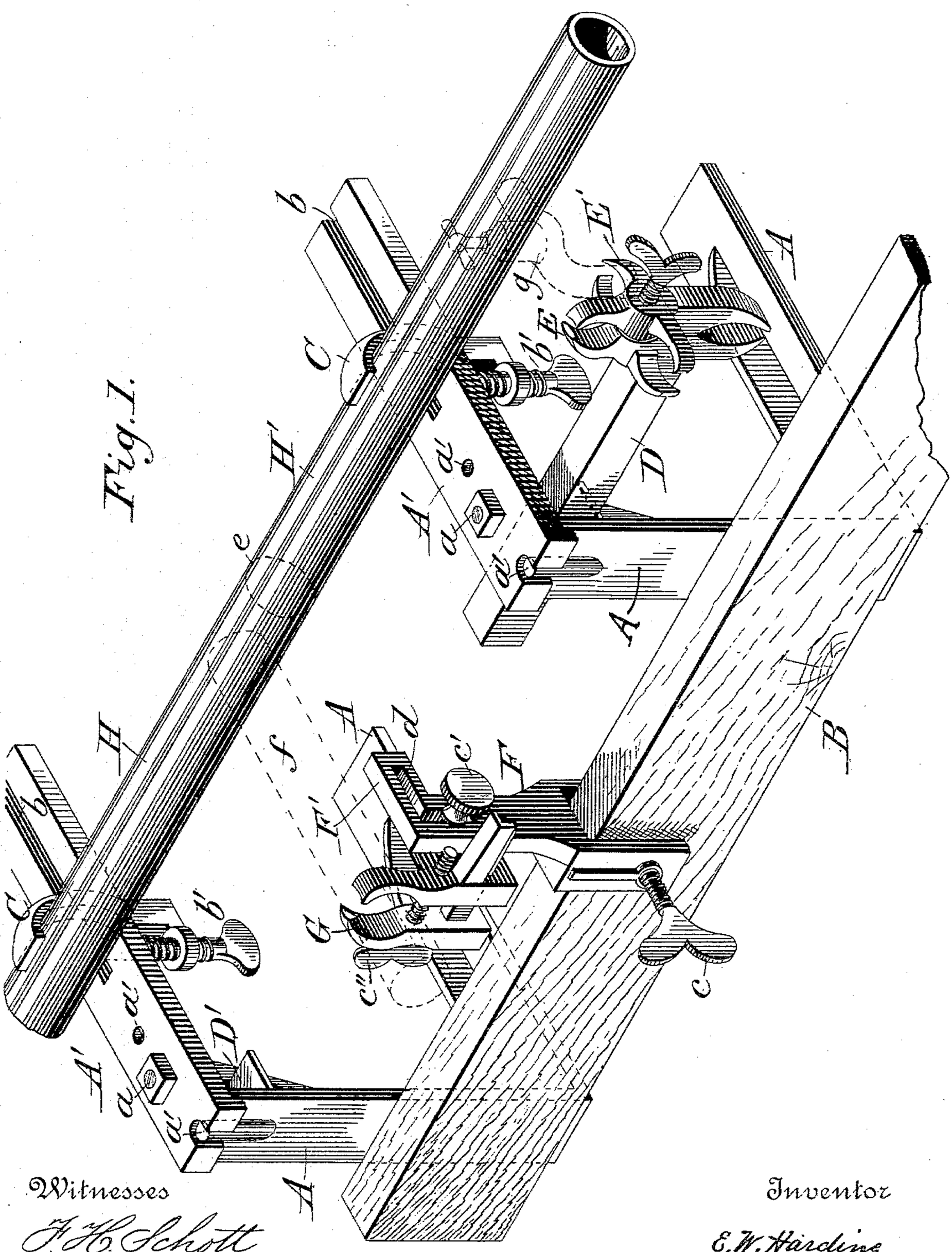
(No Model.) 3 Sheets—Sheet 1.

E. W. HARDING.

PLUMBER'S CLAMP.

No. 356,937. Patented Feb. 1, 1887.

Fig. 1.



Witnesses

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

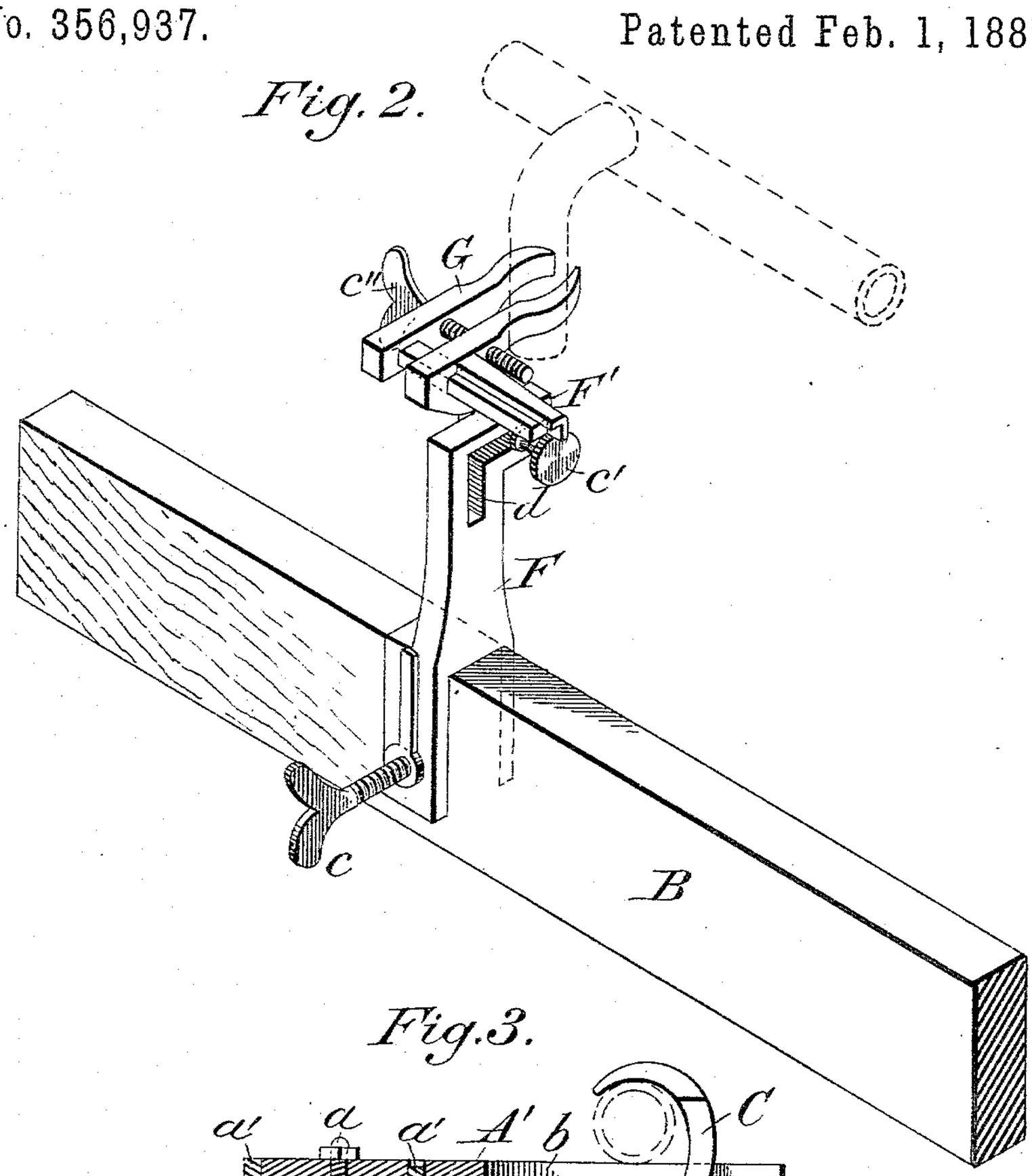
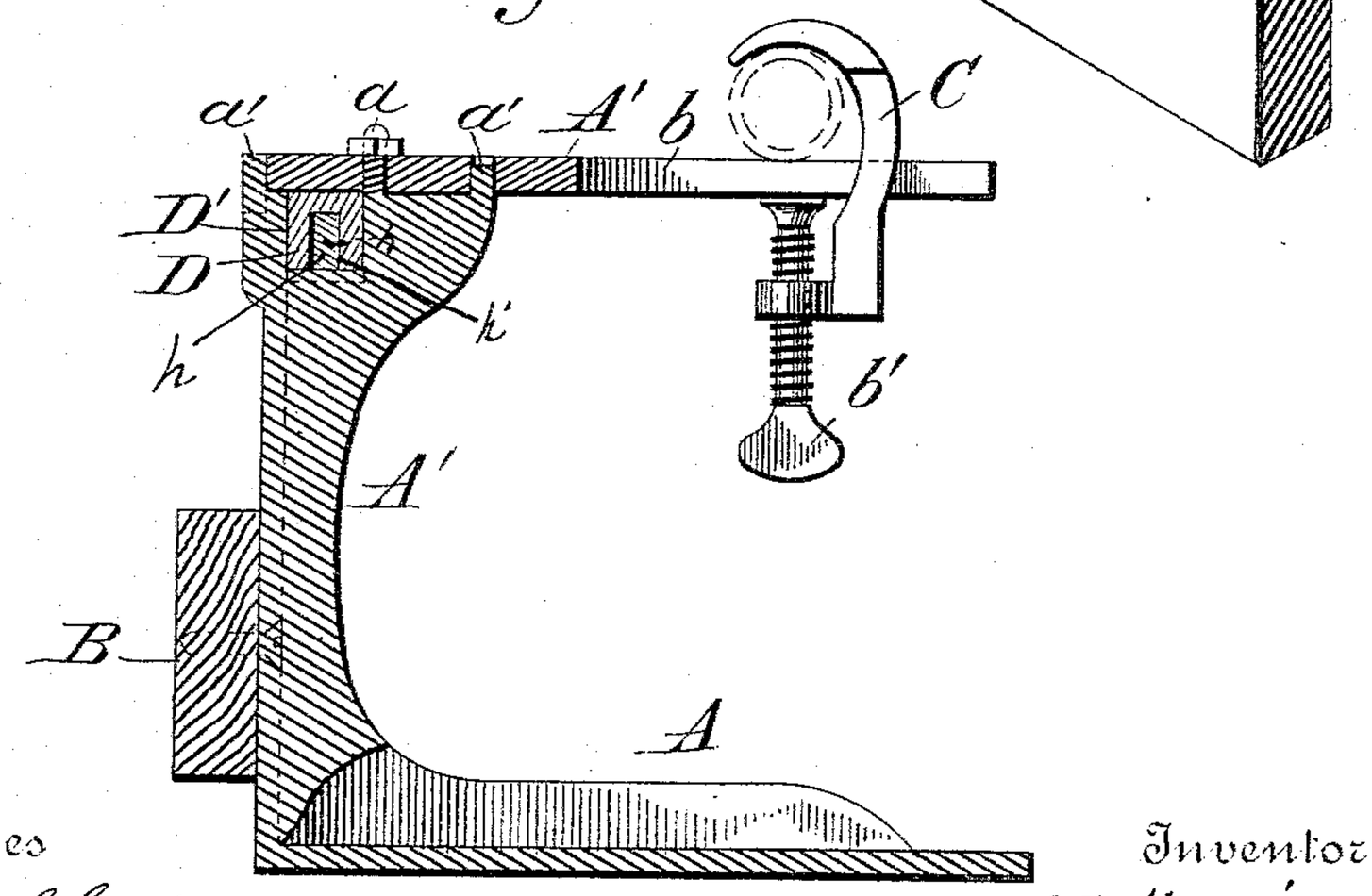


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

E. W. HARDING.

PLUMBER'S CLAMP.

No. 356,937. Patented Feb. 1, 1887.

Fig. 4.

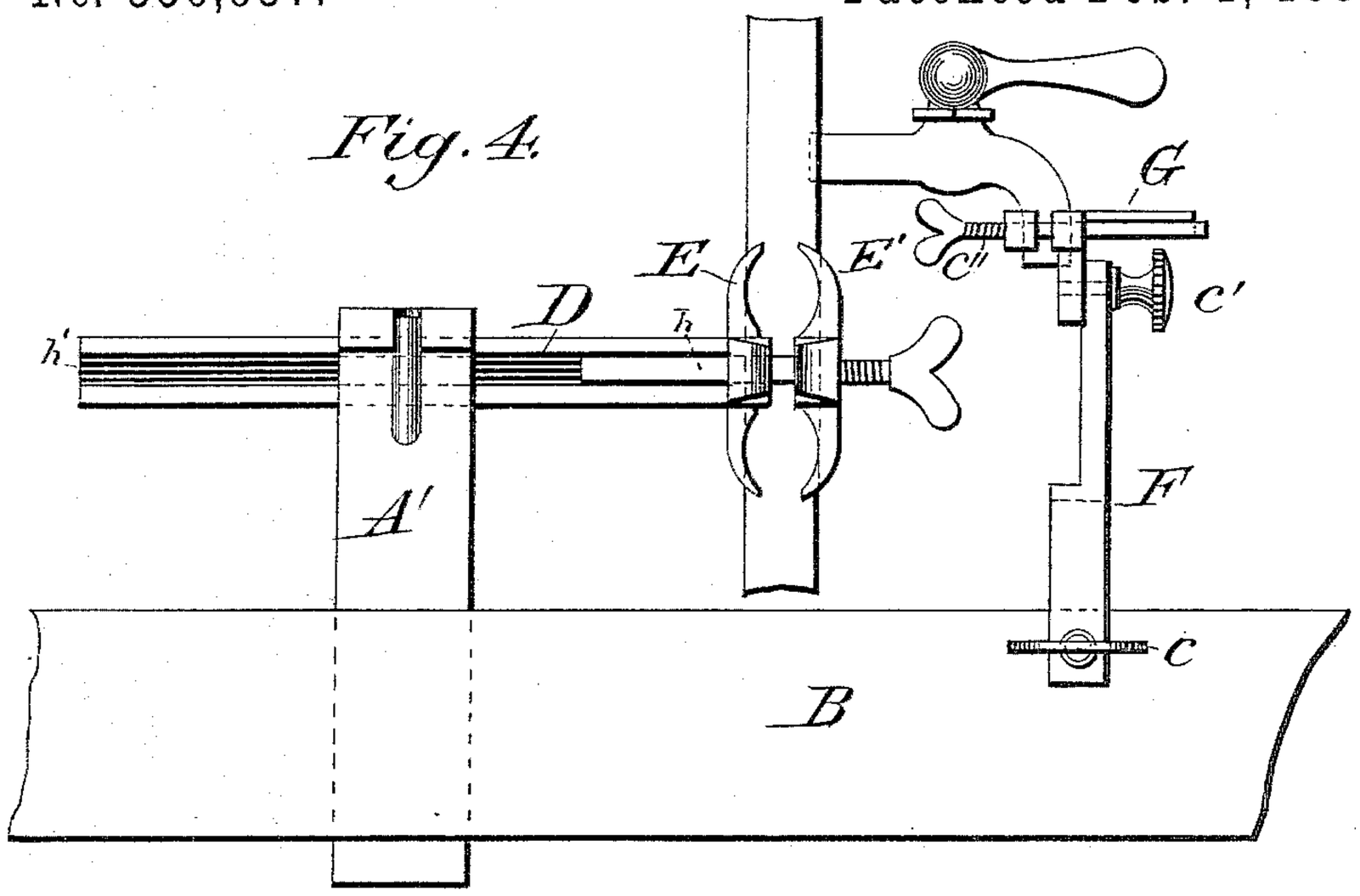
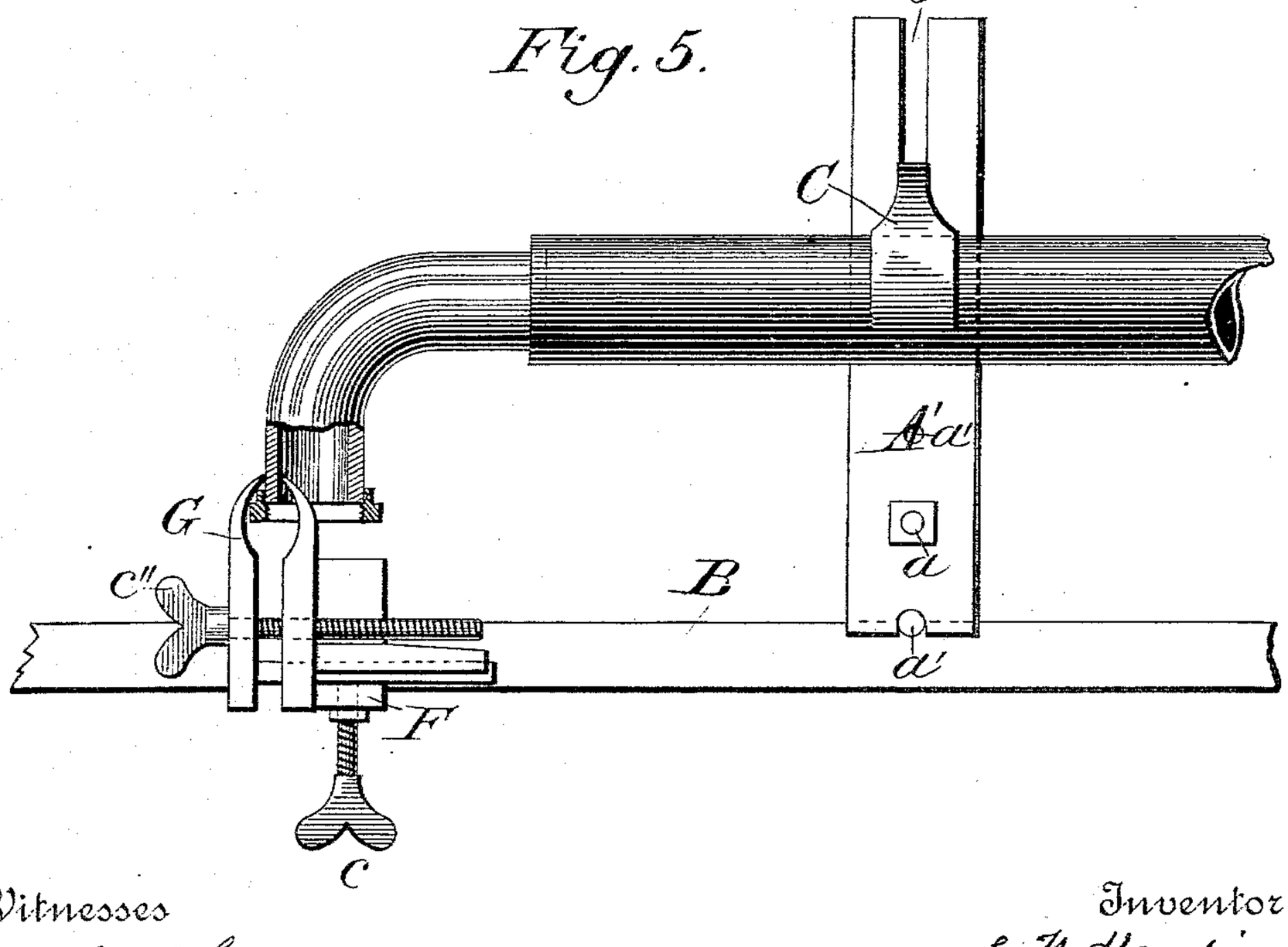


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD W. HARDING, OF BOSTON, MASSACHUSETTS.

PLUMBER'S CLAMP.

SPECIFICATION forming part of Letters Patent No. 356,937, dated February 1, 1887.

Application filed May 3, 1886. Serial No. 201,026. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. HARDING, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Plumbers' Clamps; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of devices known as "plumbers' clamps," such clamps being especially adapted to hold pipes, cocks, and couplings in place while the joints are being made by the application of solder around the same, by the process commonly known as "wiping," in which it is necessary for the workman to have free access to all parts of the joint, and the pipes for a short distance each side of the joint, thus compelling the holding devices to be placed at a distance therefrom.

The object of the present invention is to furnish the trade with a clamp that shall be portable, cheap, and capable of holding in position for wiping all the various cocks, couplings, and pipes in common use.

To this end the invention consists in the construction of a series of movable and adjustable clamps secured to a light frame-work, which may be placed upon a work-bench or other support, all as hereinafter fully described, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a perspective view of the apparatus, showing the parts arranged to clamp a straight pipe, while a branch projecting at right angles and an ordinary cock are shown in dotted lines held in position for joining to the main pipe. Fig. 2 is a perspective showing the adjustment of clamps to hold an elbow in position to connect with a main pipe. Fig. 3 is a side view, partly in section, of one of the brackets to which the clamps are attached, showing its construction. Fig. 4 is a side view of the devices as arranged for holding a cock in position for connection with a vertical pipe, and Fig. 5 is a like view, illustrating the method of holding an elbow-coupling in position to connect with the end of a pipe.

Similar letters of reference indicate like parts in all these figures.

A A represent two metal brackets, each of which is L-shaped, and is provided with a projecting arm, A′, secured to the first-named part by means of the bolt and nut *a*, and suitable projections or steady-pins, *a′*, which enter recesses formed in the arm for their reception. Connecting these brackets is a bar, B, which may be of wood or metal, and is secured to the upright arm of the brackets by screws or other suitable means, so that the whole forms a rectangular frame which may be placed upon a work-bench or in any other position found most convenient.

Each of the arms A is provided with a longitudinal slot, *b*, in which are placed the clamps C. These clamps are preferably formed with a curved holding-jaw approximating to the form of the pipe to be held by them, and moving freely in the slots of the arms, so that they may be adjusted to any desired point in its length and there secured by the set-screw *b′*, which has its joint bearing against the under side of one of the arms A′.

At the junction of the arms A′ with the vertical portion of the brackets A are formed the rectangular openings D′, three sides of said openings being formed by the bracket and the fourth by the slotted arm A′. Within these openings are secured the extension-bars D, carrying upon one end the four-jawed screw-clamp composed of the parts E and E′, the part E being firmly attached to or a part of the bar D. The movable part E′ is provided with a guide-arm, *h*, which passes through an orifice in the part E and rests in a groove, *h′*, formed in the bar D, each of the jaws of said clamp having a different width of opening from the others, to enable them to grasp and hold firmly cocks or couplings of varying sizes, the said extension-bar being retained in any desired position within the opening D′ by turning down the nut on bolt *a*, thus bringing the arm A′ firmly down upon the upper surface of the bar D, and thus clamping said arm in the opening.

Attached to the bar B by means of a set-

screw, *c*, is one or more standards, F. The upper ends of these standards have an extension, F′, at right angles to the upright part of the standard. A slot, *d*, is formed in this upright part, and also in the extension, through which passes the set-screw *c′*, firmly securing to the standard in any desired position the clamp G, operated by the screw *c″*. This standard E is adjustable to any point desired along the bar B, and by means of the right-angled slot in its upper part the clamp G is made adjustable to any position needed to receive and hold a branch pipe, cock, or coupling, which it may be desired to connect with a pipe held by the clamps C. By means of these three adjustable clamps the apparatus is enabled to hold in the desired position nearly all the parts joined together in the plumbing of a house or vessel.

The operation of the several devices being as follows: Suppose it be desired to unite two pieces of pipe, H H′, at the point shown by the dotted line *e* in Fig. 1, the apparatus is set upon a bench, or in any other desired position with proper support, the two pieces of pipe, as H H′, are laid across the arms A′ and secured by the clamps C, the ends to be joined are brought together, as shown, and the melted solder employed in making wiped joints applied in the usual manner.

If it be desired to connect a branch to a main pipe, the latter will be held by the clamps C upon the arms A′, and the branch, as *f*, held in proper relation to the main pipe by the clamp G. Should it be desired to insert a cock, as *g*, into said main pipe, the downwardly-bent portion may be held in one of the jaws of the clamp E E′, attached to the end of the extension-bar D, which is passed through one of the openings D′ until the cock is brought to the desired position with relation to the pipe, when the bar may be firmly fixed by screwing down the nut upon the bolt *a*, causing the arm A′ to impinge upon the upper surface of the bar and hold it firmly in place.

In Fig. 2 the clamp G is shown holding an elbow-pipe in place for forming a junction with a straight horizontal main pipe.

In Fig. 4 the main pipe is shown held in a vertical position by the clamp E upon the end of the extension-arm, while a cock is retained in place to be joined with said main pipe by the clamp G, to make a connection with the end of a pipe lying across the arms A′ and retained thereon by clamps C. It will be further observed that the devices are adapted to hold the parts in place for making several joints at once, thus economizing time, as but one melting of the solder is needed to make them all.

The illustrations of the positions in which the parts to be joined and held by these devices might be carried to a great length; but enough has been given to show their adaptability to the purpose for which they are intended.

I am aware that several clamping devices have been invented intended to accomplish the result attained by the one herein described, among them those shown in the patents of Hunt, July 4, 1882, Drummond, September 25, 1883, and Dixon, November 6, 1883. I do not, therefore, broadly claim a pipe-holding device intended to hold pipes in position while making the joints, but limit my claims to the special devices herein shown and described for accomplishing that object.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. A plumber's clamp consisting of the brackets A, arms A′, and bar B, in combination with standard F, clamps C G, and bar D, with its attached four-jawed clamp, all arranged for joint operation in the manner shown and described.

2. In a plumber's clamp, the brackets A, having rectangular openings D′, in combination with the arms A′, extension-bar D, and four-jawed clamp E, as set forth.

3. The combination of the standard F, having the right-angled extension F′ and slot *d*, with the adjustable clamp G, secured to the standard by the screw *c′*, and the bar B, on which said standard is adjustably secured, as and for the purpose stated.

4. The brackets A and slotted arms A′, attached to said brackets, in combination with the clamps C, constructed as shown, and made adjustable in the slots of said arms, as and for the purposes specified.

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

EDWARD W. HARDING.

Witnesses:
F. H. SCHOTT,
M. A. BALLINGER.