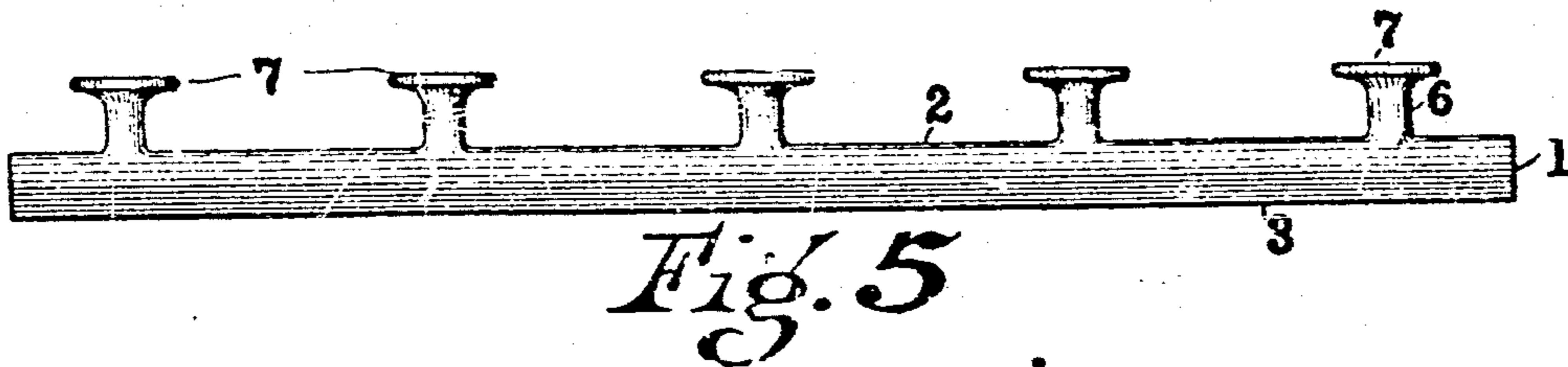
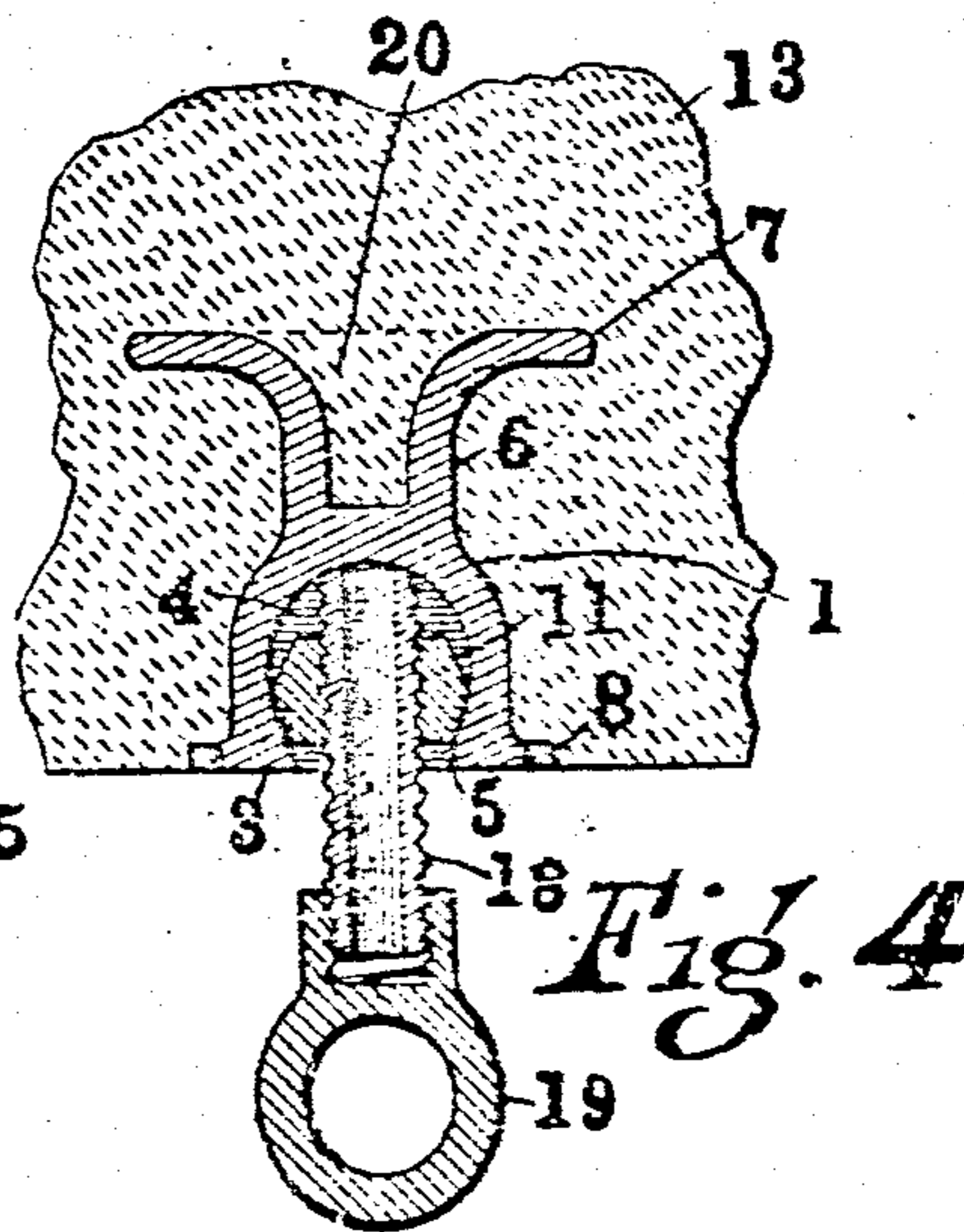
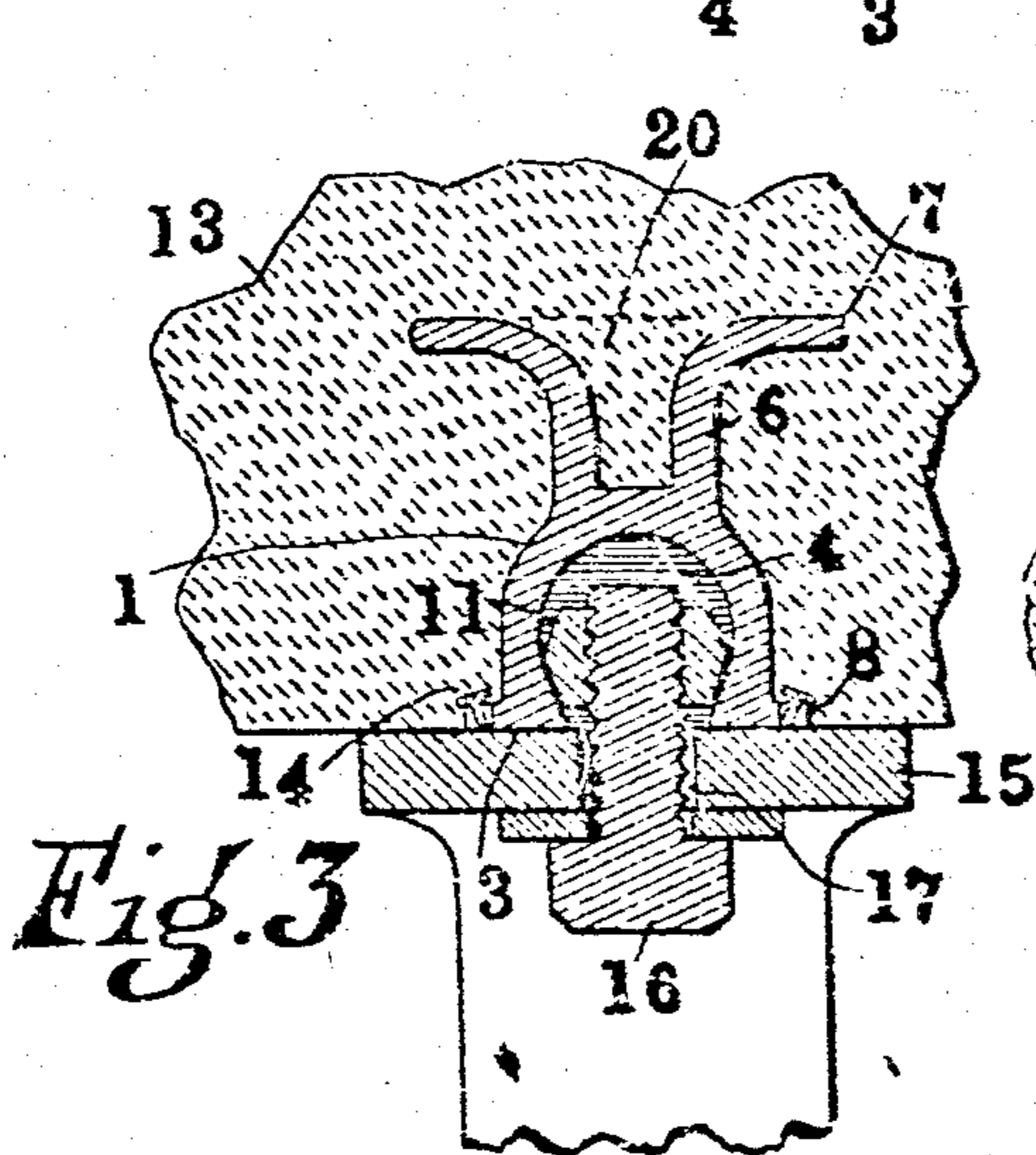
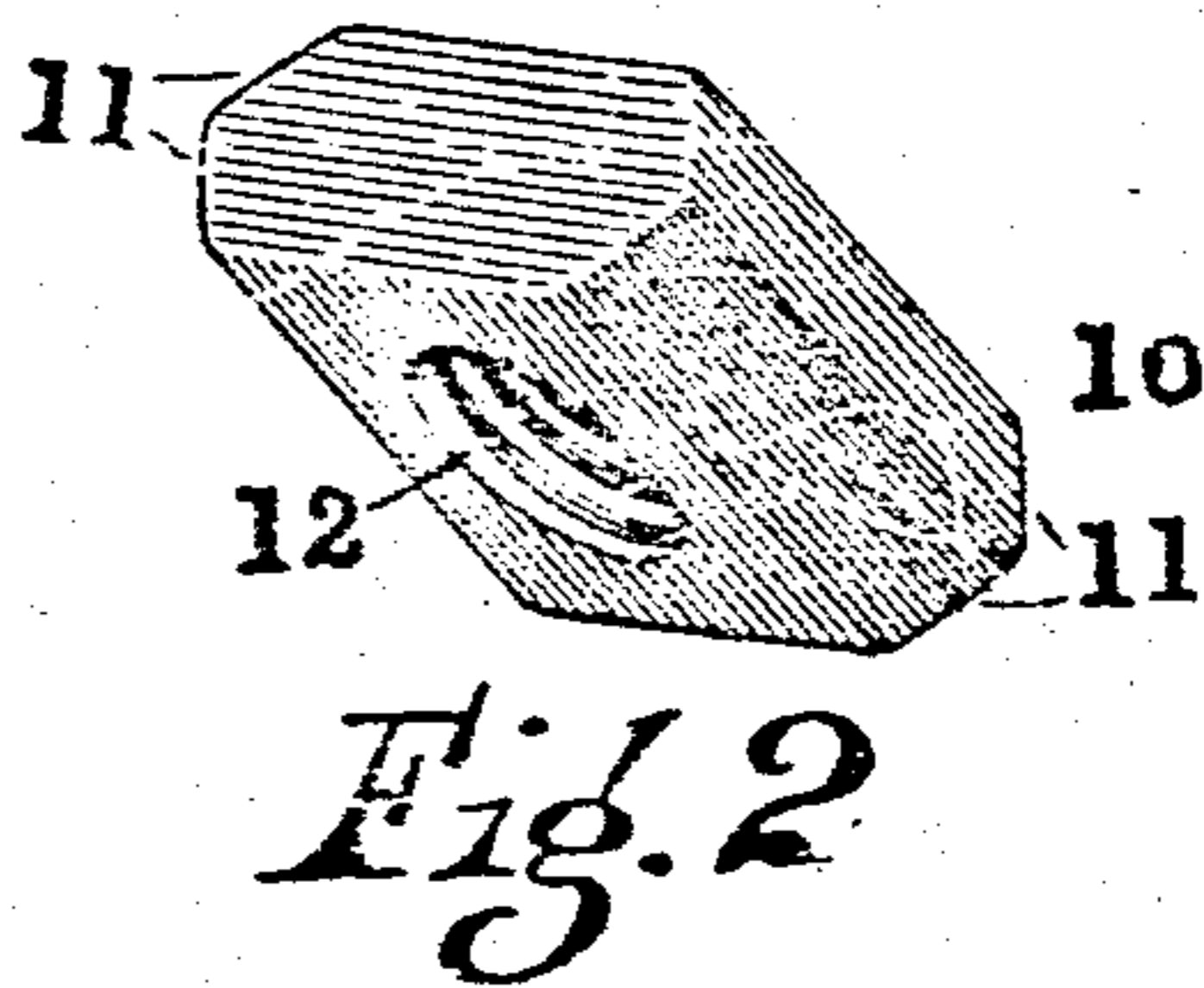
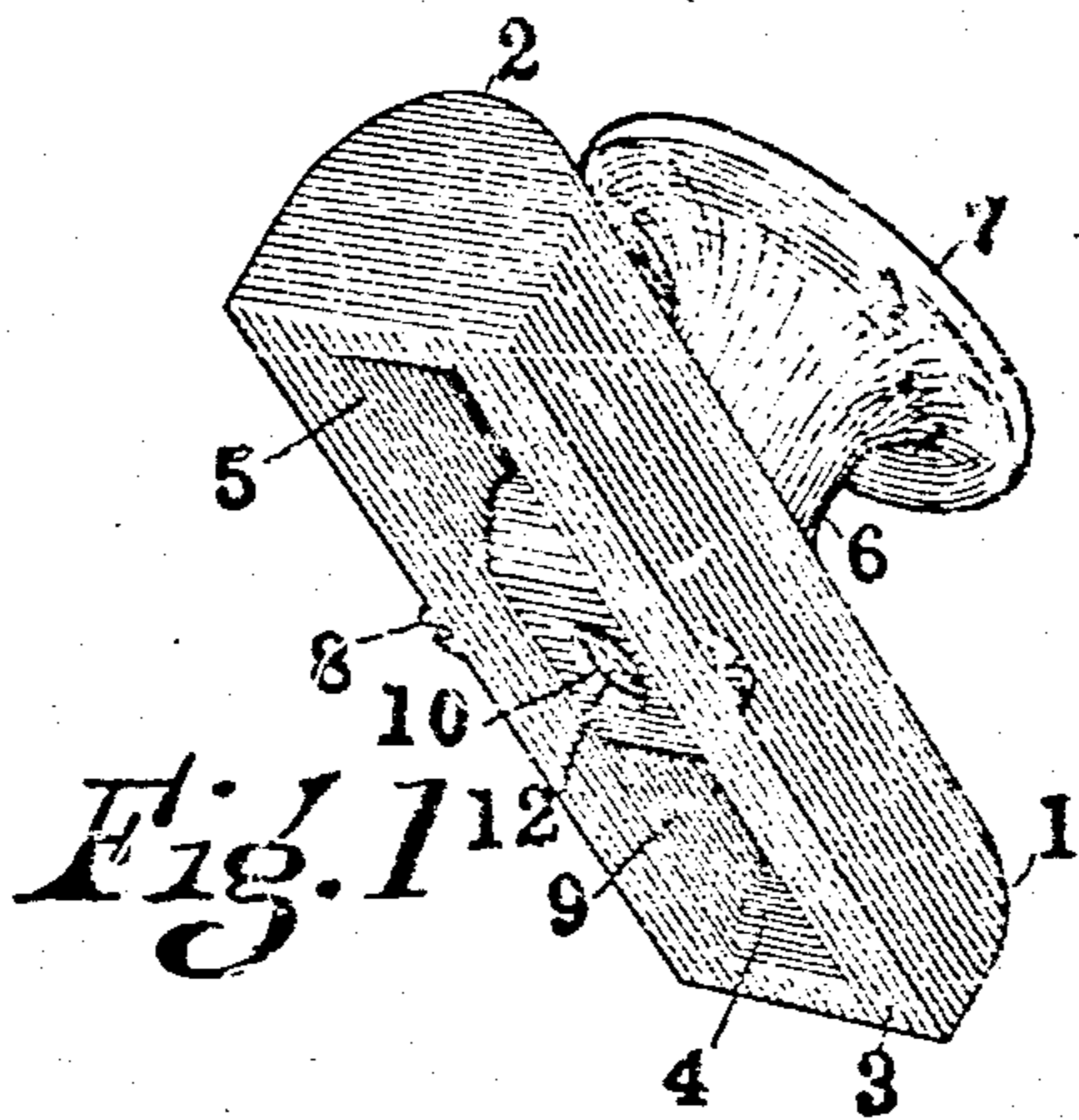


A. P. LOHMANN.
ANCHORING DEVICE FOR USE IN CONNECTION WITH CONCRETE STRUCTURES.
APPLICATION FILED OCT. 26, 1908.

950,771.

Patented Mar. 1, 1910



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ANCHORING DEVICE FOR USE IN CONNECTION WITH CONCRETE STRUCTURES.

950,771.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed October 26, 1908. Serial No. 459,520.

To all whom it may concern:

Be it known that I, ALFRED P. LOHMANN, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Anchoring Devices for Use in Connection with Concrete Structures, of which the following is a specification.

This invention relates to a device for holding or supporting articles such as hangers for shafting, sprinkling-system pipes, chandeliers, electroliers and other articles, from the walls, floors or ceilings of buildings made of self-hardening plastic material such as cement or concrete, which, put in position in a plastic state, afterward hardens so that the device embedded in the plastic substance will be held firmly in position when the material becomes solid.

The object of this invention consists in forming a holder or support, preferably from metal, adapted to be embedded in plastic or semi-plastic material which is self-hardening, provided with a recess adapted to contain a movable member slidably-supported therein having means for connecting it with such instrumentalities as hangers and the like, for various purposes, which is easily and cheaply made, simple in operation, strong, durable, readily positioned and capable of all the uses for which such structures are designed.

A further object of the invention is to so construct the device that the slidable member may be inserted after the device is positioned and the plastic material in which it is embedded has hardened. At the same time the slidable member cannot be removed unless the hanger or other instrumentality connected therewith has been detached therefrom.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a perspective view

of my improved device. Fig. 2 is a similar view of a movable member used in connection with the device shown in Fig. 1. Fig. 3 is a view in transverse section of the device shown in Fig. 1, positioned in a body of hardened plastic material showing the same in operative relation with the upper end of a hanger arm. Fig. 4 is a view similar to Fig. 3 showing the same in operative relation with another type of support; and, Fig. 5 is a view in side elevation of a device showing this invention, wherein the body portion thereof is elongated and provided with a plurality of anchoring heads adapted to be embedded in the plastic material in which the same is positioned.

The device comprises a body portion 1, preferably having a rounded upper surface at the point 2 and having a flat face or lower face 3 provided with a longitudinally-extending recess 4 having the side walls 9 thereof inclining toward the lower face 3 and toward each other to constitute a wedge-shaped abutment and to further provide a contracted outlet 5. Extending upwardly from the rounded portion 2 of the device is an integral neck 6, terminating in an outwardly-flaring head 7 the outer surface of which is formed upon curvilinear lines uniting with the neck. The head 7 is preferably provided with a recess 20 to receive the plastic material in which the device is to be embedded. The sides of the body portion 1 are preferably provided with a pair of spaced lugs 8, for a purpose to be later described. The recess 4 is formed with preferably a rounded or arched roof, shown best in Figs. 3 and 4.

Adapted to be positioned slidably within the recess 4 is a coupling member 10, hereinafter designated as a nut and of such a thickness as to be readily passed edgewise through the open portion of the recess into the interior thereof and having sides 11 with beveled-inclined faces adapted to engage the inclined faces 9 of the recess 4, whereby said coupling member is wedged between said walls when suspending an object. The coupling member 10 is in the form of a nut and is preferably made in substantially the shape shown in Fig. 2, so that it is provided with two inclined faces 11, 11, on each side thereof, approximately equivalent in inclination so that the nut may be inverted and be equally efficient in either position; and it is further provided with a threaded open-

ing 12, for a purpose to be later described. This nut is adapted to be slidable in the recess 4 substantially the entire length thereof and its side faces engage the faces of the recess in such a manner as to hold the lower face thereof slightly above the plane of the base 3 of the device, for a purpose to be later described.

In positioning the device shown in Fig. 1 in a ceiling, wall or floor of a building, a temporary support or floor for the cementitious structure 13 is generally first constructed of wood to hold the same. The devices 1 are then placed in position on this floor with their bases downward and are held securely in proper position by passing suitable holdfast devices 14 through the space intervening between the lugs 8 into the material of which the temporary floor or supporting medium is constructed, thereby securely anchoring the device in position so that it will not be moved or disturbed during the process of constructing the floor of self-hardening plastic material. When the devices 1 have been properly positioned, the self-hardening plastic material is then poured or placed on the temporary floor until a suitable thickness has been produced. It will of course be noted that in constructing buildings of this type suitable reinforcing means may be incorporated in the plastic material for adding additional strength thereto, but as this forms no part of the invention, a description thereof is believed to be unnecessary. As soon as the plastic material has sufficiently hardened to be self-sustaining, the temporary floor is removed and the nails or holdfast devices 14, which formerly projected into the floor, are cut off by a suitable tool, leaving the anchoring devices firmly embedded, with the plastic material entirely surrounding them and extending around the flaring heads 7 and into the recess thereof, as clearly shown in Figs. 3 and 4, then by securely anchoring them in position with their bases 3 in the same plane as the face of the ceiling, wall or floor in which they are contained. The nuts 11 are then taken and inserted edgewise into the recess 4 and then manipulated so as to cause them to assume the position shown in Figs. 1, 3 and 4 with their lateral faces in cooperating relation with the inwardly-inclined faces of the recess. The nuts 11, as already described, may be shifted longitudinally of the device to bring them into proper position to register with the openings in devices to be supported thereon, or in a position to receive the threaded ends of hangers or other suitable fixtures for which they form the supporting element.

In Fig. 3 is shown the upper end of a hanger such as is used for supporting pulleys having the foot or base 15 resting against the base 3 of the device 1 and also

against the wall or ceiling in which the device is mounted. A bolt or cap screw 16 is then passed through either a slot or opening 17 in the hanger arm and into engaging relation with the nut contained in the recess 4 of the device. When the holdfast device 16 is tightened or screwed to place, the tendency will be to draw the foot 15 of the hanger arm firmly against the base 3 of the device 1, thereby drawing the nut 10 into snug engagement with the lower side faces of the recess 4, thus holding the hanger arm securely in position and also securing the nut itself against further longitudinal movement, thereby anchoring the hanger arm securely in position against further unintentional movement.

It will be obvious of course that if desired to shift the position of the hanger arm longitudinally of the device, it may be easily accomplished by loosening the cap screws 16 sufficiently to relieve the nut from undue pressure, thus permitting reasonable movement of the hanger arm to a desired position, after which the cap screws 16 are again tightened.

In using the device in connection with a hanger such as is shown in Fig. 4, which is approximately the type used for supporting overhead sprinkler system pipes and similar devices, the supporting hanger, designated by the reference numeral 18, is preferably threaded and bears on its lower end a socket or loop 19 to receive the pipe.

In order to securely lock the nut 10 in position when used in connection with a supporting medium of the type shown in Fig. 4, the supporting member is passed entirely through the nut 10 and screwed against the roof of the recess 4 sufficiently firmly to secure the nut 10 against longitudinal movement by frictional engagement with the body portion of the device 1. The operation just described with reference to the device shown in this figure is also applicable where it is desired to support the upper end of a gas chandelier or electrolier, the clamping action of the same being obtained by forcing the upper end of the supporting medium against the roof of the recess 4.

It will be obvious that instead of making the device as shown in Fig. 1, it may be extended as shown in Fig. 5, wherein the body portion is elongated and provided with a plurality of heads 7, both for the purpose of strengthening the entire structure and more firmly embedding it in the self-hardening material in the ceiling, walls or floors of buildings as well as to permit greater play or travel of the nut contained in the recess formed therein, thereby securing greater freedom of movement to a device supported thereby in order to adjust it or enable its use in connection with a device

which would not be permitted movement enough by the use of the shorter device shown in Figs. 1, 3 and 4.

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

1. The combination in an anchoring device for use in connection with concrete structures comprising a body portion adapted to be positioned in a structural self-hardening material with one face thereof approximately flush with the surface of said material, said face provided with a recess extending into said body portion with the faces adjacent the opening thereof inclined to constitute a seat for a shiftable member, of a member with the sides thereof each provided with two inclined faces at an angle to each other whereby said member may be positioned on the inclined faces of said recess with either face thereof uppermost.

2. An anchoring device for the purpose set forth comprising a body portion provided with a recess in its lower face, the side walls of said recess inclining toward the lower face of the body portion and further inclining toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and provided with diametrically-opposite beveled sides adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object.

3. An anchoring device for the purpose set forth comprising a body portion provided with a longitudinally-extending recess in its lower face, the side walls of said longitudinally-extending recess inclining toward the lower face of the body portion and toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and provided with diametrically-opposite beveled sides adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object.

4. An anchoring device for the purpose set forth comprising a body portion provided with a recess in its lower face, the side walls of said recess inclining toward the lower face of the body portion and further inclining toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and provided with diametrically-opposite beveled sides adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object, and said body portion furthermore pro-

vided at its top with a flaring head constituting a means for securing the body portion within a concrete structure.

5. An anchoring device for the purpose set forth comprising a body portion provided with a longitudinally-extending recess in its lower face, side walls in said longitudinally-extending recess inclining toward the lower face of the body portion and toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and provided with diametrically-opposite beveled sides adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object, and said body portion furthermore provided at its top with a flaring head constituting a means for securing the body portion within a concrete structure.

6. An anchoring device for the purpose set forth comprising a body portion provided with a recess in its lower face, the side walls of said recess inclining toward the lower face of the body portion and toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and having diametrically-opposite sides thereof each formed with a duplex bevel, said beveled sides of said member adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object.

7. An anchoring device for the purpose set forth comprising a body portion provided with a recess in its lower face, the side walls of said recess inclining toward the lower face of the body portion and toward each other and constituting a wedge-shaped abutment, and a coupling member arranged within said recess and having diametrically-opposite sides thereof each formed with a duplex bevel, said beveled sides of said member adapted to engage the inclined walls of the recess whereby said member is wedged between said walls when suspending an object, and said body portion further provided with means for projecting from its top thereof for securing said body portion within a concrete structure.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALFRED P. LOHMANN.

Witnesses:

C. E. HUMPHREY,
GLENARA FOX.