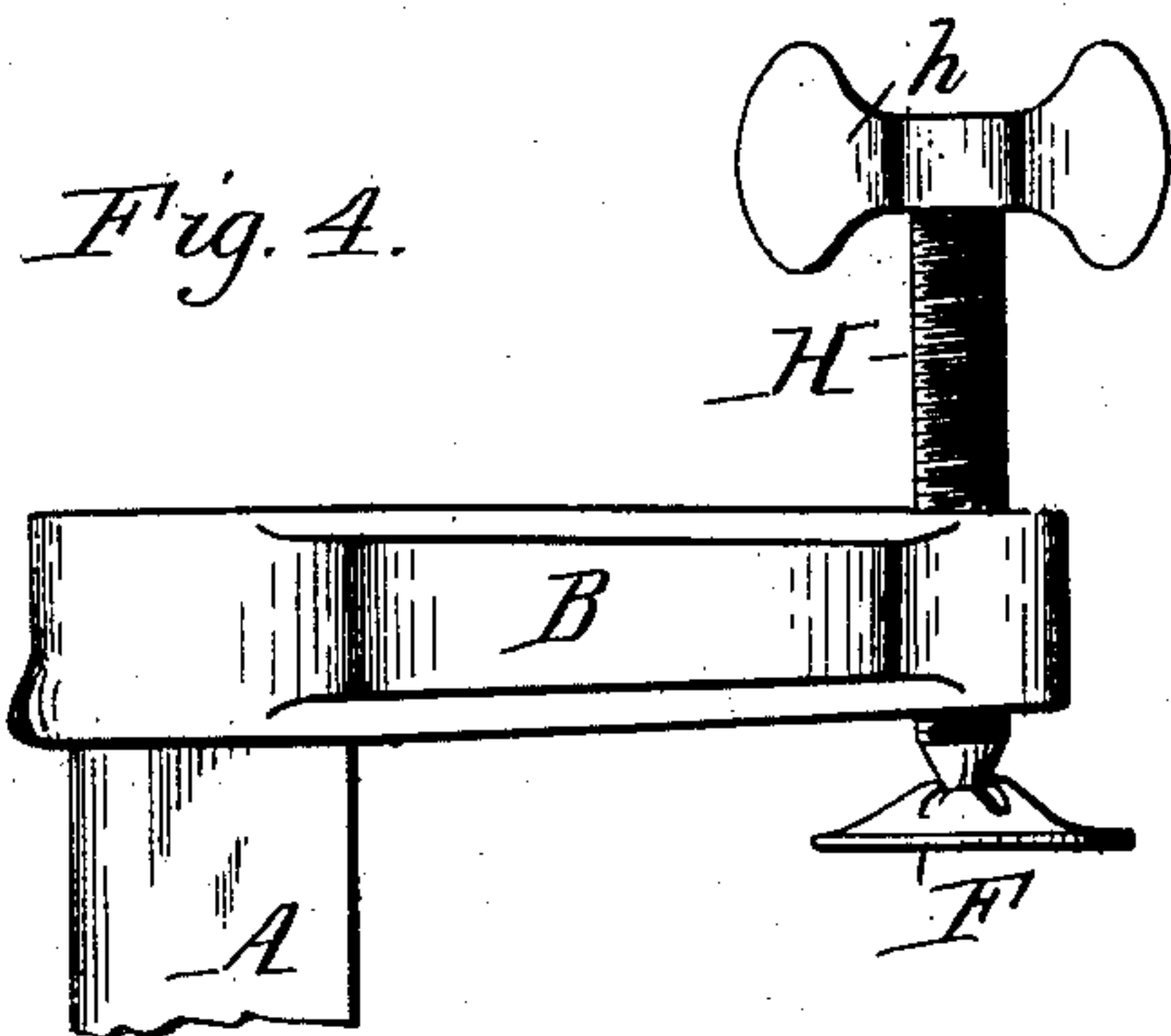
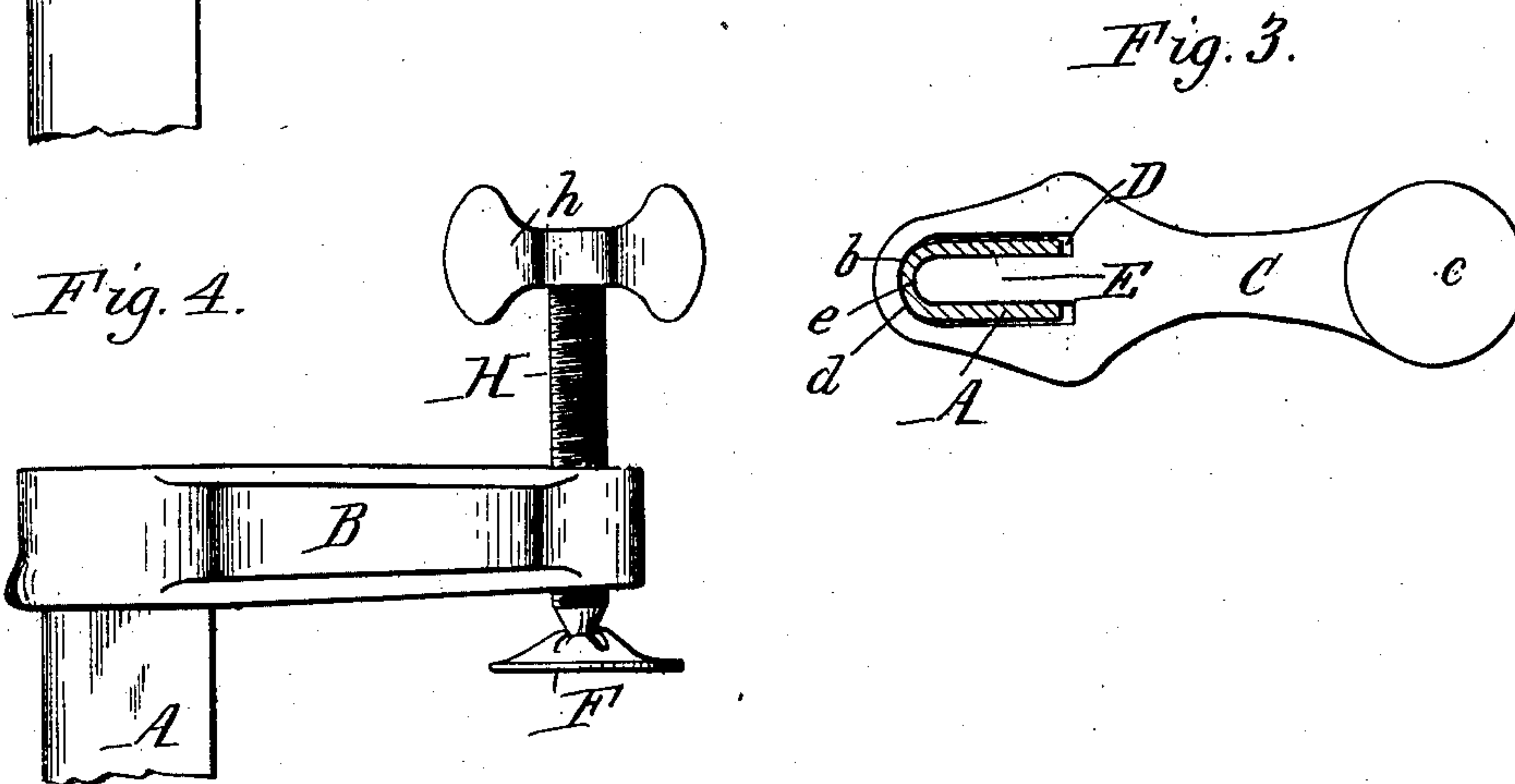
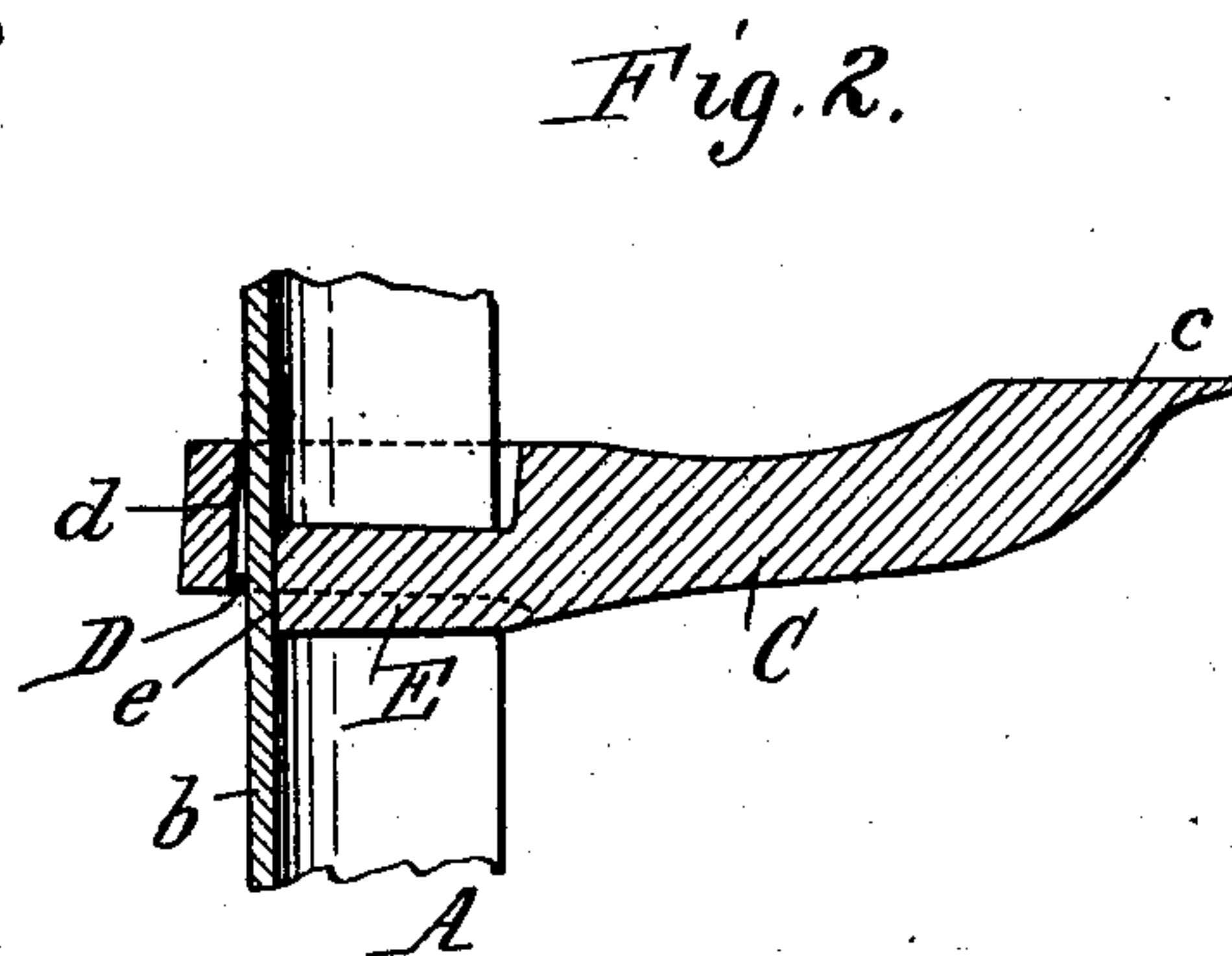
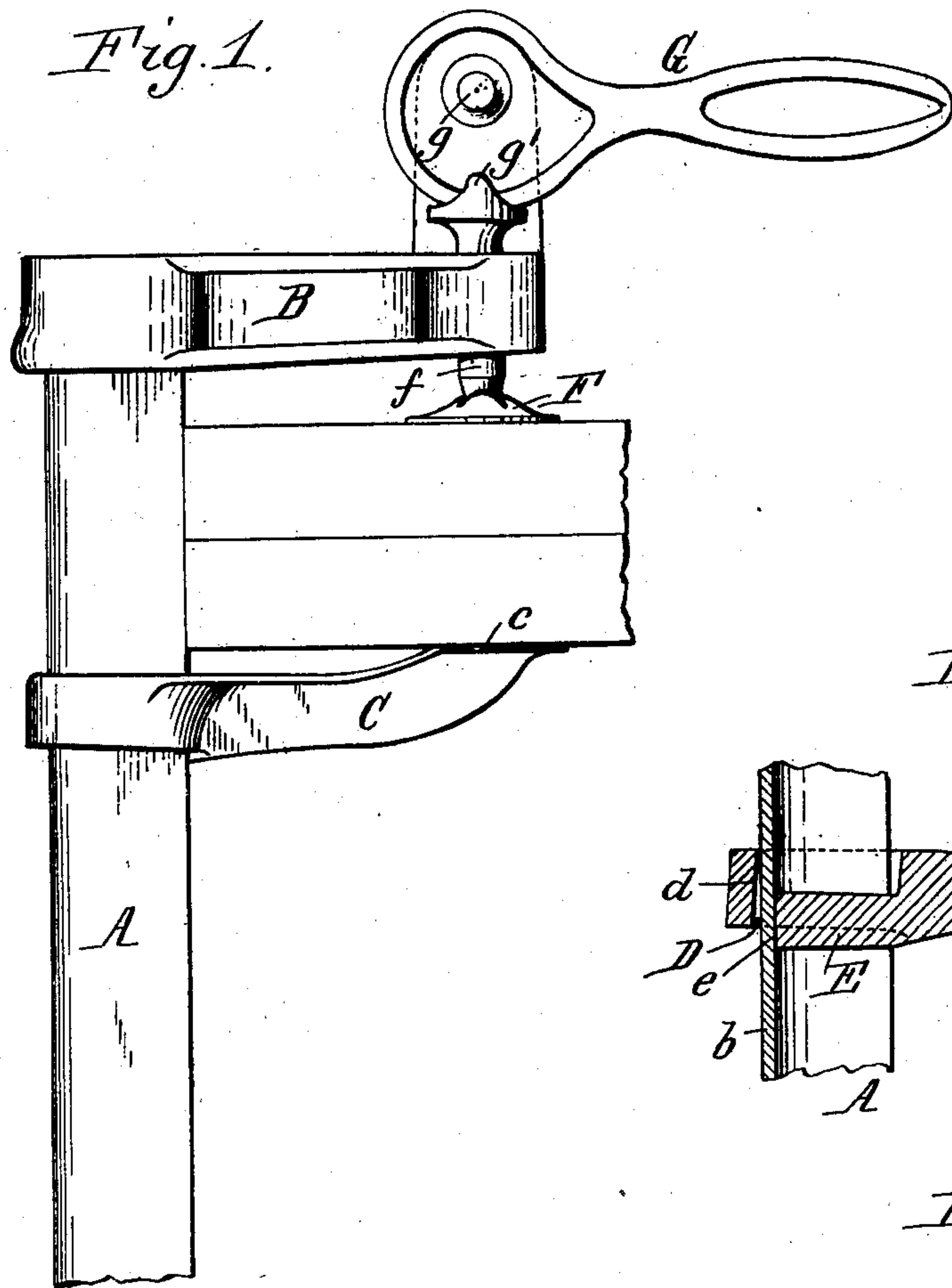


No. 735,947.

PATENTED AUG. 11, 1903.

A. M. COLT.
QUICK ACTING CLAMP.
APPLICATION FILED JAN. 12, 1903.

NO MODEL



Witnesses:

J. M. Snyder, Jr.
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UNITED STATES PATENT OFFICE.

ALVA M. COLT, OF BATAVIA, NEW YORK.

QUICK-ACTING CLAMP.

SPECIFICATION forming part of Letters Patent No. 735,947, dated August 11, 1903.

Application filed January 12, 1903. Serial No. 138,623. (No model.)

To all whom it may concern:

Be it known that I, ALVA M. COLT, a citizen of the United States, residing at Batavia, in the county of Genesee and State of New York, have invented new and useful Improvements in Quick-Acting Clamps, of which the following is a specification.

This invention relates more particularly to a quick-acting clamp of that kind in which a shank or bar is provided with a jaw slidably mounted on the same and having gripping-faces to bind on the shank to hold the sliding jaw at any desired point on the shank and an opposing clamping-plate which is moved toward the sliding jaw by a cam-lever, screw, or other device.

The object of the present invention is to provide a desirable, effective, and durable clamp in which the sliding jaw will at all times when in use firmly grip the shank and not slip.

In the accompanying drawings, Figure 1 is a side elevation of a clamp embodying the invention. Fig. 2 is a fragmentary longitudinal section through the shank and sliding jaw. Fig. 3 is a transverse section through the shank, showing the sliding jaw in plan. Fig. 4 is a fragmentary elevation showing a slightly-different means for operating the clamping-plate.

Like letters of reference refer to like parts in the several figures.

A represents a straight bar or shank which is provided at one end with a fixed arm or portion B, extending forwardly from the shank substantially at right angles thereto. The shank or bar is of U or trough shape in cross-section, having separated parallel side walls which are of considerable width and are connected only at their rear edges by a back wall b, so that the hollow or open side of the trough is at the front. The shank is preferably made of sheet metal and while comparatively light has great stiffness and strength.

C represents the sliding jaw or arm. This jaw is provided at its front end with a flat bearing face or portion c for the work and is provided at its rear end with a hole D, through which the shank passes and which substantially conforms in shape to the external cross-sectional shape of the shank. The sliding jaw is also provided with a tongue E, which

extends rearwardly into the hole D of the jaw toward the back wall of the shank and between the side walls thereof, as shown in Figs. 2 and 3. The rear end face e of the tongue and the rear face d of the hole in the jaw are so formed (see Fig. 2) that when the front end of the sliding jaw is tilted or pressed slightly away from the fixed arm of the clamp the gripping-faces will grip or bind on the opposite faces of the rear wall of the shank and the jaw will be firmly held against movement away from the fixed arm, while by tilting or pressing the front end of the sliding jaw toward the fixed arm the sliding jaw releases its hold on the shank and can be slid along the same. The rear gripping-faces of the tongue E and hole D are relatively long and bear for a considerable portion of their length against the rear wall of the shank when gripping the same, thus reducing wear on these faces and increasing the longevity and durability of the device.

F represents a clamping-plate which is provided with a flat bearing-face opposed to the bearing-face of the sliding jaw. The clamping-plate is connected to the inner end of a stem f, movably supported on the fixed arm of the clamp. The plate is preferably connected to the stem by a ball-and-socket joint, so that the plate can tilt on the stem and always bear flat against the work. In the construction shown in Fig. 1 the stem f slides longitudinally in a bearing-hole in the fixed arm of the shank and is operated to clamp and release the work by a cam-lever G, pivoted on a pin g, secured on a lug on the fixed arm of the clamp, and having a cam-shaped flange which engages between the outer end of the stem and a finger g' thereon. When the work is placed between the clamping-plate and the sliding jaw and the latter slid along the shank into contact with the work, the cam-lever is operated to force the clamping-plate against the work and clamp the latter firmly between the sliding jaw and clamping-plate.

The shank carrying the clamping-plate can be operated by any other suitable means. For instance, as shown in Fig. 4, the shank H is screw-threaded and works in a screw-threaded hole in the fixed arm and is provided at its outer end with an operating-head h.

Only the rear faces d and e of the hole and

tongue of the sliding jaw grip or bind on the shank, and the front wall d' of the hole is out of contact with the front edges of the side walls of the shank, and as the tongue is of considerable length the leverage of the sliding jaw in gripping the shank is great and a very firm hold results, even should the work being clamped bear against the sliding jaw at the front edge of the shank. This is important, for in using the clamp with some classes of work it is desirable to place the work directly against the straight front edge of the shank to hold it in place and prevent it from buckling when pressed or clamped between the sliding jaw and clamping-plate.

I am aware that a clamp of this type in which the sliding jaw is provided with opposite side gripping-lugs engaging between side flanges on the shank is old; but in said clamp the gripping-lugs are necessarily small and have very small gripping-faces, which soon wear and render the device inefficient. It is also old to provide the sliding jaw with a rearwardly-projecting loose tongue which is held in contact with the shank by a spring. This construction is objectionable on account of the small disconnected tongue, which is apt to be detached and lost, and the employment of the spring, which is liable to be broken. It is also old to provide the sliding jaw with a

tongue entering a slot in the front face of the shank and gripping against opposite flanges at the front of the shank. This clamp is not certain in use, as the gripping-points are at the front of the shank, and if the work bears on the jaw near the shank the leverage is so short that the jaw will not hold.

I claim as my invention—

The combination of a shank having separated parallel side walls connected by a back wall, a jaw projecting forwardly from and slidable on said shank, said jaw having a hole through which the shank passes and a rigid tongue projecting rearwardly in said hole between the side walls of said shank and adapted to bear at its rear end against the back wall of said shank to bind the latter between the rear end of said tongue and the rear wall of said hole in the jaw, a clamping-plate arranged opposite to said sliding jaw, and means for moving said clamping-plate toward and from said sliding jaw, substantially as set forth.

Witness my hand this 6th day of January, 1903.

ALVA M. COLT.

Witnesses:

EDWARD J. HOGAN,
H. W. SKELLEY.