(No Model.)

W. E. BROCK.

BUCK SAW.

No. 323,107. Patented July 28, 1885.

Fig. 2.

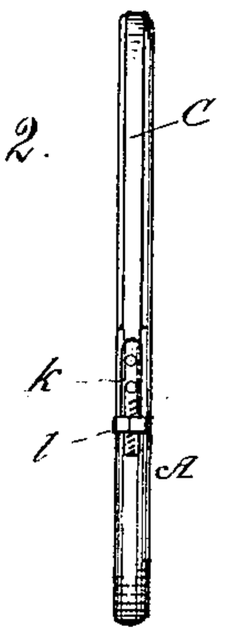


Fig. 1.

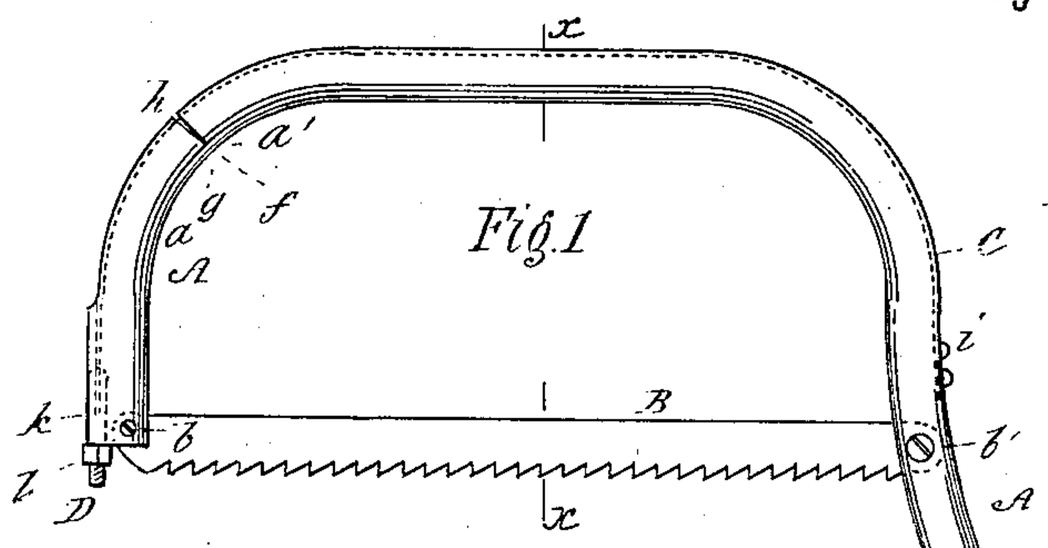


Fig. 3.

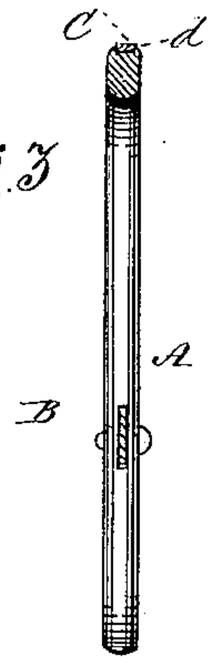


Fig. 5.

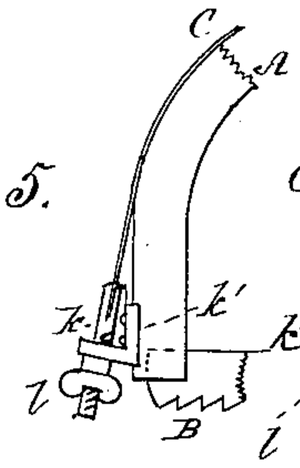


Fig. 4.

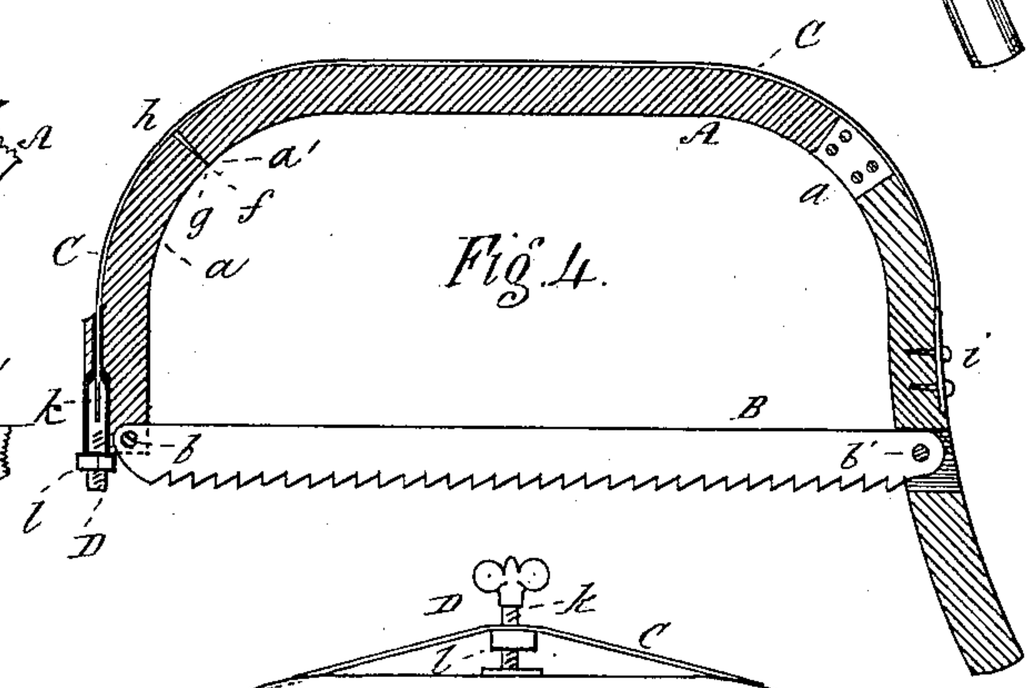


Fig. 7.

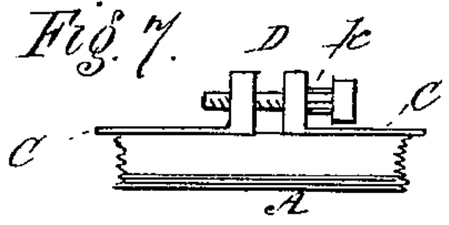


Fig. 6.

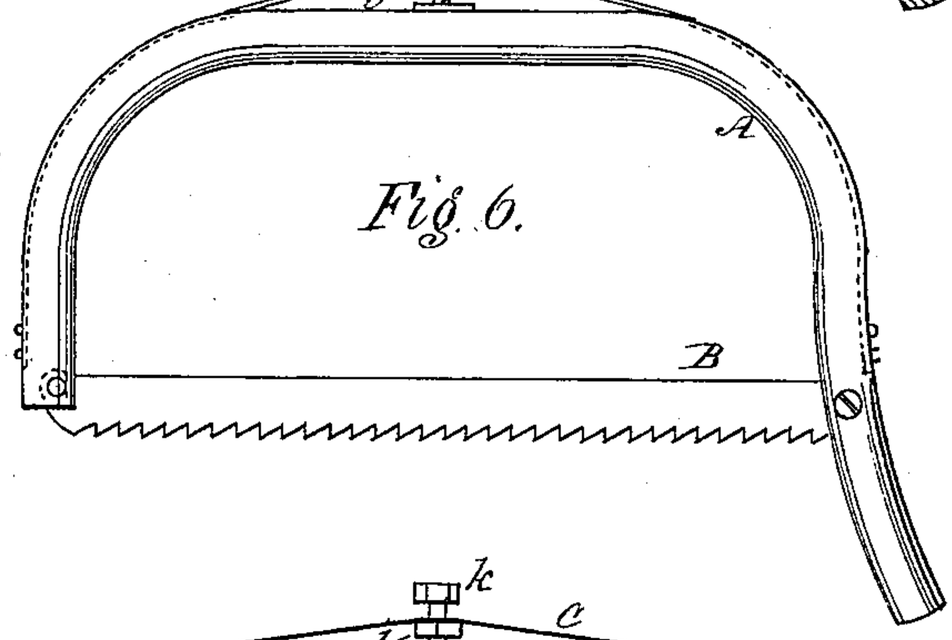
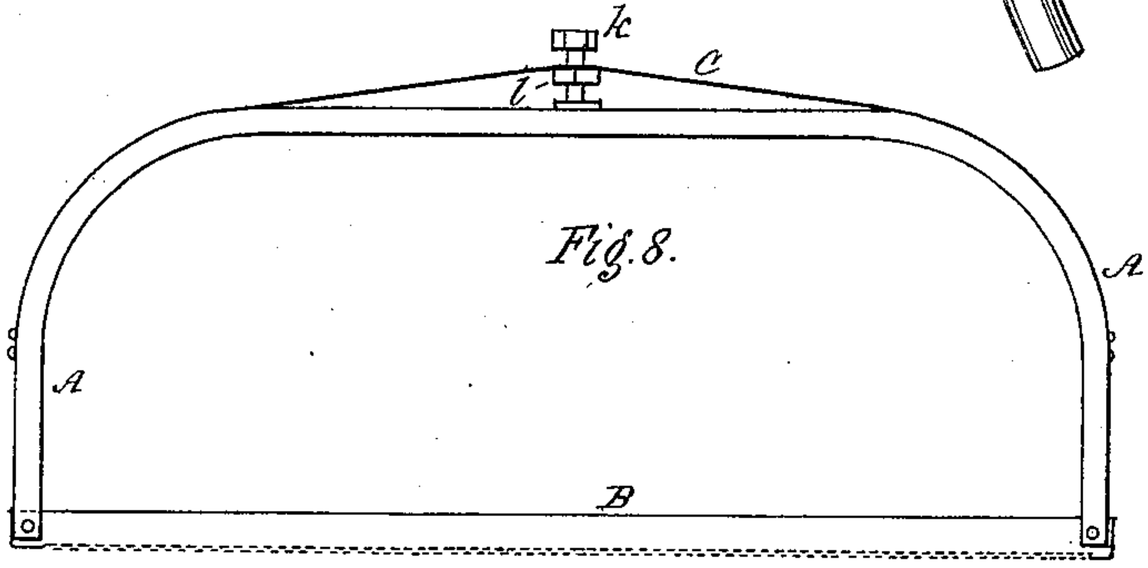


Fig. 8.



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UNITED STATES PATENT OFFICE.

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BUCK-SAW.

SPECIFICATION forming part of Letters Patent No. 323,107, dated July 28, 1885.

Application filed December 6, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. BROCK, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Buck-Saws and other Frame-Saws; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to an improvement in buck-saws and other frame-saws; and its object is to construct the frame of the saw in such manner that it shall be extremely strong in proportion to its weight and dimensions, and so that the saw-blade can be very easily and quickly detached therefrom and inserted therein, whenever it becomes necessary to remove the saw temporarily for the purpose of filing it, or for any other purpose.

In buck-saws and frame-saws as ordinarily constructed it has been usual to introduce a cross-bar running parallel with the saw-blade, between the latter and the top of the frame, for the purpose of forming a brace to strengthen the frame, and also to serve as a fulcrum, operating in connection with a turn-buckle or similar device in stretching or tightening the saw in the frame; but in my said improvement no cross-bar is necessary, and the space between the saw and the top of the frame is left entirely open and unobstructed, so that a log or piece of timber of much larger diameter can be sawed through than it would be possible to saw if the frame were obstructed by an intermediate bar, and consequently my improvement can be applied with much advantage to crosscut or lumber saws of large size, which have heretofore been used without a frame, as the saw-blade can be made much thinner and lighter, thereby requiring less power and wasting less wood; and in the case of buck-saws, by means of my improvement the saw-blade can be more tightly stretched, and the frame be made lighter and at the same time much stronger than those heretofore used.

The invention consists, essentially, in the combination, with a saw-frame, (which may be in two or more sections, which when in position form a continuous piece,) of a surrounding metallic strap or band attached to the outer edge of said frame, and a clamping or tightening device adapted to tighten said strap over the frame, so as to spread farther apart the lower ends of the frame, as hereinafter particularly set forth and described.

In the accompanying drawings, Figure 1 represents a side view of a buck-saw with my improvement. Fig. 2 is a front end elevation of the same. Fig. 3 is a transverse section on the line *x x*. Fig. 4 is a longitudinal section of the frame, taken through its center. Figs. 5, 6, and 7 represent modifications of the devices for clamping or tightening the strap, and Fig. 8 shows my improvement applied to a crosscut-saw for cutting logs.

Similar letters of reference indicate the same parts in all the several figures.

A represents the frame, which may be of wood and of suitable form or curvature according to the purpose for which the saw is to be used. In the figures of the drawings, with the exception of Fig. 8, I have shown it in the form ordinarily used for buck-saws for sawing fire-wood; but my improvement may be applied to all kinds of frame-saws, as will be obvious from the following description. The frame may either be of wood having a natural curvature of the form desired, as represented in Figs. 1 and 6, or it may be of sawed lumber with one or more splices or joints, as at *a* in Fig. 4.

B represents the saw-blade, which is inserted in the frame in the usual manner by pins *b b'*.

C is a band or strap, which surrounds and is attached to the outer edge of the frame. This strap may be of ordinary hoop-iron or other suitable material, and is slightly narrower than the edge of the frame, so that it will lie snugly in a shallow groove cut in the latter to receive it. The said strap, when tightly stretched over the frame, tends to throw the ends of the frame outward, and thereby strain the saw-blade within the frame, and this constitutes the essential feature of my invention.

In Figs. 1 to 4, inclusive, I have shown the preferred mode and means of tightening the strap C over the frame, which is as follows: The frame A is divided transversely, as at *f*, so as to form two sections. The adjoining ends of the sections *a a'* are slightly beveled,

so that the inner corners, *g*, will abut against each other, while the outer corners, *h*, are slightly apart. The inner corners thus form a sort of fulcrum, and when the strap is tightened the outer corners, *h*, are drawn toward each other, and the lower or extreme ends of the frame are thrown farther apart. The strap C is attached to the frame A at its rear end, *i*, and passed over the outer edge of the frame, within the groove *d*, and at its opposite end is connected to a screw-bolt, *k*, which is partly or wholly let into a slot in the front end of the frame, and passes through a screw-nut, *l*, which bears against the extreme front end of the frame. Thus constructed the frame is rendered very firm and strong, and the saw-blade can be strained therein to a great degree of tension very quickly by turning the screw-nut *l*, and as quickly slackened for the purpose of removing it when desired. A dowel-pin and slot or a tongue and groove may be provided on the adjoining ends of the sections to keep them in line, but that is not deemed essentially necessary.

In Fig. 5 is shown a modification of the clamping device D, in which the screw-bolt *k* is passed through a bracket, *k'*, attached to the front edge of the frame, against which the nut *l* bears, instead of bearing against the end of the frame; and this is deemed to be a substantial equivalent of the mode just described.

In the modification shown in Fig. 6 the frame is in one undivided piece, and the clamping device is arranged at the top of the frame, and both ends of the strap are attached to the frame. In this case the screw-bolt *k* is passed through a screw-nut, *l*, attached to the under side of the strap C, and the end of said bolt bears against the top of the frame and tends to press the latter inwardly and to force the ends of the frame outward when the screw is tightened, thereby straining the saw-blade, as before described.

In the practical application of my invention (see Fig. 8) to crosscut-saws, such as are operated by two men, for sawing logs and large pieces of lumber, this last-described arrangement is preferred. Referring to said Fig. 8, it will be seen that the usual handles and their attachments are dispensed with, the saw being held by the ends of the frame, and that a plain saw-blade can be used. Thus constructed a crosscut-saw may be made much thinner and lighter than those ordinarily used, and requires less power and makes a narrower cut.

In Fig. 7 is shown a modified form of the clamping device last described, which will be readily understood without a detailed description thereof.

What I claim as my invention is—

1. The combination, with a saw-frame, A, of a surrounding strap, C, attached to the outer edge of said frame, and a clamping or tightening device, D, for tightening said strap upon said frame, as and for the purpose set forth.

2. The combination, with a saw-frame, A, composed of two or more abutting sections, *a a'*, which said sections when in position form one continuous piece, of a surrounding strap, C, attached at one end to the outer edge of the frame, and attached at its other end to a screw-bolt, *k*, adapted to work in a screw-nut, *l*, arranged to bear against the end of said frame, as and for the purpose set forth.

3. The combination of a saw-blade, B, a frame, A, within the lower ends of which said blade is fixed, a strap or band, C, attached to the outer edge of said frame and embracing the same, and a clamping device, D, of suitable construction for tightening said strap over and upon said frame, as herein shown and described, for the purpose set forth.

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