

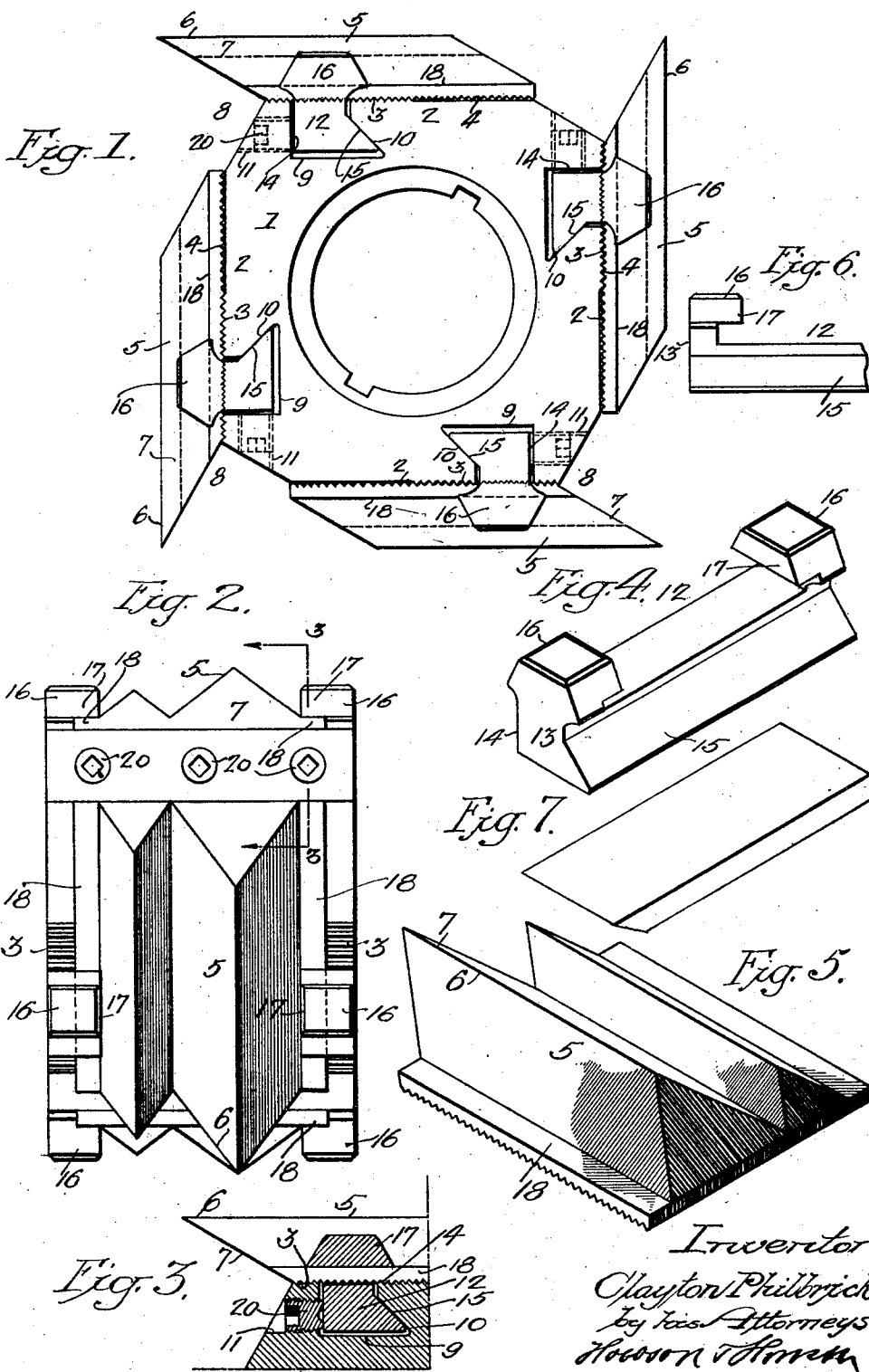
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KNIFE CLAMPING DEVICE FOR CUTTER HEADS

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## UNITED STATES PATENT OFFICE

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## KNIFE-CLAMPING DEVICE FOR CUTTER HEADS

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One object of my invention is to improve the construction of the clamps for securing knives or blades to the cutter heads of wood working machines.

5 A further object of the invention is to improve the construction of this type of clamp, so that the knives will be rigidly held to the cutter head.

And a further object of the invention is to provide the clamps with broad bearing surfaces which rest upon the knives at their edges and exert pressure upon an area extending well over both edges of the slot and avoid breaking the knife when the clamp is 15 screwed home.

These objects I attain in the following manner, reference being had to the accompanying drawings, in which:

20 Fig. 1 is a side view of a cutter head, showing the knives secured in position;

Fig. 2 is a face view of the head shown in Fig. 1;

25 Fig. 3 is a sectional view on the line 3—3, Fig. 2, showing the screws bearing against one side of a clamp;

Fig. 4 is a perspective view of one of the clamps;

Fig. 5 is a perspective view of one of the knives shown in Fig. 1;

30 Fig. 6 is a detached view of one end of a clamp; and

Fig. 7 is a perspective view of a flat knife.

Referring to the drawings, 1 is the cutter head, in the present instance having four 35 faces 2 having serrations or transverse teeth 3 which mesh with corresponding sections or teeth 4 on the knives 5, clearly shown in Fig. 1. The cutting portion 6 of the knives 40 may be of any form, depending upon the character of the cutter desired. In Fig. 7, for instance, a flat knife is shown which may be provided with a chisel cutting edge. In this view the serrations are omitted.

45 Each knife is overhung at 7 so as to form a gullet 8 directly under the knife. A short distance back of each gullet is a transverse slot 9 having a beveled face 10 on the side furthest from the gullet. Extending from 50 the gullet into the slot 9 are holes 11. The

number of these holes will depend entirely upon the width of the cutter head.

12 is a clamp, made as shown in Fig. 4, having a body portion 13 which has a straight face 14 at one side and a beveled face 15 at 55 the opposite side.

16 are the jaws of the clamping device. These jaws have overhanging portions 17 which extend over the edges 18 of the knives 5, and these jaws 16 are of a greater width 60 than the body 13 of the jaw, so as to provide a long bearing for the knives, and as stated above they extend well over part of the edges of the slot in order to prevent the breaking of the knives when the screws are applied. 65 When the jaws and knives are in position as in Fig. 1, the screws 20, which are located in the threaded openings 11, bear upon the flat surface 14 of the jaw and force the inclined surface 15 against the inclined surface 10 of 70 the head. This action causes the jaws to press down upon the surface 18 of the knives 5, clamping the knives firmly to the head, and as both the head and the undersurface of the knives are serrated in the present instance, 75 the knives are held rigidly in position. By backing off the screws 20, the knives and the clamps can be adjusted laterally on the head and then locked by the screws in the position in which they are adjusted. Other means 80 than the serrations may be used to prevent longitudinal movement of the knives.

It will be seen by the above construction that the clamps grip the knives firmly close to the cutting edge, so that no chips can work 85 between the knife and the head. The knife can be given lateral adjustment, as stated above, and the head being serrated, the knife cannot be driven back. Lateral adjustment is often required as milled to pattern knives 90 sometimes shrink in hardening enough to give them a thick and thin heel when jointed. This fault may be overcome by this lateral adjustment.

While I have shown the cutter head having 95 four surfaces on which the knives are clamped, the cutter head may be provided with two, three, or even more surfaces without departing from the essential features of 100 the invention.

## I claim:

1. The combination of a cutter head having a slot, one wall of the slot being straight, the other wall being beveled and undercut; a knife mounted on the head; a clamp having a body portion straight at one side and beveled at the opposite side to fit the beveled undercut portion of the slot, the head having threaded openings in the face; and screws mounted in the openings bearing against the straight face of the clamp, said clamp having overhung heads bearing against the knife near its edges, the heads being of a width greater than the body of the clamp, so as to provide a broad bearing surface.
2. The combination of a cutter head having a slot, one wall of the slot being beveled and undercut; a knife mounted on the head; a clamp having a body portion located in the slot and beveled at one side to fit the beveled undercut portion of the slot; screws bearing against the clamp to force the beveled surface of the clamp against the beveled surface of the slot, said clamp having overhung heads bearing against the knife near its edges, the heads being of greater width than the body of the clamp, to provide a broad bearing surface on the knife.

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