No. 686,339. Patented Nov. 12, 1901.

R. A. RITCHIE.

HAND PROTECTOR.

(Application filed July 6, 1901.)

(No Model.)

Fig. 1.

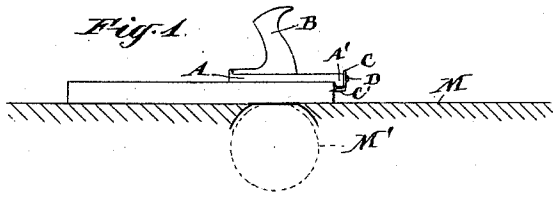


Fig. 2.

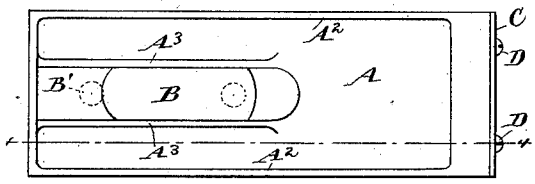


Fig. 3.

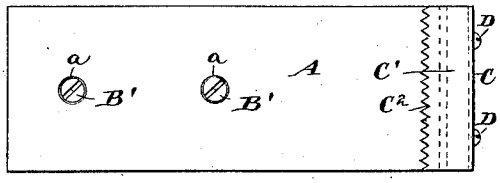


Fig. 4.

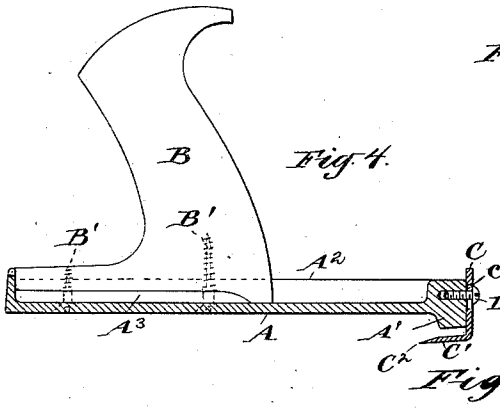


Fig. 5.

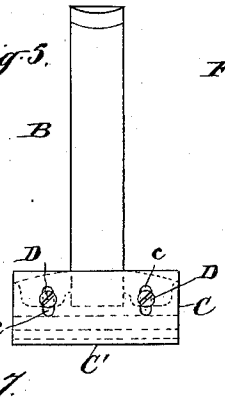


Fig. 6.

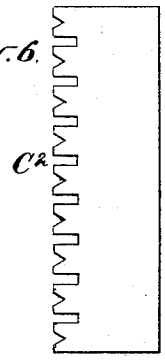


Fig. 7.

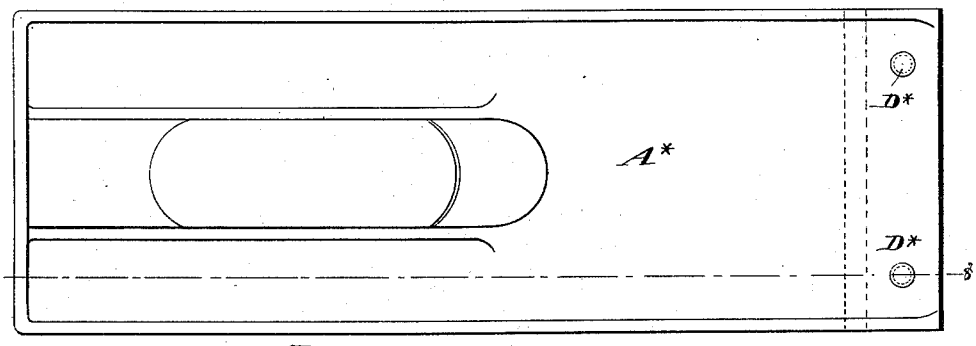
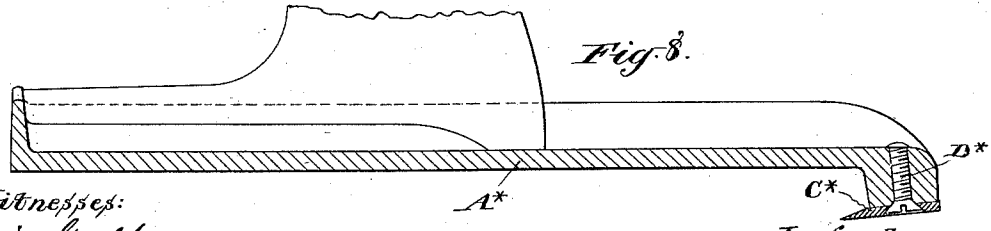


Fig. 8.



Witnesses:
Edwin Gould,
John Garry

Inventor:
Robert A. Ritchie,
by his Attorney
Charles R. Searle.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT A. RITCHIE, OF PATERSON, NEW JERSEY.

HAND-PROTECTOR.

SPECIFICATION forming part of Letters Patent No. 686,339, dated November 12, 1901.

Application filed July 6, 1901. Serial No. 67,290. (No model.)

To all whom it may concern:

Be it known that I, ROBERT A. RITCHIE, a citizen of the United States, residing in Paterson, in the county of Passaic and State of New Jersey, have invented a certain new and useful Improvement in Hand-Protectors, of which the following is a specification.

The invention relates to safety appliances for the protection of persons operating woodworking machinery; and its object is to provide means whereby the danger of accident to the hands in certain woodworking operations may be greatly lessened or entirely avoided.

In operating machines of the buzz-planer type the material to be treated is held down upon the machine-table by the pressure of the hands, and thus fed across the rapidly-revolving knives operating on the under face of the material. Accidents to the hands are of frequent occurrence. I will describe the invention as used on a machine of this type.

It consists of a flat body portion adapted to lie upon the upper face of the board or other piece to be treated, having a depending flange at the rear adapted to engage the rear edge of the board and a handle on the upper face by which it may be firmly grasped and held, and the board thus traversed across the knives. I prefer to make the engaging edge of the flange with teeth or points adapted to slightly enter and securely engage the wood, and in the most complete form of the invention I provide an adjustable toothed plate for this purpose arranged to be set and firmly held at any desired distance below the lower face of the body, and thus condition the device for varying thicknesses of material.

The invention also consists in certain details of construction and arrangement of parts to be hereinafter described.

The accompanying drawings form a part of this specification and show the invention as I have carried it out.

Figure 1 is a side elevation of the device, showing the mode of operation on a planer. The remaining figures are on a larger scale. Fig. 2 is a top or plan view of the protector alone, and Fig. 3 is a corresponding view of the under face. Fig. 4 is a vertical section taken on the line 4 4 in Fig. 2, and Fig. 5 is a corresponding end or rear view. Fig. 6 is a view of the under face of the toothed plate, showing a preferable form of tooth. Figs. 7 and 8 show a modification. Fig. 7 is a top or plan view, and Fig. 8 is a vertical section taken on the line 8 8 in Fig. 7.

Similar letters of reference indicate like parts in all the figures.

A is the body portion of the device, shown as rectangular in plan and preferably of cast-iron, having the forward part of the under surface plane and provided at the rear with a transverse lug or downwardly-projecting flange A′. The body is stiffened on the upper face by the marginal ribs A^2 and is provided with two parallel longitudinal ribs A^3 A^3 lower than the sides and adapted to receive between them a handle B, preferably of wood and analogous to a plane-handle. The handle is held in place by the screws B′ B′ inserted from below and having their heads received in corresponding countersunk recesses *a a*.

C is a plate of steel bent to nearly a right angle transversely upon itself, forming the flange C′, the forward edge of which is toothed, as shown, and beveled forward and downward. The upright portion C of the plate is provided with two vertical slots *c c*, through which extends screws D D, received in correspondingly-tapped holes in the rear of the body.

In using the protector it is applied upon the upper face of the board with the flange A′ and plate C C′ overhanging its rear edge. The operator grasps the handle B and slides the protector forward by a quick movement, embedding the teeth in the rear edge and insuring firm engagement. The board is then moved along the planer-table M (see Fig. 1) and forced across the revolving knives (indicated at M′) as usual, but with the hand of the operator well above and away from the knives. The handle B being well forward insures that the hand shall have passed beyond the knives before the rear edge of the board reaches them. It will be observed that the toothed portion of the plate inclines slightly forward and downward, and the bevel of the teeth C^2 is in a similar direction. This construction tends to increase the firmness of the engagement by inducing a pressure between the teeth and body at the rear part of

the board corresponding to the advance of the teeth into the edge thereof.

My experiments show that an operator with my protector can work better and faster than under the common method, for the reason that the grasp on the material is firmer, especially in treating small pieces, and also because of increased confidence and absence of nervous fear of accident.

Modifications may be made in the forms and proportions within wide limits. The form of handle and mode of attaching are not important. It may be cast in one with the body, if preferred.

Figs. 7 and 8 show a construction in which the body A* is similar to the form shown in the earlier figures; but the toothed plate C* is secured by screws D* directly to the under face of the flange. The upper ends of the screws protrude through the body and are riveted or headed on the upper face thereof. This modification is cheaper to manufacture than the form first described and has an additional advantage in that danger of the toothed plate becoming loosened is avoided, and consequently liability of accident by the fall of the plate into the knives is lessened. The teeth may be formed directly upon the flange A′ or may be pins inset on its front face.

Although I have described the body as of cast-iron, it will be understood that any metal or other suitable material, as hard wood, may serve.

The under face of the body may be roughened to increase the frictional grasp upon the surface of the board. I do not consider such roughening to be generally necessary or desirable.

I claim—

1. In a device of the character set forth, a body portion having a plane under face adapted to lie upon the surface of the piece to be treated, a handle on the upper face, and a downwardly-projecting portion at the rear of said body extending below the plane of said under face and in rear of said handle adapted to engage the rear edge of said piece, all combined and arranged to serve substantially as herein specified.

2. In a device of the character set forth, a body portion having its under face adapted to lie upon the surface of the piece to be treated, a handle on the upper face, a downwardly-projecting portion at the rear of said body, and a series of teeth on said projecting portion adapted to engage the rear edge of said piece, all combined substantially as herein specified.

3. In a device of the character set forth, a body portion having its under face adapted to lie upon the surface of the piece to be treated, a handle on the upper face, a downwardly-projecting portion at the rear of said body, and a plate secured to said body and having a series of forwardly-projecting teeth below the under face of said body adapted to engage the rear edge of said piece, all combined substantially as herein specified.

4. In a device of the character set forth, a body portion having its under face adapted to lie upon the surface of the piece to be treated, a handle on the upper face, a downwardly-projecting portion at the rear of said body, and a plate adjustably secured to the rear of said body and having a forwardly-projecting toothed portion below the under face of said body adapted to engage the rear edge of said piece, all combined substantially as herein specified.

5. The body A, handle B on the upper face thereof, the downwardly-projecting portion A′ on the under face of said body at the rear, in combination with the bent plate C C′ and teeth C^2 thereon, and the screws D D received in slots *c c* in said plate and serving to adjust the latter, all substantially as and for the purposes herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

ROBERT A. RITCHIE.

Witnesses:

EDWIN GOULD,

CHARLES R. SEARLE.