O. J. DUFAULT.

SAW.

APPLICATION FILED JUNE 3, 1911.

1,036,810. Patented Aug. 27, 1912.

Fig. 1.

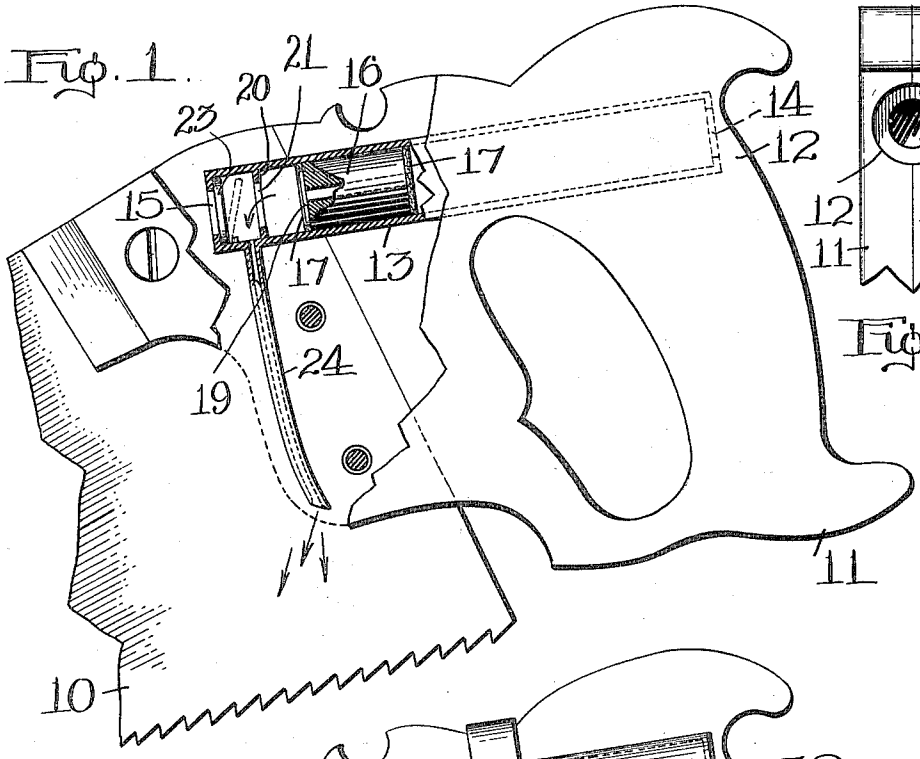
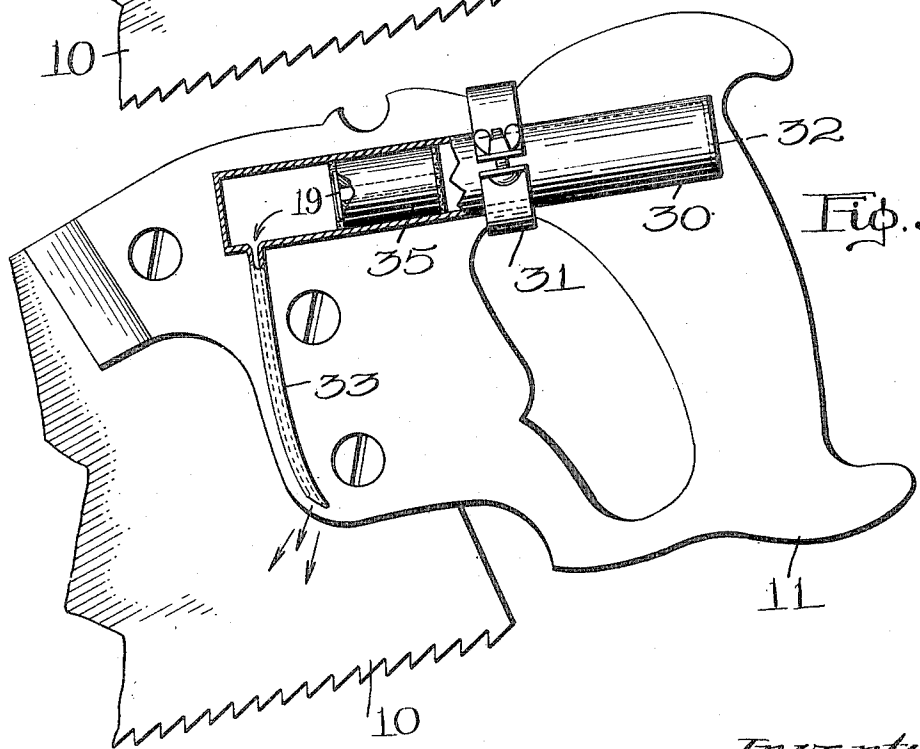


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

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SAW.

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To all whom it may concern:

Be it known that I, OLIVER J. DUFAULT, a citizen of the United States, residing at Spencer, in the county of Worcester and State of Massachusetts, have invented a new and useful Saw, of which the following is a specification.

The principal objects of this invention are to provide a simple and convenient arrangement whereby a saw, particularly a hand-saw, can be operated in the usual way, and will provide a current of air due to its own motion for blowing the sawdust away from the kerf.

The invention also involves a construction of this character in which the operator has to pay no attention whatever to the operation of the device for blowing the sawdust, as it is operated solely by the ordinary and usual motion of the saw.

Further objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which—

Figure 1 is a side view of a hand-saw with the handle partly broken away showing parts of the invention in central longitudinal section; Fig. 2 is an end view of a portion of the same; and Fig. 3 is a view similar to Fig. 1 of a modification.

I am aware that various devices have been produced for blowing sawdust away from the kerf, but so far as I am aware they have all been operated in one or two ways, that is, either by pressure of the finger of the operator or by a plunger or the like coming into contact with the board being sawed.

This invention relates to a device for securing the same result by such a means that it makes no difference whether the saw gets to a definite position with relation to the board being sawed and in which the operator has to pay absolutely no attention to the device, it being entirely automatic and operated solely by the motion of the saw itself, and without respect to the length of stroke. For this purpose the invention is shown in the first two figures as applied to an ordinary hand saw having a blade 10 and handle 11. These are secured together in the usual way but the handle or grip 11 is provided with a passage 12 extending along the same substantially longitudinally, preferably cylindrical in form. In this passage is a cylinder 13 having two free openings 14 and 15 at its opposite ends. In the cylinder is a piston or plunger 16 adapted to slide back and forth freely, and having a neat sliding fit in the cylinder. This plunger preferably is long enough to be properly guided in the cylinder and is shown as provided with pads 17 on the ends to deaden the noise. It is entirely cut off from the outside of the cylinder so that it cannot be operated from outside except by operation of the saw. It has a small free longitudinal passage 18 closed at the front on the forward stroke by a flap valve 19 or the like. In the form shown in this figure an additional feature is provided, namely a partition 20 having a free opening 21 therein and flap valve 23 for the opening 15. Between the partition and the end of the casing a tube 24 extends from the cylinder and terminates near the bottom of the handle in position to direct the air current along the rear teeth of the saw.

In operation the reciprocation of the saw in the ordinary use thereof results in forcing the plunger back and forth. When the flap valve 23 is used, the operation is as follows:—When the plunger 16 moves back it draws air in through the opening 15 and also through the tube 24. The valve 19 is open so that the air also passes from the rear of the cylinder to the front through the same. As the opening 15 is larger than the tube 24 most of the air enters in this direction and draws the flap valve 23 back. When the plunger gets to the other end of the cylinder and the motion is reversed the first effect is to close the valve 19 and force the air forward which will blow some of it out of the tube 24 but the main part of it will exert a force to close the valve 23. After this is done all the air is forced out of the tube which increases materially the strength and duration of the flow of air from this tube. By using the flap valve the tube can be made smaller and the current of air thus concentrated and strengthened.

In the form shown in Fig. 3, the saw handle is not mutilated in any way, but the cylinder 30 is mounted on the outside of the handle by means of a clamping ring 31 or the like. In this case there is an air opening 32 at the rear end of the cylinder and the tube 33 is shown as before constituting, or communicating with, the other opening. The plunger 35 is unchanged. In this case the front end of the cylinder is closed and all the air that enters at this end must come

through the tube. This arrangement can be placed on the bottom of the handle, of course, if desired or in any other convenient position.

It will be seen that by this invention the operator is relieved from all responsibility. For operating this attachment; he does not have to see that the saw moved up to such position that a trip or other device on the handle comes into contact with the board, nor does he have to manipulate anything with his fingers, except the ordinary saw handle. At the same time a thoroughly practical and efficient device is secured which contains no parts likely to get out of order, and which will not require material repairs, and is not expensive to manufacture and apply.

Although I have illustrated and described two preferred embodiments of the invention, I am aware that many modifications can be made therein and features of each applied to the other by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore I do not wish to be limited to all the details of construction herein shown and described, but

What I do claim is:—

1. As an article of manufacture, a saw provided with means for creating a current of air at each stroke of the saw, said means being operable solely by the reciprocation of the saw as a whole and independently of the length of the stroke.

2. In a saw, the combination with the handle, of a cylinder carried thereby, and a plunger freely movable in the cylinder, and having no communication with the outside thereof, said cylinder having a passage opening from one end thereof adapted to direct a current of air toward the rear teeth of the saw.

3. In a device of the character described, the combination with a saw handle having a longitudinal passage therein, of a cylinder located in said passage and having openings at its opposite ends, a tube communicating with one of said openings and extending in a position to direct a current of air on the rear teeth of the saw, and a plunger reciprocably mounted in said cylinder and entirely inclosed therein.

4. In a device of the character described, the combination with a saw handle, of a cylinder longitudinally located thereon and having openings in its opposite ends and provided with a partition near one of said openings, a flap valve between the partition and the nearest end for covering the opening in that end, a plunger in the cylinder, and a tube extending from the scope between said partition and the valve for directing a current of air therefrom.

5. In a saw, the combination with the handle, of a cylinder carried thereby, and a plunger freely movable in the cylinder, and having no communication with the outside thereof, said cylinder having a passage opening from one end thereof adapted to direct a current of air toward the rear teeth of the saw, and a plunger having a longitudinal passage and a valve for closing it on the forward motion of the cylinder.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

OLIVER J. DUFAULT.

Witnesses:

ALBERT E. FAY,

C. FORREST WESSON.