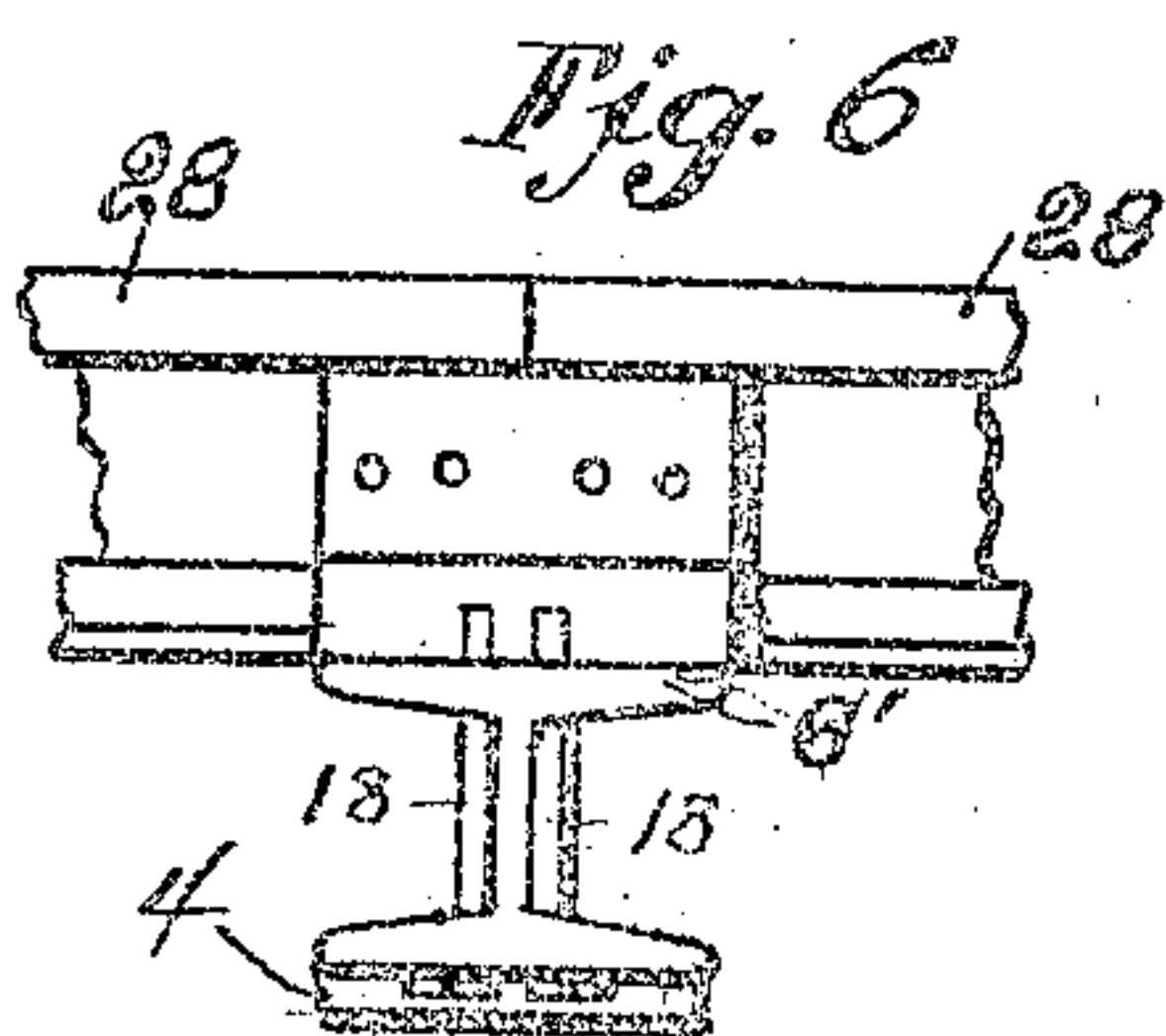
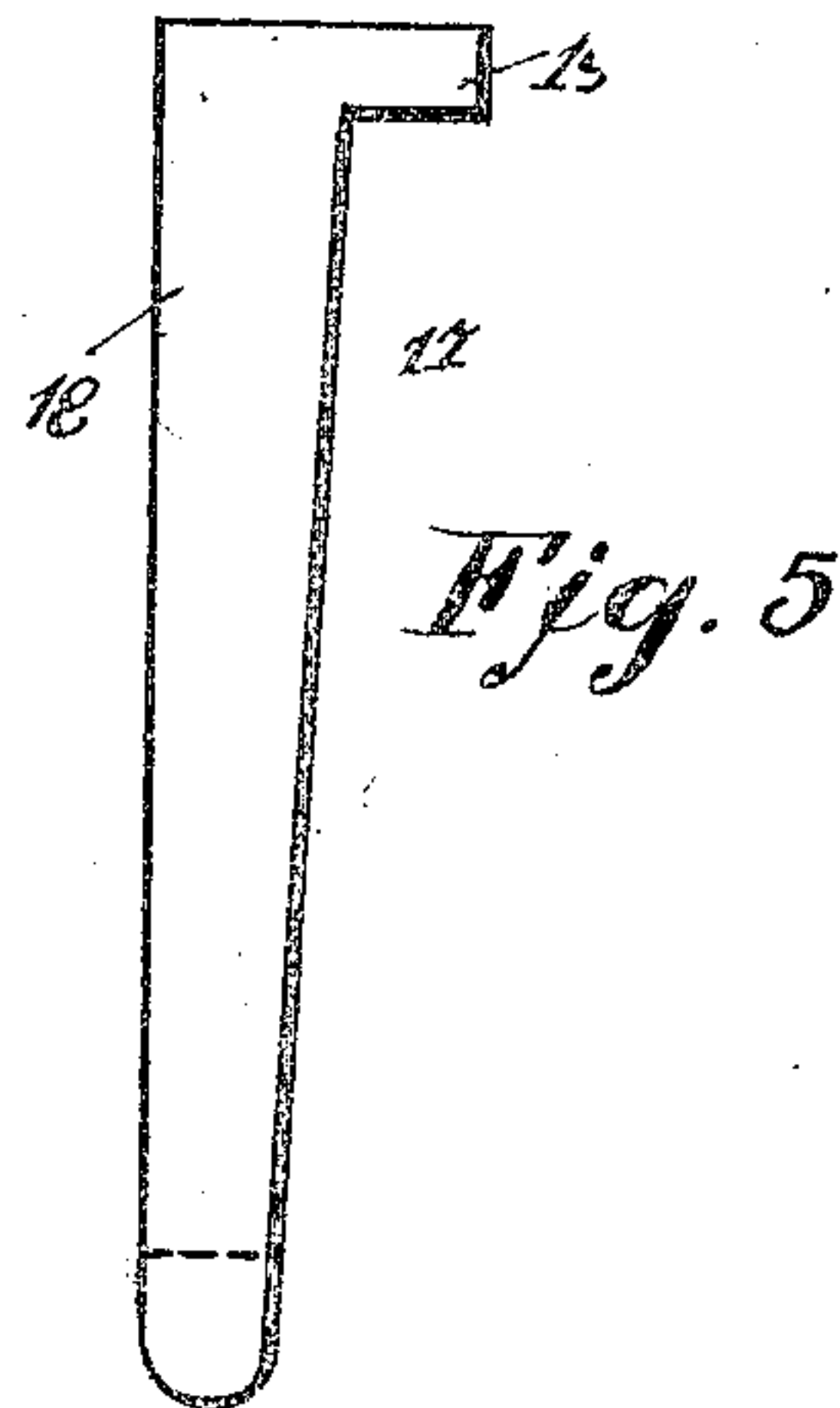
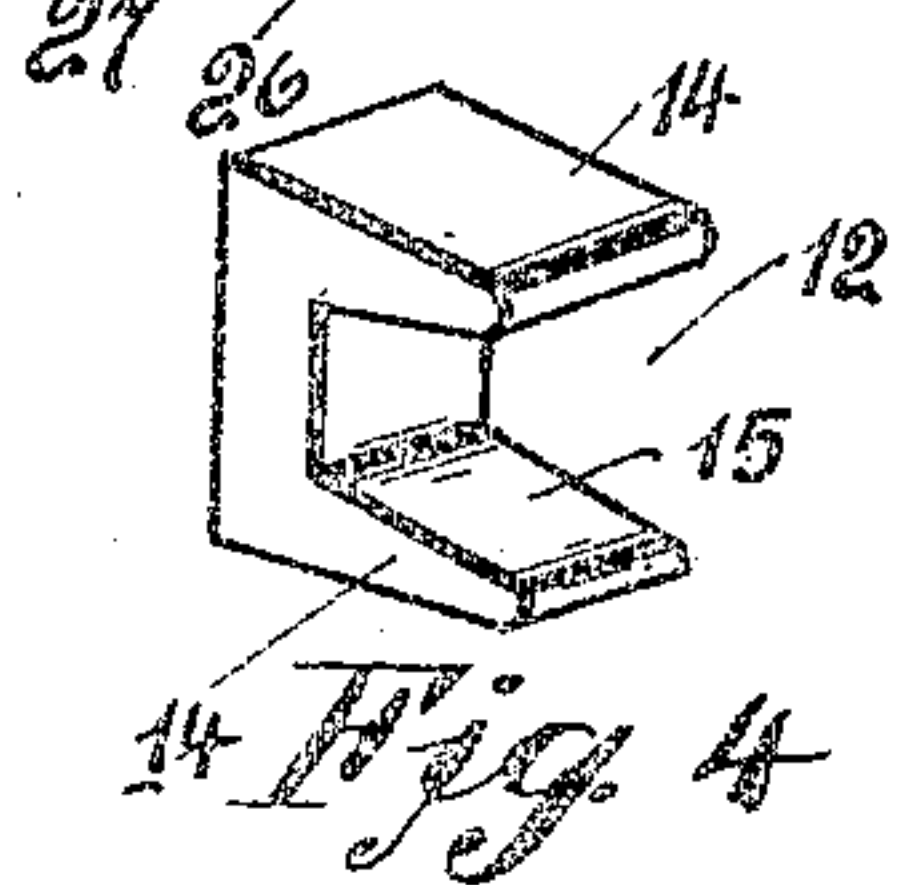
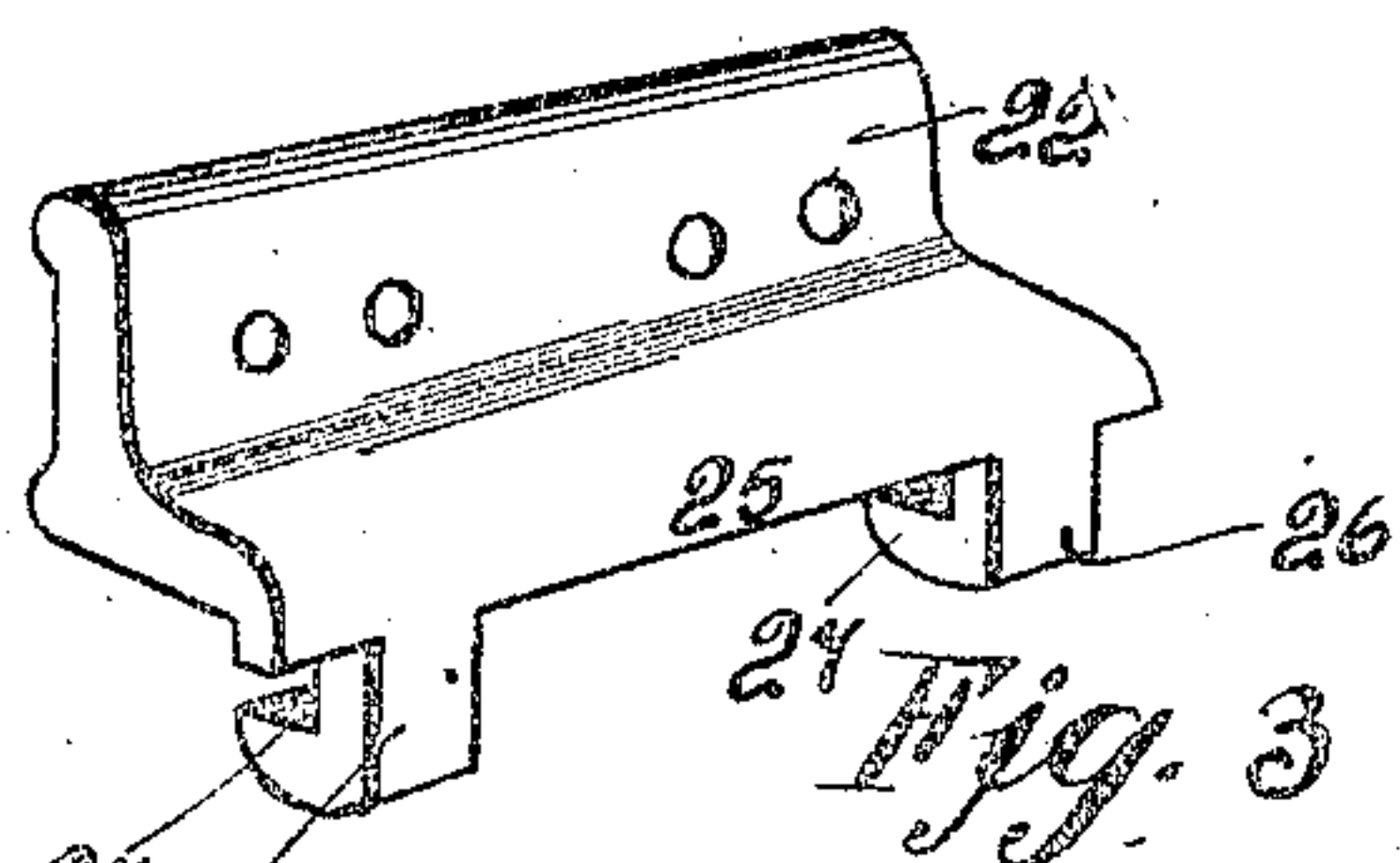
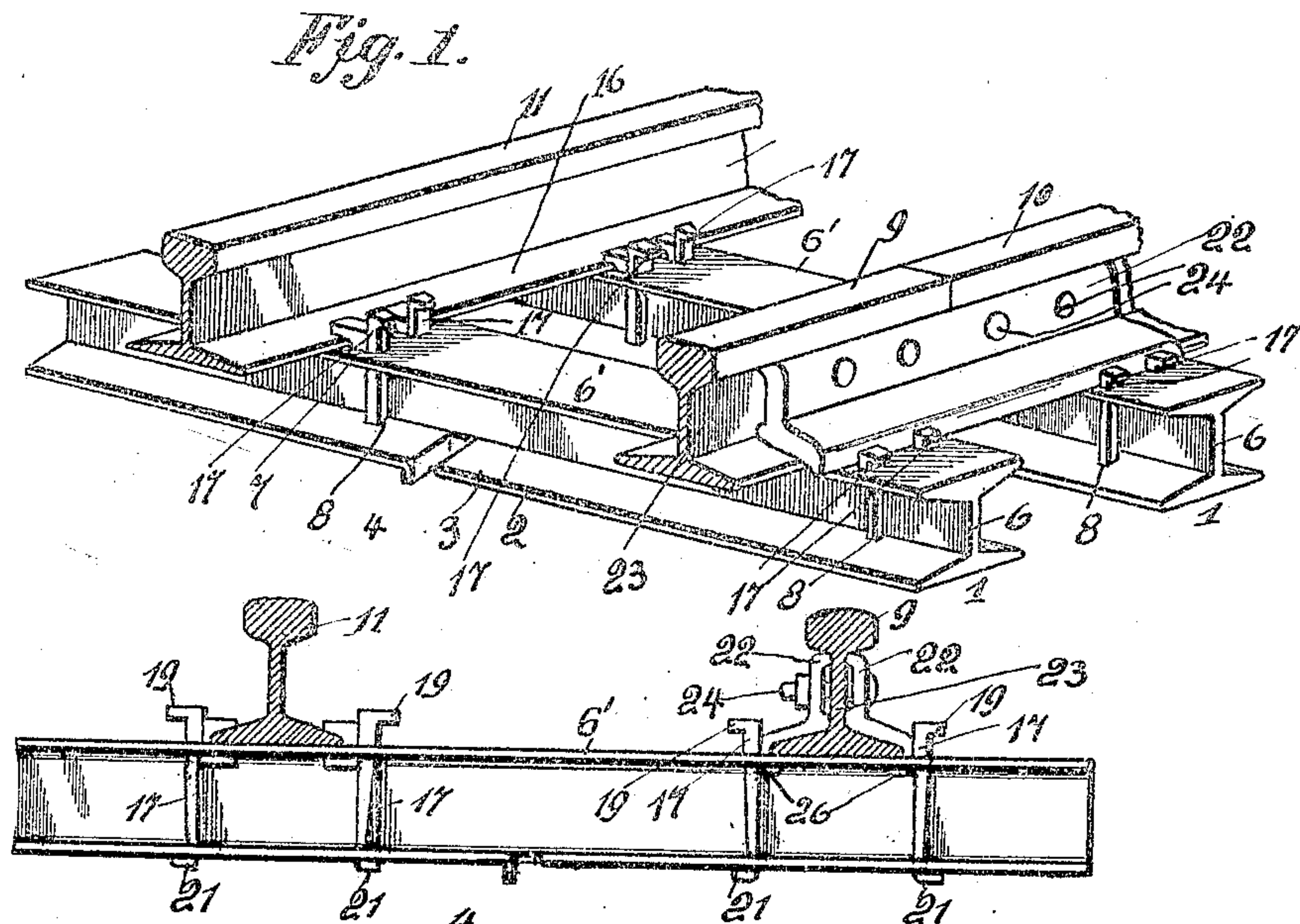


No. 822,720.

PATENTED JUNE 5, 1906.

H. B. BURKE.  
METALLIC TIE AND RAIL FASTENER.  
APPLICATION FILED AUG. 25, 1905.



Witnesses.  
C. A. Rudolph.  
H. B. Burke.

*Fig. 6.*

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# UNITED STATES PATENT OFFICE.

HENRY B. BURKE, OF WINDBER, PENNSYLVANIA.

## METALLIC TIE AND RAIL-FASTENER.

No. 22,720.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed August 26, 1905. Serial No. 275,708.

*To all whom it may concern:*

Be it known that I, HENRY B. BURKE, a citizen of the United States of America, residing at Windber, in the county of Somerset and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in metallic ties and rail-fasteners; and the invention has for its object the provision of a novel form of metallic tie to which sections of rails can be easily and quickly secured.

My invention aims to provide a metallic tie or sleeper which can be readily rolled and sheared in desired lengths.

20 I have constructed my improved ties whereby they will firmly and rigidly support sections of rails mounted upon the same, and in this connection I have devised novel fastening means for retaining the rails in position upon the ties and preventing them from spreading by the vibratory stresses exerted upon the same by rolling-stock passing over the treads of the rails. In constructing my improved ties I have also devised novel means for fastening the same in the ballast or foundation of a road-bed.

25 With the above and other objects in view the invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described and claimed.

30 The present invention is an improvement upon my improved metallic tie and rail-fastener patented December 13, 1904, No. 777,493, and the essential features of the present invention (one of which is wholly generic to the present case) are necessarily susceptible to structural change without departing from the spirit and scope of the invention; but the preferred embodiments are illustrated in the accompanying drawings, in which—

35 Figure 1 is a perspective view of two of my improved metallic ties, illustrating a rail-joint and a section of rail equipped with my improved fasteners. Fig. 2 is a side elevation of one of the metallic ties, illustrating rails secured thereon. Fig. 3 is a perspective view of a fish-bar used in connection with my improved ties. Fig. 4 is a perspective view of one of the rail-fasteners constructed in accordance with my invention. Fig. 5 is an

elevation of one of the securing-spikes, showing by dotted lines the point at which the spike is adapted to be bent to clench the same in the tie. Fig. 6 is an end view of a tie illustrating a rail-joint formed directly upon the tie.

To put my invention into practice, I construct my improved ties of a strong and durable metal, and the ties designated 1 1 are preferably rolled to conform to a substantially I shape in cross-section and are preferably made of such a material that the same can be easily sheared into the desired lengths of ties required. After the ties have been sheared the desired lengths the base-flanges 2 of the ties are sheared or cut, as at 3, and the material 4 bent downwardly to form a depending blade which is adapted to engage in the ballast or foundation of the road-bed upon which the ties are laid. When shearing the base-flanges 2, I preferably shear the same, whereby the material 4 upon one side of the web portions 6 of the ties will be diametrically opposite the sheared material upon the opposite side of the web portion 6 of the ties, this being clearly illustrated in Figs. 2 and 6 of the drawings. The head 6' of the tie and the base-flange 2 are provided, respectively, with slots 7 and 8, these slots being formed in the head and base flanges of the tie adjacent to the web portion 6 thereof. Four slots are formed in the head and base flanges of the tie, two slots being formed in transverse alinement to the tie, whereby when the sections of rails 9, 10, and 11 are placed upon the heads 6' of the ties 1 1 two slots will be upon each side of the base of said sections of rails, and these slots will be in vertical alinement with the slots of the base-flanges of said ties.

95 The rail-fastener consists of a substantially U-shaped clamp 12, the horizontal portions 14 14 having their confronting faces beveled, as at 15, these clamps, as illustrated in Figs. 1 and 2 of the drawings, being adapted to be used in connection with the section of rail 11 and are adapted to be placed in the slots 7 of the heads of the ties upon each side of the base 16 of the section of rail 11, and the inclined confronting faces 15 are adapted to engage the top surface of the base 16 of the rail and the underneath face of the head 6' of the ties and to secure said clamps within the slots 7 after the clamps have been moved over into engagement with the base of the rail, the slots being of a sufficient size to admit the horizontal portions of the clamps, spikes 17



17 are employed for locking the clamps in engagement with the rail 11. These spikes are of a peculiar form, as will be observed by referring to Fig. 5 of the drawings, wherein I have illustrated one of said spikes. Each spike consists of a vertical portion 18, having an outwardly-extending lip 19. These spikes are adapted to pass downwardly through the slots 7 and 8 of the ties to lock the clamps in engagement with the rail 11. The ends of the spikes protruding beneath the ties are adapted to be bent at right angles, as at 21, in engagement with the ties, a conventional form of instrument being employed for this purpose after the ties have been positioned upon the road-bed or foundation. The locking of the spikes within their respective slots prevents the clamps from becoming disengaged from the rail 11, consequently preventing said rail from spreading or moving laterally upon the ties 1 1.

In Fig. 1 of the drawings I have illustrated the rail-sections 9 and 10 as being joined together between the ties 1 1, and in connection with this joint I employ fish-bars 22 22, and these bars are preferably secured to the web portions 23 23 of the rails 9 and 10 by nuts and bolts 24. In order that the fish-bars may be clamped to the ties 1 1, I provide the depending edges 25 of the fish-bars with depending L-shaped lugs 26 26, which have their horizontal portions 27 27 formed to project inwardly toward the vertical portions of the fish-bars, and these horizontal portions are made of a sufficient size to enter the slots 7, and when placed therein and moved over to engage the base-flanges of the rails 9 and 10 the spikes 17 are placed in position to firmly hold and retain the fish-bars upon the

ties and, through the medium of the bolts and nuts 24, retain the confronting ends of the sections of rails 9 and 10 in close proximity to one another.

In Fig. 6 of the drawings I have illustrated the joint of two sections of rails 28 28 as being formed directly upon one of the ties 1, and in this instance fish-bars of a shorter length would be used and secured similar to the fish-bars heretofore described.

It is thought from the foregoing that the construction, operation, and advantages of the herein-described metallic tie and rail-fastener will be apparent without further description, and various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

What I claim, and desire to secure by Letters Patent, is—

The combination with a metallic tie of I-beam form having its base-flange sheared transversely from the edge of the beam to the web of the same, and the sheared portion bent down to lie at right angles to the longitudinal line of the tie, of rails mounted on the tie, clamps engaging the rail-bases and the tie, and headed spikes passing through the flanges of the tie to secure the clamps in position, and having their lower ends bent over to clench the same with the tie.

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

HENRY B. BURKE.

Witnesses:

E. E. POTTER,  
C. KLOSTEMANN.