

No. 720,309.

PATENTED FEB. 10, 1903.

O. D. WOODBURY.

PUNCH.

APPLICATION FILED SEPT. 10, 1902.

NO MODEL.

Figure 1.

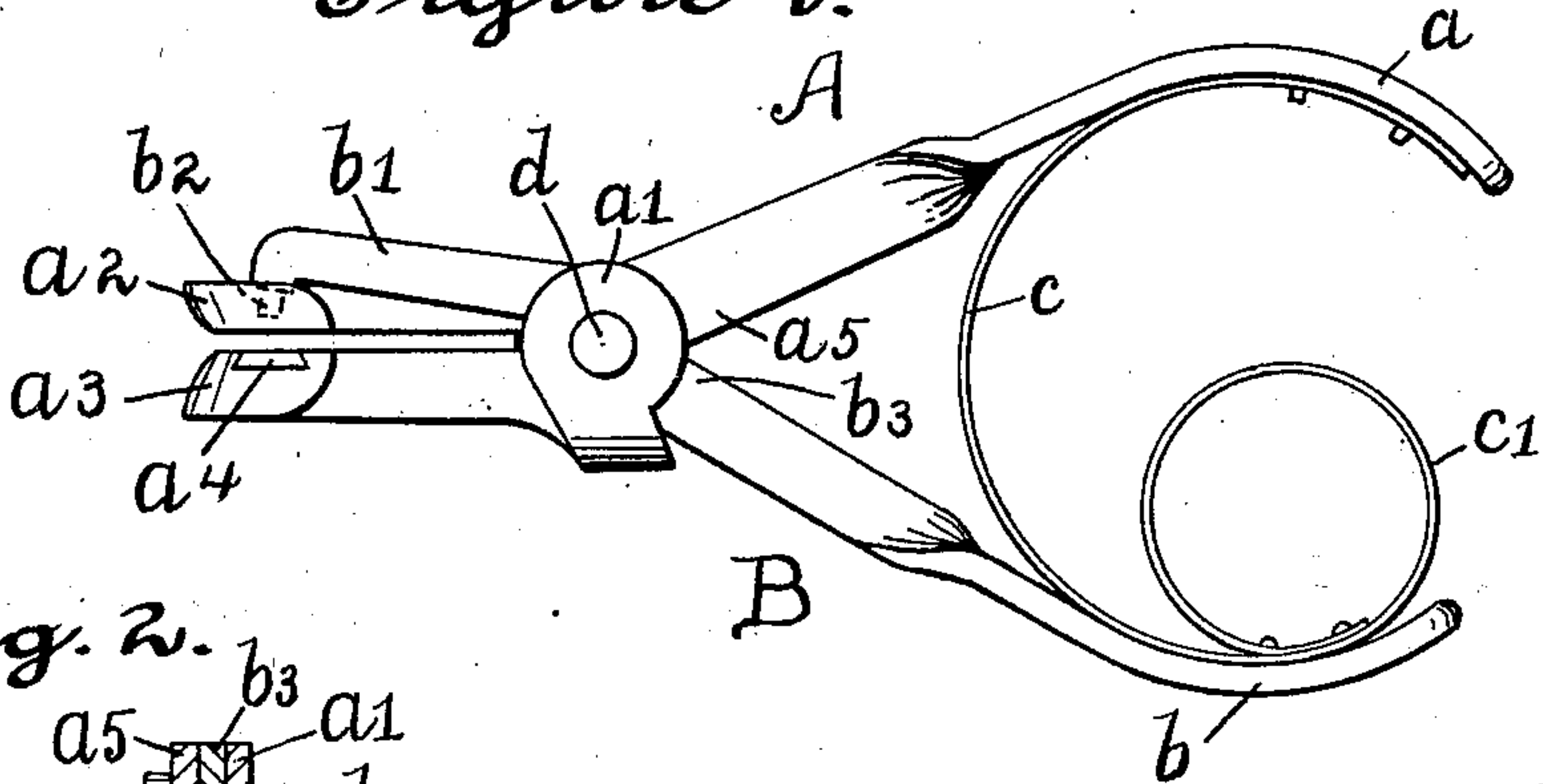


Fig. 2.

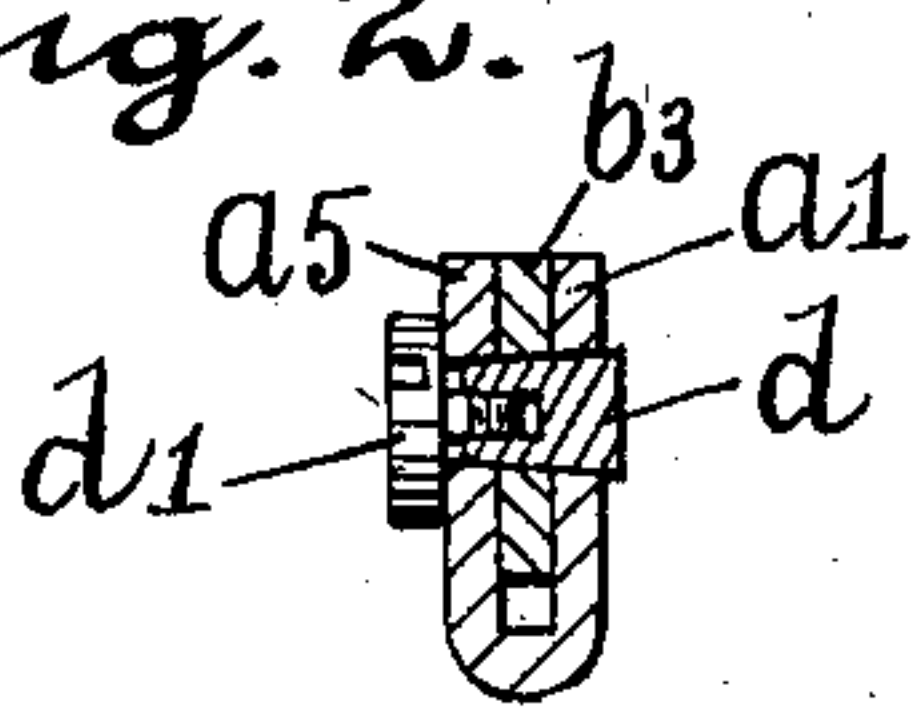


Fig. 3.

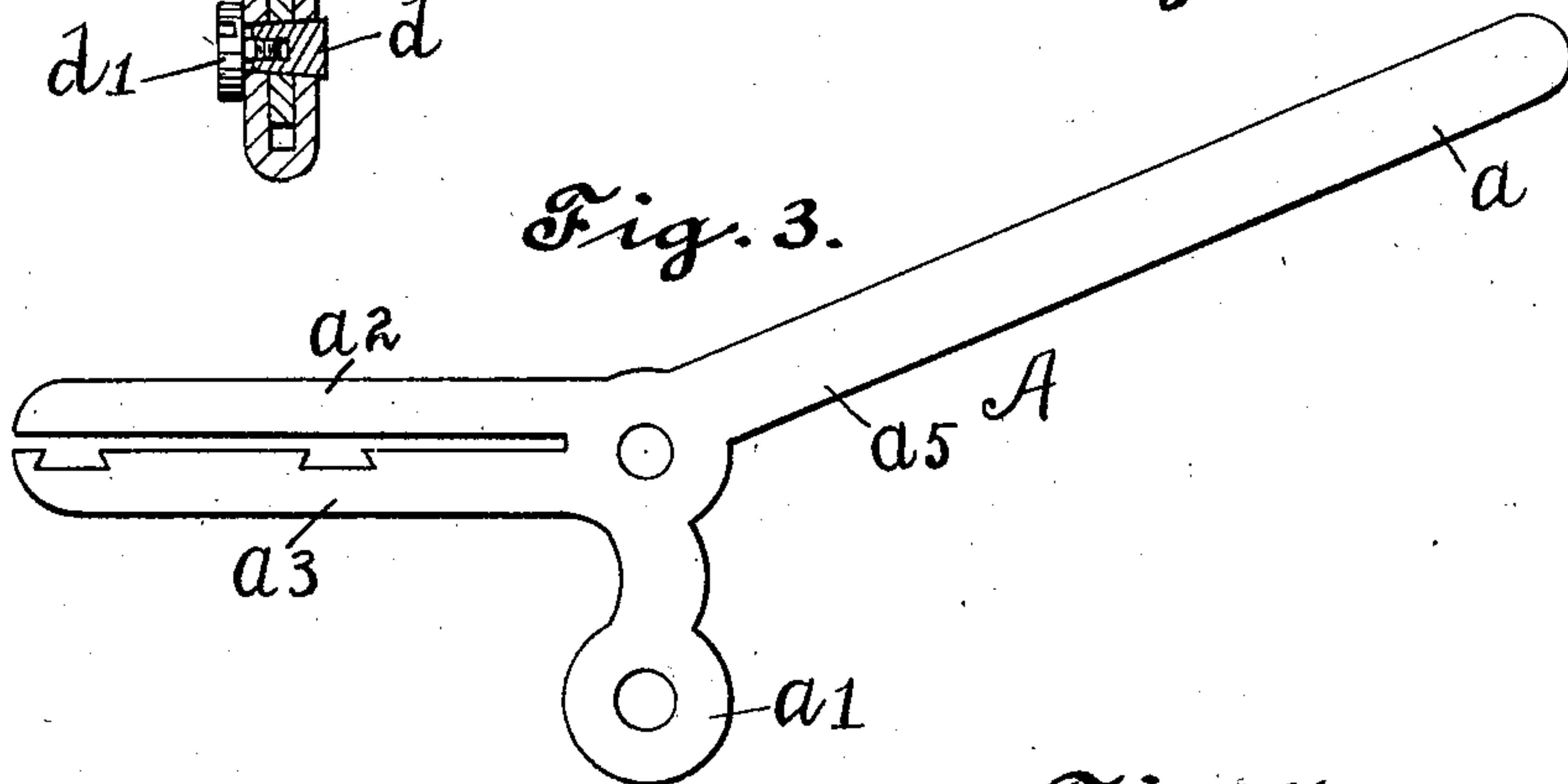


Fig. 4.

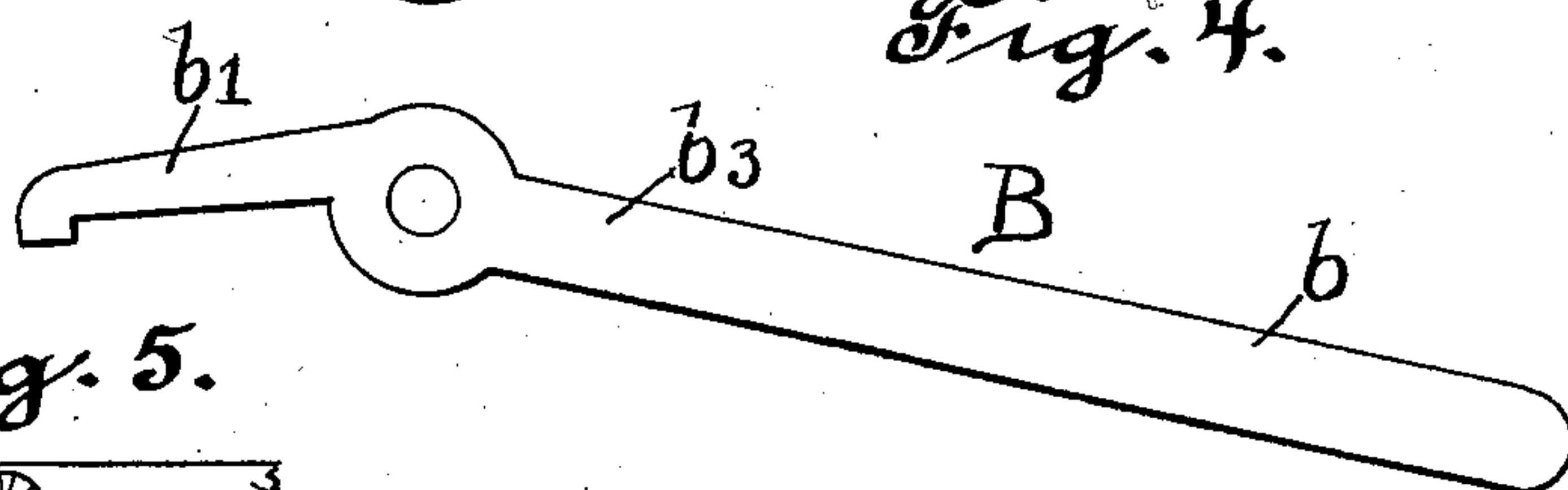


Fig. 5.

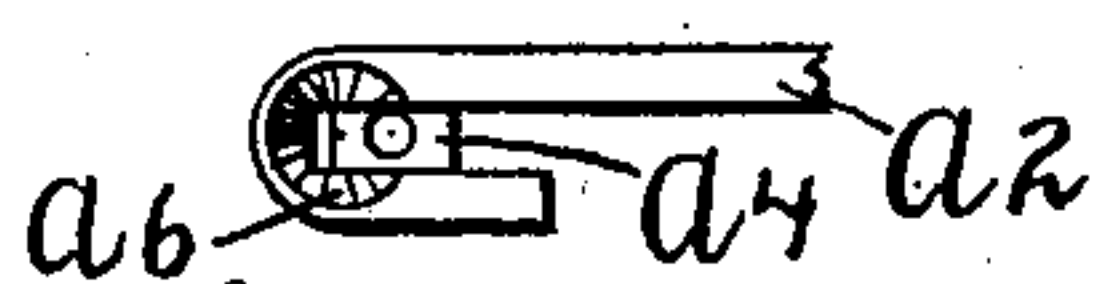
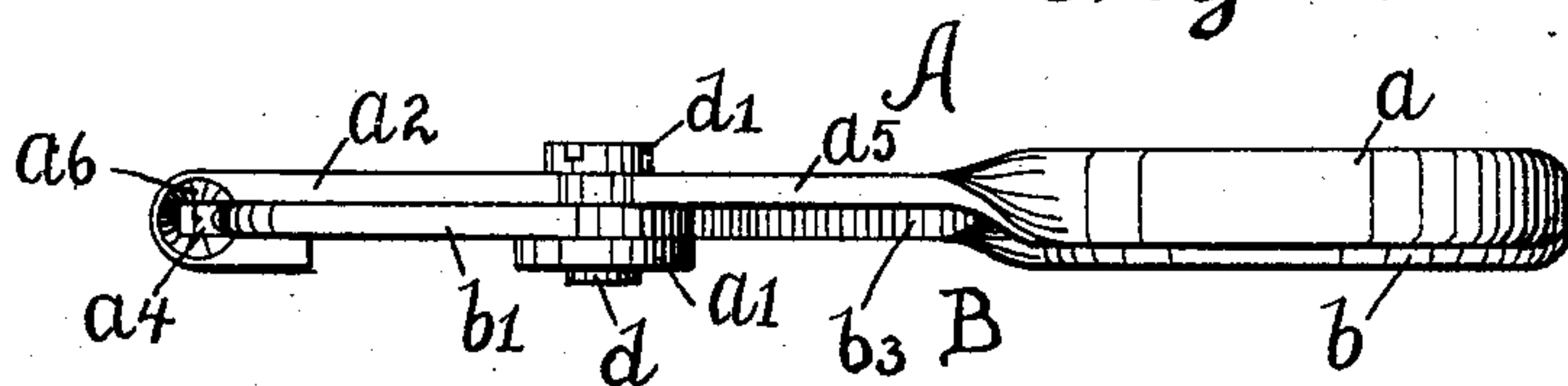


Fig. 6.



Witnesses:

Albert C. Bell.

Etha M. Smith.

Inventor  
Oscar S. Woodbury.

By his atty.

W. H. Cooley.

# UNITED STATES PATENT OFFICE.

OSCAR DAVIS WOODBURY, OF ROCHESTER, NEW YORK.

## PUNCH.

SPECIFICATION forming part of Letters Patent No. 720,309, dated February 10, 1903.

Application filed September 10, 1902. Serial No. 122,858. (No model.)

*To all whom it may concern:*

Be it known that I, OSCAR DAVIS WOODBURY, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a new and Improved Punch, of which the following is a specification.

This invention relates in its present embodiment more especially to that class of punches adapted to be used by conductors for punching tickets, transfers, &c., although some of the features thereof, as will be pointed out, are especially valuable in punches in general and in pliers, shears, and other similar tools.

One of the principal objects of my present invention is the production of a punch in which the two pivoted and coöperating members shall be capable of being struck out from sheet metal and so formed up and pivoted together as to secure a more satisfactory alinement of the coöperating parts.

Figure 1 is a side view of the punch complete. Fig. 2 is a vertical transverse sectional view of the punch, taken through the center of the joint-pin  $d$  thereof. Fig. 3 is a plan view of the member A as stamped or punched from sheet metal before any forming is done. Fig. 4 is a view similar to Fig. 3 of the member B. Fig. 5 is a detail top view showing the location of the die  $a^4$  in the member A. Fig. 6 is a top view of the punch complete.

Similar letters refer to similar parts throughout the several views.

Referring to the drawings, A and B are the two members of the punch, pivoted together by a taper pin  $d$ , as indicated in Fig. 2, this pin being securely held in place by screw  $d'$ .

The member A is so formed from the punched blank (indicated in Fig. 3) that the end  $a$  thereof by being given a quarter-twist forms the upper handle. The projection  $a'$  is folded parallel to the body  $a^5$  of the member A, so as to support the taper pin  $d$  at both ends and leave just sufficient clearance between them to accommodate the body  $b^3$  of the member B. The portion of the member A constituting the lower jaw  $a^3$  is folded back parallel to the inner portion thereof, so as to support both ends of the die-plate  $a^4$ , which is dovetailed into this lower jaw  $a^3$ , and the por-

tion  $a^2$  of the member A is folded back in a similar way, so as to leave such a space between the two folds of the portion or projection  $a^2$  that the upper jaw  $b'$  will just pass freely within and be guided thereby. The parts  $a^2$  and  $a^3$  are separated only by such a distance as to allow the material to be punched to be inserted between them. The part  $a^2$  has a countersunk opening in the outer end and on top, as seen in Figs. 5 and 6, to provide a sight-opening. This part  $a^2$  acts as a stripper, as will at once be understood.

The member B is formed from the blank indicated in Fig. 4, so that the end  $b$  thereof by being given a quarter-twist serves as the lower handle of the punch. The other end  $b'$  of the member B forms the upper jaw of the punch and carries, as indicated in Fig. 1, the punch proper,  $b^2$ , which, with its coöperating die, may be given any desired conformation.

The handles  $a$  and  $b$ , and hence also the jaws  $b'$  and  $a^3$ , are normally held apart by means of the spring  $c$ , integral with which is also formed a finger-ring  $c'$ , as indicated in Fig. 1.

What I claim is—

1. In a punch or similar tool, two coöperating members, one of them having a lateral projection formed thereon arranged to be bent around in the form of a **U** so as to form an additional or second support for the pin upon which the other member articulates, such first-named member and the projection thereon all lying in the same plane before being bent around to form such second support, and such projection on such first-named member also extending therefrom in a direction practically radial from the center of the hole for the pin upon which the other member articulates.

2. In a punch or similar tool a die-carrying member formed from sheet metal bent flatwise upon itself in the form of a **U** within which the die is located.

3. In a punch or similar tool, a die-carrying member formed from sheet metal bent flatwise upon itself in the form of a **U** and slotted and with the die supported upon one side of such slot and a guide for the punch formed upon the other side of such slot, the support for such die and the guide for such punch



formed by the U-shaped bend in the end of such member.

4. In a punch or similar tool, a die-carrying member formed from sheet metal bent flatwise upon itself in the form of a U and slotted and with the die supported upon one side of such slot, and a sight-opening and guide for the punch formed upon the other side of such slot, the support for such die, the guide for such punch, and such sight-opening formed by the U-shaped bend in the end of such member.

5. In a punch or similar tool, two cooperating members, one of them having a lateral projection formed thereon arranged to be bent

around in the form of a U so as to form an additional or second support for the pin upon which the other member articulates, and between the free ends in which such second member may be inserted, and with the holes for the pin upon which such second member articulates, located at the upper or outer ends of such U, such first-named member and the projection thereon all lying in the same plane before being bent around to form such second support.

OSCAR DAVIS WOODBURY.

Witnesses:

J. H. WOODWARD,

ETHA M. SMITH.