

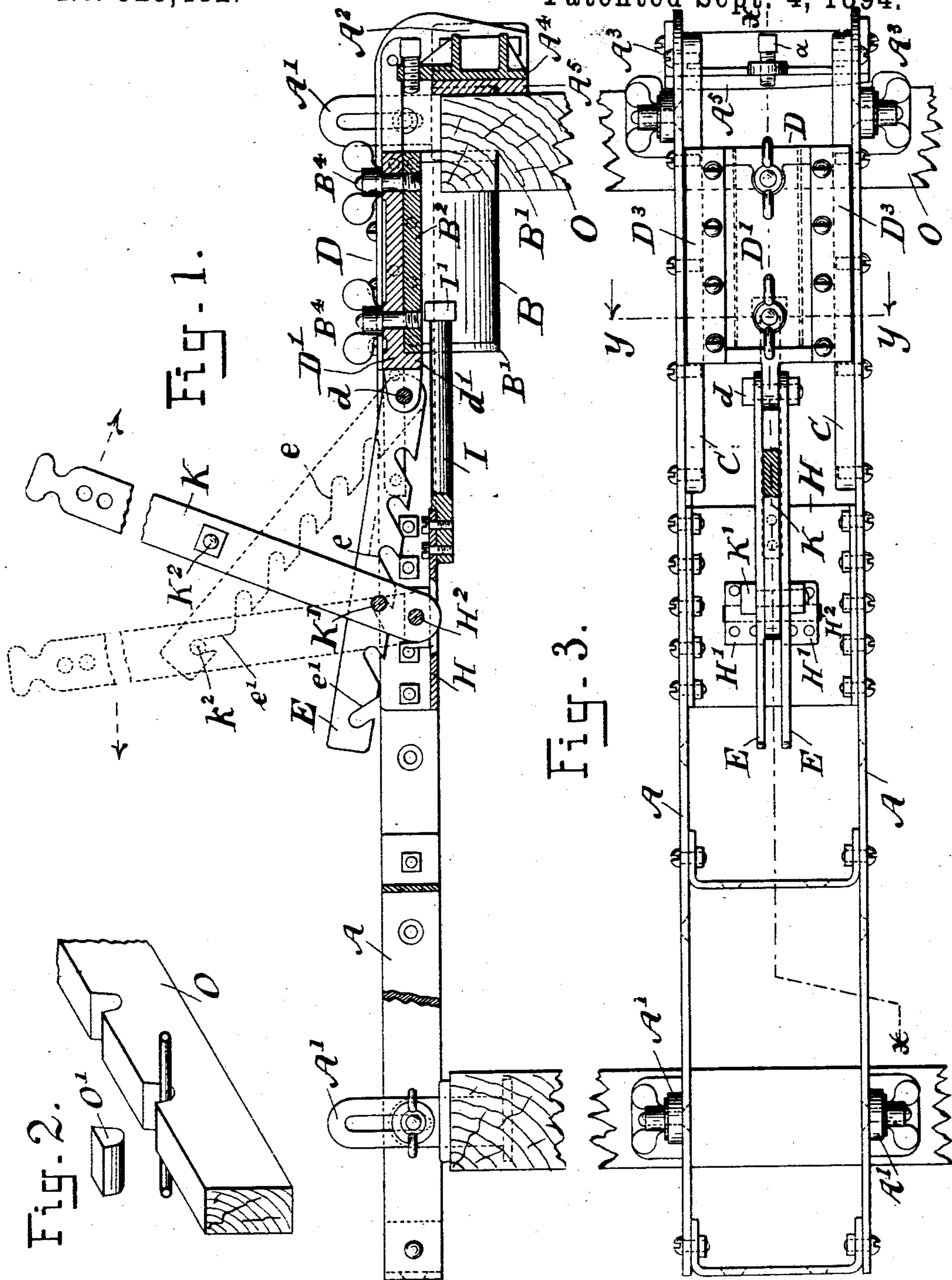
(No Model.)

2 Sheets—Sheet 1.

W. C. BLOOMER.  
GROOVING TOOL.

No. 525,482.

Patented Sept. 4, 1894.



Witnesses  
Chas. Hanemann  
B. A. Chamberlin

Inventor  
Walter Clark Bloomer  
By his Attorney  
Stephen J. Cox

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Fig. 4.

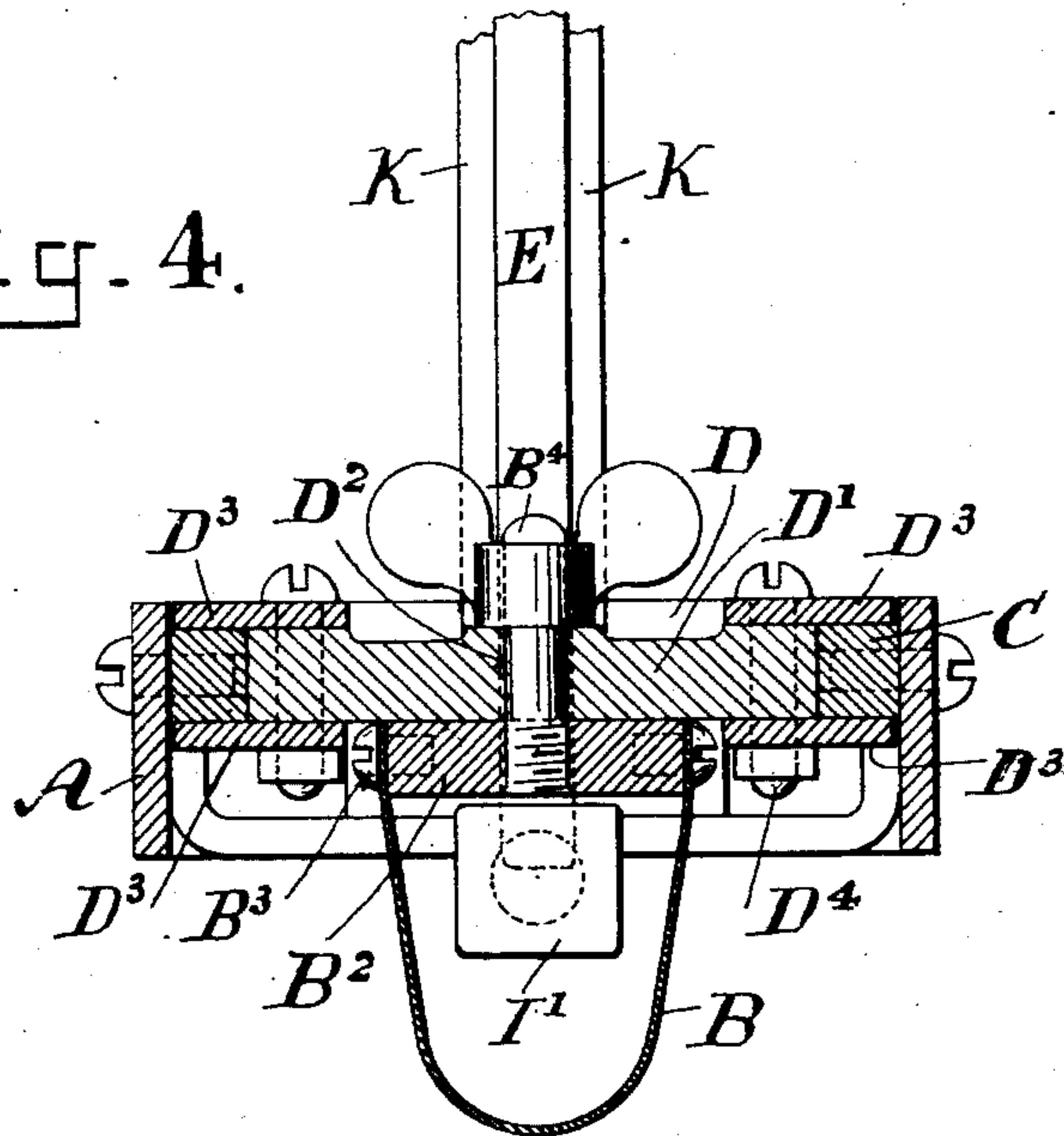


Fig. 5.

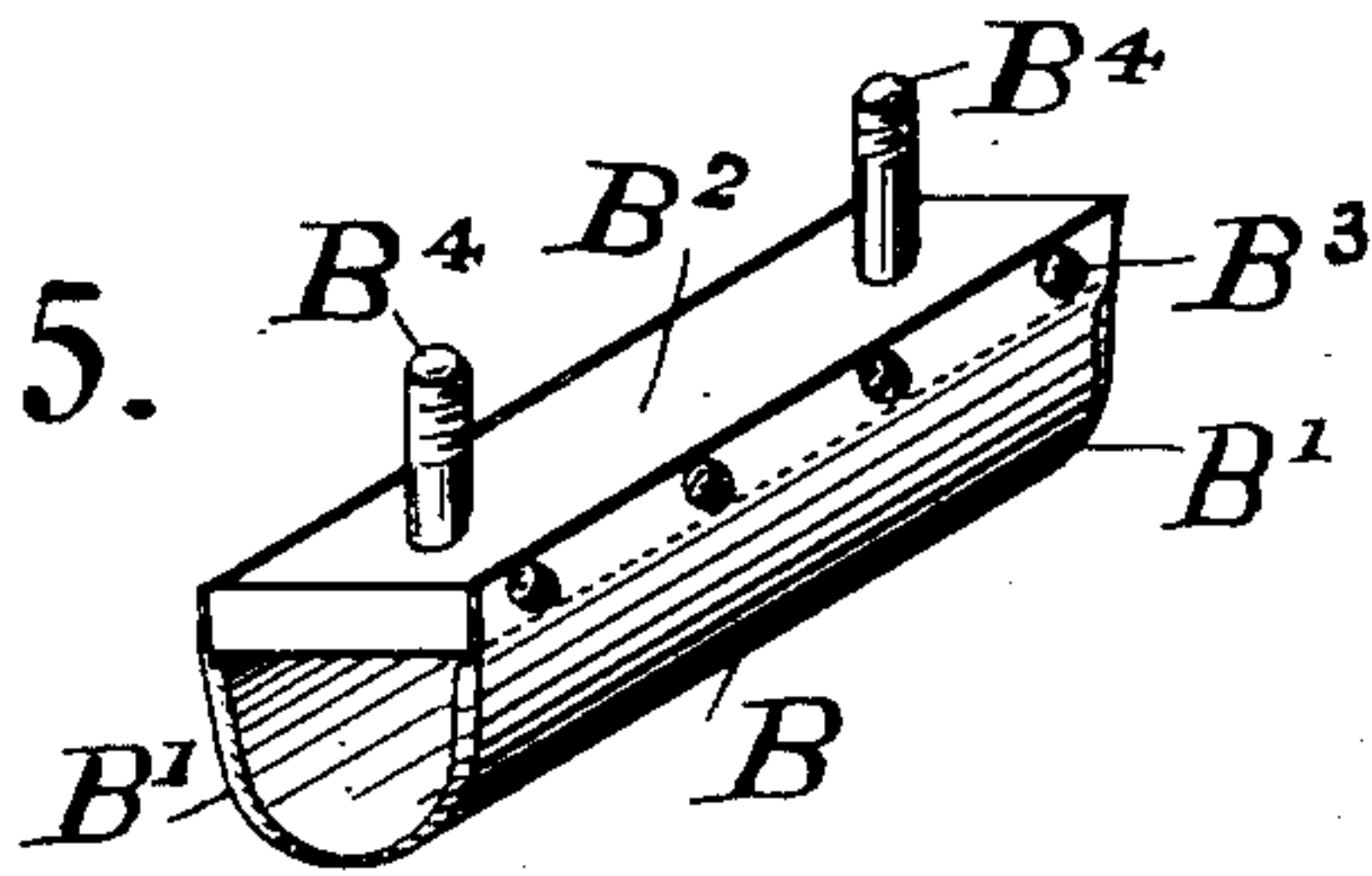
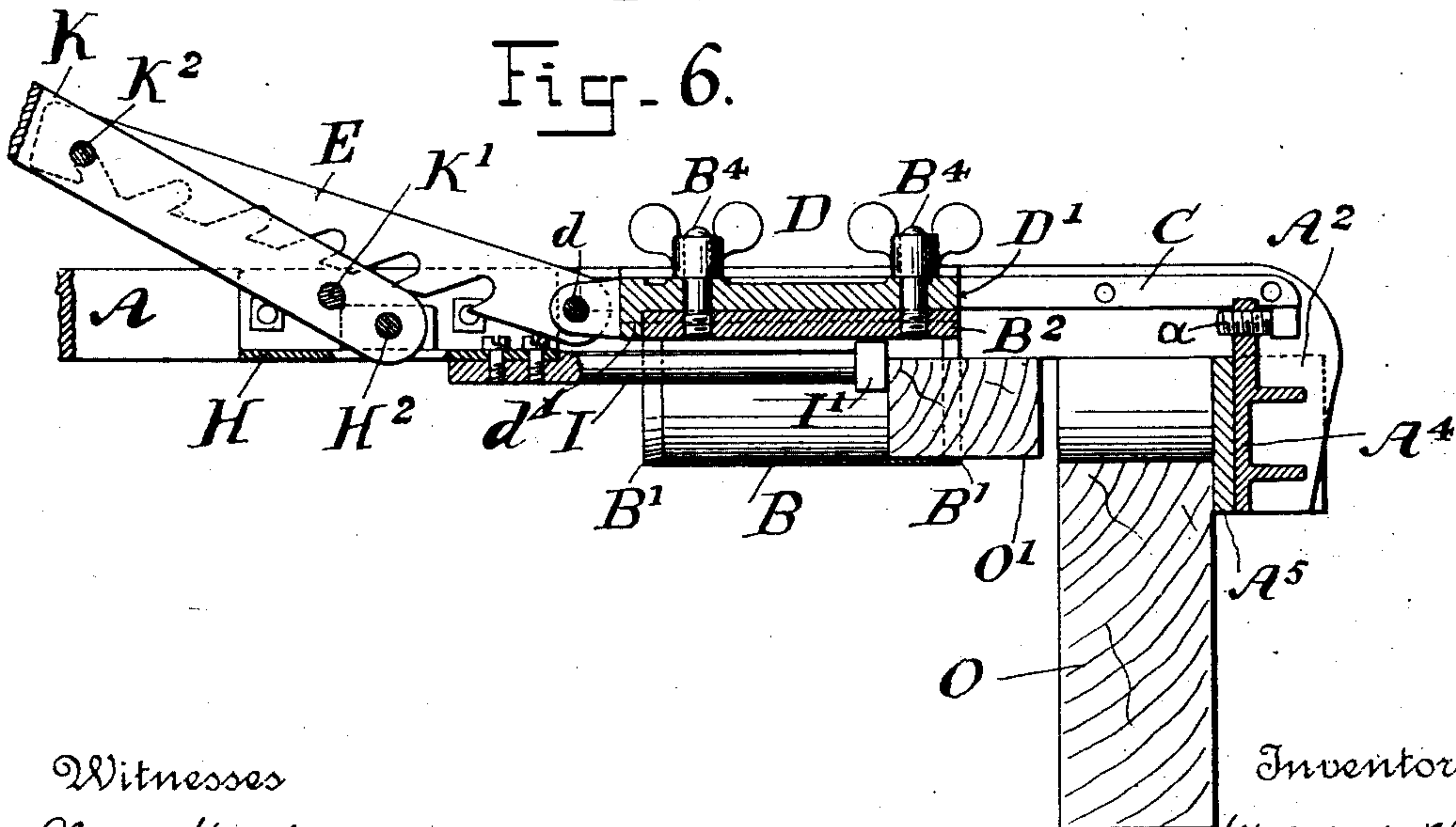


Fig. 6.



Witnesses

Chas. Hanemann  
B. A. Chamberlain.

Inventor

By his Attorney

Walter Clark Bloomer

Stephen J. Cox



# UNITED STATES PATENT OFFICE.

WALTER C. BLOOMER, OF BROOKLYN, NEW YORK.

## GROOVING-TOOL.

SPECIFICATION forming part of Letters Patent No. 525,482, dated September 4, 1894.

Application filed September 21, 1893. Serial No. 486,073. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER CLARK BLOOMER, a citizen of the United States, residing at Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Grooving-Tools, of which the following is a full and clear description, enabling others skilled in the art to which it pertains to make the same.

My invention relates to mechanics' tools, and particularly to such tools as are used in cutting notches or grooves in beams, for the purpose of laying therein, conduit pipes for electric wires, or the like. Its object is to enable a workman to rapidly form or cut in the beams on which any pipe or other like article is to be laid a groove adapted for the purpose intended.

It consists in the device illustrated in the accompanying drawings, in which like letters refer to like parts in each, and is described in the following specification:

Figure 1, is a partly longitudinal section and partly front view of device. Fig. 2, is a perspective of beam and core showing cut made by device, and pipe in position. Fig. 3, is a top view of device. Fig. 4, is a cross section of same on the line Y. Y. of Fig. 3. Fig. 5, is a perspective of cutter. Fig. 6, is a longitudinal section through X. X. of Fig. 3, in a different position.

Heretofore the usual method of cutting the grooves in beams where gas pipe, or conduit pipes of electric wires is to be laid, has been, for the workman to saw into the beams two cuts parallel with each other, and then cut or chisel out the wood between them, in this manner a channel is made in which the piping may be laid flush with the top of the beams, and under the flooring.

In the device described in this application a frame A, is provided, made of metal, this frame is arranged with slotted and adjustable lugs A', adapted to be operated by thumb nuts, by means of which the frame can be regulated on its bearings, that is, raised or lowered upon the beams, so that the depth of the channel to be cut can be exactly gaged. The frame A has fastened to or projecting downward from one end, a flange A<sup>2</sup>, which extends below the top of and over the beam to be cut, and acts as a stop to prevent the de-

vice from moving when operated, this flange A<sup>2</sup>, is securely fixed upon the head of the frame by bolts A<sup>3</sup>, it has also braces A<sup>4</sup> to strengthen it, it being essential that it be very strong, as the whole pressure of the thrust, as described farther on, is developed upon it. Upon the inner side of this flange is located a soft metal cushion plate A<sup>5</sup>; this plate made preferably of lead receives the cutting edge of the knife B, after it has passed through or out the groove in the wooden beam O.

Upon the inner side of the frame A, which as shown, best in Fig. 3, is a parallelogram in shape, is arranged a flange C; this is the slide upon which the carriage D to which the knife B is attached moves; this slideway does not extend along the entire side of the inside of the frame, but far enough to admit of the travel of the carriage D, when in operation.

The knife carriage D, is made of several parts bolted together; it has a top plate D', with one or more holes D<sup>2</sup> through it. Two flanges D<sup>3</sup> D<sup>3</sup> (see Fig. 4) are fastened to the top plate, by bolts D<sup>4</sup>. These flanges are guides to retain the carriage D in position upon the slideway when the device is operated.

The knife B is made of steel; it is reversible, that is, both ends are used for cutting; the blade is shaped in any suitable manner. In the drawings Fig. 5 it is U shape, but it may be made V shape, or in other forms, its top edge may be secured to the plate B<sup>2</sup> by bolts B<sup>3</sup>, or any other proper manner, the cutting edge B' is beveled, and sharpened to a chisel edge; the bolts B<sup>4</sup> pass through the top plate of the carriage through the holes D<sup>2</sup>, and by means of a thumb nut the knife is firmly secured, and the plates D, and B<sup>2</sup>, held together, the plate B<sup>2</sup> retains the blade of the knife in form; the top plate D, has upon its rear end a flange d', against which the plate B<sup>2</sup> abuts, and is fixed in position.

Directly behind the knife carriage, and attached to it, is a perforated lug, and to this lug is loosely pinioned by means of the pin d, the push bars E. These bars have a ratchet formed on them. These ratchets e, and e', run in two directions for a purpose described farther on. There are preferably two of the push bars.



H is a platform fixed to the frame A, and used as a fulcrum rest for the lever K; it is bolted to the frame securely. It has two posts H' with a perforation through them. The pin H<sup>2</sup> loosely holds the lever K, so that it can be moved backward and forward.

The lever K is pinioned to the platform loosely. A pin, K', is located near the lower end; another pin K<sup>2</sup> is placed farther up on the lever. These two pins are adapted to lodge in the ratchets of the push bars. The lower one K' when a push is induced on the lever operates in the ratchets e; the upper one when the core is being extracted, is lodged in the ratchet e'. Attached to the platform H, is a rod I, having a head I'. This rod is rigidly fixed, so that it extends into the inside of the knife B. Its purpose is to act as a core extractor when the knife is pulled back after cutting a groove in the beams.

Upon the upper part of the flange A<sup>2</sup>, and attached to the cross piece, which holds the frame together is a screw bolt, a. This bolt is placed there to limit the movement of the knife carriage. It acts as a stop or buffer, and can be adjusted so that when the knife carriage strikes it, the knife will not be forced into the lead plate A<sup>5</sup> to any great extent.

The operation of this device is as follows: When a beam is to be channeled, the lugs A' are adjusted to the proper height, and the device is placed upon the beam with the flange A<sup>2</sup> overhanging the edge of the beam to be cut, the knife being adjusted in its carriage, and the lever K fulcrumed at H<sup>2</sup>. The bolt K' on said lever, is adjusted in one of the ratchets e on the thrust bar. A forward pull toward the beam to be cut, throws the edge of the knife against the beam, the lever is thrown back again and the pin is lodged in another and lower notch on the thrust bar, again the lever is brought forward and the knife is forced into the beam O; this is repeated un-

til the knife has traversed the beam, and has rested its cutting edge in the lead plate A<sup>5</sup>. A channel corresponding with the shape of the knife used is thus made in the beam. The core O' of this channel remains in the inside of the knife; to force this core out the upper pin K<sup>2</sup> on the lever is adjusted in the notch e' on the push bar, and the movement of the lever is reversed, that is, it is moved backward, in doing this the knife carriage is drawn back, and the core bolt I enters into the knife forcing out the core; the knife is now in a position to be used again. As in almost every case a large number of beams must be cut, and as they always are adjoined, or in close proximity, the adjusting of the device to a number of cuts or beams is a matter of only a moment in each case.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a grooving tool the combination of the frame A, carriage D, knife B and adjustable lever K, with pins K' and K<sup>2</sup>, and thrust-bars e, as herein shown and described.
2. In a device for channeling beams, the combination of the frame A platform H, knife B, ratchet bars E, core extractor I, and adjustable lever K, with pins K' and K<sup>2</sup>, as herein shown and described.
3. In a grooving tool, the combination of the frame A, adjusting lugs A', flange A<sup>2</sup> carriage D, knife B ratchet bars E, and lever K, with pins K' and K<sup>2</sup>, as herein shown and described.
4. In a grooving tool, the combination of the frame A, adjusting lugs A', flange A<sup>2</sup>, knife B plate A<sup>5</sup> slidable carriage D, lever K with pins K' and K<sup>2</sup>, and ratchet bars E, as herein shown and described.

WALTER C. BLOOMER.

Witnesses:

HENRY GRAY,  
STEPHEN J. COX, Jr.