

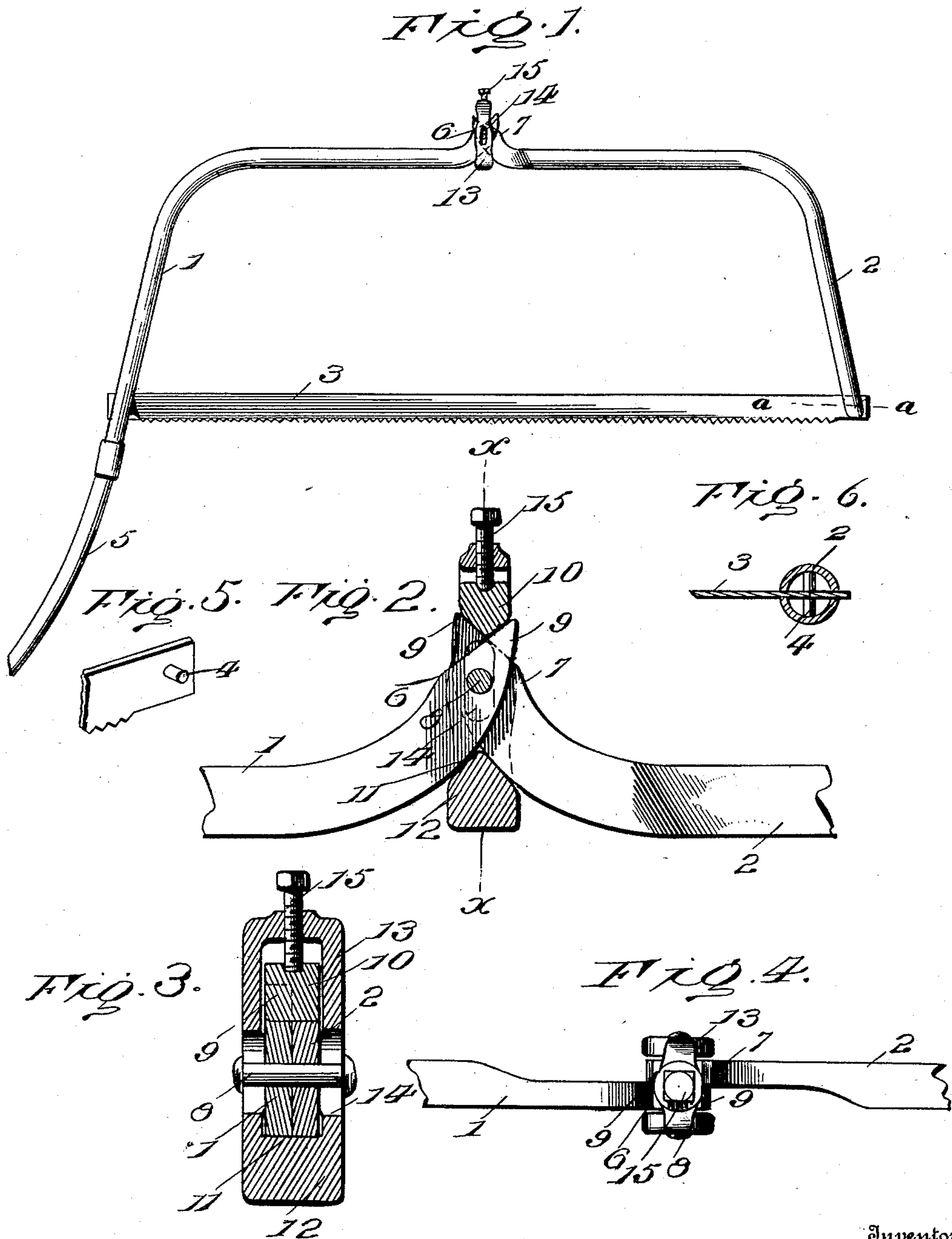
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Patented Nov. 18, 1902.

C. A. BENJAMIN.  
DRAG SAW.

(Application filed Mar. 14, 1902.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

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## DRAG-SAW.

SPECIFICATION forming part of Letters Patent No. 713,943, dated November 18, 1902.

Application filed March 14, 1902. Serial No. 98,218. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. BENJAMIN, a citizen of the United States, residing at McPherson, in the county of McPherson and State of Kansas, have invented certain new and useful Improvements in Drag-Saws; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to the type of saws comprising a frame and a saw-blade held in the frame under tension and aims to provide a novel straining mechanism for spreading the ends of the frame to subject the saw-blade to the tension necessary for effective and efficient work.

The invention consists, essentially, of the novel features, details of construction, and combinations of the parts, which hereinafter will be more particularly set forth, illustrated, and finally claimed.

In the drawings hereto attached and forming a part of the specification, Figure 1 is a side view of a saw embodying the invention. Fig. 2 is a detail view of the joint between the sections of the frame, showing the tension device in section. Fig. 3 is a transverse section on the line X X of Fig. 2. Fig. 4 is a top view of the parts shown in Fig. 2. Fig. 5 is a perspective view of an end portion of the saw-blade. Fig. 6 is a section on the line a a of Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The frame comprises similar sections 1 and 2, connected at their inner ends in such a way as to admit of spreading their outer terminals in order to place the saw-blade 3 under tension. The frame may be of any desired shape and construction, according to the particular use for which the saw is designed. The parts 1 and 2 may be formed either of bar or tubular material, and in the case of drag-saws it is preferred to construct the frame of tubing. The saw-blade 3 is connected at its ends to the outer terminals of the frame by pins 4 or other selected means

commonly employed for this purpose. For convenience of operation the frame is provided with an extension 5, constituting a handle and applied in any convenient way.

In the preferable construction the inner ends of the sections 1 and 2 are curved, as shown at 6 and 7, and are pivotally connected by the fastening 8, passing through transversely-aligning openings in the overlapped terminal portions. The extremities of the curved ends 6 and 7 are oppositely beveled to form a V-shaped space 9, in which is fitted a wedge 10. A V-shaped space 11 is formed between the curved portions of the parts 6 and 7 and receives a wedge 12. These wedges 10 and 12 cooperate to effect a turning of the sections 1 and 2 upon their pivot connection 8, so as to spread the outer terminals of the parts 1 and 2, whereby the saw-blade 3 is strained or placed under tension. A link 13 embraces the joint formed between the sections 1 and 2, and its side members are slotted, as shown at 14, to receive the ends of the pivot-fastening 8, which, in conjunction with the parts 10 and 12, hold the link in place. The wedge 12 is preferably an integral part of the link 13 and is the lower cross-bar thereof, the sides of its upper portion being oppositely inclined to form the wedge. A set-screw 15 is threaded into the upper cross-bar of the link, and its lower end is seated in a depression in the top side of the wedge 10. The side bars of the link 13 closely embrace the sides of the joint, so as to prevent lateral play of the sections 1 and 2, thereby holding them in line, which is essential to the effectiveness of the device when in use.

The size of the frame will depend upon the length of the saw-blade and the special work for which the saw is designed, and after the parts have been assembled and the saw-blade firmly attached to the outer ends of the frame the said blade is strained by turning the set-screw 15 so as to force the wedges 10 and 12 into the spaces 9 and 11. A very slight movement of the set-screw 15 is sufficient to place the saw-blade under a high tension or to regulate the distance between the outer terminals of the frame to accommodate different lengths of saw-blades within certain limits. The



straining mechanism besides serving to adjust the frame and maintain the saw-blade under tension acts to strengthen and reinforce the joint and to hold the sections of the frame in  
5 alinement.

The pin 4 is made fast to the saw-blade and is concealed within the tubular frame and, projecting at its ends beyond the sides of the slot *b* in the frame in which the end of the saw-  
10 blade is received, holds the said blade in place when under tension.

Having thus described the invention, what is claimed as new is—

1. In a saw, a frame composed of sections,  
15 a wedge interposed between the ends of the sections, and means for moving the wedge to effect an adjustment of the frame either to accommodate different lengths of saw-blades within certain limits or to place the saw-blade  
20 under tension, substantially as set forth.

2. In a saw, a frame comprising pivoted sections, and a wedge interposed between the pivoted ends of the said sections to effect an outward adjustment of the outer terminals of the  
25 said sections, substantially as and for the purpose set forth.

3. In a saw, a frame composed of sections pivotally connected at their inner ends, a link fitted to the joint between the said sections,  
30 a wedge held in place by the link, and means for forcing the wedge between the pivoted parts of the joint to effect a spreading of the outer ends of the aforesaid sections, substantially as specified.

35 4. In a saw, a frame comprising sections pivotally connected at their inner ends, a link applied to the joint, wedges located at opposite sides of the pivot connection and supported by the link, and means for forcing the  
40 wedges together, whereby they cooperate to effect a spreading of the outer ends of the

aforementioned sections, substantially as set forth.

5. In a saw, a frame comprising pivoted sections, having the extremities of the pivotal  
45 ends oppositely inclined, a wedge, and means for forcing the wedge into the angular space formed between the inclined extremities of the said pivotal ends to effect a spreading of the outer ends of the frame, substantially as  
50 and for the purpose specified.

6. In a saw, a frame comprising sections having their inner ends curved and pivotally connected, and a wedge adapted to be forced  
55 into the space formed between the curved portions of the pivoted ends to effect a spreading of the outer ends of the frame, substantially as specified.

7. In a saw, a frame comprising pivoted sections, a link embracing the joint formed be-  
60 tween the said sections, a wedge supported by said link, and means cooperating with the link to force the wedge between the pivoted parts of the joint to effect a spreading of the outer ends of the frame, substantially as set  
65 forth.

8. In a saw, a frame comprising sections having the inner ends curved and overlapped, a pivot-fastening connecting the curved ends  
70 and having its end portions extended, a link embracing the joint and having its side portions slotted to receive the extended ends of the pivot-fastening, a wedge carried by the link, and means for forcing the wedge home to effect a spreading of the outer ends of the  
75 frame, substantially as set forth.

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

CHARLES A. BENJAMIN.

Witnesses:

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