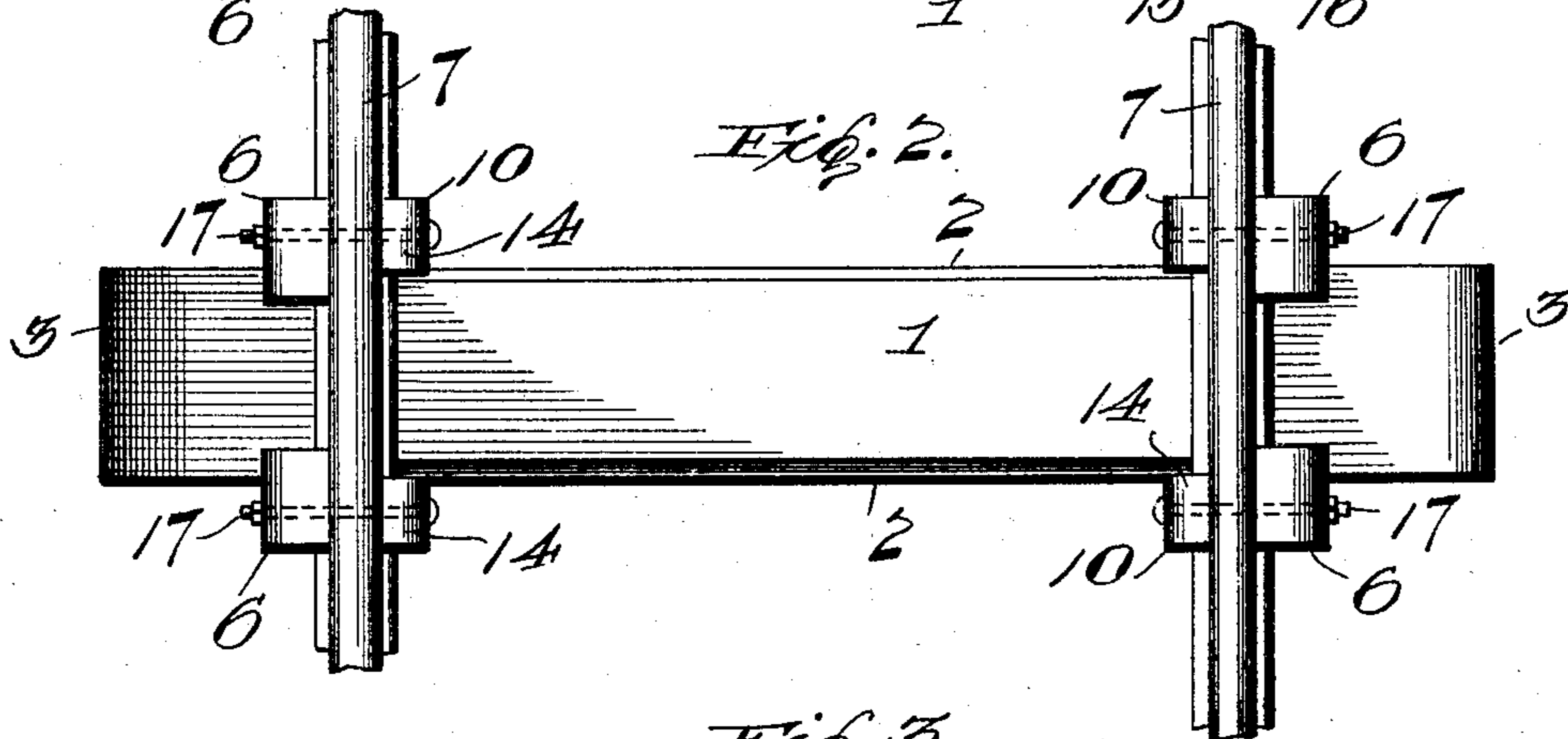
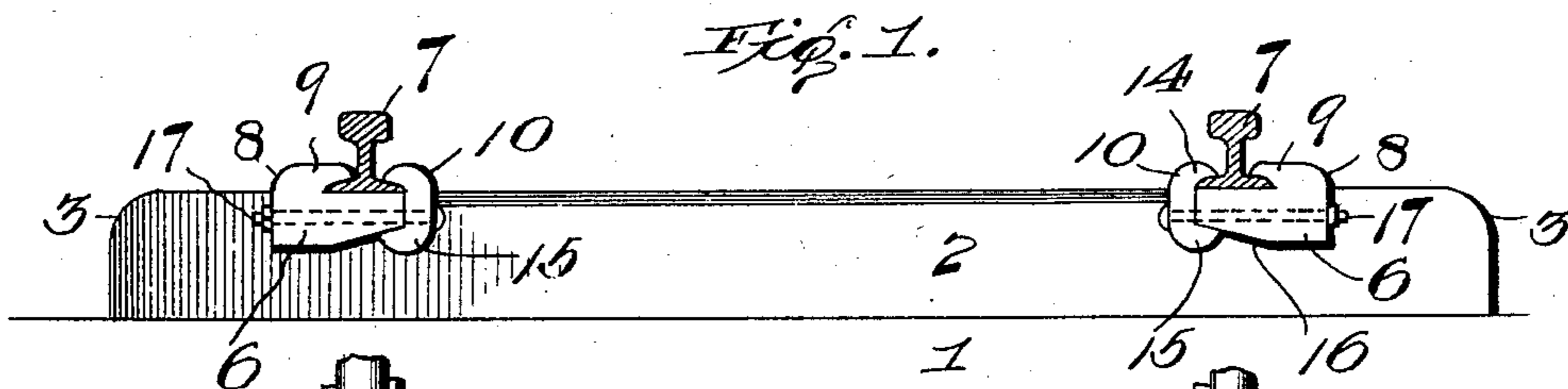


No. 785,647.

PATENTED MAR. 21, 1905.

W. G. WILLCOXEN.
RAIL TIE AND FASTENING.
APPLICATION FILED AUG. 4, 1904.



Witnesses
J. L. Knochman
G. V. Forbes

W. G. WILLCOXEN
By D. P. Wolhaupter
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM G. WILLCOXEN, OF BURLINGTON, IOWA.

RAIL TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 785,647, dated March 21, 1905.

Application filed August 4, 1904. Serial No. 219,478.

To all whom it may concern:

Be it known that I, WILLIAM G. WILLCOXEN, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Rail Ties and Fastenings, of which the following is a specification.

This invention relates to rail ties and fasteners, the object of the invention being to provide a metallic railway-tie embodying means carried thereby for supporting the rails and fastening the same securely thereto in such manner as to prevent any liability of the rails to spread or tilt or turn under the stress, thrust, and weight of a loaded train passing thereover.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a view in elevation of a railway-tie embodying the present invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged detail perspective view of one end of the tie with the rail-clamps detached. Fig. 4 is a detail perspective view of one of the clamps. Fig. 5 is a plan view of a tie of skeleton form.

Like reference-numerals designate corresponding parts in the several figures of the drawings.

The tie contemplated in this invention is composed of any suitable metal and may be either cast, rolled, or forged. The tie in its preferred embodiment comprises a top 1, substantially parallel sides 2, and ends 3, which may either be closed or opened, according to preference. The tie is substantially rectangular in cross-section, as shown in Fig. 3, and has the sides 2 projected downward from the top 1 in substantially parallel relation, a channel 4 being thus left, which extends practically the entire length of the tie to receive a suitable filling 5 of concrete or its equivalent, which may be applied to the tie before placing the same in position upon the road-bed or subsequently thereto, as may be found most expedient.

In further carrying out the present inven-

tion and in order to provide for fastening the rails thereto the tie is provided at suitable points with oppositely-located and laterally-projecting lugs 6, which constitute chairs for the support of the rails, (shown at 7.) At the outer side the lugs or chairs 6 are extended upwardly, as shown at 8, and then inwardly, as shown at 9, to engage over the base-flange of the rail at the outer side of the latter, as shown in Fig. 1, the parts 6, 8, and 9 thus constituting laterally-projecting rail-chairs which are formed integrally with the body of the tie. It will be understood that two sets of such chairs are formed at or near opposite ends of the tie and are located a distance apart commensurate with the gage of the road in connection with which the ties are employed.

In conjunction with each lug or chair 6 a rail-clamp 10 is employed, the same comprising a body portion 11, provided with a bolt-hole 12, which is adapted to register with a corresponding bolt-hole 13, passing horizontally through the chair 6. The clamp 10 is provided at the upper part thereof with a cap portion 14, which when the clamp is in place fits over the base-flange of the rail at the inner side, as shown in Fig. 1. At the bottom the clamp is provided with a base portion or lip 15, which engages beneath the corresponding chair 6, as also shown in Fig. 1. The upper surface of the lip 15 is beveled or inclined, as shown, to cooperate with the correspondingly-inclined lower face 16 of the chair or lug 6, so that when a bolt 17 is inserted through the chair and clamp and a nut turned up tightly thereon the inclined faces of the clamp and chair will cooperate, with the result of crowding the cap portion of the clamp inward and downward against the base of the rail, thus forcing the rail into close engagement with the chair and also obtaining a firm seating of the rail on the tie.

It will be noted that the clamps are arranged close up to and on opposite sides of the tie, this being productive of a strong and durable fastening for the rails, while the nuts which secure the clamps in place are arranged at the outer sides of the rails, where they are convenient of access.

In some cases it is found desirable to form the top and sides of the metallic tie in open-work or skeleton form, as shown at 18 in Fig.

5 This decreases the cost of the tie without sacrificing any strength and also facilitates the application of the composite filling.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the scope of the invention.
10

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

15 1. A metallic railway-tie having laterally-projecting rail-chairs offset from the sides thereof, and rail-clamps arranged outside of the plane of the tie and connected with said chairs.

20 2. A metallic railway-tie, provided with integral laterally-projecting rail-chairs offset from the sides of the tie-body, and rail-clamps arranged outside of the plane of the tie-body and having separate portions respectively engaging the chairs and the rail-base.

25 3. A metallic railway-tie, provided with laterally-projecting rail-chairs offset from the sides thereof and having inclined faces, and separate rail-clamps arranged outside of the

plane of the tie-body and provided with rail-engaging portions and also with inclined portions having wedging engagement with the inclined faces of said chairs. 30

4. A metallic railway-tie, provided at the sides thereof with laterally-offset rail-chairs having upstanding rail-engaging portions and at their under sides provided with inclined faces, upright rail-clamps arranged outside of the plane of the tie-body and provided at their upper ends with rail-engaging members and at their lower ends with inclined portions 35 having a wedging engagement with the inclined faces of the chairs, and bolt connections between the clamps and the rail-chairs.

5. A metallic railway-tie provided at its sides with laterally-offset rail-chairs, rail-clamps arranged without the plane of the tie-body and having chair and rail engaging portions, and bolts connecting the clamps with the rail-chairs. 45

In testimony whereof I affix my signature in presence of two witnesses. 50

WILLIAM G. WILLCOXEN.

Witnesses:

W. W. DODGE,

JENNIE I. HARTLEY.