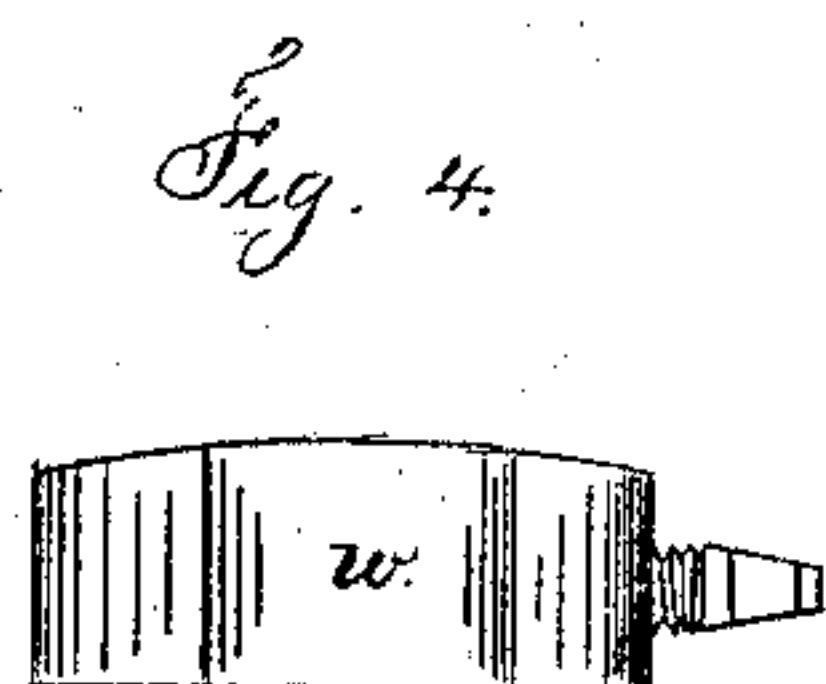
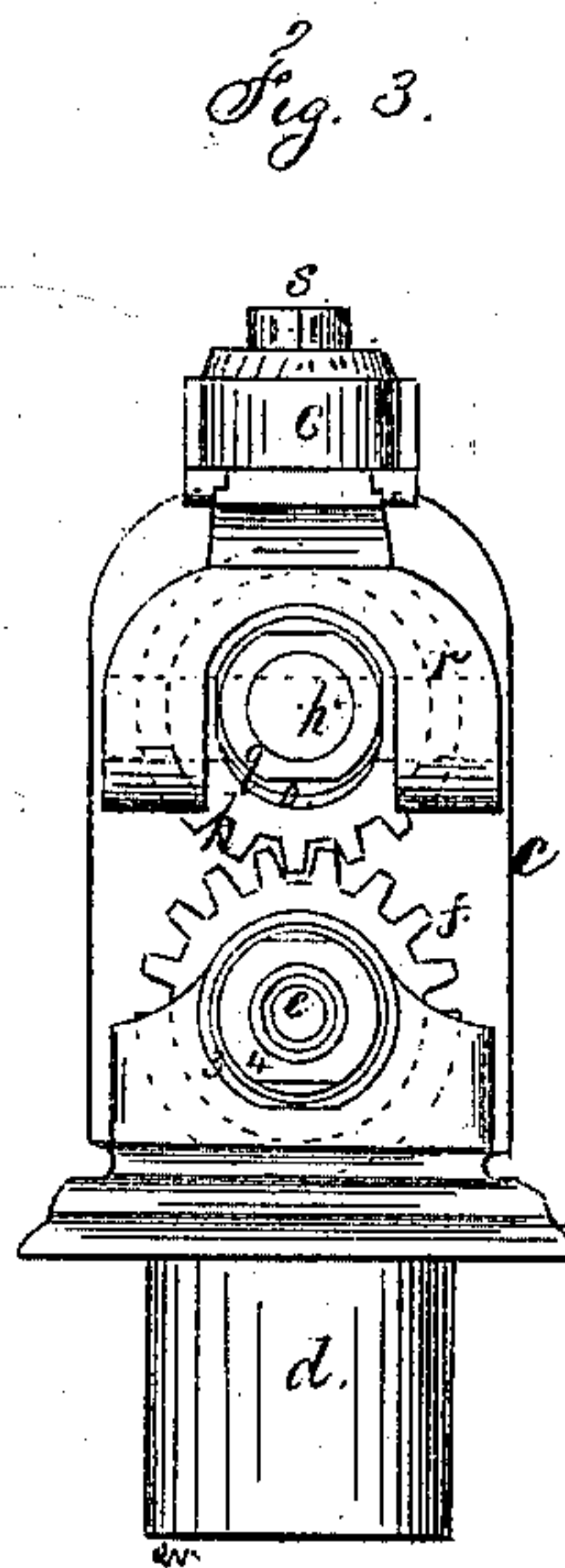
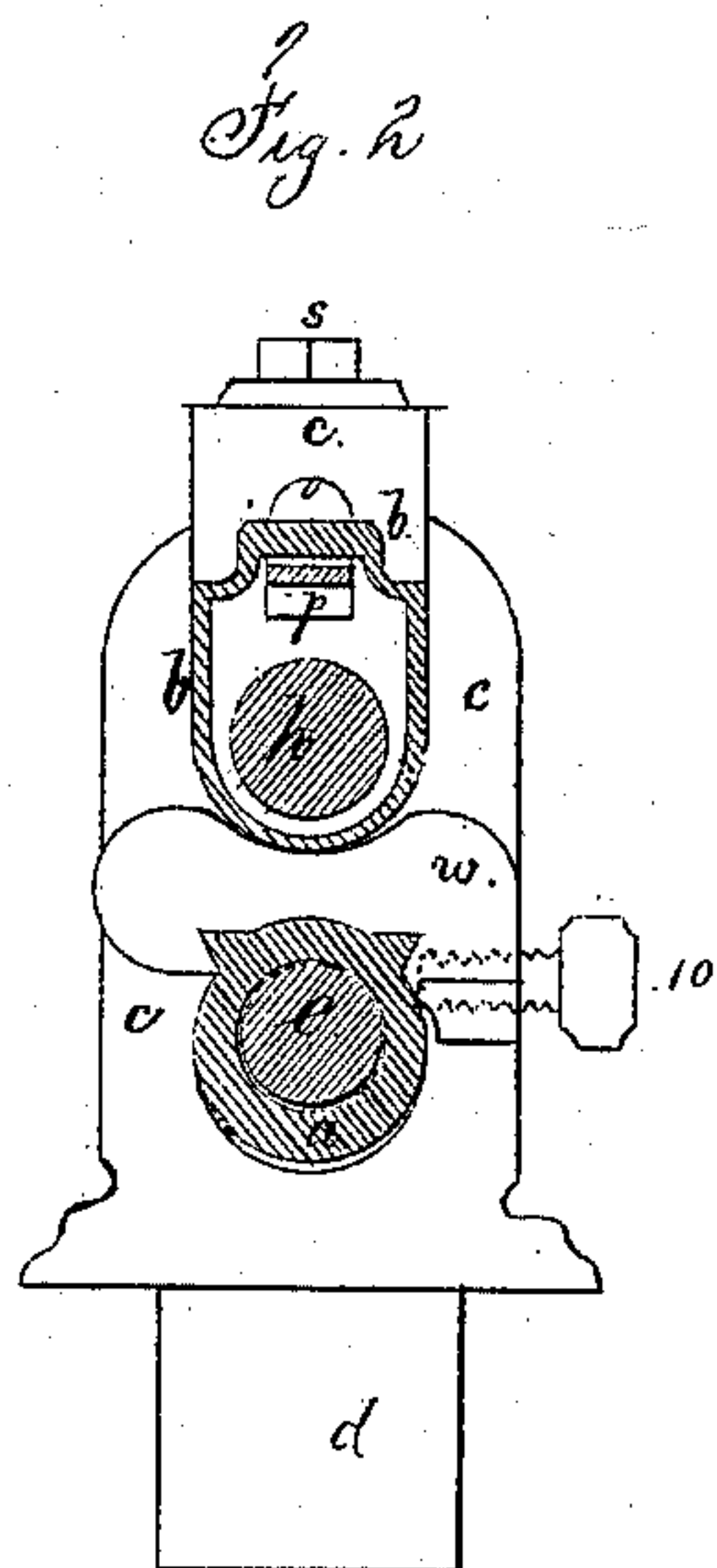
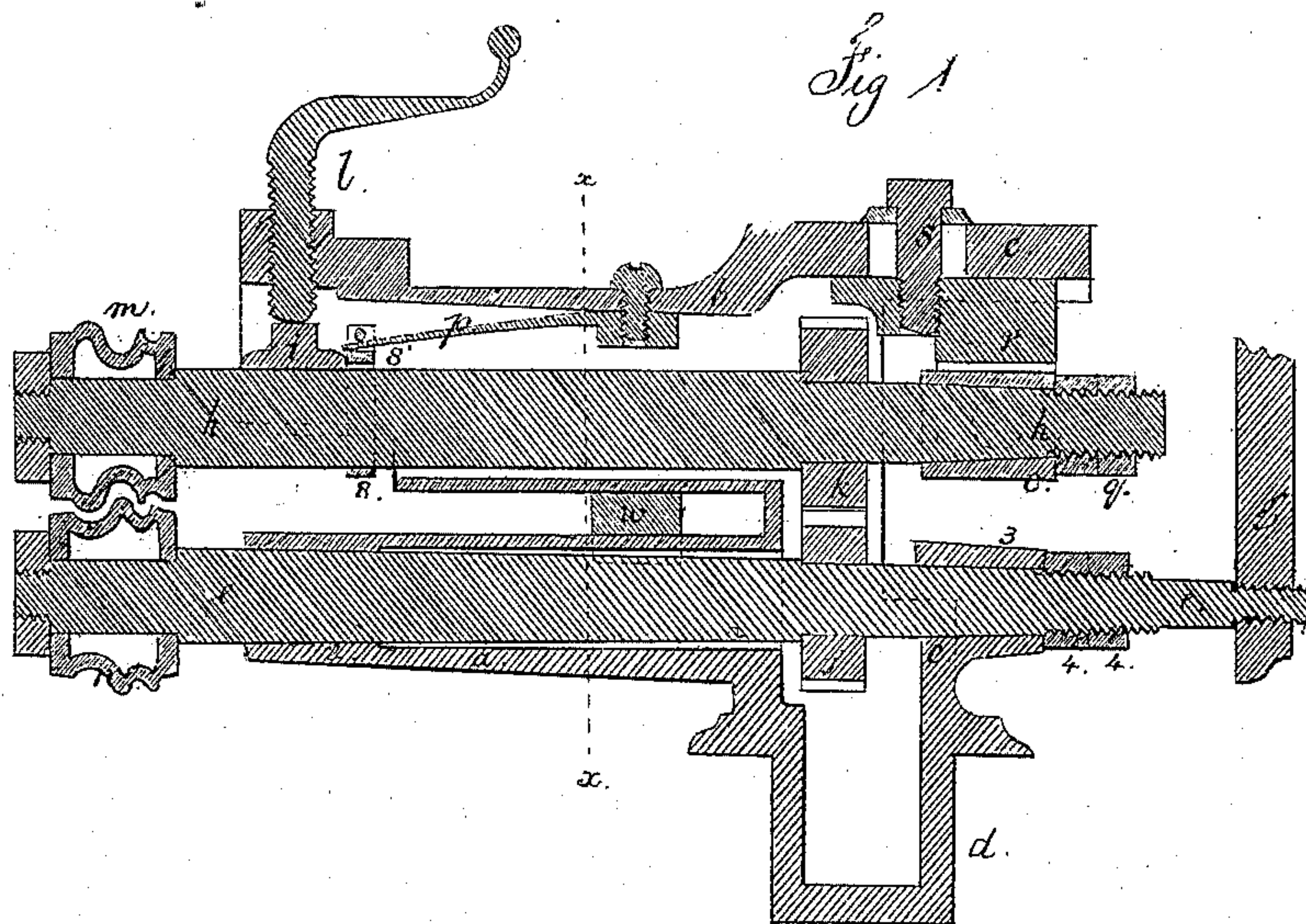


C. H. RAYMOND.
BEADING MACHINE FOR SHEET METAL.

No. 99,788.

Patented Feb. 15, 1870.



Witnesses

Charles Smith
Geo. D. Walker.

Charles H. Raymond
L. W. Terrell
Atty

United States Patent Office.

CHARLES H. RAYMOND, OF SOUTHTON, CONNECTICUT.

Letters Patent No. 99,788, dated February 15, 1870.

IMPROVEMENT IN BEADING MACHINES FOR SHEET METAL

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES H. RAYMOND, of Southington, in the county of Hartford, and State of Connecticut, have invented and made a new and useful Improvement in Beading Machines for Sheet Metal; and that the following is a correct description thereof.

This machine is to bend sheet metal, and form beads or mouldings on the same.

I employ rollers at the ends of shafts, supported by hollow cast-metal arms, the edge of the sheet metal running in between said arms, where an adjustable gauge is provided.

In the drawing—

Figure 1 is a longitudinal vertical section of said bending-machine;

Figure 2 is a cross-section, at the line $x x$; and

Figure 3 is a rear view, endwise of the shafts.

The frame-work of my machine is made of cast metal, with hollow arms, a and b , extending out from the box c , that contains the gears; and d is a pintle to set into a socket on the bench, and support the entire machine.

The lower shaft e passes near one end, through a bearing, 2, in the end of the arm a , then through the gear f , and tapering bearing 3, the latter being cast with the gear-box c .

The set-nuts 4 4, upon the shaft e , retain the shaft, and allow of an endwise adjustment, in case of the shaft wearing loose in the bearing. They do not, however, interfere with the free rotation of the shaft.

The crank-handle g is applied to the end of this shaft e , to rotate the same, and motion is communicated to the shaft h by the gears f and k .

This shaft h passes through the upper arm b ; and at the outer end of said arm b is a sliding box, i , acted upon by the adjusting-screw l , so as to press the roller m to the desired proximity to the roller n , and, when relieved, the rollers are separated by the spring p , that acts upon a lifting-ring, 8, through which the shaft h passes.

At the back end the shaft h is made tapering, and passes through the box o , and is held, but allowed to rotate freely, by the set-nuts q .

The box o has gudgeons or trunnions passing into the yoke r , and this latter is held by the nut and screw s , passing through a slot in the upper part of c . These devices allow the shaft h to be adjusted longitudinally, and, at the same time, the roller m to be raised or pressed down.

The endwise adjustment causes the beads on the

roller m to come properly over the grooves in the roller n .

These rollers m and n are to be made of steel or malleable iron, case-hardened. Heretofore, the rollers in machines of this kind have been solid, and were liable to break in hardening, in consequence of inequality of thickness, or else were unnecessarily heavy and costly.

To obviate these difficulties, I make the said rollers of nearly uniform thickness, by forming the roller hollow, as represented. The roller can be more quickly rendered malleable than solid cast-iron rollers, and the metal is more uniform, and less liable to break, either in use or while being hardened.

The arm a is formed as a V-slide, for receiving the gauge w , that is movable between the arms a and b , to regulate the distance at which the bead is bent from the edge of the sheet metal. The clamping-screw 10 holds this gauge, and one side of said gauge is rounding, as seen in the detached view, Figure 4, and the other side is straight, so as to accommodate different articles of sheet metal. This gauge may be slipped off the V-slide, and turned around, so as to present either the straight or curved edge to the sheet metal.

The bending-machine, made as aforesaid, is much more easily adjusted than the machines heretofore made, and is stronger and less liable to become obstructed in its operation, or injured when in use.

The box o and adjustable yoke r , set-nuts q and tapering shaft h , are not herein claimed, the same being found in Letters Patent granted to me March 30, 1869.

I claim as my invention—

1. The hollow arms a and b , and gear-box c , cast together, in combination with the shafts e and h , bearing 2, 3, i , and o , gears f and k , and rollers m and n , substantially as and for the purposes set forth.

2. The V-shaped slide upon the arm a , in combination with the gauge w and rollers m and n , as and for the purposes set forth.

3. The gauge w , formed with one side straight, and the other convex, in combination with the rollers m and n and arms a and b , between which arms said gauge is clamped, as set forth.

Signed this 21st day of October, A. D. 1869.

C. H. RAYMOND.

Witnesses:

SYLVESTER E. MUNGER,
HENRY S. HUTCHINSON.