No. 668,825. Patented Feb. 26, 1901.

S. TOLES

BUCKSAW.

(Application filed Dec. 31, 1900.)

(No Model.)

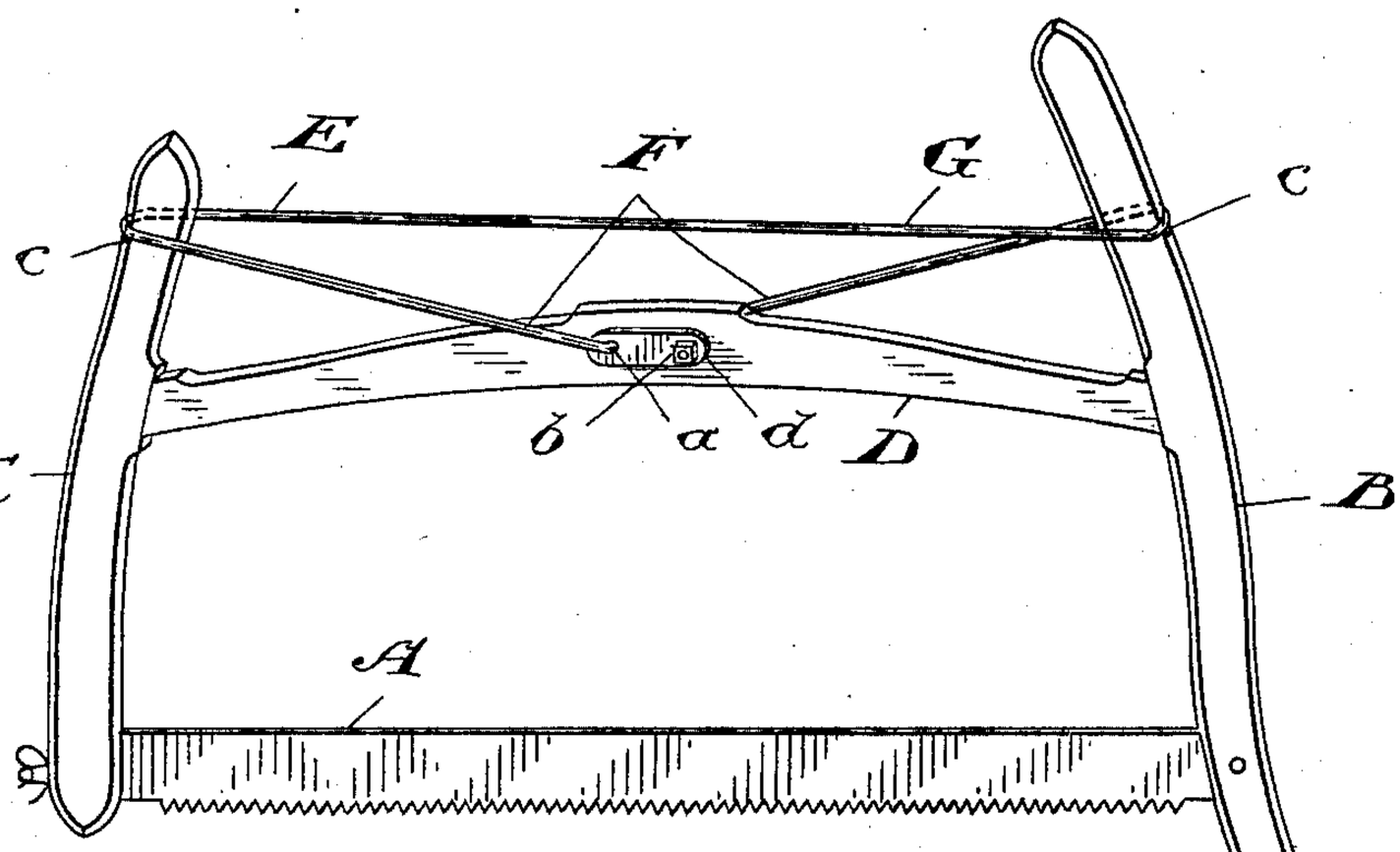

Fig. 1.

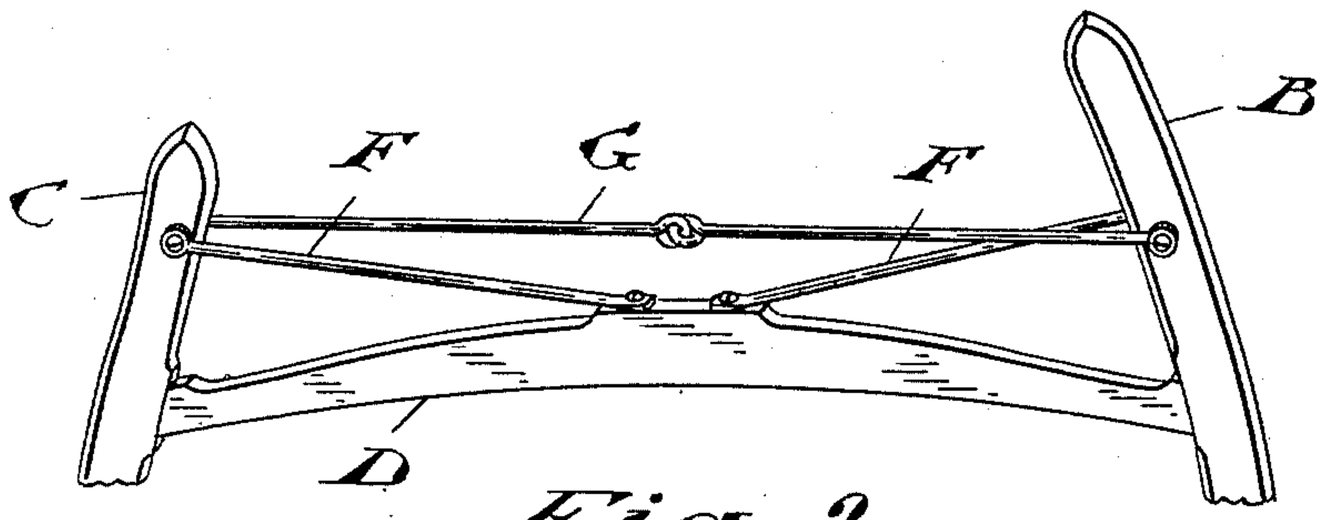

Fig. 2.

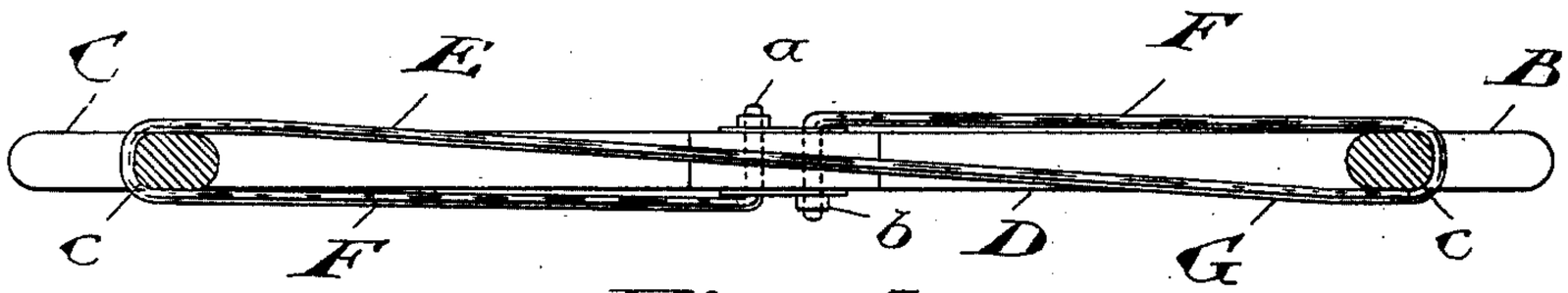

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

SILAS TOLES, OF GALT, CANADA, ASSIGNOR TO SHURLY & DIETRICH, OF SAME PLACE.

BUCKSAW.

SPECIFICATION forming part of Letters Patent No. 668,825, dated February 26, 1901.

Application filed December 31, 1900. Serial No. 41,614. (No model.)

To all whom it may concern:

Be it known that I, SILAS TOLES, mechanic, of the town of Galt, in the county of Waterloo, Province of Ontario, Canada, have invented certain new and useful Improvements in Bucksaws, of which the following is a specification.

The object of my invention is to devise a frame for a bucksaw which will be perfectly rigid and in which the cross-brace of the frame is effectually trussed or stayed to resist sideway distortion; and it consists, essentially, in combining with the end pieces and cross-brace of the frame a brace-rod suitably connected thereto to form both a vertical and lateral truss to resist both vertical or lateral distortion of the parts, substantially as hereinafter more particularly described and then definitely claimed.

Figure 1 is a perspective view of my invention. Fig. 2 is a similar view showing a modification of the same. Fig. 3 is a plan view showing the lateral bracing of the cross-bar.

In the drawings like letters of reference indicate corresponding parts in the different figures.

A is a saw-blade which is suitably connected with the end pieces B and C in any suitable manner.

D is the cross-brace, connecting the end pieces in the usual way.

The novel feature of my invention consists in the use of the brace-rod E, which is suitably bent to form the ends *a*, the diagonal braces F, and the connecting-tie G. The ends *a* are inserted through the cross-brace D from opposite sides and are suitably threaded to receive the nuts *b*, by means of which they are securely held in place, though, of course, other means might be employed for the same purpose of fastening the diagonal braces near the middle of the cross-brace. Plates *d* are preferably provided at each side of the cross-braces to receive the wear. The diagonal braces F, as shown, extend one from one side of the cross-brace to the same side of the end piece B and the other from the opposite side of the cross-brace to the opposite side of the end piece C. Here they are bent around the end pieces to connect with the tie G, the bent portions preferably lying in notches *c* in the end pieces, though this is not an absolutely essential construction. As the diagonal braces are on opposite sides of the end pieces, the tie G naturally runs in a diagonal direction from one end of one piece to the opposite side of the other.

One of the weaknesses of the ordinary bucksaw-frame has been the tendency of the cross-brace to spring laterally under strain. With my construction this distortion is absolutely impossible, as distortion to one side is resisted by the pull of one diagonal brace, while distortion in the other direction is resisted by the pull of the other diagonal brace. The pull of the braces on the end pieces would naturally tend to twist one end piece in one direction and the other in the other; but this twisting tendency is absolutely counteracted by the tie G, which causes the twisting strain on one end piece to entirely counteract the twisting strain on the other.

An examination of Fig. 3 will show that the disposition of the parts of the brace-rod E is such as to form a lateral truss, bracing the cross-bar, as shown, and stiffening the whole frame laterally.

From the perspective views it will be seen that the frame is effectually trussed in the vertical direction, so that the parts of the frame are held rigidly in proper relation to one another under any strain tending to distort them in their vertical relationship.

It must of course be understood that the terms "vertical" and "lateral" are used in regard to the frame under the supposition that it is viewed in its ordinary working position with the saw-blade, end pieces, and cross-brace lying in a vertical plane.

I do not wish to confine myself to the construction shown, in which the diagonal braces and ties are formed of a continuous rod of metal, as these parts may be independently connected to the end frame, as shown in Fig. 2, nor is it absolutely essential that the ends of the diagonal braces be connected to opposite sides of the cross-brace, as they might be connected to the top of the cross-brace, as they are shown in Fig. 2, and thence run to opposite sides of the end pieces. It will be seen that the construction shown in Fig. 2 is

absolutely similar in effect to that shown in Fig. 1; but it is not quite so good a commercial construction. I also show in this figure that the tie G is, at least in part, flexible. This construction is readily possible, as it merely is required to stand a tensional strain. Other changes might also be made in the details of construction which would naturally fall under the scope of my invention, as set out in the accompanying claims.

What I claim as my invention is—

1. A bucksaw comprising a saw-blade, end pieces and cross-brace suitably connected, in combination with a continuous brace-rod suitably bent to form two diagonal braces and a connecting-tie, the diagonal braces being secured to the cross-brace intermediate of its ends, running up diagonally to opposite sides of the respective end pieces and connected by the tie portion which runs diagonally from one side of one end piece to the opposite side of the other, substantially as and for the purpose specified.

2. A bucksaw comprising a saw-blade, end pieces and cross-brace suitably connected, in combination with diagonal braces secured to the cross-brace intermediate of its ends and engaging opposite sides of the respective end pieces, and a tie-rod engaging the end pieces and running diagonally from the side of one end piece, opposite the point of connection with its diagonal brace to the opposite side of the other end piece, substantially as and for the purpose specified.

3. A bucksaw comprising a saw-blade, end pieces and cross-brace suitably connected, in combination with a continuous brace-rod suitably bent to form two diagonal braces and a connecting-tie the diagonal braces being secured to the sides of the cross-brace near the center, running up diagonally to opposite sides of the respective end pieces and connected by the tie portion which runs diagonally from one side of one end piece to the opposite side of the other, substantially as and for the purpose specified.

4. A bucksaw comprising a saw-blade, end pieces provided with notches *c*, and cross-brace suitably connected, in combination with the continuous brace-rod E comprising the ends *a* passing through the cross-brace D and suitably secured in place, the diagonal braces F connecting the opposite side of the cross-brace D and the end pieces B and C, and the tie G connecting the diagonal braces F, the brace-rod being held from slipping where bent around the end pieces by engaging the notches *c* in the end pieces.

5. A bucksaw comprising a saw-blade, end pieces and cross-brace suitably connected, in combination with a continuous brace or tension rod suitably looped to said end pieces and having its ends connected with the cross-brace near its middle and thereby forming both a vertical and horizontal truss to resist both vertical and lateral distortion of the parts, substantially as described.

Galt, Ontario, Canada, December 27, 1900.

SILAS TOLES.

In presence of—
R. BARRIE,
A. JORDAN.