

(No Model.)

3 Sheets—Sheet 1.

A. B. HUTCHINSON & E. F. AUTENRIETH.
PLANING MACHINE.

No. 406,583.

Patented July 9, 1889.

Fig. 1.

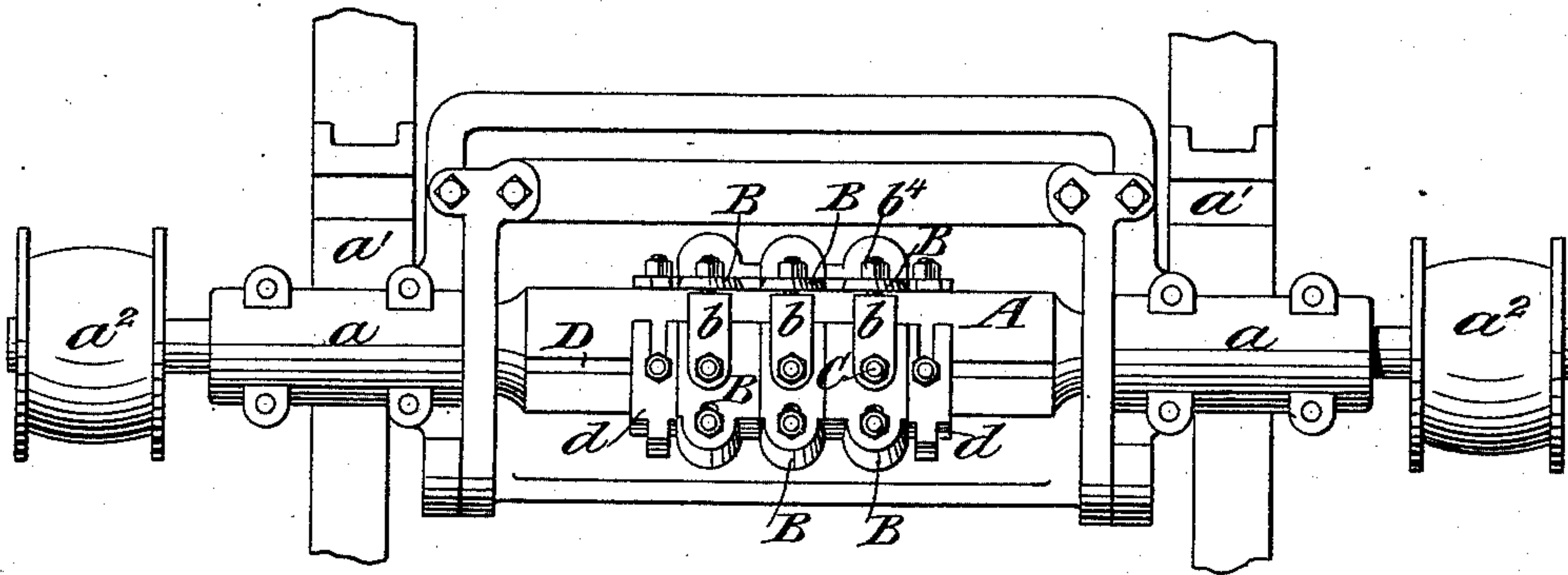


Fig. 2.

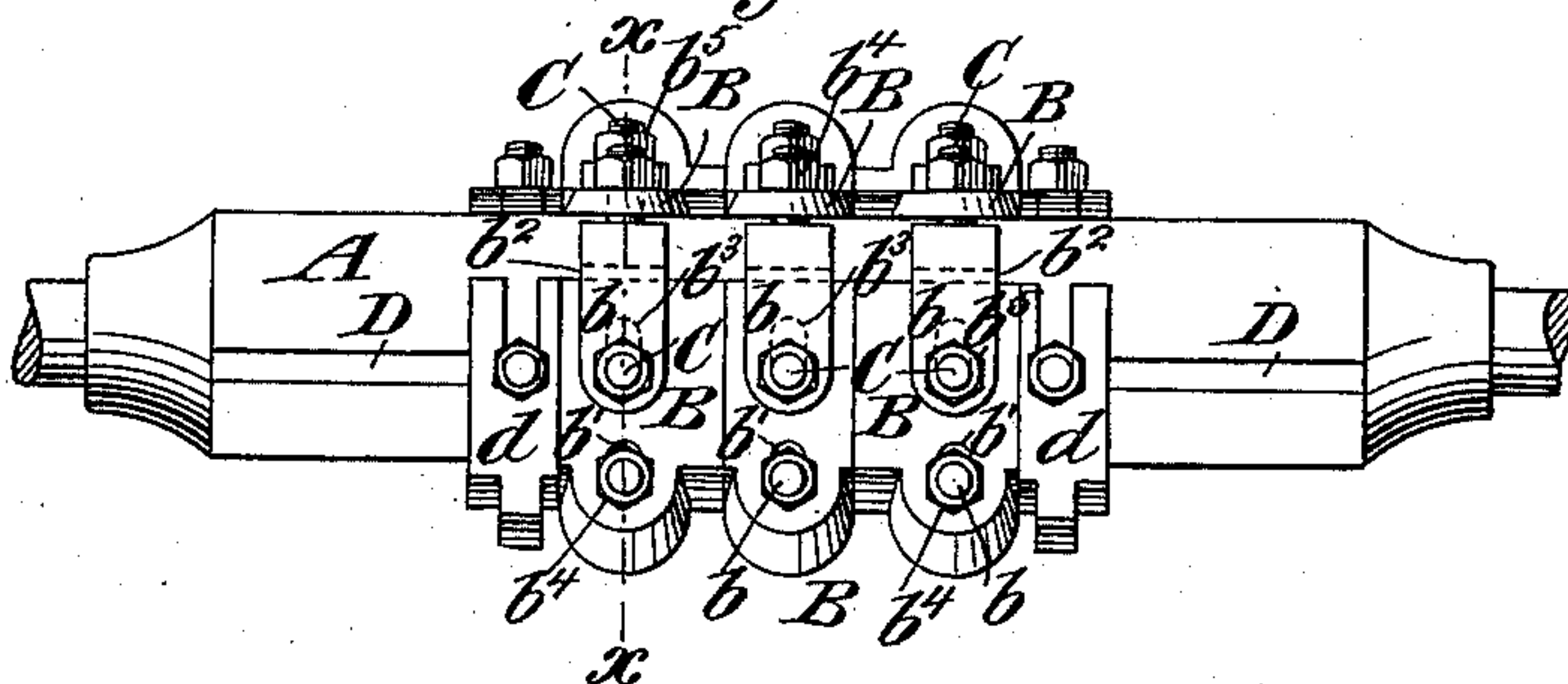
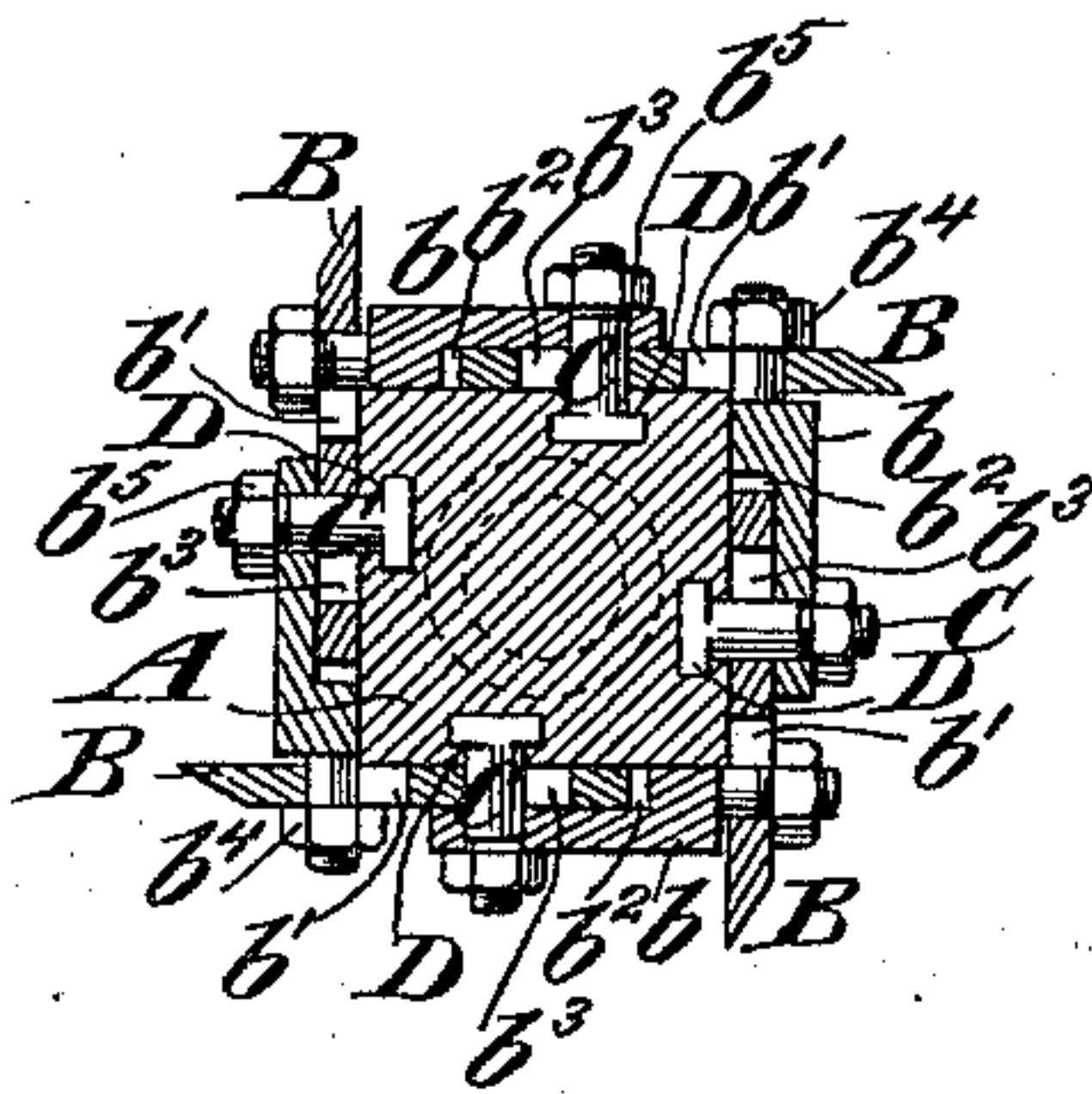


Fig. 3.



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by their Attorney
Brown & Snowball

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Fig. 4.

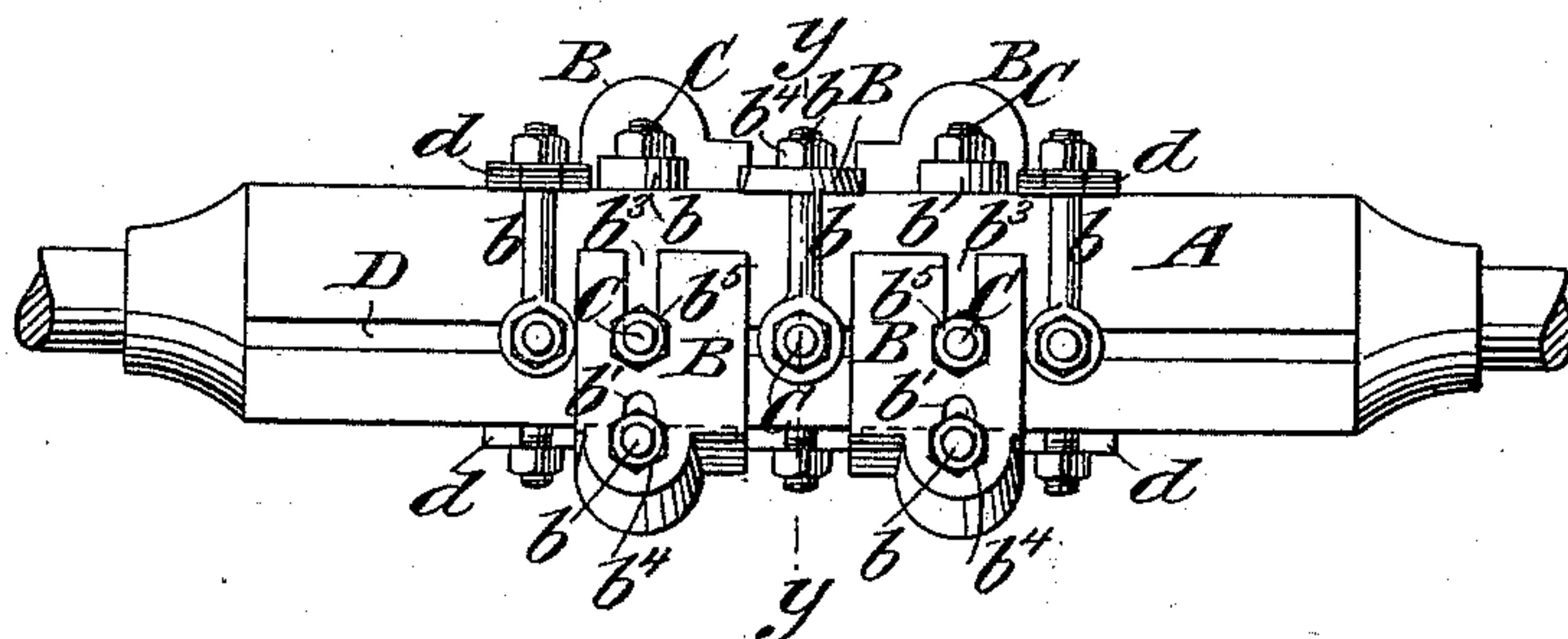


Fig. 5.

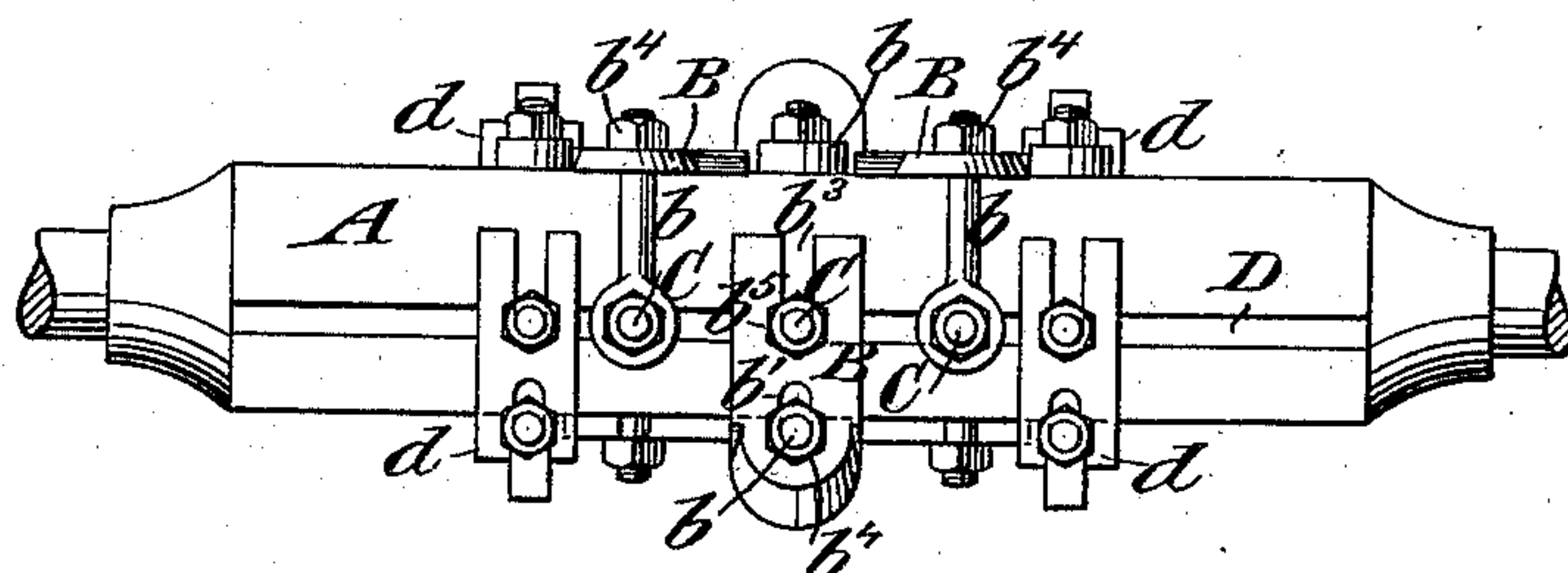
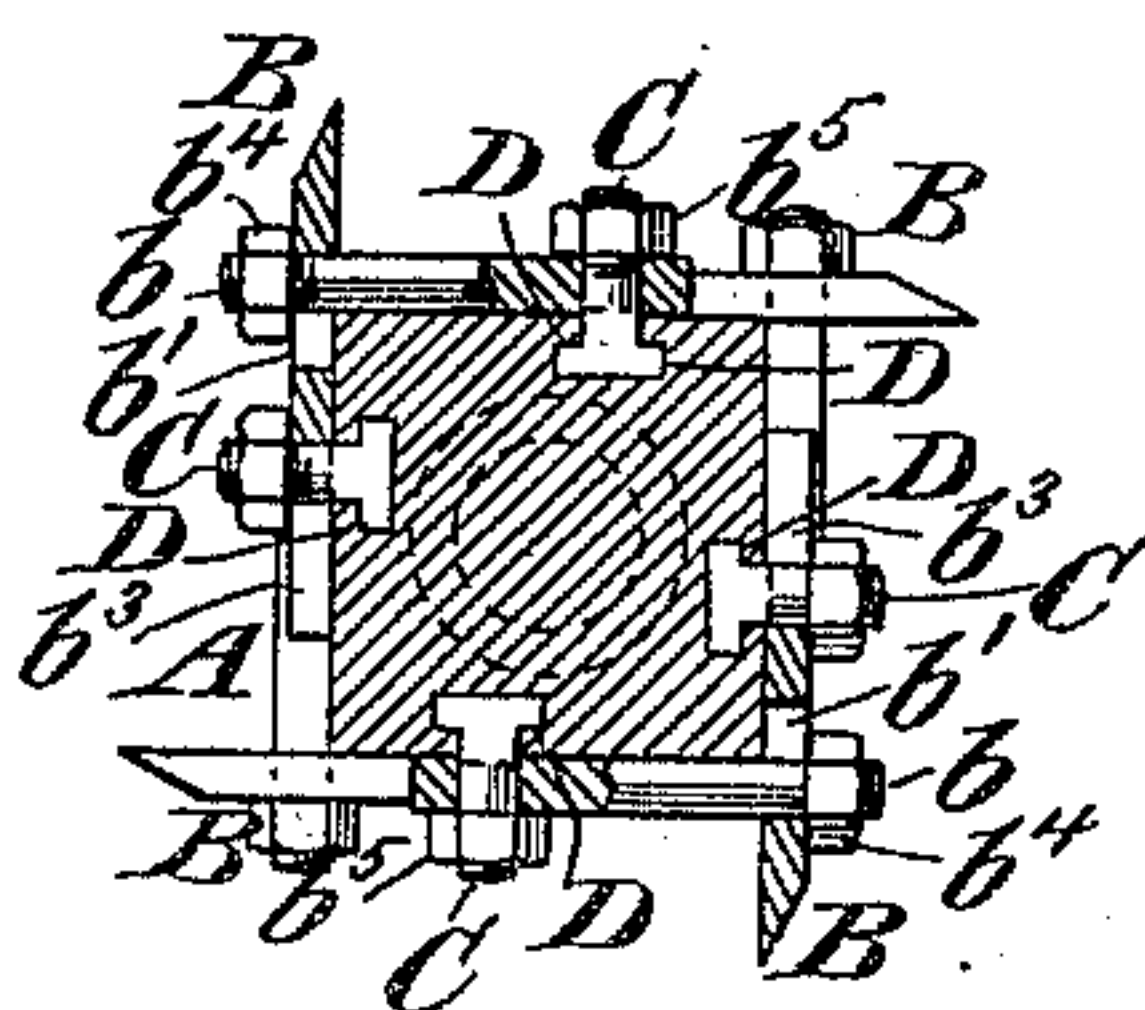


Fig. 6.



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3 Sheets—Sheet 3.

PLANING MACHINE.

Patented July 9, 1889.

A perspective view of a rectangular frame assembly. It features four vertical posts (labeled A, B, C, D) and four horizontal members (labeled E, F, G, H) forming a rectangular frame. The assembly is supported by a base (labeled I, J, K, L). Various components are labeled with letters and numbers, including A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, 1, 2, 3, 4, 5.

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UNITED STATES PATENT OFFICE.

ALFRED B. HUTCHINSON, OF BROOKLYN, AND ERNST F. AUTENRIETH, OF
NEW YORK, ASSIGNORS TO THE GLEN COVE MACHINE COMPANY,
(LIMITED,) OF BROOKLYN, NEW YORK.

PLANING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 406,583, dated July 9, 1889.

Application filed March 30, 1889. Serial No. 305,386. (No model.)

To all whom it may concern:

Be it known that we, ALFRED B. HUTCHINSON, of Brooklyn, in the county of Kings and State of New York, and ERNST F. AUTENRIETH, of the city, county, and State of New York, have invented a certain new and useful Improvement in Planing-Machines, of which the following is a specification.

Our improvement relates to cutter-heads and cutters and is designed more particularly for making deep cuts—such, for instance, as cutting semicircular grooves in pieces of wood afterward to be placed together to form a wooden pipe. In such cutter-heads it is very desirable to have the cutters extend for a considerable distance beyond the cutter-heads and yet be secured to the head as near the blade of the cutter as possible, in order that undue springing of the blade may be avoided and strain upon the cutters relieved.

We will describe our improvement in detail and then point out the novel features in claims.

In the accompanying drawings, Figure 1 is a plan or top view showing a portion of a planing-machine and a cutter-head embodying our improvement. Fig. 2 is a side view of the cutter-head shown in Fig. 1. Fig. 3 is a transverse section thereof, taken on the line $x x$, Fig. 2. Figs. 2 and 3 are on a somewhat larger scale than Fig. 1. Fig. 4 is a plan or top view of a cutter-head illustrating a modification. Fig. 5 is a side view of the same. Fig. 6 is a transverse section taken on the line $y y$, Fig. 4. Fig. 7 is a sectional view illustrating still another modification, and Fig. 8 is a sectional view illustrating still another modification. Figs. 4, 5, 6, 7, and 8 are on the same scale as Figs. 2 and 3.

Similar letters of reference designate corresponding parts in all the figures.

A designates a cutter-head, journaled in suitable bearings a , formed on the frame a' of the machine and driven from pulleys a^2 , in a well-known manner. The body of the cutter-head is rectangular, and its sides are provided with T-shaped grooves D, extending from end to end thereof.

B designates the cutters. In the example

of our improvement shown in Figs. 1, 2, and 3 there are twenty cutters arranged upon the cutter-heads, five upon each side.

b designates bolts. (In this example shown as eyebolts.) These eyebolts extend through longitudinal slots b' , arranged in the cutters near the extreme outer ends thereof. The shanks of the eyebolts are recessed upon their under sides, as at b^2 , and the inner portions of the cutters B extend into said recesses. Extending through suitable apertures in the eyebolts near their inner ends are T-bolts C, the heads of which engage the longitudinal T-grooves D. Said bolts likewise extend through longitudinally-extending slots b^3 , formed in the cutters B near the inner ends of the latter. The eyebolts b and the T-bolts C are provided with nuts $b^4 b^5$, by which they may be firmly clamped when in position. By loosening them the cutters may be adjusted in the direction of their lengths as desired. It will be seen that by arranging the cutters and securing them about the rectangular head in the manner described, the cutters may extend well beyond the cutter-heads and will be very firmly and rigidly secured near their outer extremities, or, in other words, near the blades, whereby undue springing action of the cutters will be avoided. Strain will also be borne to a large extent by the bolts b , thus relieving the cutters.

In Figs. 1, 2, and 3 we have shown the cutters arranged in line with each other; but in Figs. 4, 5, and 6 we have shown that they may be alternated—that is to say, the cutters upon one side will be intermediate of the cutters upon the next adjacent side or sides. In this example the bolts b are eyebolts; but they do not receive the rearward portions of the cutters. They are arranged between the cutters, and their eyes are secured by the T-bolts within the grooves D, as in the other example of our improvement. The eyebolts, however, it will be observed, secure the outer portions of the cutters in the same manner as in the examples shown in Figs. 1, 2, and 3.

In the examples of our improvement shown in Figs. 7 and 8 the alternate arrangement of the cutters is shown as in Figs. 4, 5, and 6; but

in Fig. 7 the bolts *b*, instead of being eye-bolts have their inner ends turned or bent inwardly and provided with T-heads *g*, extending into the T-grooves *D*. Their outer extremities secure the cutters in the manner previously described.

The example shown in Fig. 8 is like those shown in Figs. 4, 5, and 6, except that the bolts *b* have offset portions *h*, extending away from the cutter-heads. This construction provides for using very long cutters and still securing them near their outer extremities or near the blades. At the sides of the cutters which we have described we have shown cutters *d*, which may be secured in the cutter-heads in the usual manner or in manner similar to the other cutters. The cutters *d* are for the purpose of grooving the wood being cut. In this last example, also, we have shown the inner portions of the cutters as being secured by T-bolts.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with a cutter-head, of a cutter placed against one side thereof, a bolt securing the rear end of the cutter to the said side of the head, and a second bolt one end of which is fastened to the head on a side thereof at an angle to the first-mentioned side and which passes through the cutter outside of the head, substantially as and for the purpose herein set forth.

2. The combination, with a cutter-head, of a cutter placed against one side thereof, a bolt securing the rear end of the cutter to the said side of the head, a second bolt passing through the cutter outside of the head, and a third bolt securing said second bolt to the head, substantially as and for the purpose herein set forth.

ALFRED B. HUTCHINSON.
ERNST F. AUTENRIETH.

Witnesses:

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