

S. M. MOORE.
Manufacture of Knife Blades.

No. 202,282.

Patented April 9, 1878.

Fig. 1.

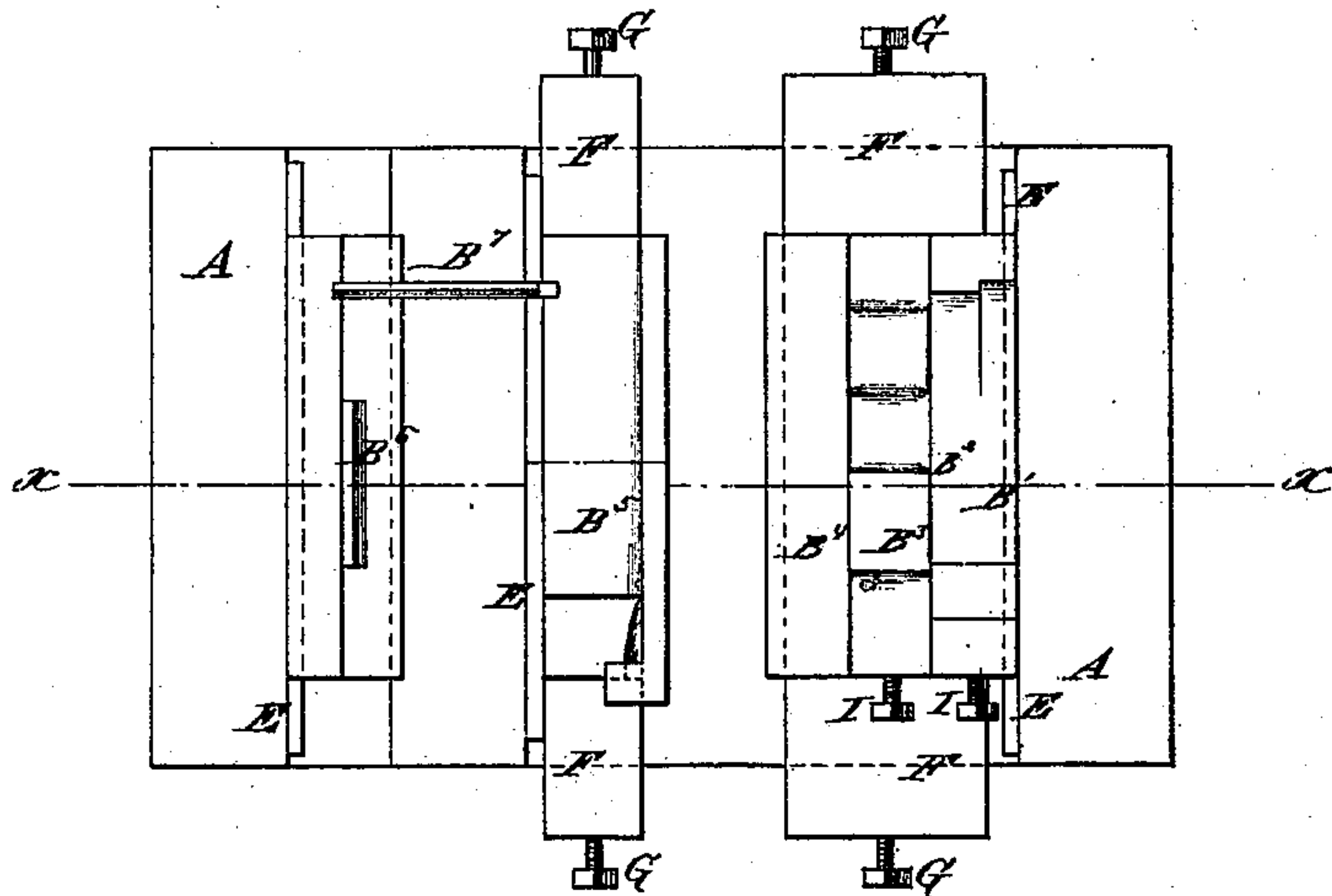
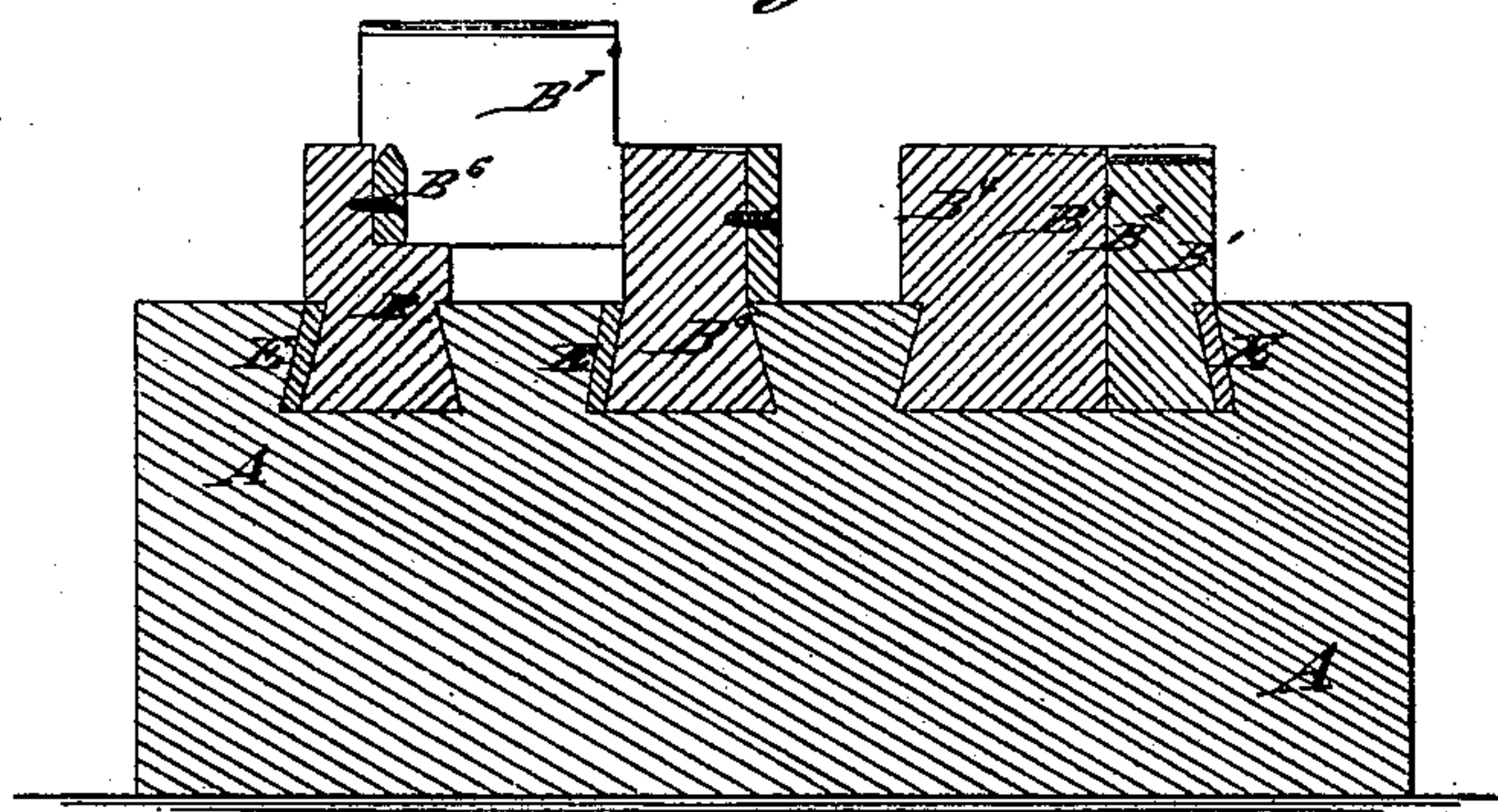


Fig. 2.



WITNESSES:

H. Rydquist
J. H. Scarborough.

INVENTOR:

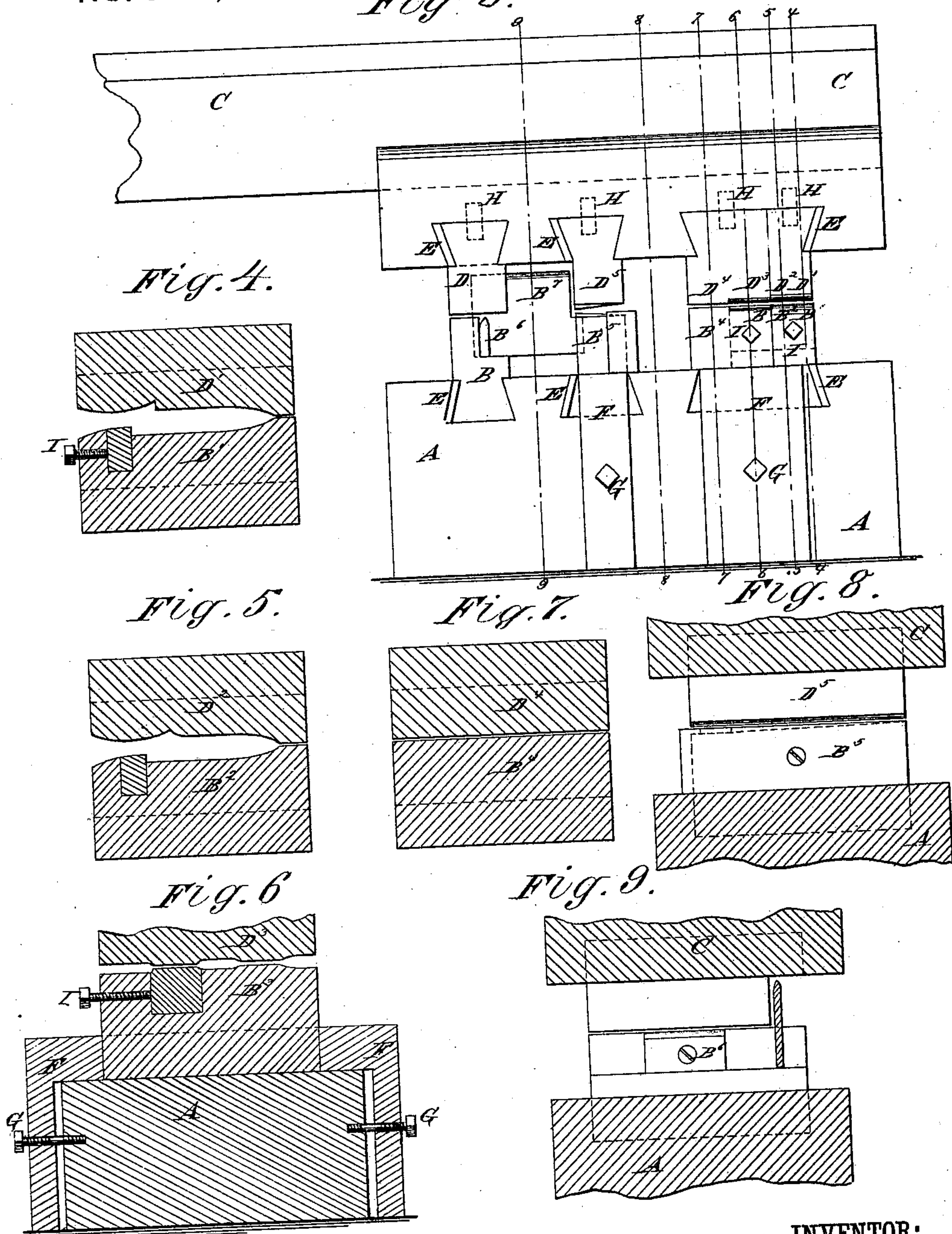
S. M. Moore.
BY *Munn & Co.*

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UNITED STATES PATENT OFFICE.

SILAS M. MOORE, OF CANASTOTA, NEW YORK, ASSIGNOR TO WILLIAM HURLBUT, OF SAME PLACE.

IMPROVEMENT IN THE MANUFACTURE OF KNIFE-BLADES.

Specification forming part of Letters Patent No. 202,282, dated April 9, 1878; application filed October 25, 1877.

To all whom it may concern:

Be it known that I, SILAS M. MOORE, of Canastota, in the county of Madison and State of New York, have invented a new and useful Improvement in Manufacturing Knife-Blades, of which the following is a specification:

The object of this invention is to accomplish the manufacture of blades for knives, razors, &c., by means of trip or drop hammers, driven by any motive power, from rod-steel, and in such manner that the grain of the steel at the junction of the blade and tang will not be injured or destroyed, thereby remedying a common defect in blades produced by hand-forging.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of the stationary or bed dies; Fig. 2, a vertical section of same at the line *x x*; Fig. 3, a side elevation of the upper and lower dies in place upon each other. Fig. 4 is a transverse section of the upper and lower dies at the line 4 4, Fig. 3; Fig. 5, a transverse section of same at the line 5 5; Fig. 6, a transverse section of same at the line 6 6; Fig. 7, a transverse section of same at the line 7 7; Fig. 8, a transverse section of same at the line 8 8; Fig. 9, a transverse section of same at the line 9 9.

As illustrated in the drawings, A is the bed in which the lower dies B are secured, and C the hammer-head, to which the upper dies D are secured. The dies are placed in dovetailed grooves formed in the bed and hammer-head, and are secured by keys E, driven into the grooves by the side of the dies. Several of the dies, being placed in the same groove, are all secured by a single key. The lower dies B are adjusted to coincide with the upper dies D by the bars F, attached to the sides of the bed A by set-screws G. The upper ends of these bars project into the grooves in said bed, and bear against the ends of the dies B, as shown in Fig. 6, so that by turning the screws G at either side, as may be required, the dies B can be quickly and accurately adjusted to their proper places. The upper dies D are

retained in their places by the dowel-pins H, which are inserted in their backs and into the hammer-head C.

The parts of the dies for forming the tangs are changeable, so that tangs of different sizes may be formed on blades of the same size. These parts are held in place and adjusted by set-screws I.

The operation of forging by these dies is as follows: The end of the steel rod is heated and narrowed on its point in the dies B¹ D¹, the shoulders are cut on the dies B² D², and the rod is drawn out and flattened in the dies B³ D³. It is then narrowed in dies B² D², again flattened in dies B³ D³, again narrowed in dies B² D², and flattened and smoothed in dies B⁴ D⁴. It is then drawn to an edge in dies B⁵ D⁵. The nail-nick is formed on the nick-chisel B⁶. It is again straightened in the dies B¹ D¹, B⁴ D⁴, and B⁵ D⁵, and is cut off by the chisel B⁷, a perfected forging, ready for the subsequent operations of grinding and finishing.

In forging knife-blades by hand, in reducing the thickness of the metal where the heel of the blade joins the tang, and in forming the cutting-edge of it, it is the universal practice of all smiths to drive the metal over to one face of the tang until the required thickness and bevel of the blade is obtained, and then to drive it back again until the thin edge is brought to the center of the edge of the tang. In doing this it is manifest that the perfect cohesion of the grain of the metal at this point is greatly impaired if not entirely destroyed, and from this cause proceeds the fracture of the blade at this point so common when subjected to the slightest strain. This defect is entirely remedied by my mode of forging blades, for the reason that the reduction of the metal at the point referred to is produced uniformly from both sides and at the same instant, whereby the grain of the metal, instead of being injured, is greatly improved by being condensed in the process of hammering.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In the manufacture of knife-blades, the combination of the series of dies, substantially

as herein described, for producing by successive forgings knife-blades, in the manner set forth.

2. The combination, with bed and anvils, of the bars F, applied as and for the purpose set forth.

3. The combination of the dowel-pins H with the dies D and the hammer-head C, substantially as herein shown and described.

4. The combination, with the dies B, of in-

terchangeable pieces, secured therein for varying the size and shape of the tang of the blades, as set forth.

SILAS ^{his} × MARKHAM MOORE.
mark.

Witnesses:

EDITH MOORE,
J. H. BELL.