

No. 620,886.

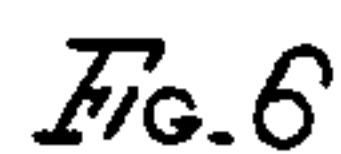
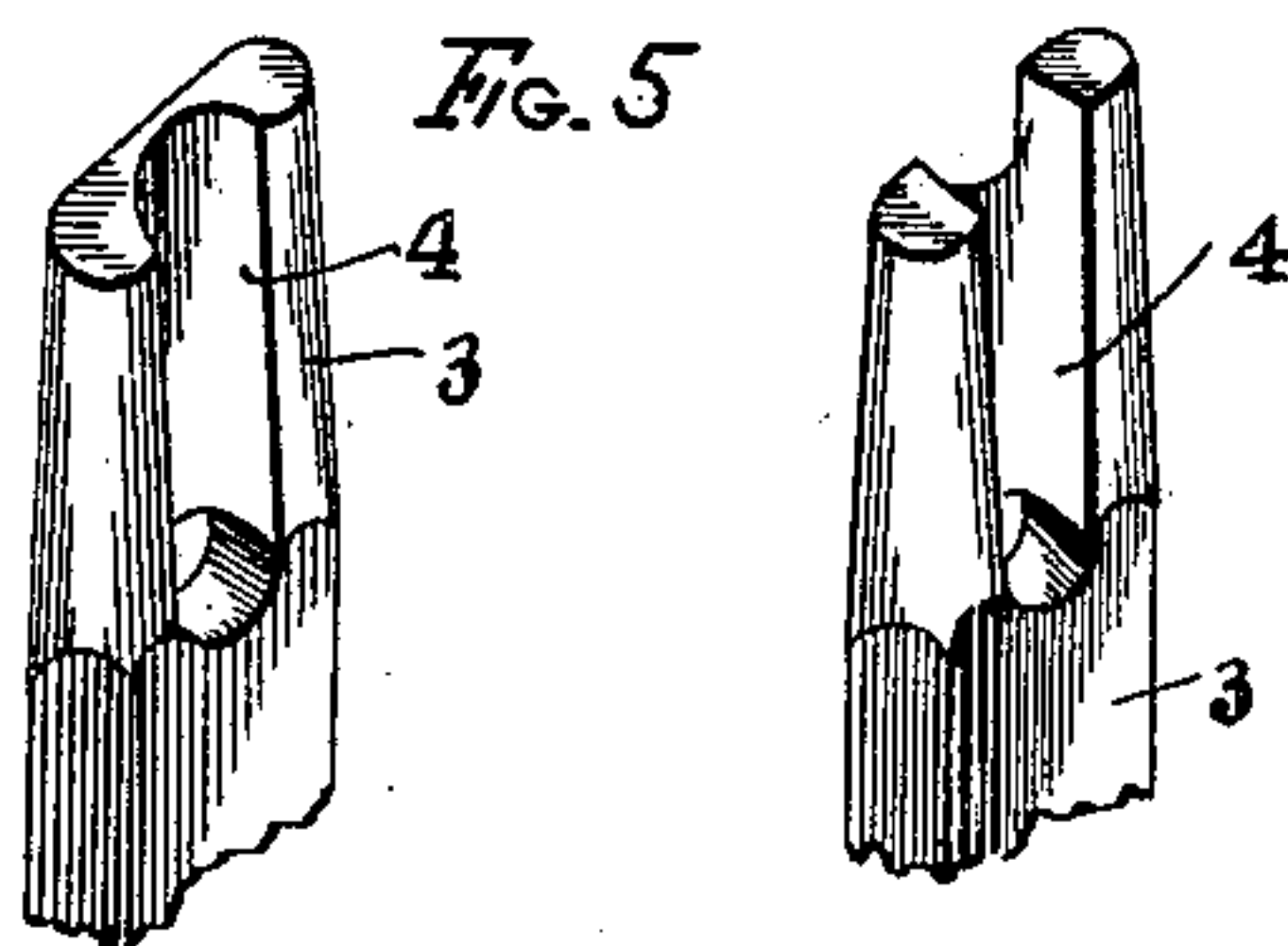
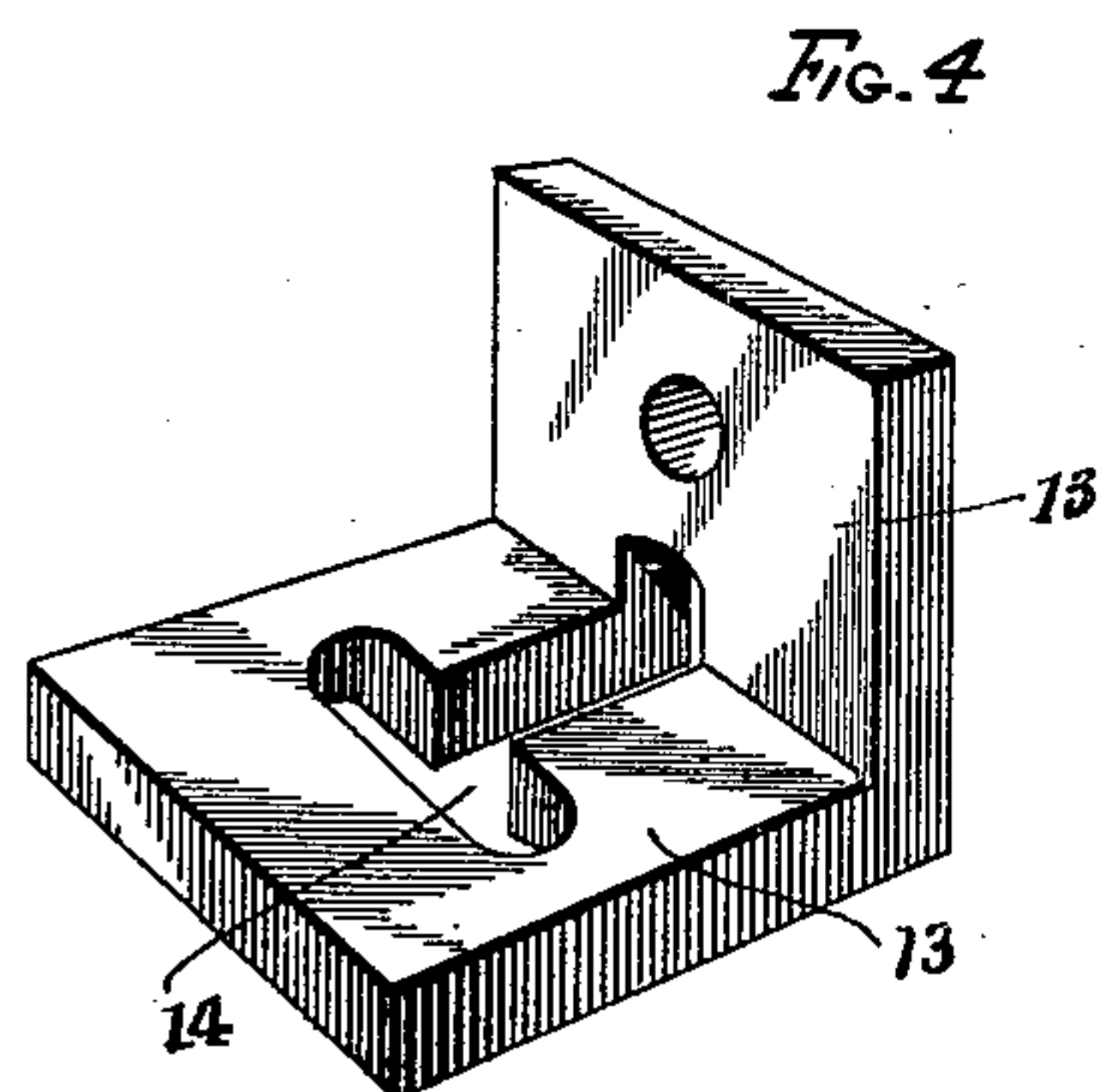
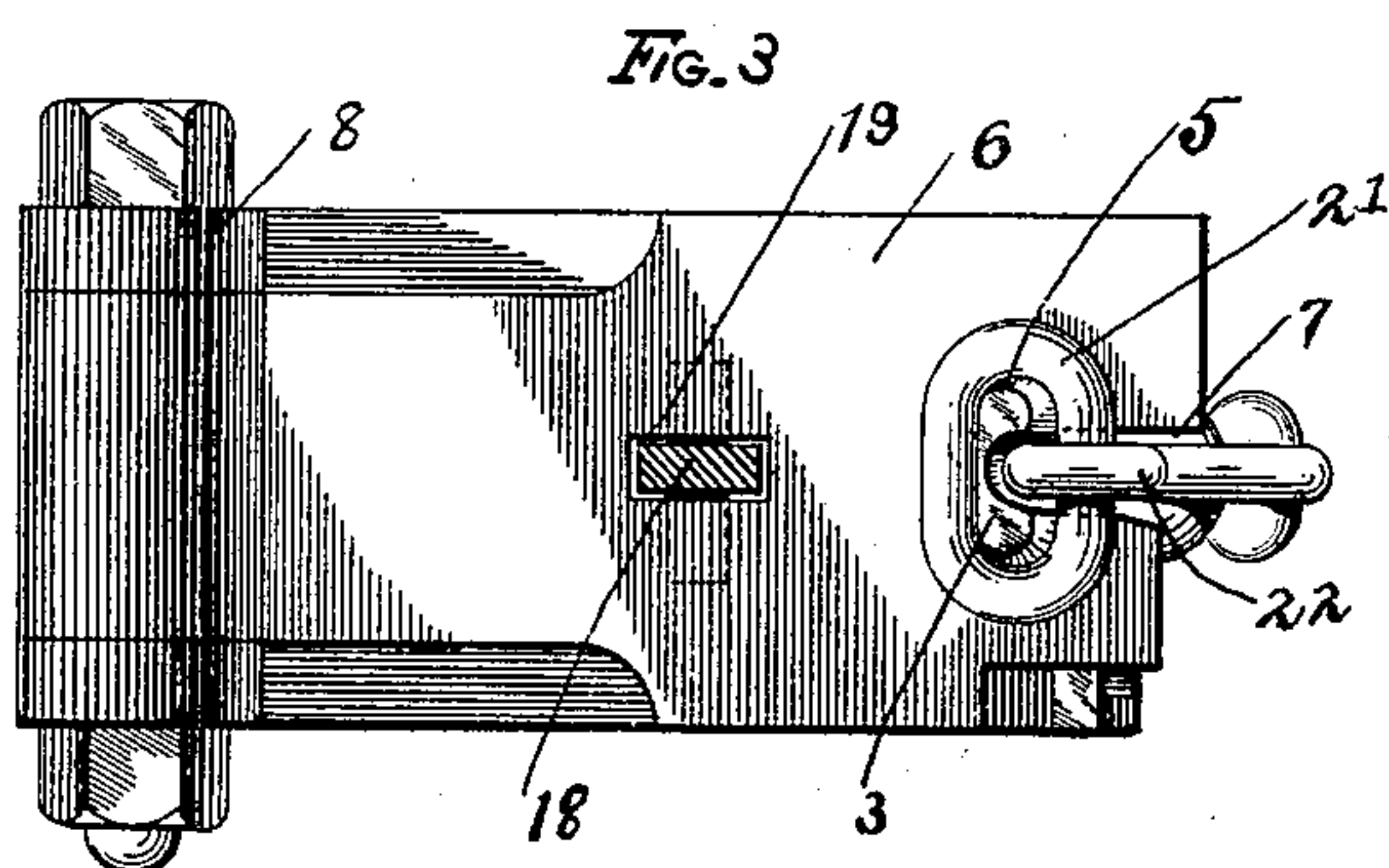
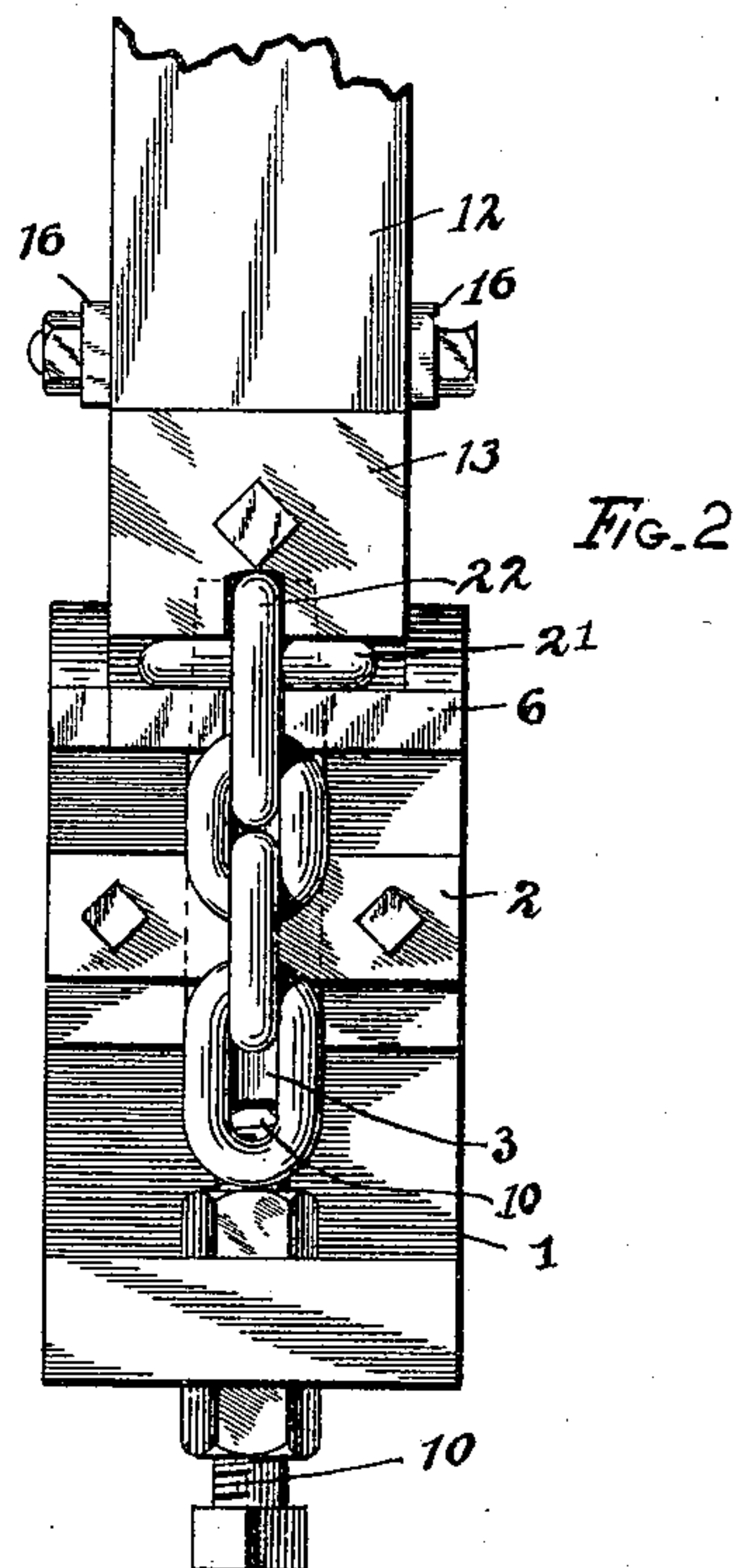
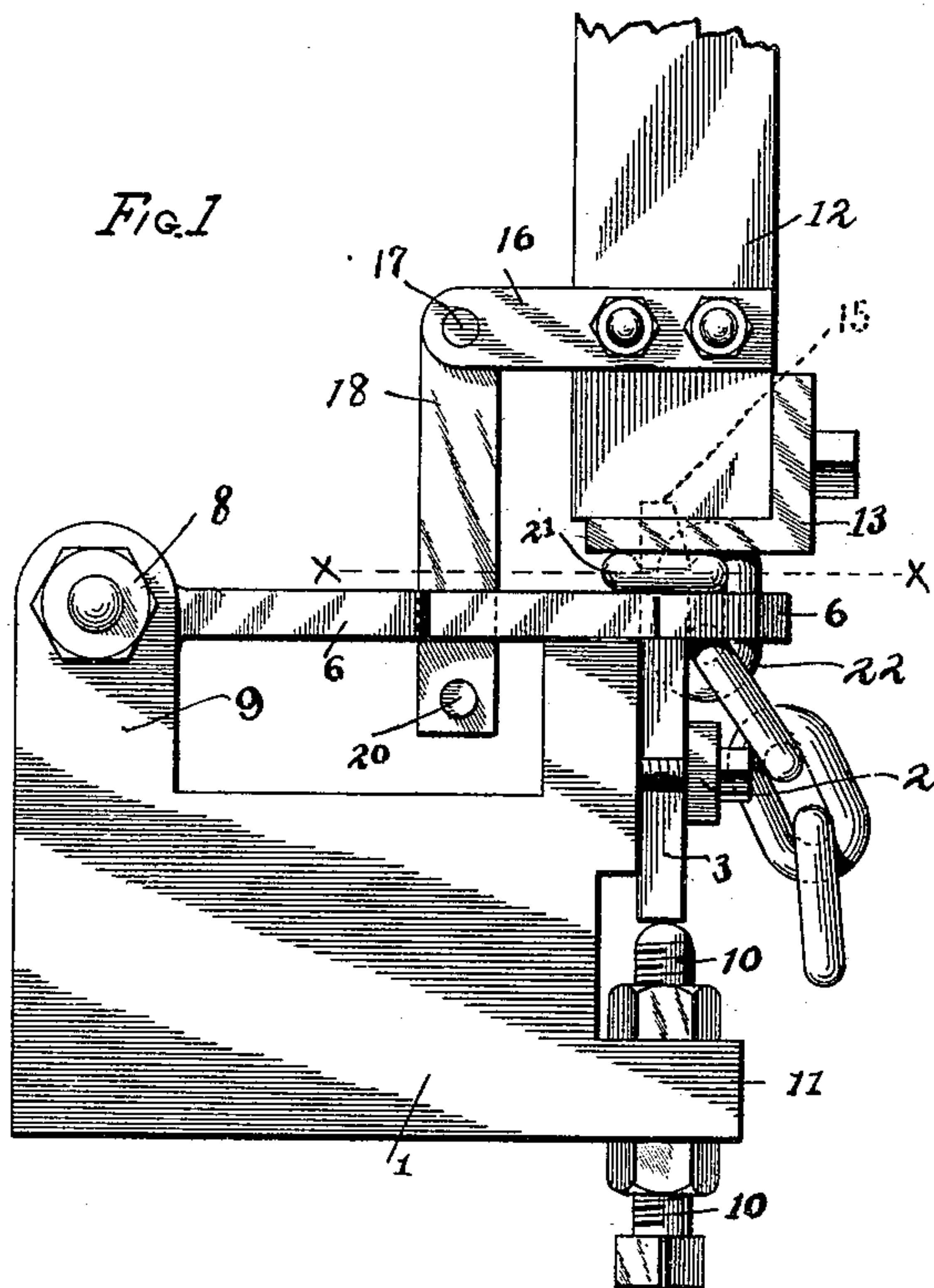
Patented Mar. 14, 1899.

D. CARROLL.

DEVICE FOR IMPARTING UNIFORM DIMENSIONS TO CHAIN LINKS.

(Application filed Dec. 10, 1897.)

(No Model.)



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DANIEL CARROLL, OF COLUMBUS, OHIO.

DEVICE FOR IMPARTING UNIFORM DIMENSIONS TO CHAIN-LINKS.

SPECIFICATION forming part of Letters Patent No. 620,886, dated March 14, 1899.

Application filed December 10, 1897. Serial No. 661,434. (No model.)

To all whom it may concern:

Be it known that I, DANIEL CARROLL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Devices for Imparting Uniform Dimensions to Chain-Links, of which the following is a specification.

My invention relates to an improvement in devices for regulating the internal dimensions of chain-links; and the objects of my invention are to provide an improved and effective device for imparting uniform dimensions to the links of a chain, to so construct and arrange said device as to insure accuracy and speed in its operation, and to produce other improvements the details of construction of which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved link-regulating device, showing a portion of a chain in position for operating thereon. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional view on line *xx* of Fig. 1. Fig. 4 is a detail view in perspective of the press-slide-arm foot or presser-plate. Fig. 5 is a detail view in perspective of the upper portion of a link-regulating punch, and Fig. 6 is a similar view showing a slightly-modified form of punch-head.

Similar numerals refer to similar parts throughout the several views.

1 represents the base-block of an ordinary press. Clamped, as indicated at 2, to the front face of the base 1 is a vertical link-regulating punch 3, the latter preferably being in the form of a vertical bar, the upper end portion of which is provided with rounded sides or edges which, as shown, converge toward the upper end of the punch. This rounded and converging upper end portion of the punch-bar is provided on its outer face with a central vertical groove or concavity 4. As indicated in the drawings, the upper end portion of the punch 3 is adapted to project through a correspondingly-shaped opening 5 in the outer end of a stripper-plate 6, said transverse opening 5 communicating centrally with the inner end of a recess 7, which leads out through the front end of said strip-

per-plate. The rear end of the stripper-plate 6 is, as indicated at 8, hinged or fulcrumed between upwardly-projecting oppositely-located rear lugs 9 of the base-block 1.

The lower end of the punch-bar 3 is adjustably supported upon the outer end of a vertical adjusting-screw 10, which has a threaded engagement with a projecting lip 11 on the lower portion of the base-block.

12 represents an ordinary press slide-arm which is arranged vertically over the forward end portion of the stripper-plate and punch-head and to which reciprocating vertical motion is adapted to be converted in the usual or any well-known manner. This press slide-arm I provide with a presser foot or shoe 13, which is in the form of an angular plate, (shown more clearly in Figs. 1 and 4 of the drawings,) the vertical wing of said plate being secured to the front side or face of the slide-arm 12, while the lower and horizontal wing of said plate embraces or bears against the under side of said slide-arm. The horizontal portion of the presser plate or foot has formed therein a substantially T-shaped mortise 14, the stem of which has a short vertical continuation in the vertical portion of the presser-plate. As indicated in dotted lines in Fig. 1 and in full lines in Fig. 3 of the drawings, the upper and round-edged end portion of the punch 3 is adapted to project through the transverse portion of the mortise 14 of the presser-plate 13 when the slide-arm is in its lower position. The extreme upper end portion of the punch is also adapted, as shown at 15 in dotted lines in Fig. 1, to project within a shallow socket in the lower side of the press-arm.

Extending rearwardly from opposite sides of the press-arm are bars 16, to which is fulcrumed at 17 the upper end portion of a downwardly-extending elevating-arm 18, the latter passing loosely through a mortise 19 in the stripper-plate 6 and being provided on the under side of said stripper-plate with a transverse pin 20.

The manner of utilizing my invention is substantially as follows: As the forming or welding of each link of a chain is completed said link is placed over the upper end of the punch-head in the manner shown more clearly in Figs. 1 and 3 of the drawings. The next ad-

joining link 22 of the chain being turned to the vertical position shown in the drawings or at right angles with the chain 21, from which it depends, is suspended in the recess or mouth 5 7 of the opening 5, the upper end of said adjoining link 22 projecting within the stem of the mortise 14 of the presser foot or plate 13 and the inner arm of said link projecting within the groove 4 of the punch. A downward pressure of the arm 12 now being exerted, it is obvious that the horizontal link 21 will be driven downward against the upper side or surface of the plate 6, and consequently to a lower point on the tapering head 15 of the punch 3, this forcing of the link down about the punch-head serving to impart to said link the desired internal measurement. It is obvious that the measurement or dimensions thus imparted to the link will be governed 20 by the size and form of the punch-head and that for the purpose of regulating the internal dimensions of links of different sizes and intended lengths punches of various sizes and forms may be employed.

25 The above operation being accomplished and the press slide-arm 12 being returned to its elevated position, it is obvious that the presser-foot will be lifted off the link 21 and that the upward movement of the press slide-arm and its bars 16 and arm 18 will result in an engagement of the pin 20 with the under side of the stripper-plate and in a consequent raising of the stripper-plate. This elevation of the hinged stripper-plate must result, as 30 will readily be seen, in stripping or forcing the link off the head of the punch and out of engagement therewith. It is obvious that in links of different sizes presser feet or plates 13 may be attached to the slide-arm of the 40 press having mortises 14 of different or desirable dimensions.

It is obvious that a device substantially as herein shown and described may be employed in connection with the ordinary form of foot, 45 hand, or power press and that by its use a great saving of labor and time will be effected in the regulation of the internal dimensions of chain-links. My device is particularly adapted for use on that class of chains which 50 are used to transmit power and which, owing to the fact that their links fit into wheel-pockets or engage with sprockets of uniform size, must correspond in their internal measurements.

55 It is obvious that by the use of my device the operation of regulating the lengths or dimensions of chain-links may be conducted in a rapid and effective manner and that the

construction of my link-regulating device is simple and may be produced at a reasonable 60 cost of manufacture.

Although the herein-described method of utilizing my device consists in forcing a link down over the head of the punch, it is obvious that without altering the principle of 65 my invention this operation might be reversed and the punch forced into the link.

In Fig. 6 of the drawings I have shown a slightly-modified form of punch-head, said modification consisting, as shown, in producing a substantially bifurcated upper end portion of the punch. This punch-head, it is evident, may be formed in the manner indicated in said Fig. 6 or in Fig. 5 of the drawings. 70

Having now fully described my invention, 75 what I claim, and desire to secure by Letters Patent, is—

1. In a device for regulating the dimensions of chain-links, a punch having a slightly-tapering head adapted to enter and fill the 80 ends of a chain-link, said punch-head having a channel in one of its faces to permit the free movement therein of one arm of an adjoining link, substantially as and for the purpose specified. 85

2. In a device for imparting uniform dimensions to chain-links, the combination with a suitably-supported vertically-adjustable punch 3 having a slightly-tapering head portion adapted to be received by a chain-link, 90 of a plate 6 having a transverse opening to receive the head of said punch and an outlet or recess 7 to said transverse opening and means for forcing a link on said punch-head, substantially as and for the purpose specified. 95

3. In a device for imparting uniform dimensions to chain-links, the combination with a suitably-operated press, its base-block and slide-arm, a punch 3 adjustably supported in 100 connection with said base-block and projecting therefrom, a fulcrumed stripping-plate having an opening 5 therethrough for the reception of the punch-head and a recess 7 leading therefrom, of a detachable presser-foot on 105 said press slide-arm, said presser-foot having a substantially T-shaped mortise therein and connections between said slide-arm and stripper-plate whereby the elevation of the former results in the elevation of the latter, substan- 110 tially as and for the purpose specified.

DANIEL CARROLL.

In presence of—

C. C. SHEPHERD,
P. S. KARSHNER.