

S. A. LESAN.

PUNCH.

APPLICATION FILED FEB. 11, 1909.

934,194.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.

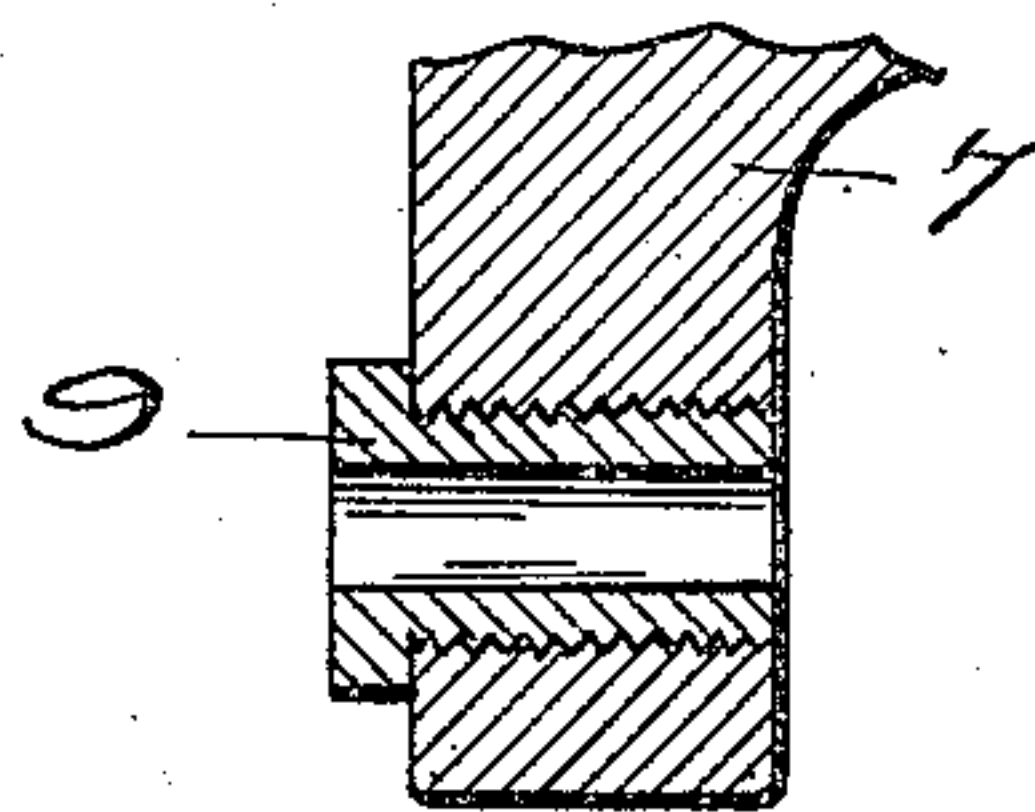
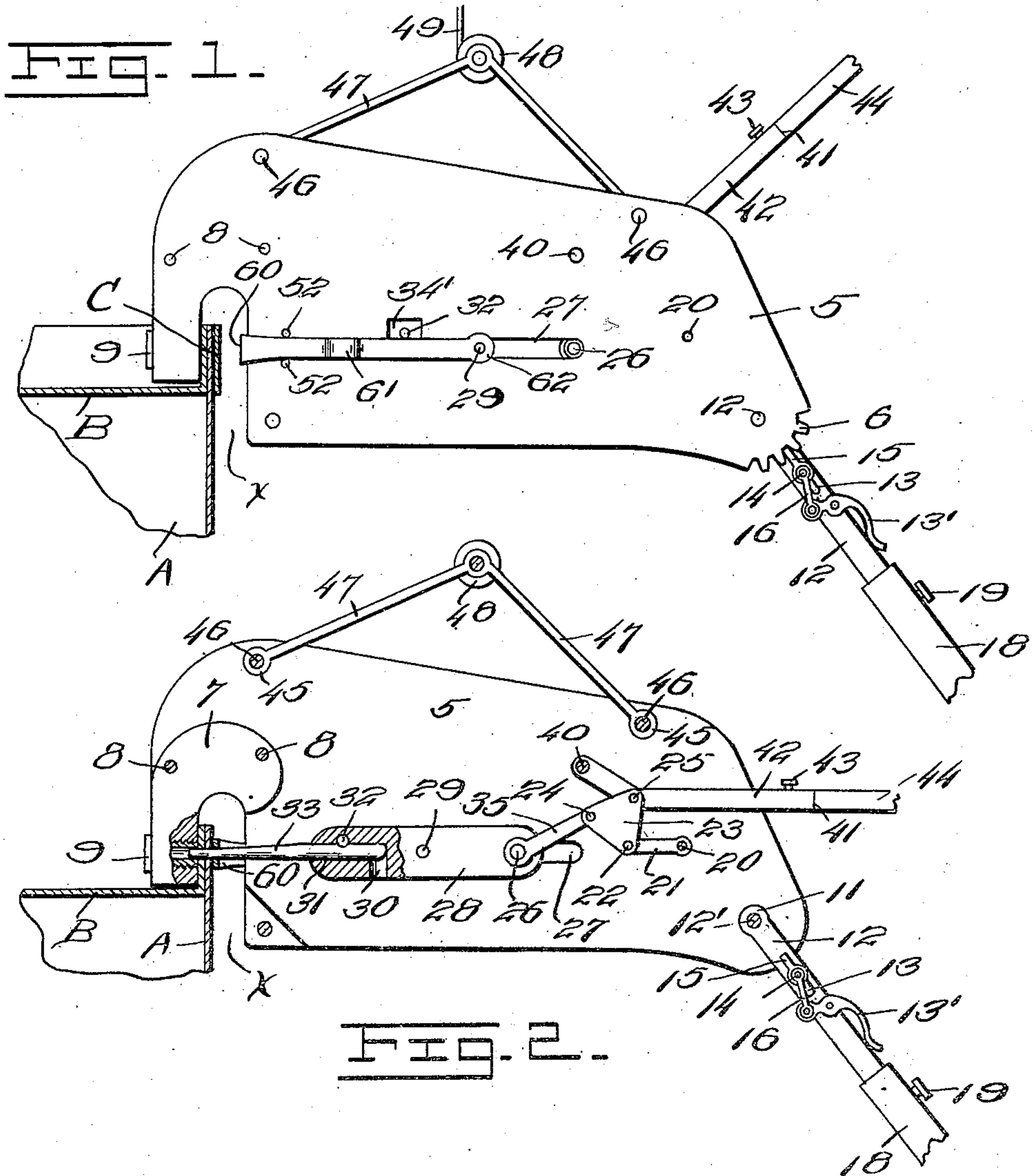


FIG. 3. S. A. Lesan

Witnesses
E. L. Chandler
E. L. Chandler

By *Woodward Chandler*

Attorneys

S. A. LESAN.

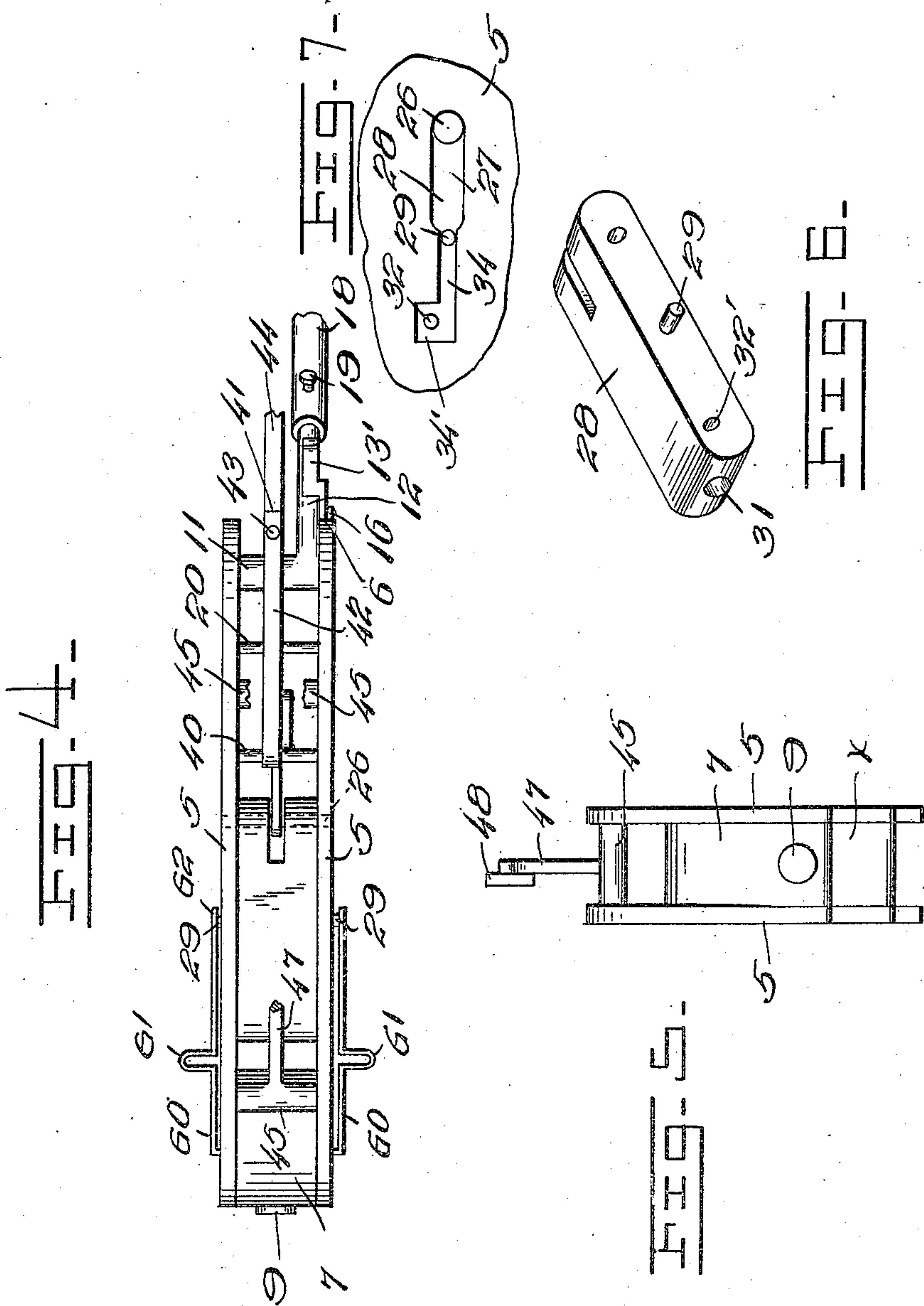
PUNCH.

APPLICATION FILED FEB. 11, 1909.

934,194.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 2.



Witnesses
E. L. Chandler
E. L. Chandler

Inventor
S. A. Lesan,
By *Woodward & Chandler*
Attorneys

UNITED STATES PATENT OFFICE.

SETH A. LESAN, OF SEYMOUR, IOWA, ASSIGNOR OF ONE-THIRD TO SAMUEL W. BONNER AND ONE-THIRD TO CREED C. CALBRAITH, BOTH OF SEYMOUR, IOWA.

PUNCH.

934,194.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed February 11, 1909. Serial No. 477,341.

To all whom it may concern:

Be it known that I, SETH A. LESAN, a citizen of the United States, residing at Seymour, in the county of Wayne and State of Iowa, have invented certain new and useful Improvements in Punches, of which the following is a specification.

This invention relates to certain new and useful improvements in punches, and refers more particularly to that class of punches used in the manufacture of sheet steel water tanks.

The object of my invention is to provide a punch of the class that are suspended and detachably secured to the work piece, while the tool is forced to its work, under manual power, and my invention comprises certain novel features as will be described more fully hereinafter.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification, and in which like characters of reference indicate similar parts in the several views, Figure 1 is an elevational view disclosing my punch as secured to a work piece, Fig. 2 shows a punch with one of the face plates removed, disclosing the punch in its forward position, Fig. 3 shows a broken sectional detail of the receiving die, Fig. 4 shows a top view of the punch with portions removed, Fig. 5 discloses a front view of the punch, Fig. 6 shows a perspective view of the punch block, Fig. 7 shows a broken portion of one of the side plates, disclosing the arrangement of the guide openings.

In carrying out the object of my invention, I employ two similar side or supporting plates 5, approximately oblong in outline as disclosed in Fig. 1 and provided at one end as shown in Fig. 6 with a ratchet edge. This ratchet edge 6 of the side plates is extended slightly downward. Along the lower edge but at the opposite end, I provide the side or supporting plates with the access opening α . Held between the side plates 5 at the forward or working end, is the head block 7, which by means of the rivets 8, is held between these side or supporting plates 5. This block as disclosed in

Fig. 2 skirts the forward and upper edge of the access opening α , and is arranged to receive within its lower end the receiving die 9.

At the rear end the side plates are held apart by means of the head 11 forming a part of the bar 12, pivotally secured between these side plates by means of the bolt 12'. The bar 12 is slotted as is shown at 13 in Fig. 1, and carries a pin 14, holding a latch 15, adapted to work in the serrations 6. Extending from the latch 15, is a bar 16 secured to the pivotally held lever 13', so that upon operating the lever, the latch 15 will adjustably engage within the lower end 6, of the side plates. This bar 12 telescopes within the tube 18, and is locked by means of the set screw 19. This tube and bar are used as a brace to support the rear end of the punch. Near the rear end, the two side plates are connected by means of a thrust pin 20, clearly disclosed in Fig. 2 which pin 20 carries a rock link 21 engaging the pin 22 carried by the triangular knee plate 23. This knee plate 23 further carries the pin 24, pivotally supporting the thrust link 35.

Each side plate near the lower edge as shown in Fig. 1 is provided with a guide opening 27, leading into a slot 34. Slidably held within the guide opening 27, is a guide pin 26, while slidably held within the slot 34 is a bolt 29. Carried upon this pin and bolt is the punch block 28 provided in front with the tool-receiving openings 31, and a laterally extending opening 30. This punch block is further provided with an opening 32' adapted to receive the tool-holding pin 32 as shown clearly in Fig. 2. By means of the pin 26 and the bolt 29, the punch block is slidably carried between the supporting side plates. Held within the punch block 28 and secured by means of the pin 32 is a suitable punching die 33. This punching die 33 is held in proper alinement with the receiving die 9 as disclosed.

Connecting the side plates near the upper edge is a pin 40, and this pin pivotally supports a crooked operating lever 42 having the handle-receiving socket 41 and carrying the set screw 43 so that the operating lever or handle 44 may be properly secured within the socket 41. This crooked lever 42 approximately midlength, carries the pin 25 by means of which this lever is secured to

the triangular knee plate 23 as clearly disclosed in Fig. 2.

In order to hold the side plates apart in proper spaced relation near the upper edge, I provide the hangers 47, by means of which the punch is supported with the enlarged heads 45 carrying the pins 46, these hangers 47 carrying a suitable windlass 48 adjustably secured to a suitable suspending rope 49, so that the punch may be raised or lowered.

As shown in Figs. 1 and 2 the slot 34 is provided with a suitable enlargement 34' so that the tool-holding pin 32 is accessible.

Projecting from the side or face plates 5 near the access opening α , are two supporting pins 52, which carry the forward end of an encompassing stripper, comprising the perforated head 60 through which the punching tool 33 extends, the two side spring loops 61 and the terminal ears 62 receiving the bolt 29.

On rocking the lever 44, a firm positive forward and backward movement is imparted to the punching die 33, as well as to the stripper 60.

In Fig. 1, I disclose my punch as attached to a water tank. In this view A, represents the body of the tank, B the bottom having a suitable flange, and C the usual iron band by means of which the tank is reinforced.

On rocking the lever 44, the punching die 33 is advanced as is also the stripper 60. The head of the stripper first engages the work piece and so securely clamps the punch against the work piece. The punching die 33 first passes through the stripper head and then through the work piece. While the punch is shown as used in connection with a water tank, it is of course understood that the same may be used in the manufacture of sheet metal goods in general. On the upward stroke of the operating lever 44, the stripper removes the punch from the work piece.

The punch as described is light, simple of construction, and positive in its operations.

Having thus described my said invention, what I claim as new and desire to secure by United States Letters Patent is:

1. The combination with a supporting

plate, of a punch block slidably carried by said plate, a thrust link pivotally connected at one end to said punch block, a triangular knee plate, said thrust link having its remaining end pivotally secured to one corner of said triangular knee plate, a lever pivoted at its lower end to said supporting plate, a pin connecting said triangular knee plate at a second corner to said lever, a thrust pin secured to said supporting plate, and a rock link carried by said thrust pin and secured to the remaining corner of said triangular knee plate.

2. In combination, two spaced side plates, having an access opening near one end, a die receiving block between said plates proximal to said access opening, said plates having oppositely positioned guide slots, a punch block having projecting guide pins sliding within said slots, a thrust pin to the rear of said punch block, a rock link carried by said thrust pin, a thrust link pivoted to said punch block, a knee plate uniting said links, a pin secured above said knee plate, an operating lever having its end carried upon said last mentioned pin, and a pin securing said lever intermediate at its ends to said knee plate.

3. In combination, two spaced side plates having an access opening near one end, a die receiving head between said plates proximal to said access opening, said plates having oppositely positioned guide slots, a punch block having projecting guide pins sliding within said slots, a thrust pin to the rear of said punch block, a rock link carried by said thrust pin, a thrust link pivoted to said punch block, a knee plate uniting said links, a suitably supported operating lever secured to said knee plate, and a stripper having two outwardly extending spring loops carried by said guide pins, all arranged substantially as and for the purpose set forth.

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

SETH A. LESAN.

Witnesses:

J. C. PHILLIPS,
W. E. BARTO.