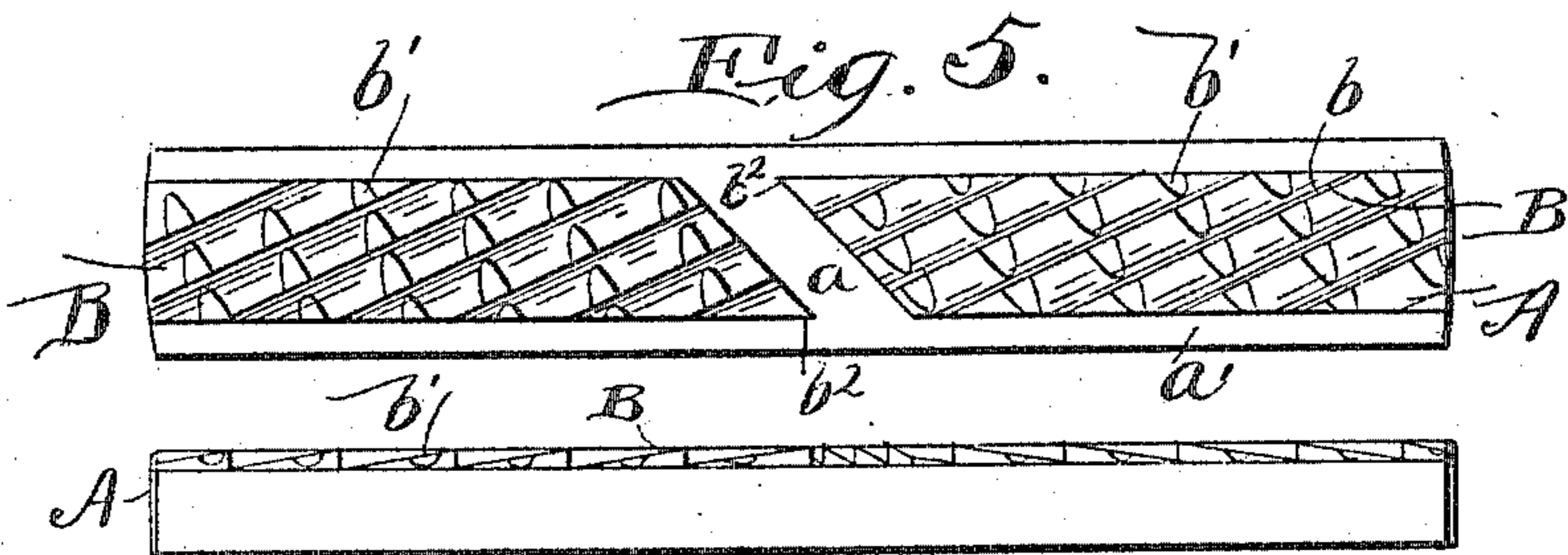
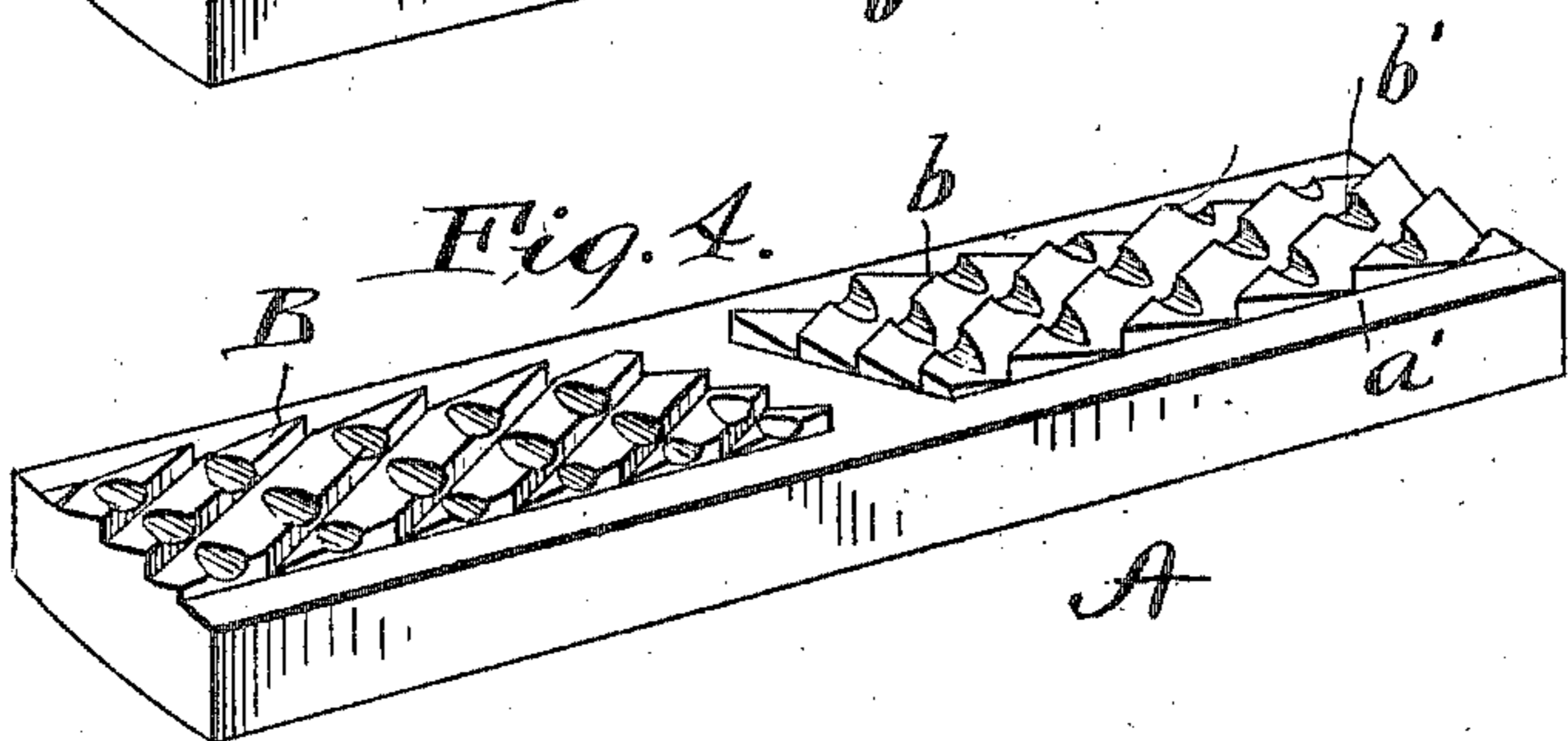
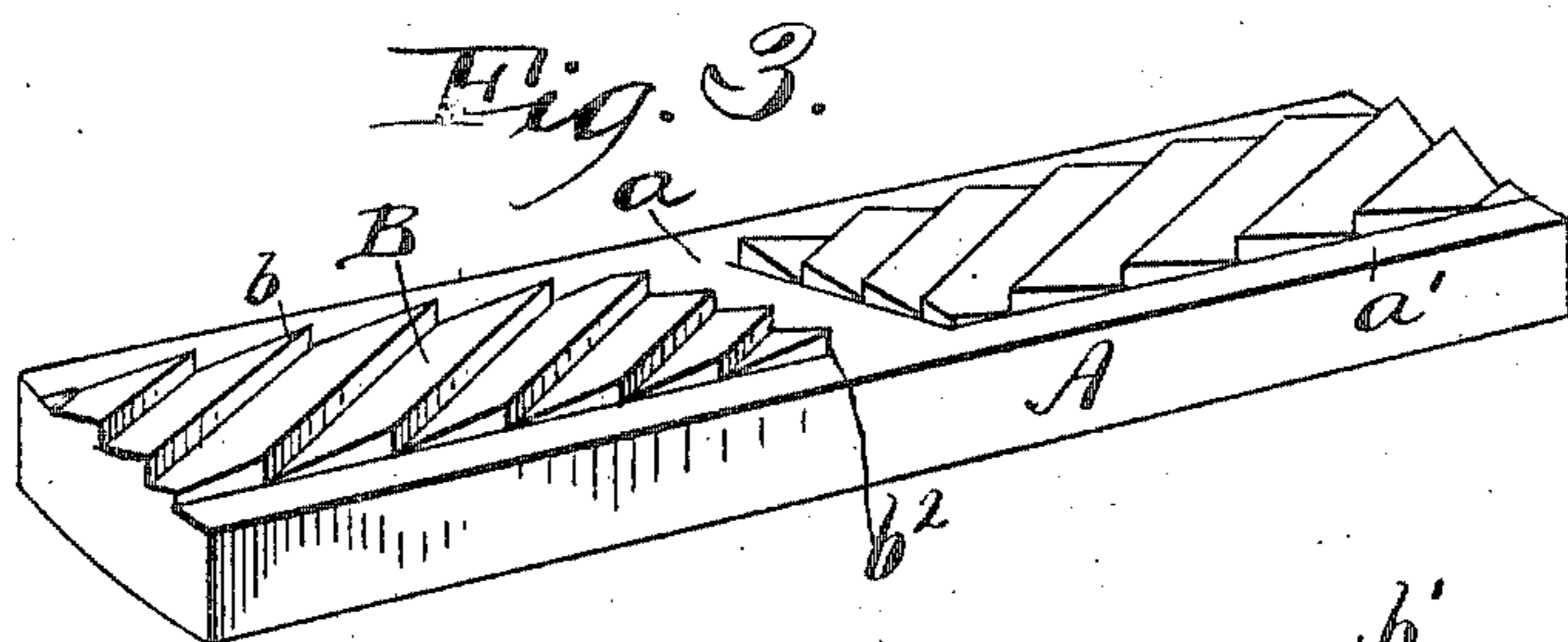
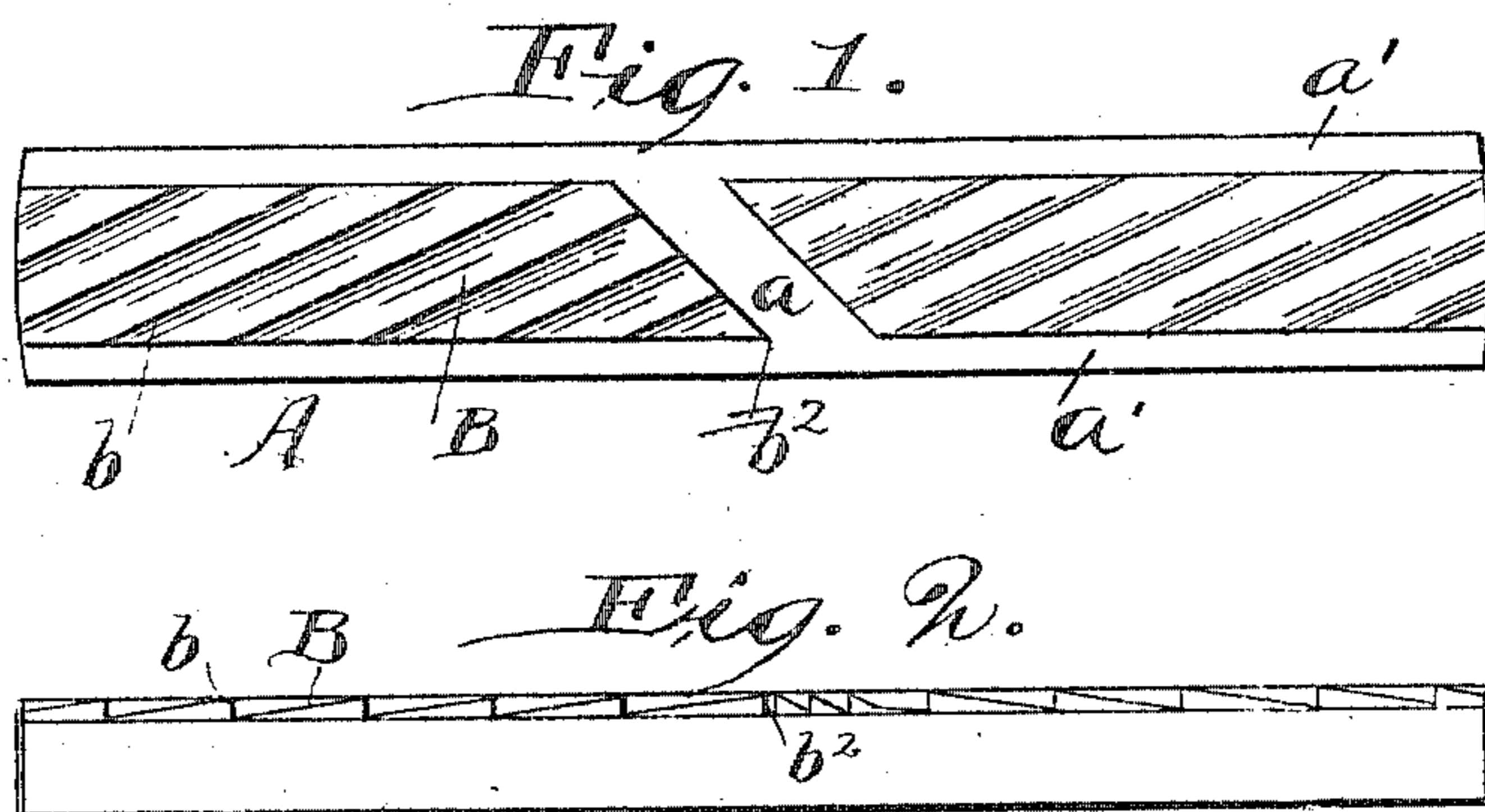


No. 817,502.

PATENTED APR. 10, 1906.

J. D. MITCHELL.
FACING TOOL.

APPLICATION FILED AUG. 12, 1904.



Witnesses.
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JAMES D. MITCHELL, OF LAKEWOOD, OHIO.

FACING-TOOL.

No. 817,502.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed August 12, 1904. Serial No. 220,454.

To all whom it may concern:

Be it known that I, JAMES D. MITCHELL, a citizen of the United States, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Facing-Tools, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

10 The object of this invention is to provide a very efficient tool for refacing valve-seats and similar structures.

My application, Serial No. 212,318, shows a hand-operated mechanism for rotating the tool on the face of a valve-seat. The present application relates to the facing-tool itself and may be most conveniently summarized as consisting of the features shown in the drawings hereof and hereinafter more fully described.

20 The drawings illustrate my invention embodied either in a roughing-tool or a smoothing-tool.

Figures 1, 2, and 3 are respectively a plan, an edge view, and a perspective view of a smoothing-tool. Figs. 4, 5, and 6 are respectively a perspective, a plan, and an edge view of the tool adapted for roughing.

Referring to the drawings, A represents the body of the tool, which is a comparatively long narrow block. On the face of this block are formed parallel diagonal ribs B. These ribs are arranged with cutting edges *b* parallel to each other. The forward faces of the ribs extend from the cutting edge to the body of the block in a direction at right angles to the block. The other face of the rib is a sloping plane extending from the cutting edge to the base of the succeeding rib.

40 The ribs are in two sets facing in opposite directions and located on opposite sides of the center of the block's face, so that as the tool is rotated the forward edge of the ribs will be continuously presented to the material operated upon. Between the oppositely-facing ribs there is a clear space which is devoid of ribs. This portion extends diagonally

nally from one side of the block across the center thereof to the other side. It operates to prevent any drag of the tool across the work.

On the face of the block adjacent to each longitudinal edge the ribs are omitted, forming a flat smooth portion *a'*. This is of value in tempering the tool, as it allows the jaws of the holding mechanism to extend over to the face of the tool, thus securely grasping it.

In the roughing-tool shown in Figs. 4, 5, and 6 I have formed grooves *b'* across the ribs, thus reducing the cutting length of the different ribs and allowing the tool to be fed to its work more rapidly.

I have found that I can make the most efficient cutting-tool by having the clear space *a* across the center of the face of such width and at such an angle that rather acute points *b²* are formed at the forward corner of each set of ribs, the two points overhanging each other on opposite sides of the traverse-line through the center of the face.

I claim—

1. A facing-tool comprising a block having a clear space across its face and diagonal ribs arranged parallel in two groups on opposite sides of said clear space and projecting out of the plane thereof, said clear space extending diagonally across the center of the face of the block, whereby acute cutting-points are provided.

2. A facing-tool comprising a block having a clear space across its face and diagonal ribs arranged in two groups on opposite sides of said clear space and projecting out of the plane thereof, said clear space extending diagonally across the center of the face of the block and of such width and at such an angle that the points of the two groups overhang the center.

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

JAMES D. MITCHELL.

Witnesses:

E. B. GILCHRIST,
E. L. THURSTON.