

Feb. 14, 1933.

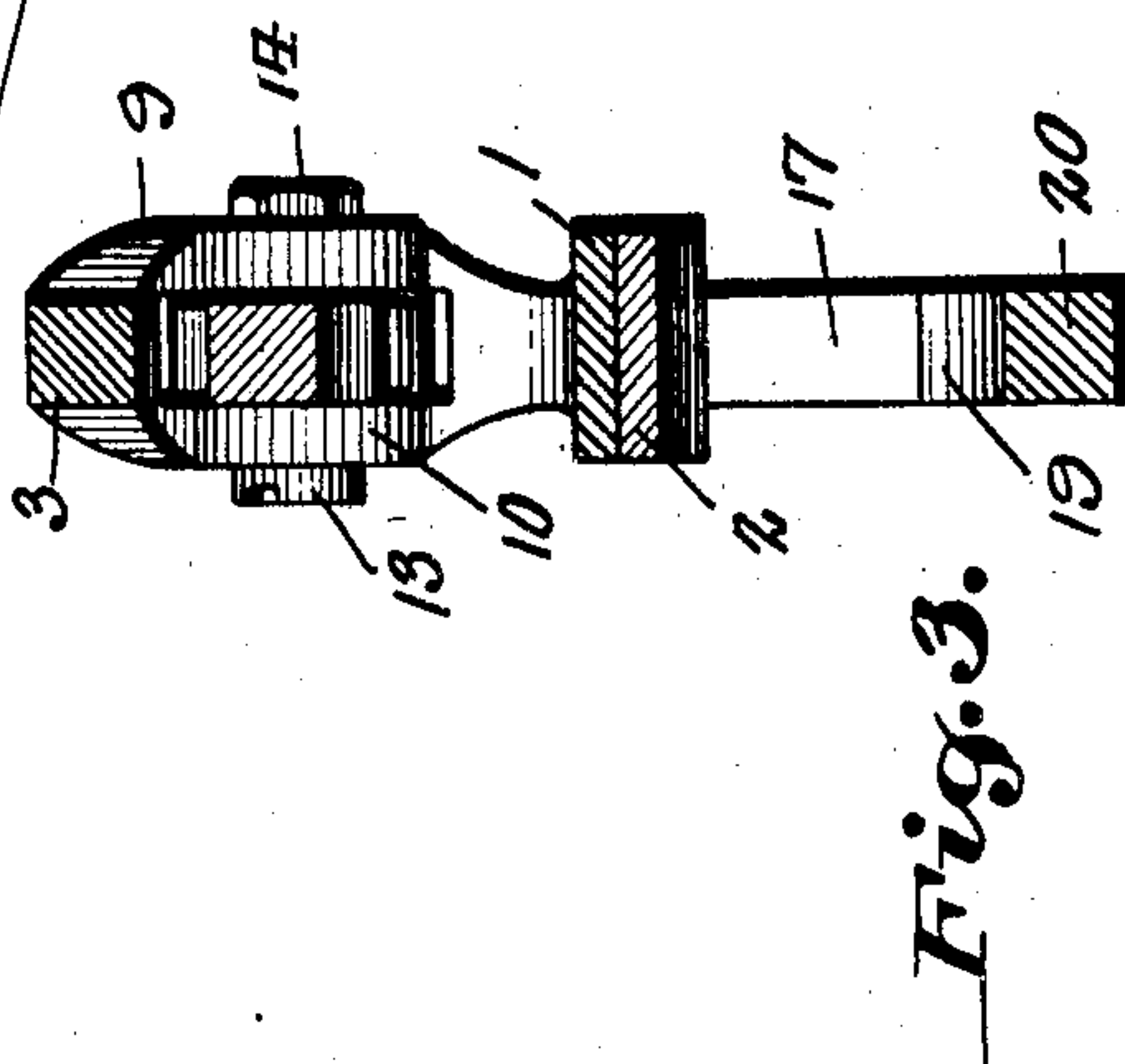
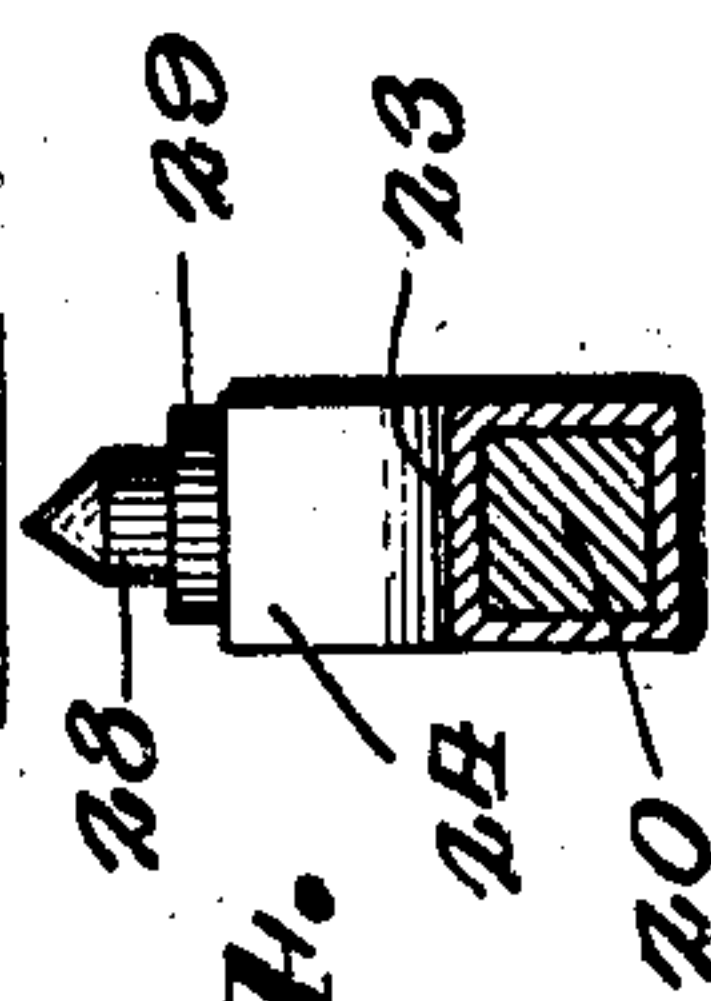
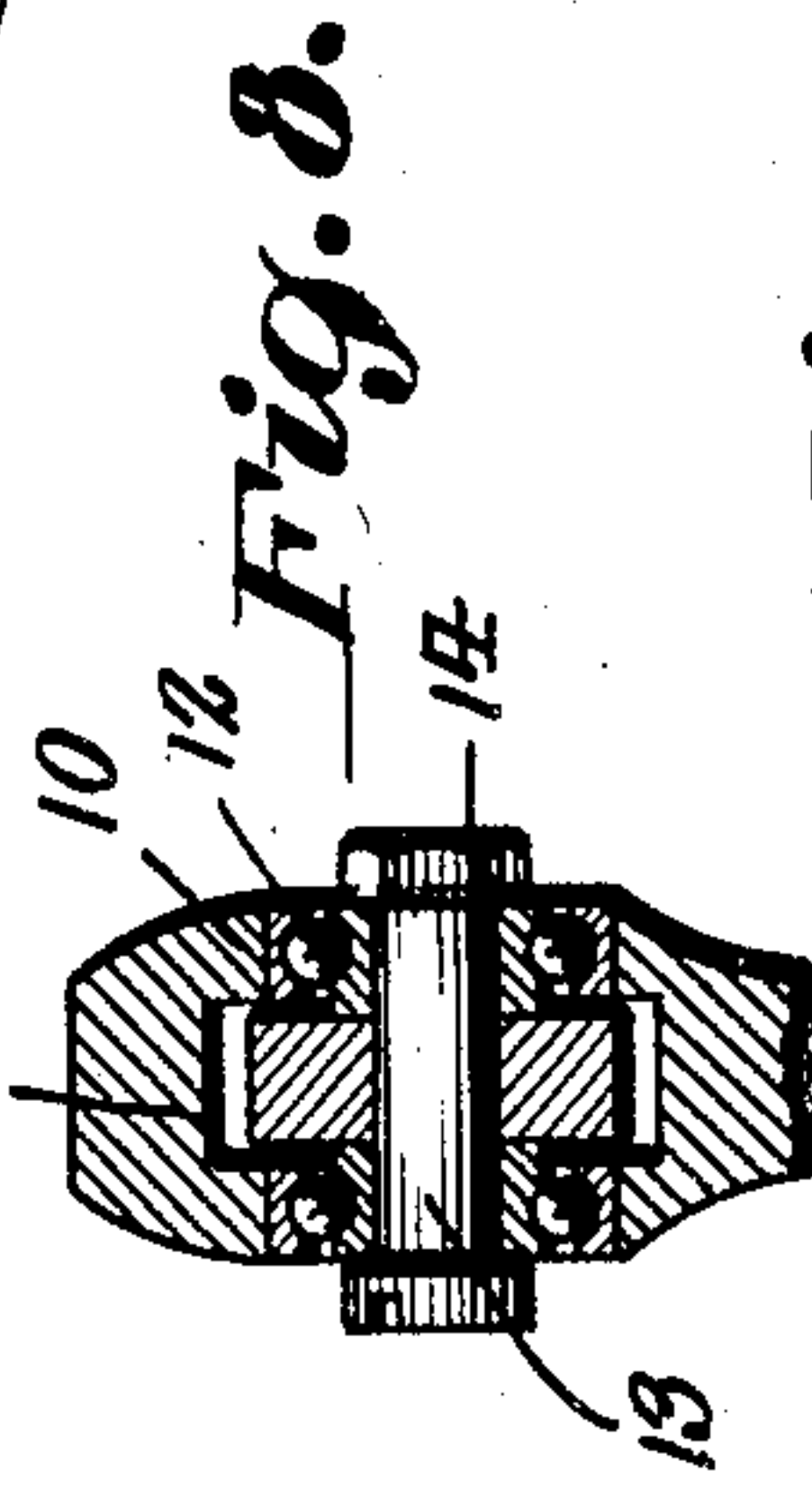
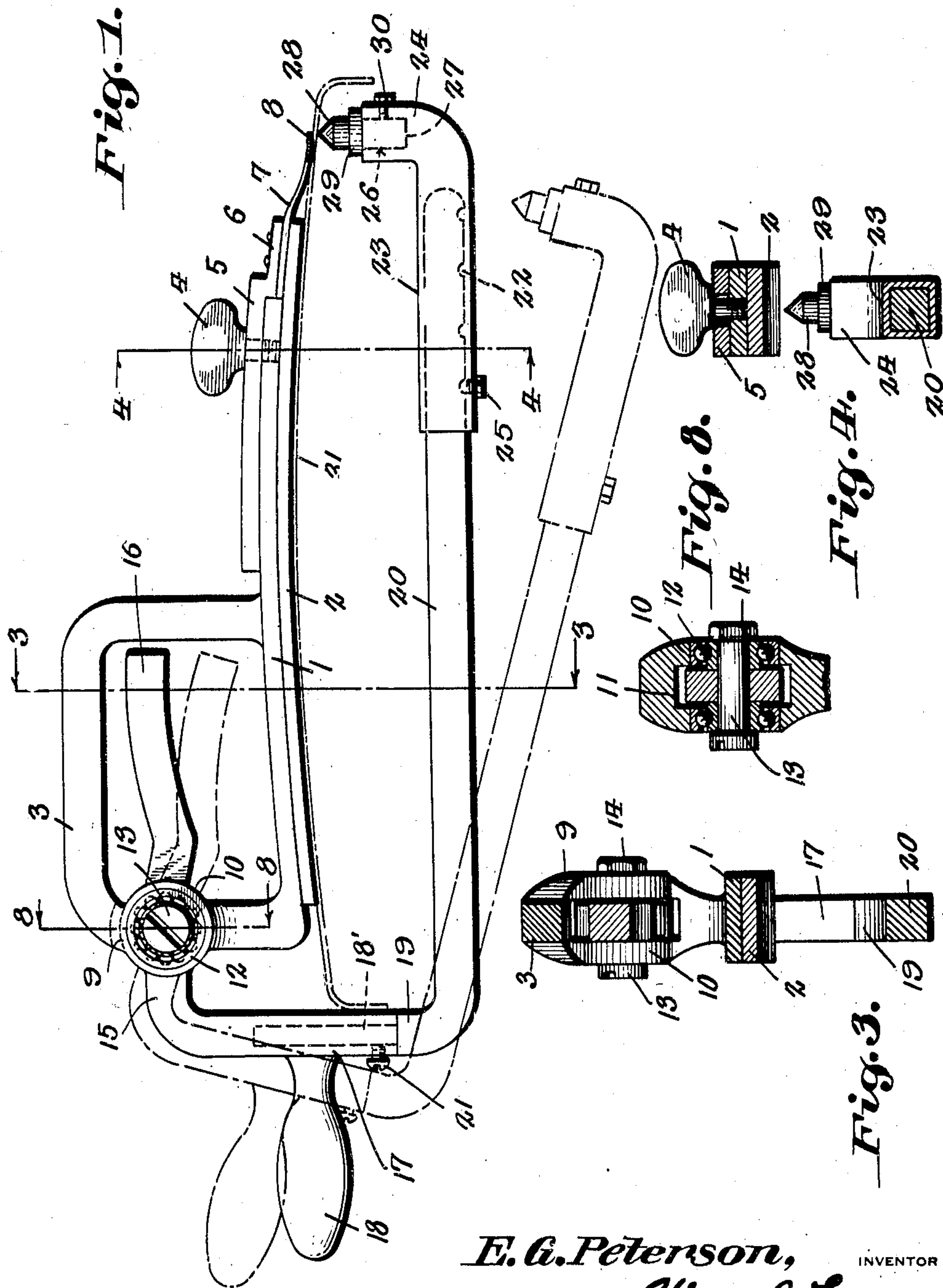
E. G. PETERSON

1,897,142

FENDER TOOL

Filed Aug. 19, 1931

3 Sheets-Sheet 1



E. G. Peterson,

INVENTOR

BY *Victor J. Evans*
and Co., ATTORNEY

ATTORNEY

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3 Sheets-Sheet 2

Fig. 2.

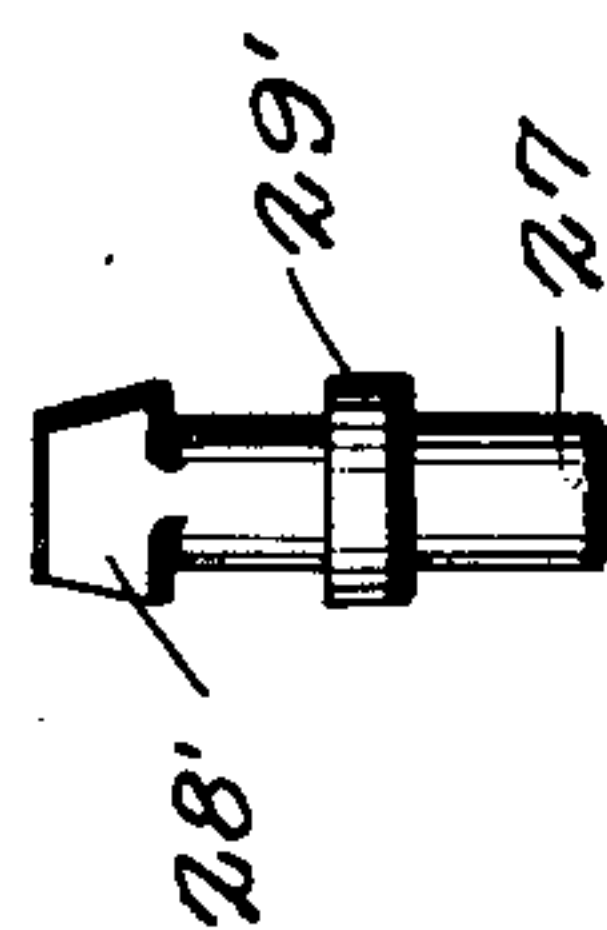
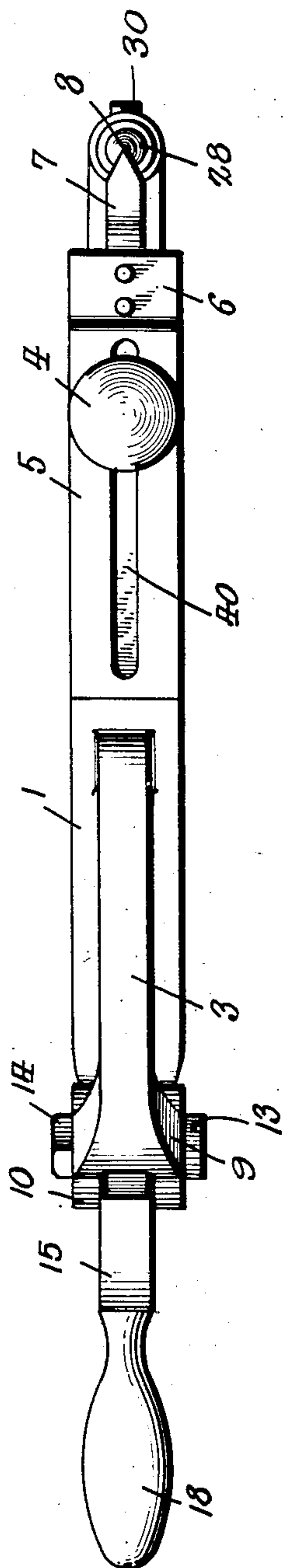


Fig. 5.

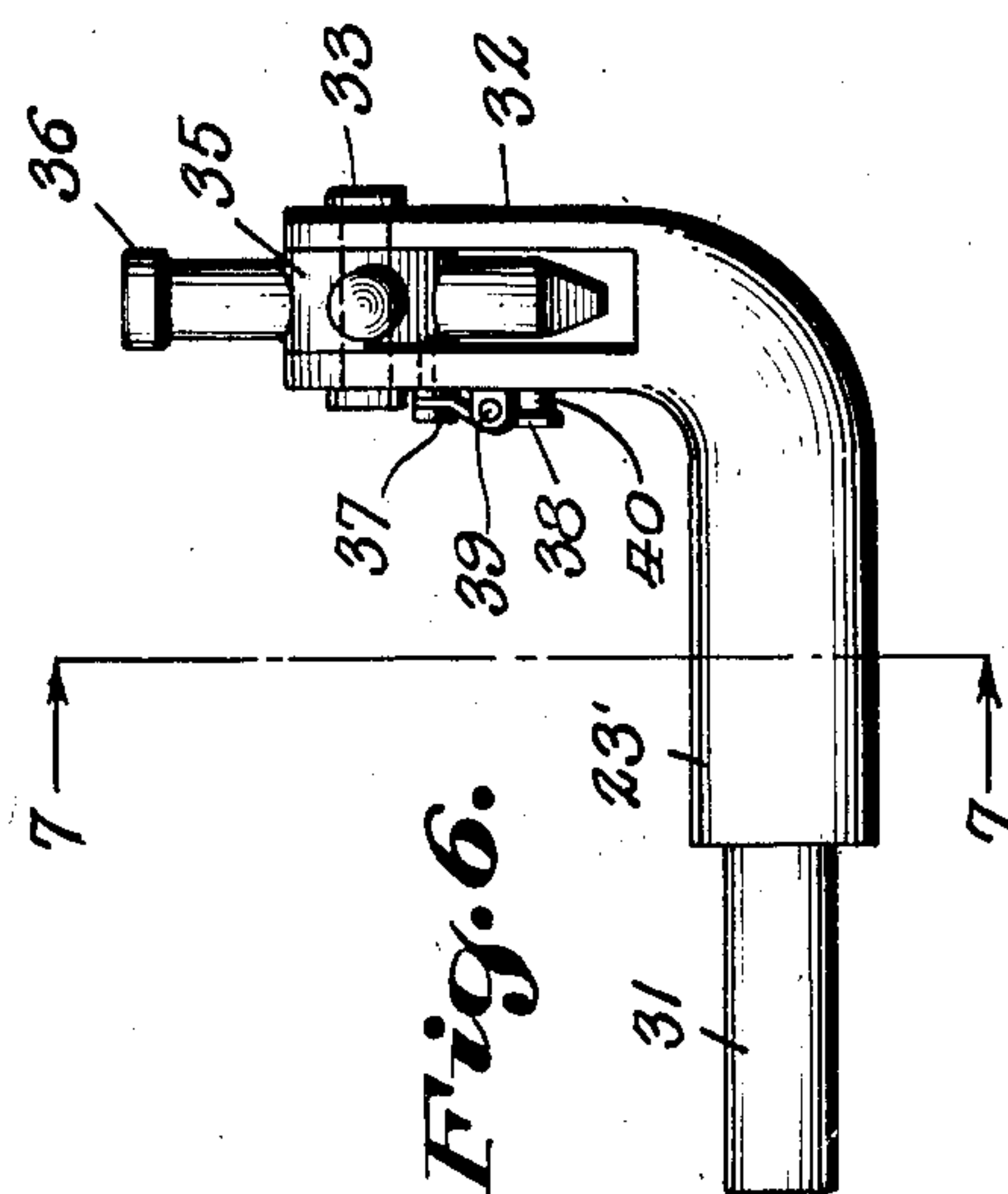


Fig. 6.

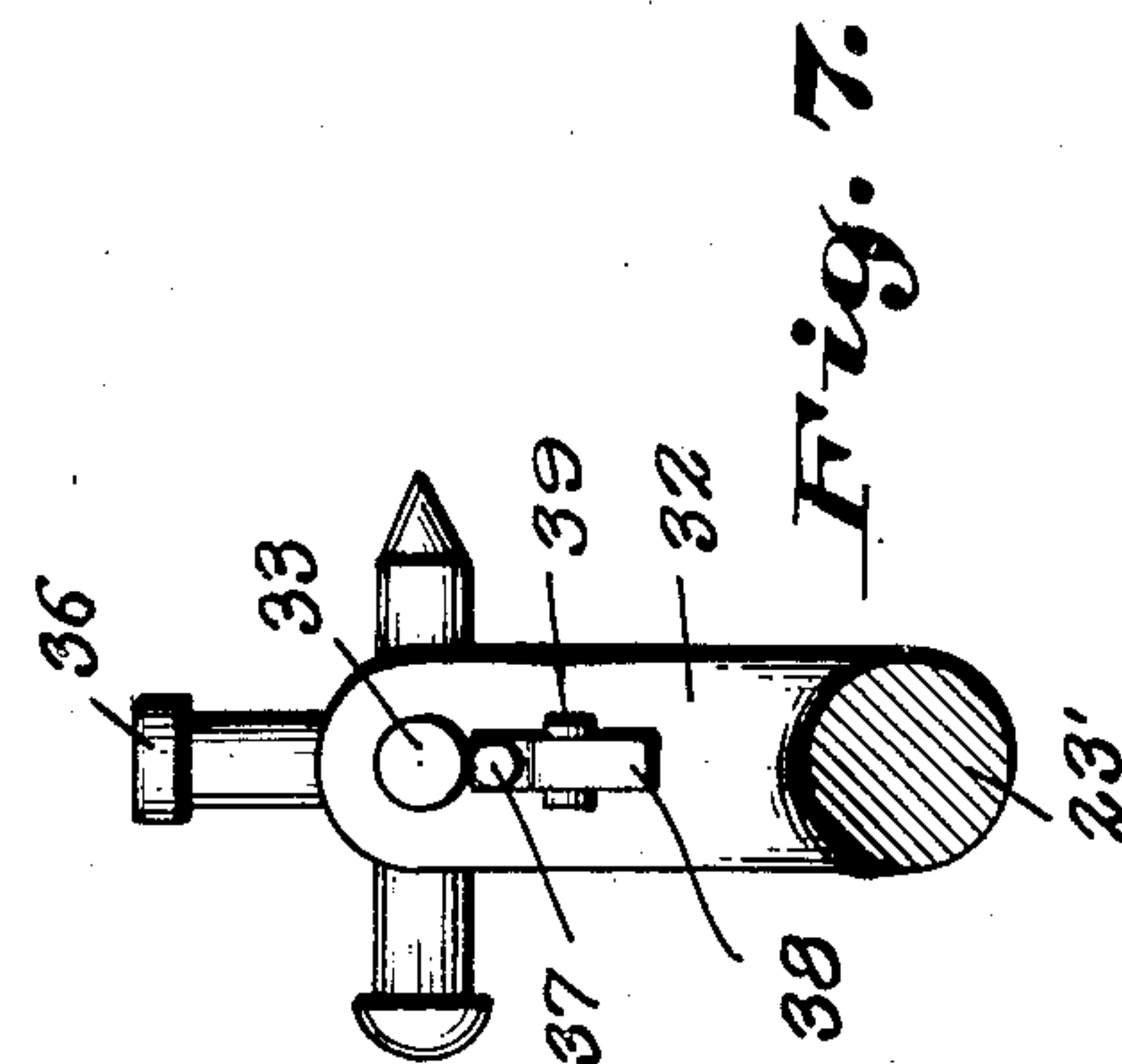


Fig. 7.

E. G. Peterson, INVENTOR
BY *Victor J. Evans* and *Co.* ATTORNEY

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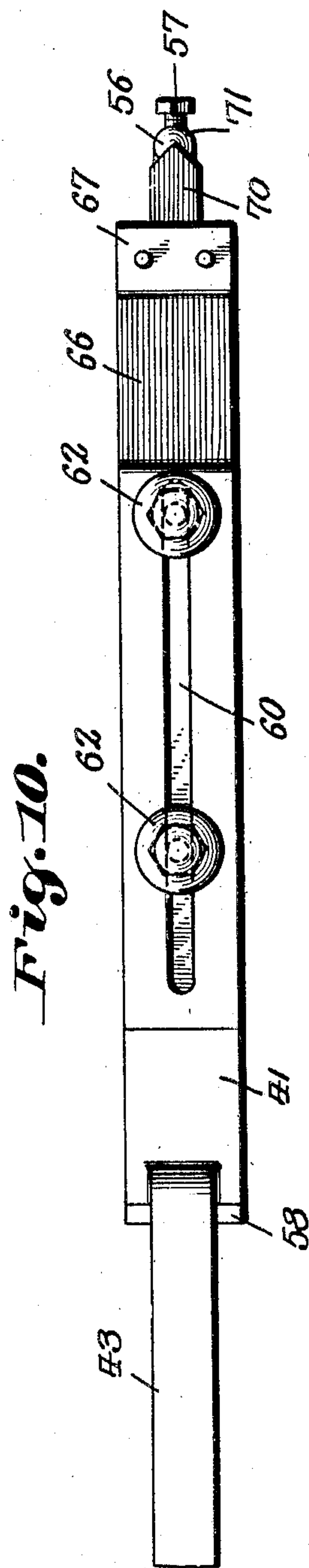
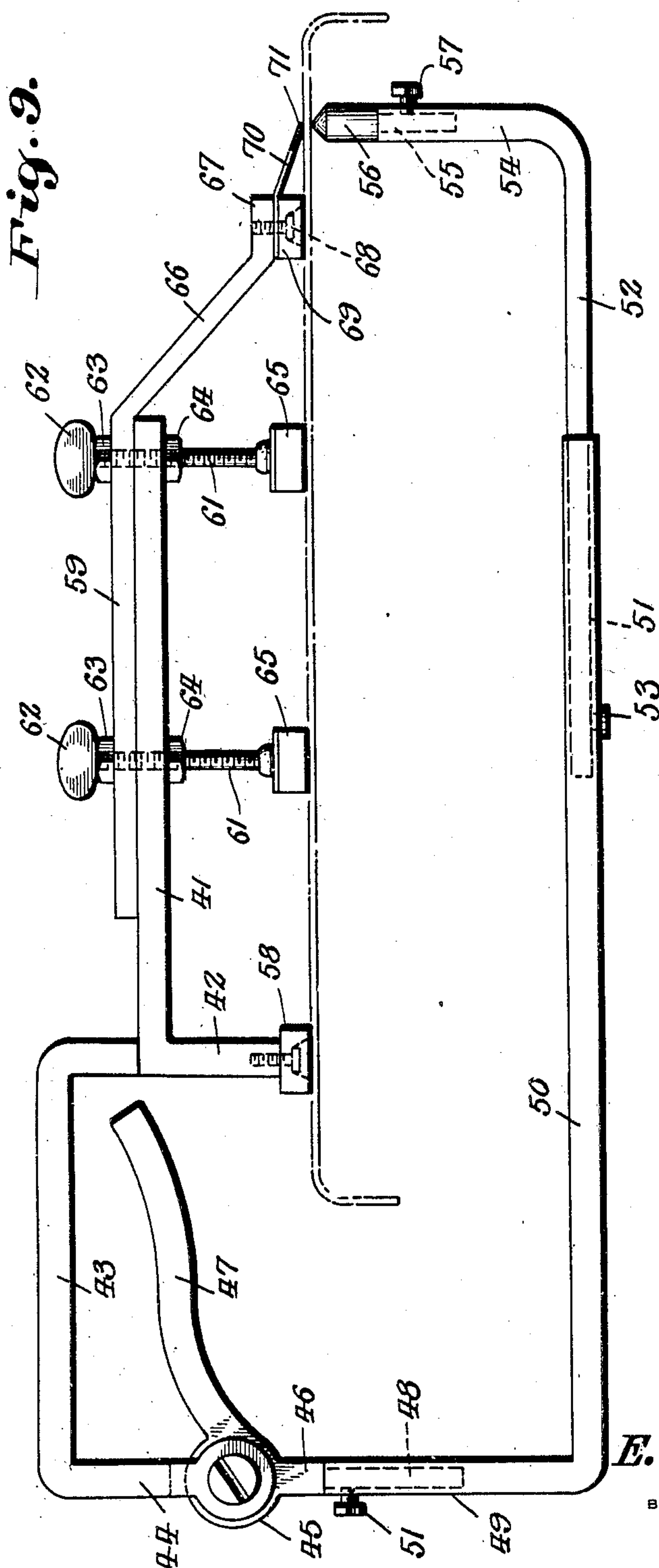
E. G. PETERSON

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3 Sheets-Sheet 3



E. G. Peterson, INVENTOR
BY *Victor J. Evans*
and Co. ATTORNEY

UNITED STATES PATENT OFFICE

EDWARD G. PETERSON, OF SEATTLE, WASHINGTON

FENDER TOOL

Application filed August 19, 1931. Serial No. 558,165.

The object of this, my present invention, is the provision of a tool for straightening the indented portions of automobile fenders or any other metal plates which are dented.

A further object is the provision of a hand operated tool for this purpose of an extremely simple and inexpensive construction and which includes a pointer or indicator element which is arranged in a line with the depression in the fender or plate and which also includes a hammer movable in a line with the pointer for contacting with the metal in removing the indenture therefrom.

To the attainment of the foregoing the invention consists in the improvement hereinafter described and definitely claimed.

In the drawings:

Figure 1 is a side elevation of the improvement in practical use.

Figure 2 is a top plan view thereof.

Figure 3 is a sectional view approximately on the line 3—3 of Figure 1.

Figure 4 is a sectional view approximately on the line 4—4 of Figure 1.

Figure 5 is an elevation of one of the hammers.

Figure 6 is a side elevation of the outer removable and adjustable hammer carrying member illustrating a slight modification.

Figure 7 is a sectional view approximately on the line 7—7 of Figure 6.

Figure 8 is a sectional view approximately on the line 8—8 of Figure 1.

Figure 9 is a side elevation illustrating another form of the improvement.

Figure 10 is a top plan view thereof.

The primary object of my invention is the provision of a tool for operating upon automobile fenders or other plates which is of a construction and arrangement to eliminate inaccurate hammering of small dents that are left in the surface of a fender, the hood, doors, body panels and other metal parts of an automobile or other dented plates after the same have been ruffed or hammered out fairly smooth and have been filed to disclose the many small dents left in the surface of such plates. Other tools have been devised for this purpose, but the same have not proved efficient for the reason that the hammering

must be done from one side of the plate and the part of the plate upon which the hammer is to operate must be accurately mounted from the second or outer face of the plate. It will be noted as the description progresses 55 that with my improvement the tool is positively held in proper position for the hammering operation, so that the teats or small protrusions provided by the dents will be positively indicated and the hammer accurately arranged for acting upon such protrusions or teats to act upon the same to render both surfaces of the plate smooth and in condition to be treated by paint or enamel. 60

The slightly arched elongated plate of the improvement is in the nature of a metal bar 65 and will for convenience be hereinafter referred to as the base of the device. This base is indicated by the numeral 1 and has arranged on its under face a compressible strip or pad 2. The rear of the base is integrally formed with a substantially inverted U-shaped extension that affords a hand grip 3. On the outer end there is secured by the threaded shank of a thumb bolt 4, the body 75 portion 5 of a clamp. The second or outer end of the clamp is offset downwardly against the outer edge of the base 1 and is from thence continued and terminates approximately in a line with the outer terminal 80 of the pad 2. This portion of the clamp is indicated by the numeral 6 and the same has riveted or otherwise secured to the outer or under face thereof a spring steel plate or strip 7 whose outer end is preferably reduced 85 and arched downwardly and terminates in a point 8.

The rear arm 9 of the hand grip 3 is widened outwardly to provide the same with what I will term a round hub 10 and the central portion of the hub is provided with an annular depression 11 that communicates with openings in the opposite sides of the hub. In the sides of the hub there are raceways for anti-friction bearings 12, the inner 95 raceway having passed therethrough and has preferably secured thereto a pivot bolt 13. The bolt has a kerfed head and its threaded shank is engaged by a nut 14. The bolt 13 passes through an opening in the upper arm 100

15 of a rod. A portion of this arm affords a finger grip 16. The rod has its outer end formed with an angle and depending extension 17 on which is fixed a knob 18. The outer end of the arm 17 is preferably provided with a socket for the reduced stem 18' on the angle end 19 of a rod or bar 20. A binding element 21 holds the stem 18' in the socket. The outer end of the rod has its under or outer face provided with spaced notches 22 and this end of the rod is designed to receive thereon the socket end 23 of a member that has its outer end arranged at an angle, as indicated by the numeral 24. The angle member provides a holder for the hammers as will presently be understood. The socket end of the hammer member has screwed thereto the shank of a short bolt 25 that is designed to be received in any of the notches 22 for firmly holding the hammer carrying member on the rod 20.

The angle end of the hammer carrying member is provided with a socket 26 for the stem 27 of a hammer 28. The hammer has a shoulder 29 which contacts with the outer face of the angle end 24 of the hammer carrying member and the stem of the hammer is held in the socket by a binding bolt or screw 30.

Hammers having heads either pointed, as disclosed by Figure 1 of the drawings, or provided with flat or semi-circular or frusto conical heads, as disclosed by Figures 6 and 7 of the drawings may be employed but the center of each hammer is disposed in a line with the outer and V-shaped end of the arched spring pointer 7.

In operation the pad 2 carried by the base 1 is arranged over one of the surfaces of a fender or plate after the same has been hammered to straighten the same and after the same has been filed to disclose any dents which may appear in the plate 31. The dents are clearly discernible to the operator, and the operator, with one hand partly engaging the hand grip 3 to arrange the spring pointer 7 in a line with the center of the dent, while his remaining fingers engage the finger grip 16 to swing the rods or bars 17 and 20 to cause the hammer to forcibly contact with the teat or protrusion afforded by the dent. Thus the hammer is operated by a single hand of the operator from the outer face of the plate 31, and obviates the necessity of the operator placing the hammer against the protrusion for the hammering or straightening action which is a common practice.

The rods 20 and 17 need not comprise separate members but may be integrally formed. The knob 4 affords a means whereby the device may be readily shifted to different positions on the plate 31 to arrange the indicator opposite differently positioned dents in the plate 31 without necessitating the removal of the device from the plate.

The hammer carrying member need not have its straight arm 23 provided with a socket, as the outer end of the rod 20 may be formed with a socket and the arm 23 provided with a stem to be received in such socket, such construction being disclosed by Figure 6 of the drawings. The arm 23' of the hammer carrying member has its longitudinal arm provided with a stem 31 and the angle end 32 of the hammer carrying member is in this showing bifurcated, and there is pivotally secured, as at 33, between the arms provided by such bifurcation a round head 35. The head 35 is provided with right angularly arranged sockets in which are received the shanks of hammers 36 having various types of heads. Obviously the hammers may have their shanks formed with the rotatable member 35, and one side of the said member 35 is provided with spaced notches which align the center of the shanks of the hammer and such notches are designed to receive therein a holding pin 37 loosely connected to the outer end of a small lever 38 which is pivoted between outstanding brackets 39 on one of the arms afforded by the bifurcated end 32 of the hammer carrying member. The lever 38 is influenced away from the arm 32 by a spring 40, which, of course, forces the pin 37 into a desired notch and a pressure upon the tail end of the lever will permit the member 35 being turned to bring any of the hammers carried thereby to outward active positions. The knob 18 and the finger grip 16 may be simultaneously pressed in opposite directions when the plate 31 is thick or non-yieldable to the ordinary impact of the hammer when only the finger grip 16 is employed for swinging the hammer.

I have referred to the plate 5 as a clamp for the reason that the pointer is attached thereto. Necessarily this plate is provided with an elongated slot or opening 40 through which the threaded shank of the knob 4 passes and whereby the plate 5 may be longitudinally adjusted upon the element 1, which I have referred to as the base, so that the telescopic elements that carry the hammer will permit of the hammer being brought directly opposite the end 8 of the thin pointer plate 7 and the parts securely adjusted prior to the operation of the tool in a manner which will presently be described.

In Figures 9 and 10 I have illustrated another form of the improvement which may be considered the preferred form of the device. In this instance the frame includes a bar 41 formed on one end of an arm 42 which comprises the inner element of the arched portion of the improvement. The outer or top element of the arched or handle portion is indicated by the numeral 43 and the second or outer depending arm of the handle is indicated by the numeral 44. The lower end of the arm 44 is rounded and preferably bifur-

cated and receives therein and has pivoted thereto the upper rounded end 45 of a rod member 46, the same being formed with a curved extension 47 arranged in the handle and affording a finger grip. The element 46 in this instance is provided with a depending reduced portion 48 that is received in a socket in the angle end 49 of a rod or arm 50. A binding element 51 holds the extension 48 in the socket. The member 50 is made up of two adjustably connected sections. The longer element of the arm having the angle end 49 has its outer end formed with a socket in which is received the reduced end 51 of the shorter element 52 of the arm or rod 50. A binding element such as a headed bolt 53 is screwed through the socket and contacts with the reduced end 51 of the member 53. The member 52 has its outer end arranged at an upward angle and is parallel with the end 49. This end of the arm is indicated for distinction by the numeral 54 and is provided with a socket for the stem 55 on a pointed hammer 56. A binding bolt or screw 57 holds the stem 56 in the socket.

The inner arm 42 of the arched handle portion of the improvement has removably and adjustably secured upon its outer end a compressible disc 58, and the arm 41 has arranged thereover a longitudinally slotted plate 59, similar to the plate 5, which I have termed the clamping plate. There is passed through the slot 60 in the said plate 59 spaced bolts 61, respectively. The outer ends of these bolts have knobs or handles 62 and screwed on the bolts there are adjusting nuts 63 to contact with the outer face of the plate 59 and likewise screwed on these bolts there are other nuts 64 to contact with the under or outer face of the arm 41. The ends of these bolts are swivelly connected to the rubber discs 65, respectively. The end of the plate 59 which extends beyond the arm 43 is arranged at a downward angle and is indicated by the numeral 66 and this portion has a straight extension 67. There is secured on the under face of the extension 67, through the medium of a bolt 68 a compressible disc 69 and the said disc binds against the under face of the said extension 67 the straight inner end of a thin metal strip 70 whose outer portion is arranged at an angle and terminates in a point 71. The compressible discs 58 and 69 have their outer faces concaved to receive the heads of the securing bolts therein and the pointer 71 is designed to be arranged directly opposite the pointed end or poll of the hammer 56 by adjusting the elements 59 and 52 in a manner as above described. By adjusting the screws or bolts 61 and the nuts 63 and 64 thereon the inner compressible discs 65 may be raised or lowered so that all of the compressible discs (including, of course, the discs 58 and 69) will be in contact with the upper

surface of the fender or other plate whose indentures are to be hammered out.

In the operation of both of the forms of the improvement the pointer is adjusted with respect to the hammer in a manner as set forth. The pointer is accurately arranged opposite the indenture to be operated upon by the hammer. In the construction disclosed by Figure 1 the arched handle 3 is engaged by one hand of the user whose fingers also engage with the finger grip 16 to impart a swinging movement to the hammer carrying member and to cause the hammer to contact with the convex surface formed by the indenture to straighten the plate. Should the plate 31 be of greater thickness than is ordinary the knob 18 is gripped by the second hand of the operator and moved in a direction away from the finger grip 16 so that greater force is thus employed in the operation of the hammer. In Figures 9 and 10 the handle 43 may be gripped by one hand of the operator and the finger grip 47 may be gripped by the other hand of the operator to impart a greater impact of force to the hammer, when the grip 47 is swung toward the handle 48, when the device is employed for removing dents in comparatively thick plates, but for removing dents from thin plates the handle 43 is engaged by the palm and thumb of the operator while his fingers engage with the finger grip 47 and pressure is exerted to swing the finger grip toward the handle.

It is thought the foregoing description will fully and clearly set forth the construction and advantages of the improvement so that further detailed description will not be required.

It is within the province of this invention to omit all of the extension features so that the hammer can be constructed in one piece and the frame of another piece. Also the ball bearings are not an absolute requirements and may be dispensed with if desired.

Having described the invention, I claim:

1. A tool for straightening the indented portions of plates, including a frame having a thin plate whose end is pointed, and which end is designed to be arranged opposite an indenture when the frame rests on the plate to be operated upon, said frame having an arched end affording a handle, a member having offset ends, one of which is pivotally secured to the outer end of the handle and extending into the handle to afford a finger grip and a pointed hammer on the second angle end of the member disposed directly opposite the pointed end of the plate when the handle and finger grip are grasped by an operator to move the finger grip toward the handle to cause the hammer to contact with the under face of the plate.

2. A tool for removing indentures from a metal plate, comprising a member having a

substantially U-shaped handle and a portion extending longitudinally from the bottom thereof, and provided with a compressible outer face, a longitudinally slotted plate arranged over the extension, a knob having a threaded shank passing through the slot and screwed in the extension, said plate having an offset end, a thin metal strip having an outwardly extending angularly disposed portion that merges into a point, and said strip being secured to the offset end of the plate, a finger grip arranged in and pivotally secured to the outer arm of the handle and having a downwardly extending portion, an arm having an angle end adjustably secured in said extending portion, said arm comprising two sections which are adjustably connected, and the outer section having an offset end parallel to the extension and provided with a socket, and a hammering element having a pointed end and having a shank which is removably received in said socket and which hammer is disposed opposite the pointed end of the strip.

3. A tool for removing indentures from metal plates, comprising a member having a substantially U-shaped handle and a portion extending longitudinally from the bottom thereof, and provided with a compressible outer face, a longitudinally slotted plate arranged over the extension, a thumb bolt screwed through the slot and screwed in the extension, and contacting with the compressible face, said plate having an offset end, a thin metal strip having an outwardly extending angularly disposed portion that merges into a point, and said strip being secured to the offset end of the plate, a finger grip arranged in and pivotally secured to the outer arm of the handle and having a downwardly extending portion, an arm having an angle end adjustably secured in said extending portion, said arm comprising two sections which are adjustably connected, and the outer section having an offset end parallel to the extension and provided with a socket, a hub pivotally secured to the said end, radially disposed hammering elements on the hub, and means between the end of the arm and the hub for latching the hub to arrange any one of the hammering elements directly opposite the pointed end of the strip.

4. A tool for straightening the indented portions of plates, including a frame having a thin spring strip whose end is pointed, and which end is designed to be arranged opposite an indenture when the frame rests on the upper face of the plate to be operated upon, said frame having an arched end affording a handle, a member having offset ends, one of which is pivotally secured to the outer end of the handle and extending into the handle to afford a finger grip and a pointed hammer on the second angle end of the member disposed directly opposite the pointed

end of the plate when the handle and finger grip are grasped by an operator to move the finger grip toward the handle to cause the hammer to contact with the under face of the plate which is operated upon and a knob adjacent to the pivoted portion of the said hammer carrying member.

5. A tool for straightening the dented portions of plates, comprising a frame to rest upon the outer face of a plate to be operated on, said frame having a substantially U-shaped end that affords a handle, a spring pointer extending at a downward angle from the second end of the frame to frictionally contact with the plate, a member having offset ends, one of which is pivotally connected with the outer element of the handle, and which is formed with a portion extending into the U-shaped handle to afford a finger grip, and a pointed hammer removably and adjustably secured to the second angle end of the member and the said hammer designed to be arranged directly opposite the end of the pointer when the finger grip and handle are engaged by a hand of an operator and the finger grip swung toward the handle.

In testimony whereof I affix my signature.
EDWARD G. PETERSON.

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