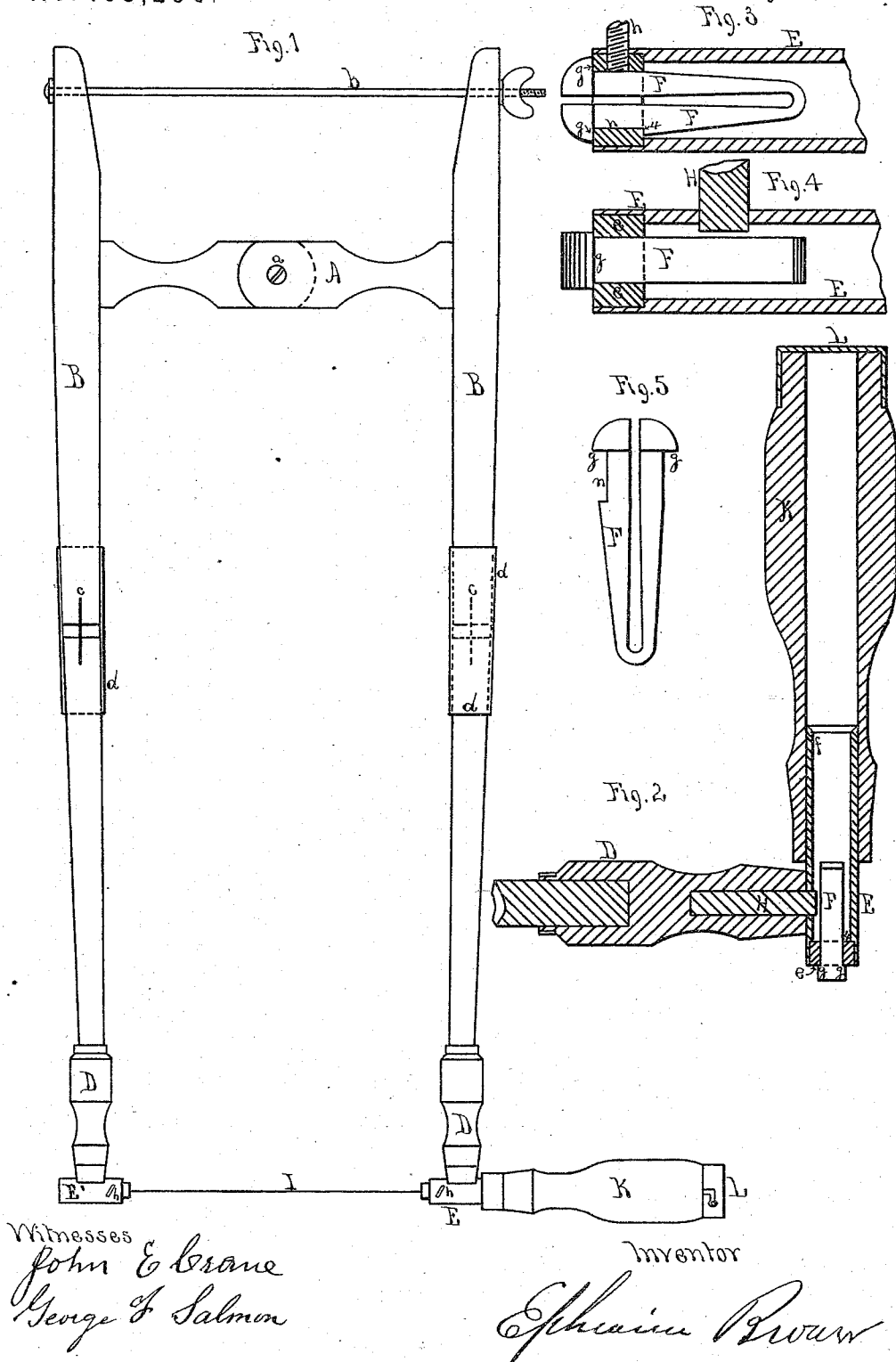


E. BROWN.
Buhl-Saw.

No. 163,296.

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UNITED STATES PATENT OFFICE.

EPHRAIM BROWN, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN BUHL-SAWS.

Specification forming part of Letters Patent No. **163,296**, dated May 18, 1875; application filed January 9, 1875.

To all whom it may concern:

Be it known that I, EPHRAIM BROWN, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Buhl-Saws, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 represents a side elevation; Fig. 2, a detached section of the hollow handle or saw-case and certain of the other parts, showing, also, one of the shouldered saw clamps, gripes, or holding devices, the bushed tube into which the gripe is inserted, and which, at the operating end, enters and forms a part of the handle, the side shank by which the tube or this and the handle are connected each to one of the frame-sides, or to an extension connected therewith. Figs. 3 and 4 represent opposite detached sections of the bushed tube and its frame-side-connecting shank with the shouldered and notched saw-gripe as they are applied in practice. Fig. 5 represents a side elevation of one of the shouldered and notched saw-gripes detached, showing the notch which engages with the inner end of the tube-bushing.

This invention relates to certain new and useful improvements in buhl-saws, whereby the latter are rendered more useful and convenient than those heretofore in use, and cheaper in proportion to the mechanical construction and combinations of certain of the parts, one or more of which serve a double purpose, and thereby contribute to the production of more than one result, co-operating with other parts, as hereinafter more fully explained.

My invention consists, first, of the jointed frame-sides B of the buhl-saw, in combination with and connected by links or pivoted plates *c*, and with and held in position and released by sliding ferrules *d*, so as to render the frame capable of being folded together, or one part over the other, and thus to occupy but about one-half the room or space one way, and thus to be much more convenient for packing and carrying.

Second, my invention consists of the tubular bushed socket E, constructed with an end

bushing, *e*, which forms a holding-shoulder, 4, for the clamp or gripe F and its notch *n*, and with a side shank, H, by which to connect the socket with the end D of either frame-side B, as hereinafter described.

Third, my invention consists of the spring clamp or gripe F, constructed as shown, with shoulders *g* and a holding-notch, *n*, in combination with the bushed socket E and set-screw *h*, and operating as hereinafter more fully described.

Fourth, my invention consists of the combination of the hollow capped handle K with the tubular bushed socket E, having a holding-shoulder, 4, for the notch *n* of the gripe F, a connecting-shank, H, and a set-screw, *h*, and with the shouldered and notched clamp or gripe F and frame-side B, substantially as hereinafter fully described.

In the said drawings, B represents the frame-sides, which are jointed at or near their centers, and connected by links or plates *c*, which work in slots in and are pivoted to each division of the frame-sides, so as to allow the two parts of the frame to be folded together into compact form for convenience of boxing, packing, or carrying, and when the thus jointed and linked or plate-connected frame-sides are unfolded or opened, a sliding ferrule, *d*, on each side B is slid over the joint, thus holding each frame-side in position for use. The frame-sides are retained at a suitable distance apart by a well-known cross-bar, A, and the tension or strain is brought upon the saw by a common screw-rod, *b*, applied to the upper or outer ends of the frame-sides. To release the jointed frame-sides, as when they are to be folded together, the ferrules *d* are slid or moved back from and uncovering each joint, when the frame is easily and conveniently folded together, as before stated. To the ends of each of the frame-sides B, opposite to where the screw-rod *b* is applied, or to extended ends D, I apply to each a tubular bushed socket, E, by means of a side shank, H, which enters the end of each frame-side or its extension D, and this holds each socket firmly in position.

Each socket E is constructed with an interior end bushing, *e*, which forms a holding-shoulder, 4, for the clamp or gripe F and its

notch *n*, when the clamp is applied, as shown. One of these sockets, *E'*, is only long enough to contain a clamp or gripe, which holds one end of the saw *I*, while the other socket, *E*, is longer, and its extended end *f* enters and forms a connection with and a part of the hollow handle *K*, and this, with the tubular socket *E*, forms a case or receptacle for spare saws, when the cap *L* is applied, as shown, and the shouldered gripe *F* is inserted in the inner end of the bushed tube. The shoulders on all sides of the head of the gripe, by predetermined construction of the latter, prevent thin saws from passing out of the case between the sides of the gripe and the bushing of the socket when the gripe fits loosely. Set-screws *h*, passing through the side of each bushed tube, are to press on the side of each gripe, opposite each notch *n*, and close the gripe tightly upon the sides of the saw-ends and hold them firmly, while the notch *n* and the shoulder 4 of the bushing prevent the gripe being withdrawn when the saw is strained or tension brought upon it by the screw-rod *b*. The clamp or gripe *F*, which is constructed with shoulders *g* on all sides of the head, may, in some instances, be or become loose in the bushing of the socket *E*; but in that event the shoulders *g* will operate as they were designed, and prevent the escape of thin saws from the case or hollow handle at that point. This clamp or gripe *F* is intended to be used only in combination with the tubular bushed socket *E* and its set-screw *h*, to clamp and hold the saw and to prevent the withdrawal of the gripe, as before described. Instead of the inner shoulder of the bushing *e*, it is evident that a pin passing through the side of the socket and entering the notch *n* of the gripe might be resorted to as equivalent means for holding in the gripe. The hollow capped handle *K* is constructed as shown, its cap *L* applied to the outer end, and the extension *f* of the tubular socket *E* inserted tightly in the inner end of the handle. The side shank *H* is then driven or forced into the end of the frame-side or into the end *D*, as shown, and the bushing *E'* is affixed to the other end *D* in like manner. The gripes *F* are then inserted in the bushed end of each

tubular bushing *E*, with the shoulders of the gripe-head fair against the end of the bushing, and the notch *n* on the bushing and its shoulder 4, the ends of the saw *I* placed between the jaws of the gripe, the set-screws *h* turned in, pressing the notch *n* onto the rise of the bushing *e*, and closing the jaws of the gripe tightly onto the saw-ends, and holding them firmly. The screw-rod *b* or its nut is then turned to draw the upper ends of the frame together, and thus to force the opposite and saw-connected ends apart and tighten or strain the saw. The extension *f* and the side shank *H* are the means for connecting the hollow capped handle with the tubular bushed socket and the frame-side *B*, while the bushing *e*, with its shoulder 4, and the notch *n* and set-screw *h* of the gripe are the means for connecting the latter with the bushed socket, thus forming the new combinations of co-operative elements, each combination of elements producing a new, useful, and unitary result.

I claim as my invention—

1. In a buhl-saw frame, the jointed sides *B*, in combination with and connected by links or plates *c*, held and released by ferrules *d*, substantially as and for the purpose described.

2. The tubular socket *E*, constructed as described, with an end bushing, *e*, having a shoulder, 4, and with a side shank, *H*, and a set-screw, *h*, in combination with the frame-side *B*, substantially as described.

3. The spring clamp or gripe *F*, constructed as described, with shoulders *g* and a notch, *n*, in combination with the bushed socket *E* and its set-screw *h*, and clamping and holding the ends of the saw, substantially as described.

4. The combination of the hollow capped handle *K* with the tubular bushed socket *E*, having a shoulder, 4, a frame-connecting shank, *H*, and a set-screw, *h*, and with the clamp *F*, having a notch, *n*, and shoulders *g*, and with the frame-side *B*, substantially as and for the purpose described.

EPHRAIM BROWN.

Witnesses:

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