

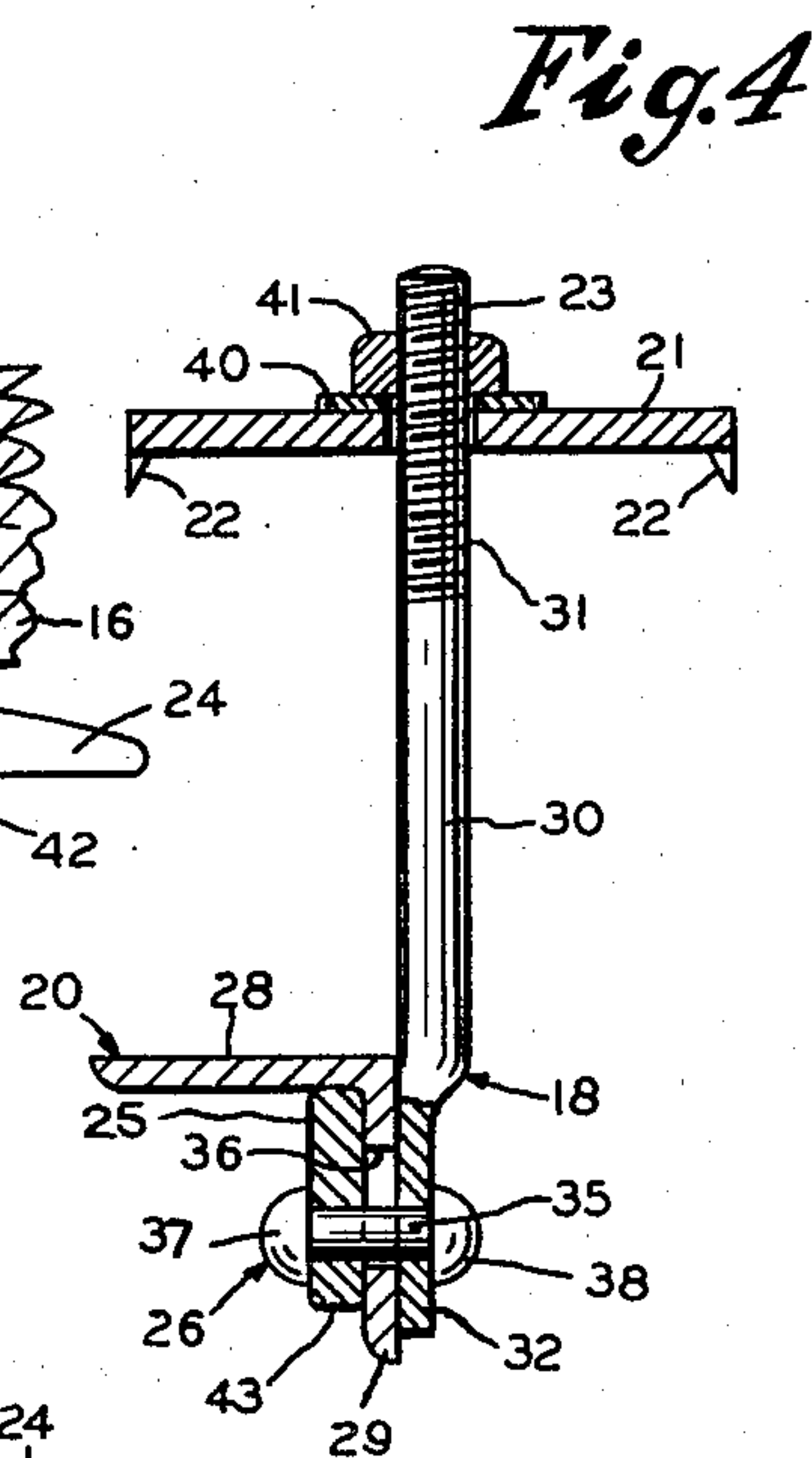
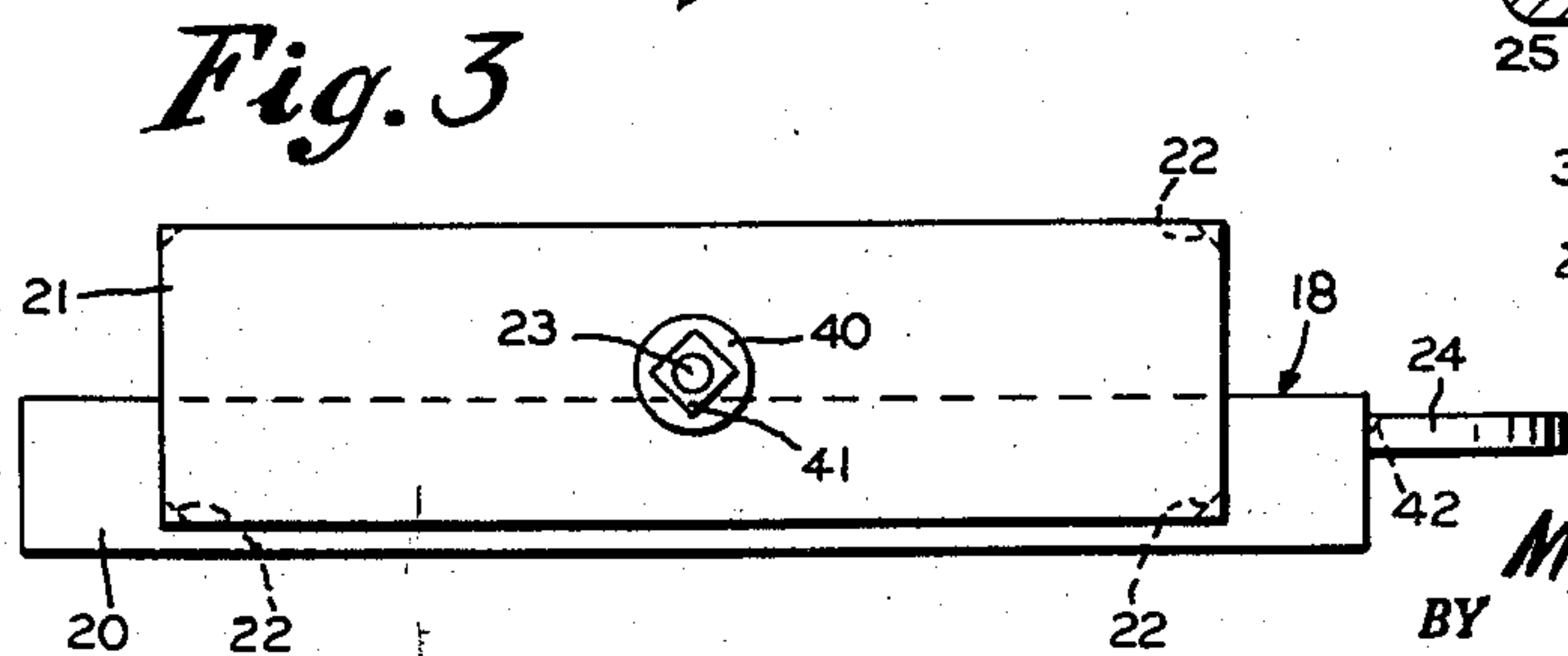
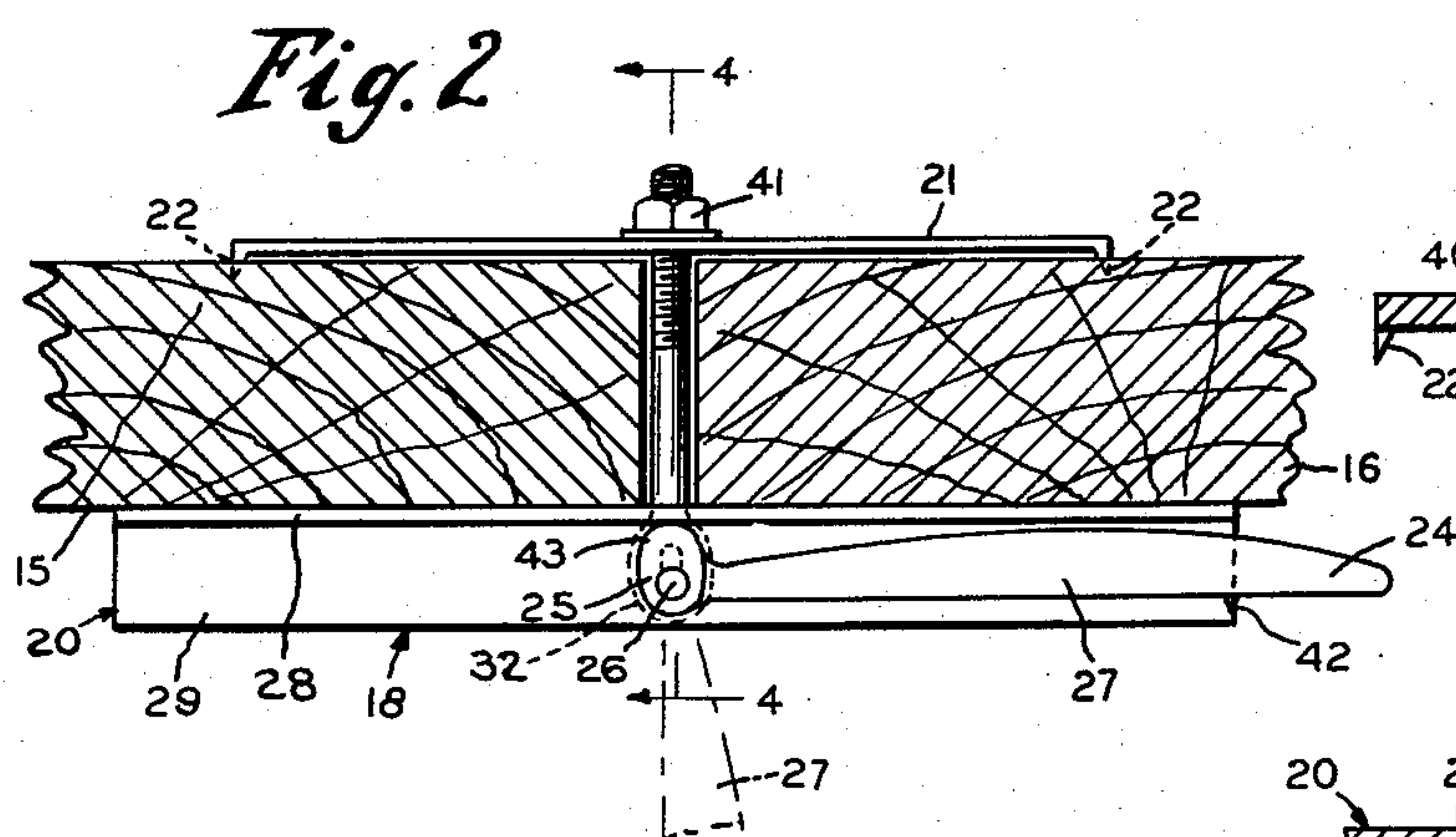
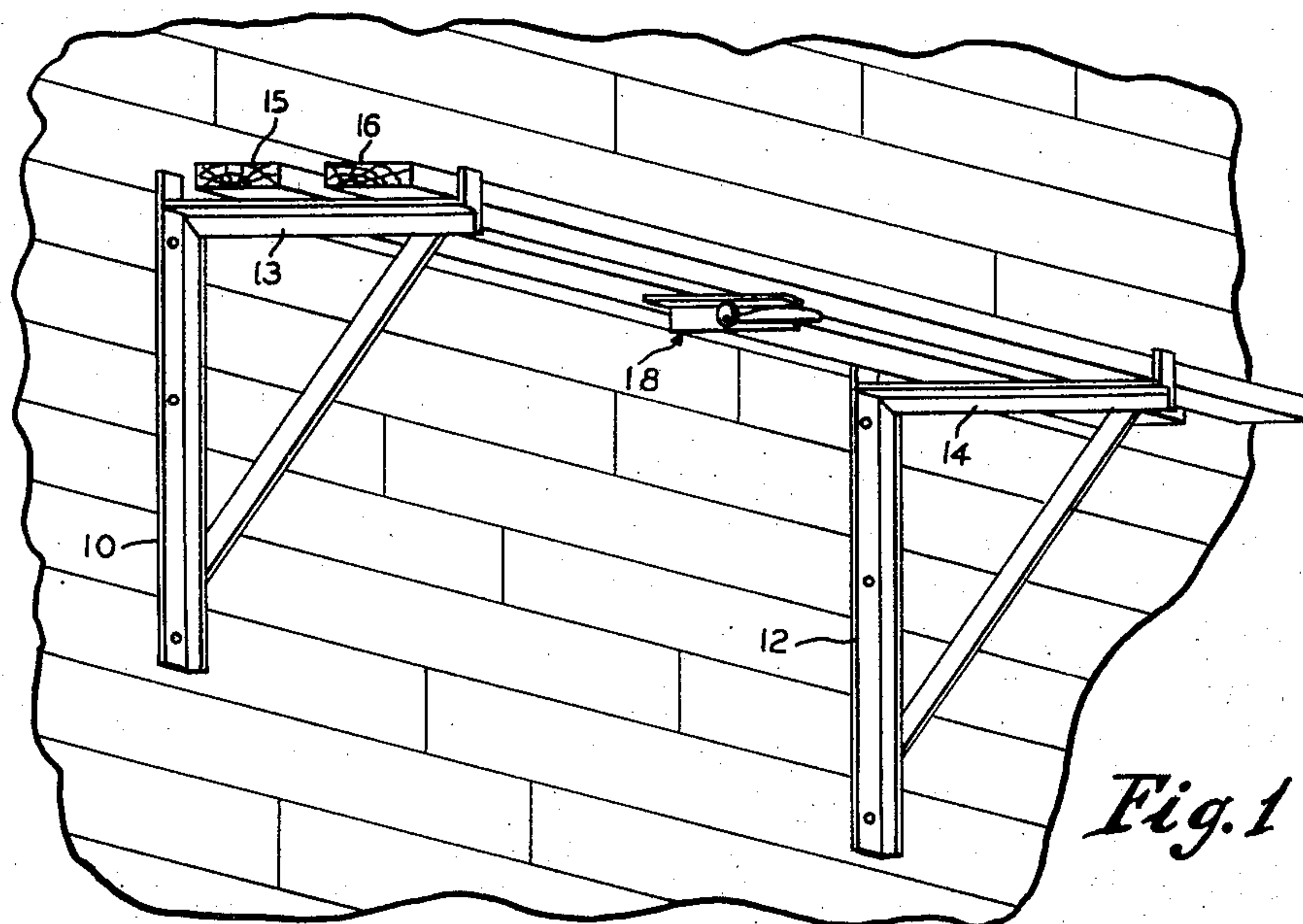
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# PLANK CLAMPING DEVICE FOR SCAFFOLDS

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## PLANK CLAMPING DEVICE FOR SCAFFOLDS

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1 Claim. (Cl. 304—40)

This invention relates to scaffolds, and more particularly to a plank clamping device for use in clamping together and temporarily uniting the two horizontal planks or boards which are arranged usually side by side on metal scaffold brackets and form the temporary elevated platforms for supporting workmen and materials in building operations.

In erecting and working on scaffolding workmen are exposed to falls sometimes resulting in serious injury by reason of the planks or boards slipping or spreading on the scaffold brackets which support them. To prevent the possibility of accidents of this sort occurring I have devised a plank clamp or fastener which securely clamps the two planks or boards horizontally and unites them temporarily in their desired position relative to each other whereby they cannot slide separately in any direction or spread apart on the scaffold brackets.

An object of the invention is to provide a plank clamping device of the character indicated which will be strong and durable, not likely to wear out readily or be damaged in service, and thoroughly practical commercially.

One feature of the invention is the provision of an adjustable quick-action clamping device to clamp platform boards of scaffolds in which the movable clamping member is arranged to be pulled toward the stationary clamping member by means controlled by the action of a cam acting against the stationary clamping member.

Another feature of the invention is the provision of a plank clamping device one clamping member of which is in the form of a bar presenting a flat ledge which engages horizontally the bottoms of the planks and is disposed transversely thereof when in use, and the other clamping member being an adjustable plate which may be pulled bodily toward the bar and forced against the top faces of both planks by an operating link controlled by the action of the cam against the underside of the ledge portion of said bar when the cam is turned by appropriate movement of an operating lever.

Another feature of the invention is the provision of a plank clamping device in which the stationary jaw is in the form of a bar having two arms at substantially right angles to each other whereby one arm will engage horizontally the bottoms of both planks and the other arm will extend vertically downwardly when said bar is in a clamped position, and the movable jaw is in the form of an adjustable plate the underside of which presents a number of pointed projections which, when the plate is pulled bodily toward the stationary jaw by actuation of the lever and cam, will dig into the wood of the top faces of both planks and aid in securing them together.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawings, and the novel features will be particularly pointed out in the appended claim.

In the drawings:

Fig. 1 is a perspective view illustrating the present invention in use on a part of a scaffold and showing two

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of the horizontal platform planks on scaffold brackets and united by one of my clamping devices;

Fig. 2 is a side elevation of my clamping device with two planks clamped horizontally between the jaw members and showing details of the construction of the clamping structure;

Fig. 3 is a top plan view of the clamping device shown in Fig. 2; and

Fig. 4 is a detail vertical sectional view taken on the line 4—4 of Fig. 2, but of double size, disclosing the clamping structure and its associated actuating mechanism and parts.

Referring to the drawings, in Fig. 1 is illustrated a pair of metal scaffold brackets 10 and 12 of conventional construction which are spiked to the exterior side walls of the building, and spaced apart a convenient distance such as, for example, about ten to twelve feet apart. Resting upon and supported by the horizontal arms 13 and 14 of the brackets 10 and 12 respectively are two relatively long planks 15 and 16 which are shown clamped together and united temporarily by one of the clamping or fastening devices 18 of the present invention. If desired, a pair of my clamping devices 18 may be used to clamp each pair of planks, the clamps being placed at the opposite ends of the planks in the vicinity of the scaffold brackets instead of one clamp positioned as shown in Fig. 1.

The construction of my clamping device 18 is illustrated in detail in Figs. 2, 3 and 4 of the drawings and comprises a stationary bottom clamping member or jaw 20 formed of a short length of angle iron, and a movable upper clamping member or jaw 21 in the form of a generally flat metal plate. The underside of the upper jaw 21 adjacent its opposite ends is provided as at 22 with several depending teeth or spurs for digging into and gripping the top faces of both planks with a firm bite when the latter are held tightly clamped together between the jaws 20 and 21 by appropriate movement of the operating mechanism for moving the upper jaw 21 to pull it forward toward the lower jaw 20, as will be presently described.

As illustrated in Figs. 2 and 4, the operating mechanism for effecting relative approaching motion of the jaws 20 and 21 is of the cam and lever type and consists of an operating link 23 for the movable plate 21, a control lever 24 and a cam 25 at the pivot end thereof, the link 23 and the cam-shaped terminus of the lever 24 being connected together by a transverse pivot pin 26 which pivotally attaches the lever to the stationary jaw 20, as will be hereinafter described. The control lever 24 has a handle portion 27 which terminates in an eccentric cam-shaped head 25 formed integral with the lever 24 at its inner end. The cam 25 is here shown as being of generally elliptical form having flat side faces, and in the assembled relation of the lever 24 to the stationary clamping member 20 the cam part 25 is positioned beneath the horizontal angle iron arm 28 of the lower jaw 20 with one of the flat side faces of the cam next to the inner side face of the vertical angle iron arm 29 of the lower jaw 20. The operating link 23 consists of a vertical rod 30 threaded at its upper end portion as indicated at 31 and formed at its lower end with a relatively wide flat-sided enlargement or eye portion 32 the inner flat side face of which is situated next to the outer side face of the vertical angle iron arm 29 of the lower jaw 20. The transverse pivot pin 26 is here shown as a metal rivet the shank 35 of which passes loosely through and protrudes from the vertical slot 36 provided at substantially the middle of the lower jaw 20 and formed in the vertical angle iron arm 29; and the protruding end portions of the rivet extend freely through suitable holes drilled in the cam 25 and the



eye portion 32 respectively and are suitably upset to provide the heads 37 and 38 at opposite ends of the rivet to retain the cam and link in final assembled position on the arm 29.

The rod portion 30 of the operating link 23 is made to have sufficient length as to pass upwardly between the two planks 15 and 16 and thence extend upwardly above them for a distance sufficient to allow for the thickness of the planks and that of the upper jaw 21, as well as to accommodate thereon a washer 40 and an adjusting nut 41, which has threaded connection with the screw-threaded upper end portion 31 of the rod 30, and to leave sufficient threaded extension beyond the nut 41 to permit variations in the spread of the jaws in order that they may be adjusted initially to accommodate various thicknesses of planks or boards which may be employed. A spur 42 struck out of the material of the end edge of the vertical arm 29 of the lower jaw 20 serves as a snap-lock to hold the lever handle portion 27 in substantially a horizontal position when the planks are clamped tightly by the jaws.

The manner of application and the operation of my clamping device will be obvious from the accompanying drawings, the clamp with the handle 27 in the dot and dash position first being positioned with the L-section base member or bar forming the lower clamping jaw 20 placed crosswise of both planks with the flat clamping surface of the arm 28 bearing against their bottom faces and the rod portion 30 of the operating link 23 extending upwardly between the two planks. The upper clamping plate or jaw 21 which is loosely fitted on the rod 30, after being initially set by suitable adjustment of the nut 41 to provide sufficient spread between the jaws 20 and 21 for free insertion of the planks, then is dropped so as to extend transversely over and engage the tops of both planks and the adjusting nut 41 is then initially tightened by hand. When the lever 24 is actuated by upward movement from the dot and dash position shown in Fig. 2 to the substantially horizontal position shown therein in full lines, it will move the peripheral elliptical camming portion 43 of the cam 25 against the flat under surface of the horizontal arm 28 of the angle iron bar forming the lower clamping jaw 20. Continued turning of the cam 25 by the lever 24 to move the cam to substantially its greatest lift will apply pressure downwardly on the transverse pivot pin 26 between the lever at the pivot axis of the cam 25 and the link 23 to force down the pivot pin 26 in the vertical slot 36 in the depending arm 29 of the jaw 20, as shown in Fig. 2, and simultaneously therewith to push downward the link 23 and force the clamping plate 21 tightly against the top faces of the planks 15 and 16, causing the pointed projections, teeth or spurs 22 depending from the underside of the plate 21 at its corner edges to enter the wood.

What is claimed is:

A flooring plank clamp device for use on scaffolds comprising a clamping bar formed of a short piece of angle-iron having arms at right angles to each other, one arm being arranged to be disposed horizontally when applied against the bottoms of a pair of flooring planks to be clamped together side by side, and the other arm being directed to extend vertically downwardly and provided with a vertical slot therethrough, a clamping lever having an eccentric cam-shaped terminal head, said head having a hole therethrough, a rod member having a flattened eye portion at one end and a screw-threaded portion at its other end, a pin extending through and projecting outside of said slot in the vertical arm of the angle-iron and pivotally mounting on such projecting pin portions said cam head and said rod eye portion respectively, said pin also being free to move lengthwise of said slot, said cam head being situated beneath the underside of said horizontally positionable arm of the angle-iron in operative relation to bear thereagainst when the clamping lever is turned about said pivot pin during clamping and unclamping operations, a clamping plate loosely slidable on said rod member and positioned thereon to cooperate with said horizontally positionable arm of said angle-iron to clamp both flooring planks therebetween when said rod member extends vertically upwardly between the planks, said clamping plate having spurs on the side facing the clamping bar for digging into the planks to prevent slipping, and abutment means adjustable on said threaded rod portion outwardly of said clamping plate and manually positionable into various adjusted positions to permit the reception and clamping of pairs of planks in sets of different thickness, said abutment means engaging said clamping plate to force it toward said clamping bar to clamp the planks therebetween upon a clamping movement of said rod member by said lever and also serving to suspend said clamp device from said planks when initially installed in place before they are clamped.

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