

(No Model.)

2 Sheets—Sheet 1.

G. VAN RIPER.

APPARATUS FOR FORMING WOODEN SCOOPS OR SHOVELS.

No. 390,725.

Patented Oct. 9, 1888.

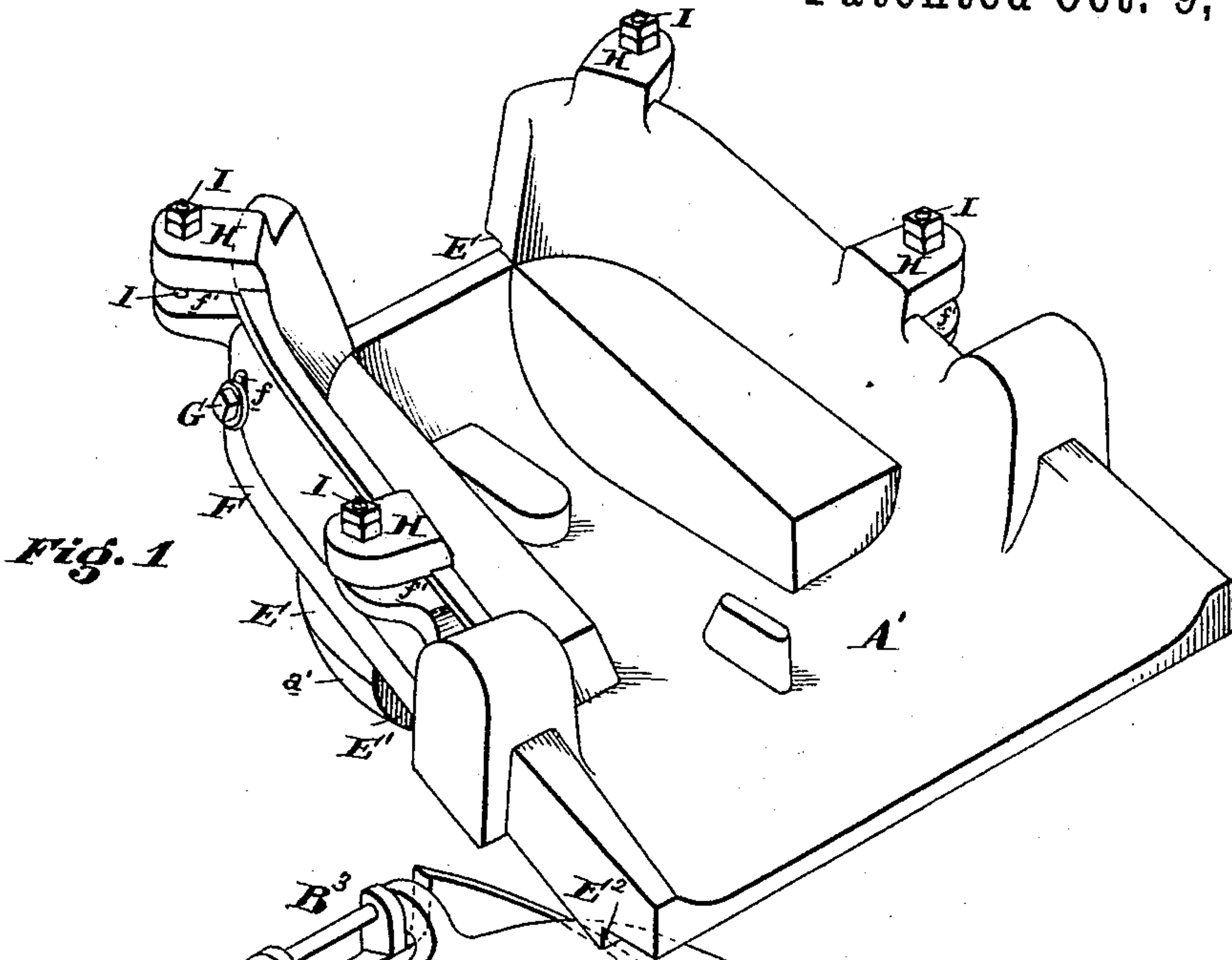


Fig. 1

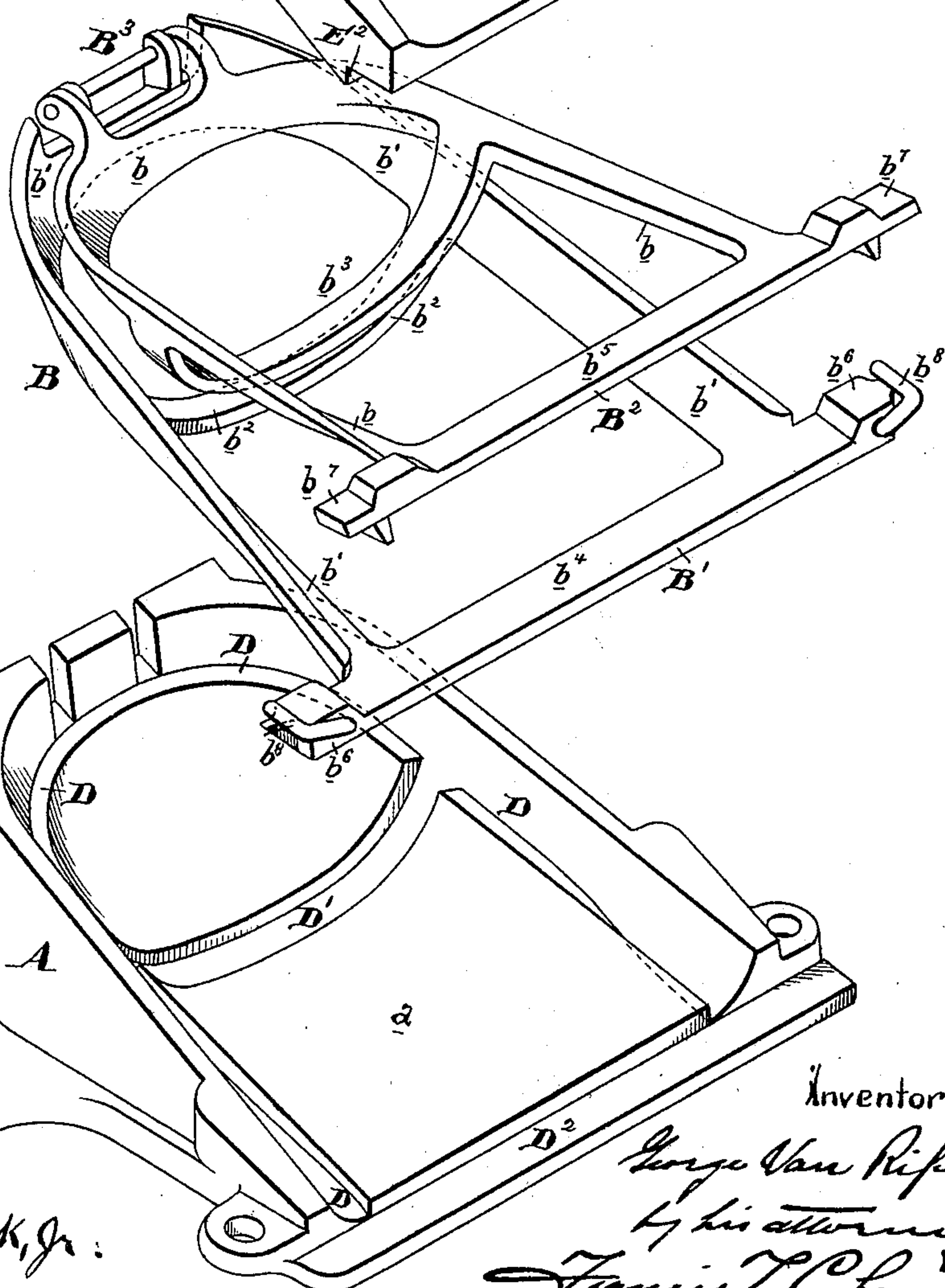


Fig. 2

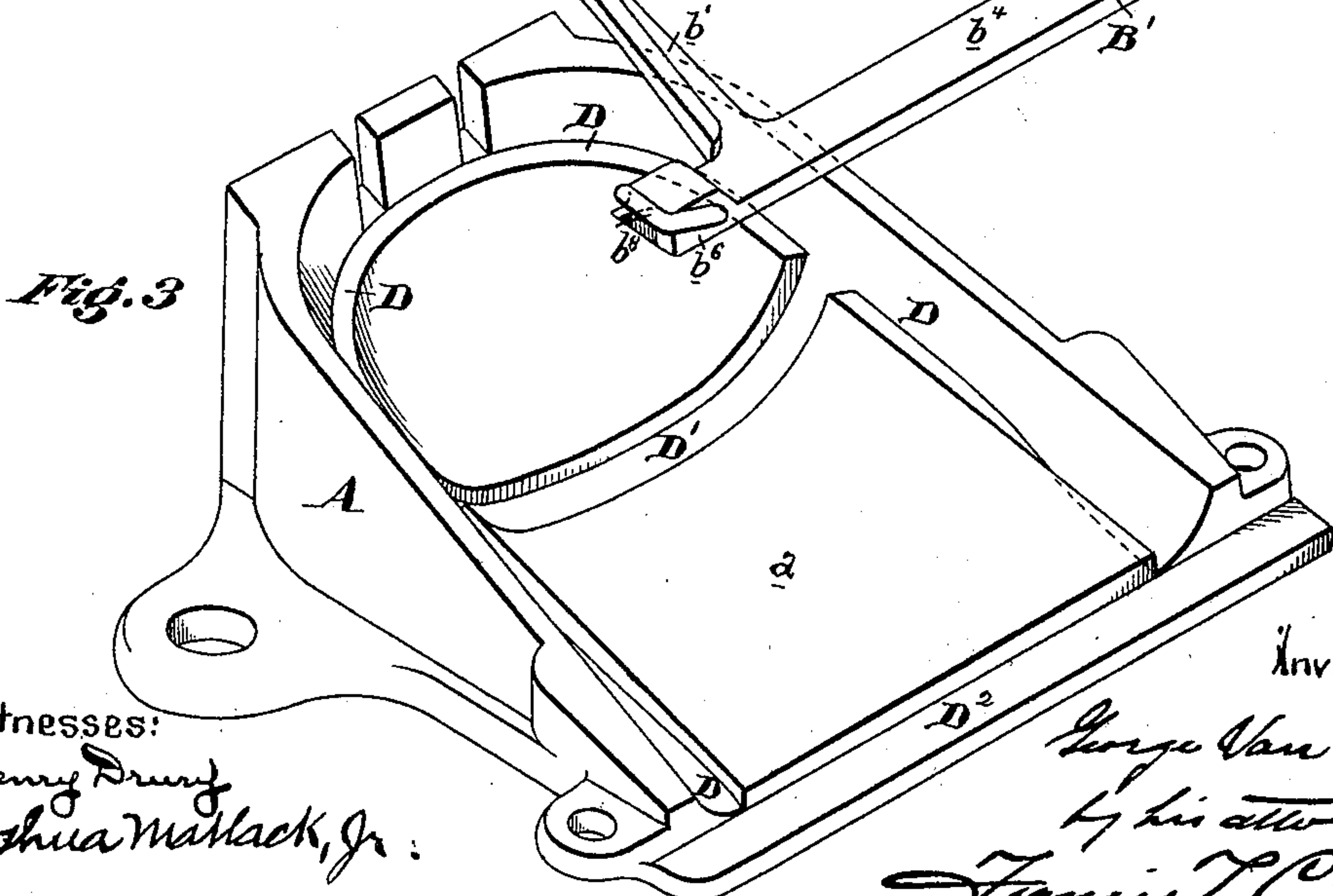


Fig. 3

Witnesses:  
Henry Drury  
Joshua Mottack, Jr.

Inventor:  
George Van Riper,  
by his attorney  
Francis T. Chamberlain

(No Model.)

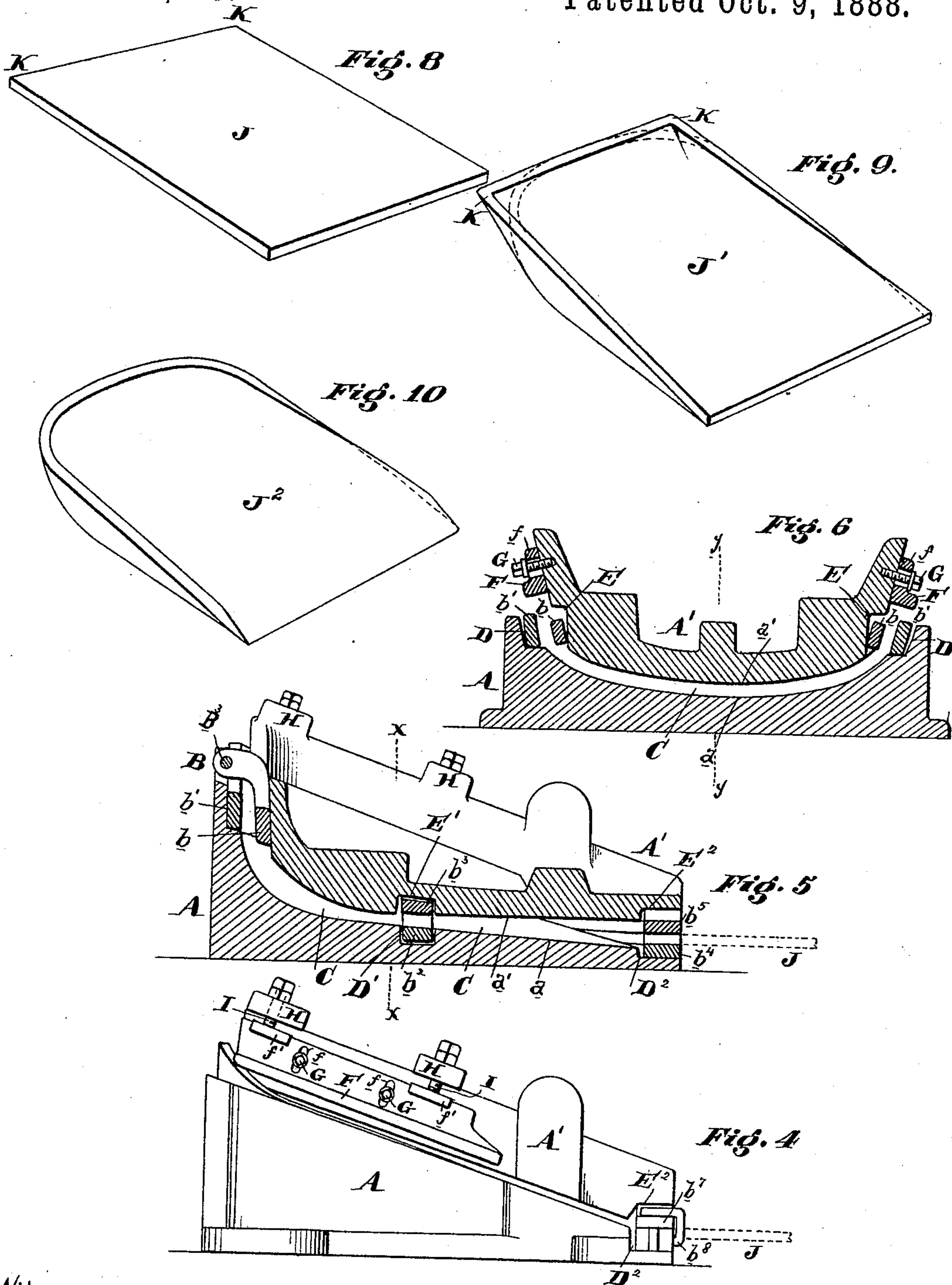
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# UNITED STATES PATENT OFFICE.

GEORGE VAN RIPER, OF ALBION, ASSIGNOR, BY MESNE ASSIGNMENTS, TO  
T. ROWLAND'S SONS, OF CHELTENHAM, PENNSYLVANIA.

## APPARATUS FOR FORMING WOODEN SCOOPS OR SHOVELS.

SPECIFICATION forming part of Letters Patent No. 390,725, dated October 9, 1888.

Application filed June 1, 1888. Serial No. 275,733. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE VAN RIPER, of Albion, county of Erie, State of Pennsylvania, have invented a new and useful Improved Ap-  
5 paratus for Forming Wooden Scoops or Shov-  
els, of which the following is a true and exact description, reference being had to the accom-  
panying drawings, which form a part of this specification.

10 My invention relates to the construction of  
apparatus whereby flat slabs of wood are  
formed into a scoop form to serve as the blade  
of a shovel or scoop. This forming of the  
blade has heretofore been accomplished by  
15 forcing the slab, after it has been prepared by  
steaming, between dies which bend it to the  
proper shape; but in the dies used prior to my  
invention the slab was subjected to certain in-  
jurious strains and was liable to split. These  
20 dies were also not entirely satisfactory in their  
forming action, and as the bent slab is in prac-  
tice necessarily removed from the dies at once  
after being bent, it was liable to lose its form  
and be distorted in drying.

25 The object of my invention is to arrange the  
dies so that they will exert the greatest press-  
ure on the slab in the lines where it is most  
required; to make the dies adjustable, so that  
slabs of different sizes can be bent in them,  
30 and to combine with the ordinary forming-dies  
a removable frame which, while not acting on  
the slab in the process of forming it into a  
scoop, will so engage and hold it that it can be  
removed from the dies in the frame and be held  
35 in the shape given it by the dies until suffi-  
ciently dry to be free from the tendency to lose  
its form or shape.

Reference being now had to the drawings  
which illustrate my invention, Figure 1 is a  
40 perspective view of the upper forming-die;  
Fig. 2, a perspective view of the removable  
frame which fits between the dies; Fig. 3, a  
perspective view of the lower forming-die;  
Fig. 4, a side elevation of the dies in position;  
45 Fig. 5, a central longitudinal cross-section of  
the dies and frame in the line *yy* of Fig. 6;  
Fig. 6, a cross-section on the line *xx* of Fig.  
5; Fig. 7, a perspective view of the adjustable  
forming-flange *F* of the upper die; Fig. 8, a  
50 perspective view of the wooden slab used to

form a scoop; Fig. 9, a similar view of the slab  
after it is formed in the dies, and Fig. 10 a  
view of the completed scoop-blade.

A indicates the lower and *A'* the upper  
forming-dies, *a* being the forming-surface of 55  
die A, and *a'* the forming-surface of die *A'*.  
These dies are arranged in any convenient  
framing, so that when in operative position  
the space C will be left between *a* and *a'*, and  
the die *A'* is made movable by a hinge or oth- 60  
erwise, so that it can be thrown up from die  
A to permit of the withdrawal of the slab after  
it is brought to shape. These dies, generally  
speaking; and their connections form no part  
of my invention, and need not therefore be 65  
further described.

B is my removable frame, made of two parts,  
*B'* and *B<sup>2</sup>*, preferably hinged together at one  
end, as *B<sup>3</sup>*, and provided with some locking  
device at their other end to hold the parts *B'* 70  
and *B<sup>2</sup>* together.

The part *B'* of frame B is made up of a  
curved rim, *b'*, connected together by a bar,  
*b<sup>4</sup>*, the upper surfaces of the rim and bar con-  
forming to the curvature of the die-surface *a* 75  
in the parts on which the edges of the slab will  
rest. One or more cross-bars, *b<sup>2</sup>*, should be  
formed with part *B'* to strengthen the frame  
and coact with the part *B<sup>2</sup>*, as will be described.  
The upper surface of this bar or bars must also 80  
conform to the surface of the corresponding  
part of die-face *a*.

The part *B<sup>2</sup>* of frame B is in shape similar  
to the part *B'*—that is, it is made up of a curved  
rim, *b*, bar *b<sup>5</sup>*, and cross-bar *b<sup>3</sup>*, the inner or 85  
lower surfaces of which must conform in shape  
to the curvature of the die-face *a'*. The ends  
*b<sup>6</sup>* of bar *b<sup>4</sup>* and ends *b<sup>7</sup>* of bar *b<sup>5</sup>* are prolonged  
and formed to serve as stops to prevent the  
parts *B'* *B<sup>2</sup>* from approaching too close together, 90  
a hinged link or catch, *b<sup>8</sup>*, being provided at  
each end to lock the parts together.

The surface *a* of the die A is cut away at D,  
*D<sup>2</sup>*, and *D'* to admit the rim *b'*, bar *b<sup>4</sup>*, and  
cross-bar *b<sup>2</sup>* of part *B'*, the slots being of such 95  
depth as to enable the part *B'* of frame B to be  
entirely below or flush with the die-face *a*.  
The surface *a'* of die *A'* is similarly cut away  
at E, *E<sup>2</sup>*, and *E'* to admit the parts *b*, *b<sup>2</sup>*, and *b<sup>3</sup>*  
of part *B<sup>2</sup>* of frame B, so that when the frame 100



B is inserted in the die, as shown, it does not obstruct the forming-surfaces  $a a'$ , but is virtually incorporated with them.

The blank J (see Fig. 8) is inserted at the 5 end of the die and thrust up between the forming-surfaces  $a a'$ , as is indicated in Figs. 4 and 5. The die A' is then removed or thrown back, and the frame B, which now holds the slab bent to the form shown at J', Fig. 9, removed 10 to a drying-room, another frame being inserted in the dies before another blank is bent to shape. After the scoop is sufficiently dry and set the catches  $b^3$  are thrown back, the blank J' removed from frame B, and then trimmed 15 to form, as at J<sup>2</sup>, Fig. 10.

The strains brought upon the frame B are very severe, and, as it is preferably of light construction, it is very liable to break under them. After many tests with different materials I have concluded that malleable-iron castings will be the best for use as parts B' B<sup>2</sup> of frame B. 20

To pass now to another feature of my invention, I would call attention to the fact that, as 25 shown in Figs. 8 and 9, the slab or blank is square, and that the corners K K are not cut away until after the scoop is pressed to shape, these corners K serve an important purpose in the manufacture of the scoops. Along the 30 sides of die A', I secure flanged plates F F, made vertically adjustable by means of slots  $f f$ , through which the bolts G G, which secure them to the die, pass. Lugs  $f' f'$  are formed on the plates F, so as to come beneath threaded 35 lugs H H, extending out from die A', and set-screws I I pass through lugs H and rest on lugs  $f'$ , to resist upward pressure and enable the position of the flanged plates to be adjusted at will. The corners K K of the blank J press 40 against the flanged plates F as the slab is forced between the dies, and their action is to press

the upper end of the slab down against the most curved portion of face  $a$  and to compress the wood along the said upper end. In this way they bring great pressure to bear just 45 where it is needed to accomplish the greatest work, and they also relieve the strains which in the dies without the flanged plates F were found harmful.

Having now described my invention, what I 50 claim as new, and desire to secure by Letters Patent, is—

1. In an apparatus for forming the blades of wooden shovels, the combination, with the dies A A', of the adjustable flanged plates F F, se- 55 cured on the edges of the fixed die A, so as to engage the upper corners of the blank and compress the upper edge thereof as it is forced between the die-faces, all substantially as and for the purpose described. 60

2. In an apparatus for forming the blades of wooden shovels, the combination of the dies A A' and the removable frame B, made up of the parts B' and B<sup>2</sup>, and formed so that the space 65 between said parts will conform to the space between the die-faces, said dies A A' being cut away to permit the frame to lie outside the forming-surfaces, so that in forcing the blank into the die it will be embraced by the frame B, all substantially as and for the purpose de- 70 scribed.

3. In an apparatus for forming the blades of wooden shovels, the combination, with the dies A A', of the adjustable flanged plates F F and the frame B, said dies being cut away to per- 75 mit the frame to lie outside of the forming-surfaces, all substantially as and for the purpose described.

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Witnesses:

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C. C. BURCH.