(No Model.)

C. MORROW.

COPING SAW.

No. 355,704. Patented Jan. 11, 1887.

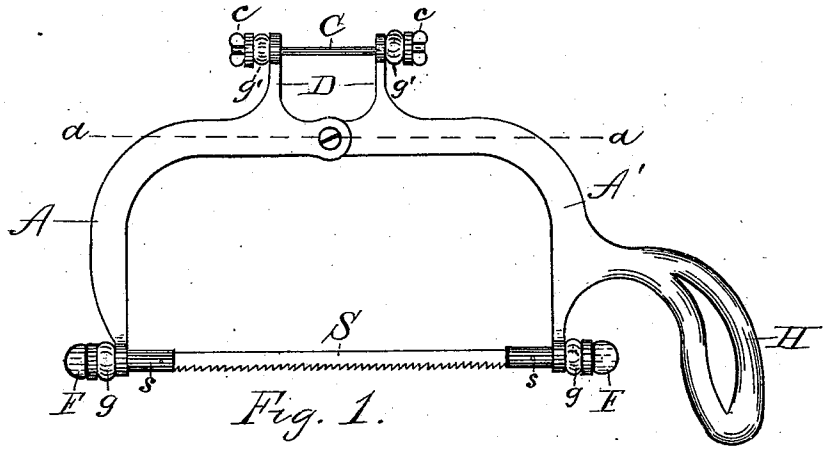


Fig. 1.

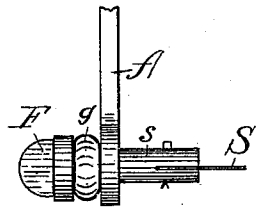


Fig. 4.

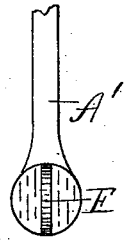


Fig. 3.

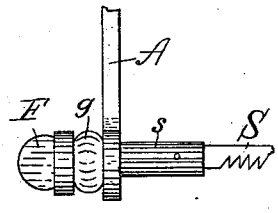


Fig. 2.

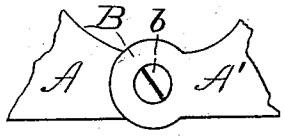


Fig. 5.

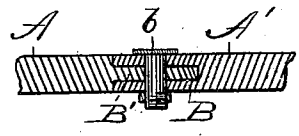


Fig. 6.

Witnesses
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UNITED STATES PATENT OFFICE.

CHRISTOPHER MORROW, OF KANSAS CITY, MISSOURI.

COPING-SAW.

SPECIFICATION forming part of Letters Patent No. 355,704, dated January 11, 1887.

Application filed August 3, 1886. Serial No. 209,925. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER MORROW, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Coping-Saws or Bow-Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part hereof.

This invention relates more particularly to means for tightening and loosening the saw-blade, and to devices connected to the framing and the blade for absorbing or decreasing the vibratory shocks occasioned by the teeth of the blade striking against the material that is being operated on, and the novelty, I would say, lies in the construction and combined arrangement of such devices, all substantially as hereinafter described and claimed.

In the drawings which illustrate the manner of carrying out my invention, Figure 1 is a side view of the saw with a blade applied and ready to be operated. Fig. 2 is a detail of one end of the saw-frame and the blade. Fig. 3 represents an end view of the devices shown in the last-named figure. Fig. 4 is a view similar to Fig. 2, except that the blade is turned in the framing to a different angle from that shown in the second figure. Fig. 5 is a detail view of the hinge used to connect the two sections of the framing, and Fig. 6 is a section through said hinge on line *a a*, Fig. 1.

The framing of the saw is made in two main sections, A and A′, that are hinged together at one end, and upon the back or upper edge of each section, and projecting at nearly a right angle thereto is formed or located an arm or lug, D, which is engaged by the straining-rod C.

Near to the point where the rod C passes through the said arm or lug it is somewhat enlarged in size, so as to form a more secure bearing for the washer, which rests against it, and when the two sections are properly hinged together—that is, when the end B of section A is engaged by the end B′ of section A′, and a bolt or rivet, *b*, is passed through them—the straining-arms D of each section will be located directly opposite each other, as shown.

For the purpose of tightening up the saw-blade S, a straining-rod, C, is located near the upper ends of the straining-arms D, and by means of thumb-screws and rubber washers it is adapted to urge said arms toward each other; hence it is that when the arms D are drawn toward each other the lower ends of the respective sections carrying the blade will be forced farther apart and said blade will be tightened up, and in a reverse way when the said arms are slacked away from each other the blade will be loosened up. Both ends of the rod C are preferably provided with a screw-thread and a thumb-screw, *c*, although it is obvious that the saw-blade will be strained just as effectively if said rod is constructed with a head upon one of its ends instead of a thread and thumb-screw, as shown.

Rubber washers or springs *g′* are located on the straining-rod C, between the thumb-screws *c* and the arms D, for the purpose of absorbing the vibrations that may be occasioned by the teeth of the blade striking against the material that is being operated on. I would say, however, that the washers or springs *g′*, located upon the straining-rod, will not be sufficient to do away with all vibration, and that, looking toward a more perfect absorption of the shocks and vibrations occasioned by the operation of using the saw, I locate another spring or washer, *g*, on the handles F, to which the ends of the blade are secured. These last-named washers are also made of rubber in any approved form that will possess sufficient elasticity, and they are located on the handles F, between the free ends of the respective framing-sections A and A′ and a shoulder formed on the said handles, as shown.

It will be observed that the handles F are formed with a cylindrical body portion, *s*, which engages an aperture in the free ends of the framing-sections, and that they are perfectly free to be revolved in their bearings.

The framing of my improved saw should be made as light as possible, of sheet metal; or it may be of cast metal, if preferred, and the arms D can be cast integral with their respective sections. At any rate, lightness and small compass is much to be desired in a saw of this kind, as it is designed to be carried in the coat-pockets of the workman using it. It is particularly designed for use as a "coping-saw"—that is, sawing out one irregular form in such a way that it will fit upon another.

It will be observed that the blade S can be

readily turned in the frame and in any direction that may be required. Another part of my invention, which I consider of some importance, is the peculiar form and location of the frame-handle H. It is preferably cast solid with the section A′, and it is located so low down thereon that the hand of the workman in grasping it will be in position to exert power in a line that is almost the same as that in which the blade is located, thus obviating all side draft on the said blade and promoting smoothness of operation. Downward pressure on the blade is also prevented in a great degree by the location of the framing-handle on a line with it, and while this downward pressure might be tolerated in saws of larger size and designed for heavier work, yet it would be ruinous to the light blades that I propose to use in my improved frame.

In conclusion, I do not desire to be limited to the exact form or style of hinge that I here show for connecting the two sections of the framing, as its form is immaterial to the perfect working of the saw.

I do not herein broadly claim a saw-frame composed of two sections hinged together and provided with a device for regulating the tension of the saw-blade; but

What I do claim is—

In a saw having a metal frame, the combination, with the sections A A′, hinged together and having arms or lugs formed integral therewith, of the straining-rod C, nuts or thumb-screws *c*, located on said rod C, rubber washers *g′*, also located on said rod between the thumb-screws and the lugs D, for the purpose of absorbing vibrations, handle H, formed integral with one of the sections and so situated that the hand of the operator is in the same line with the saw-blade, blade-handle F, having cylindrical body portions *s*, made integral therewith, rubber washers situated on said cylindrical body, as described, and the blade S, secured to the blade-handles in the manner as shown, all arranged to operate substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTOPHER MORROW.

Witnesses:

W. G. MARSHALL,

S. F. OLIVER.