

C. HOELLER.  
STOVE-PIPE.

No. 175,560.

Patented April 4, 1876.

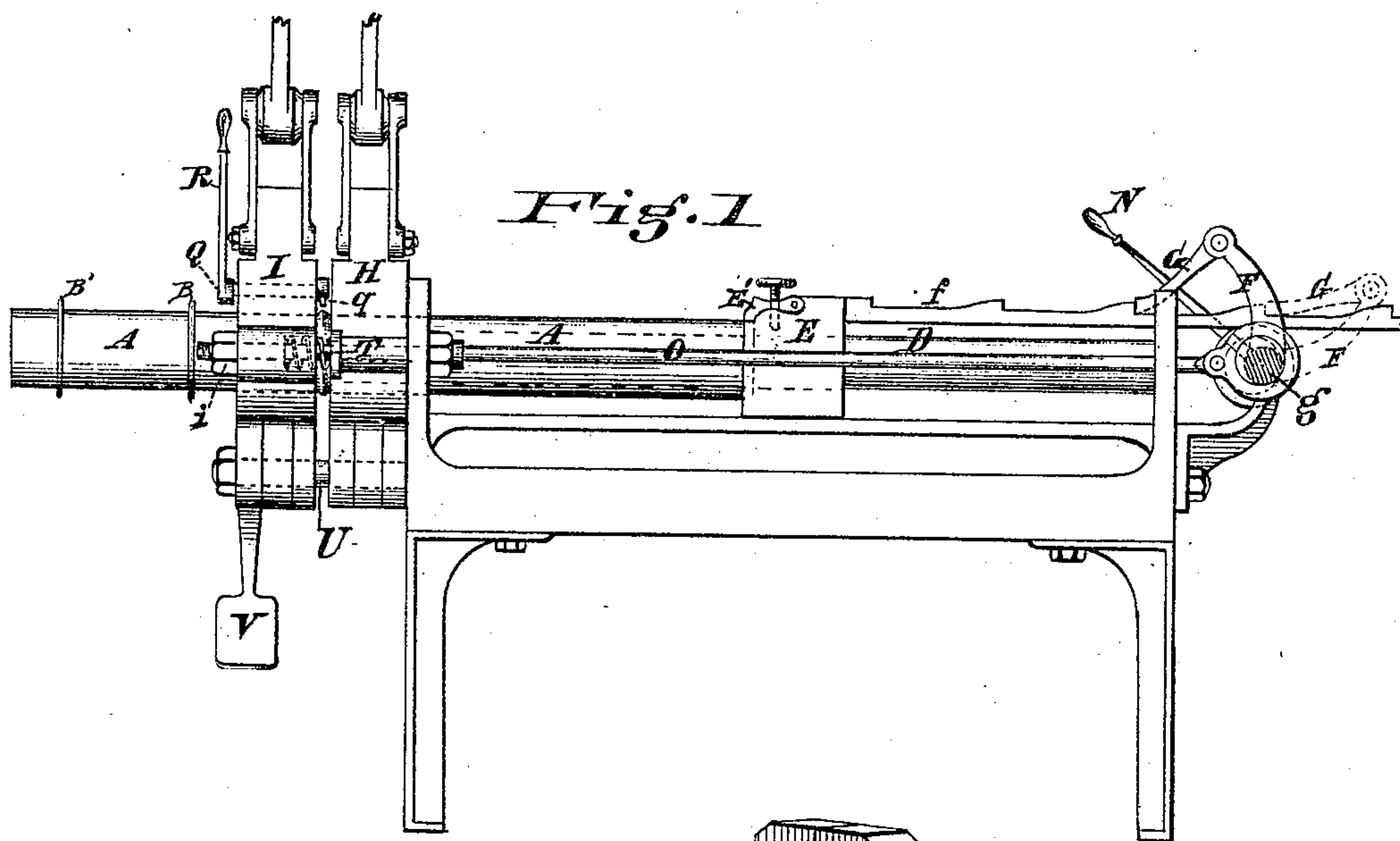


Fig. 3

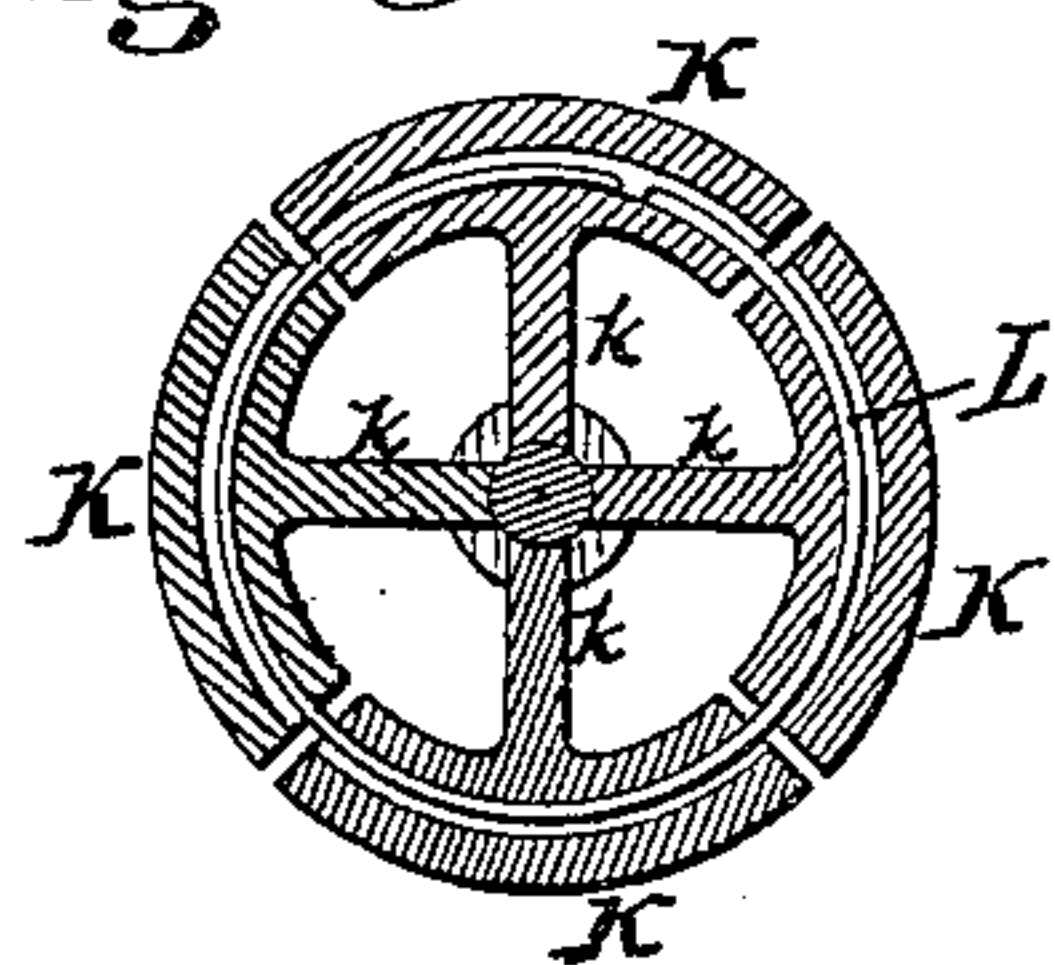


Fig. 2

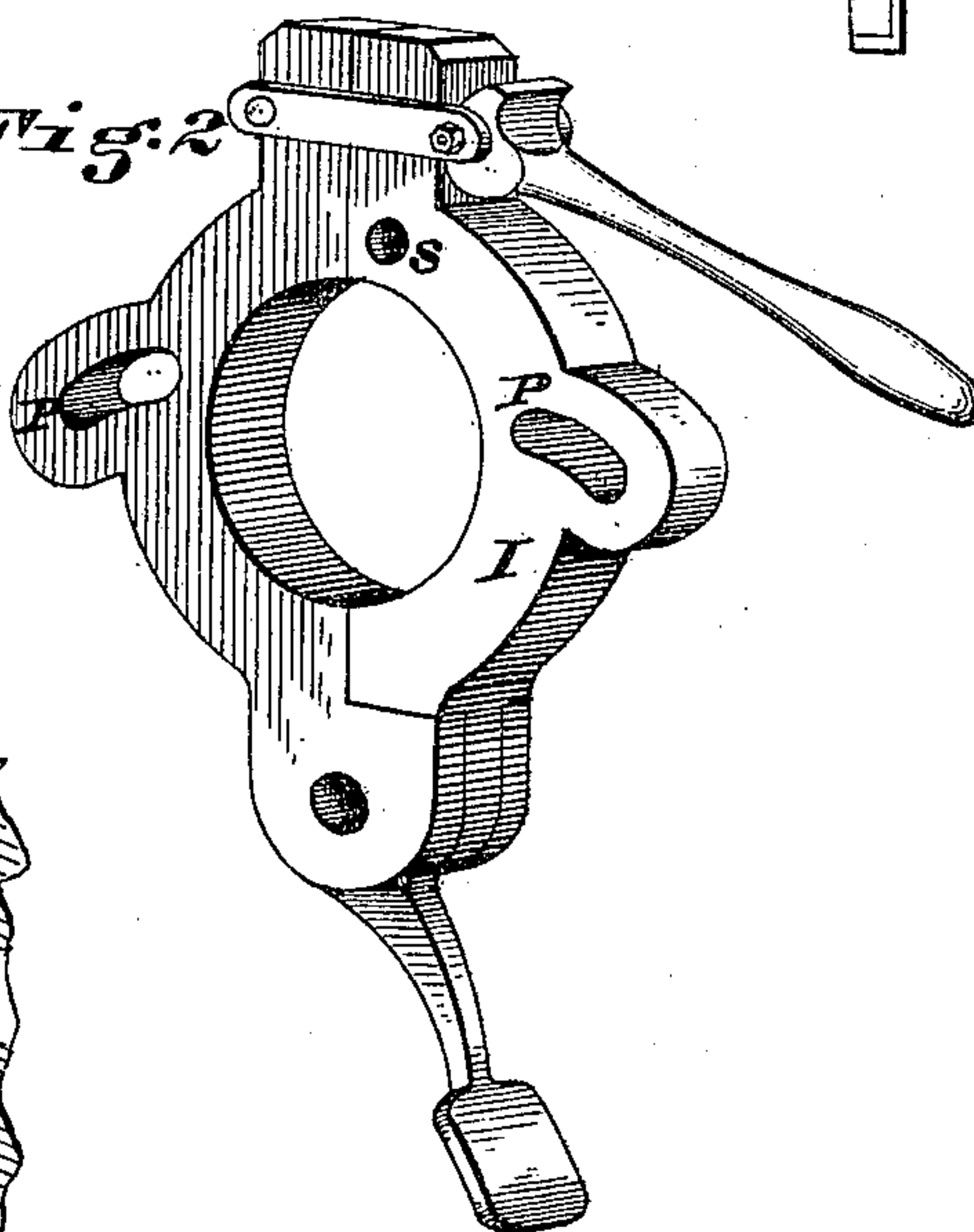
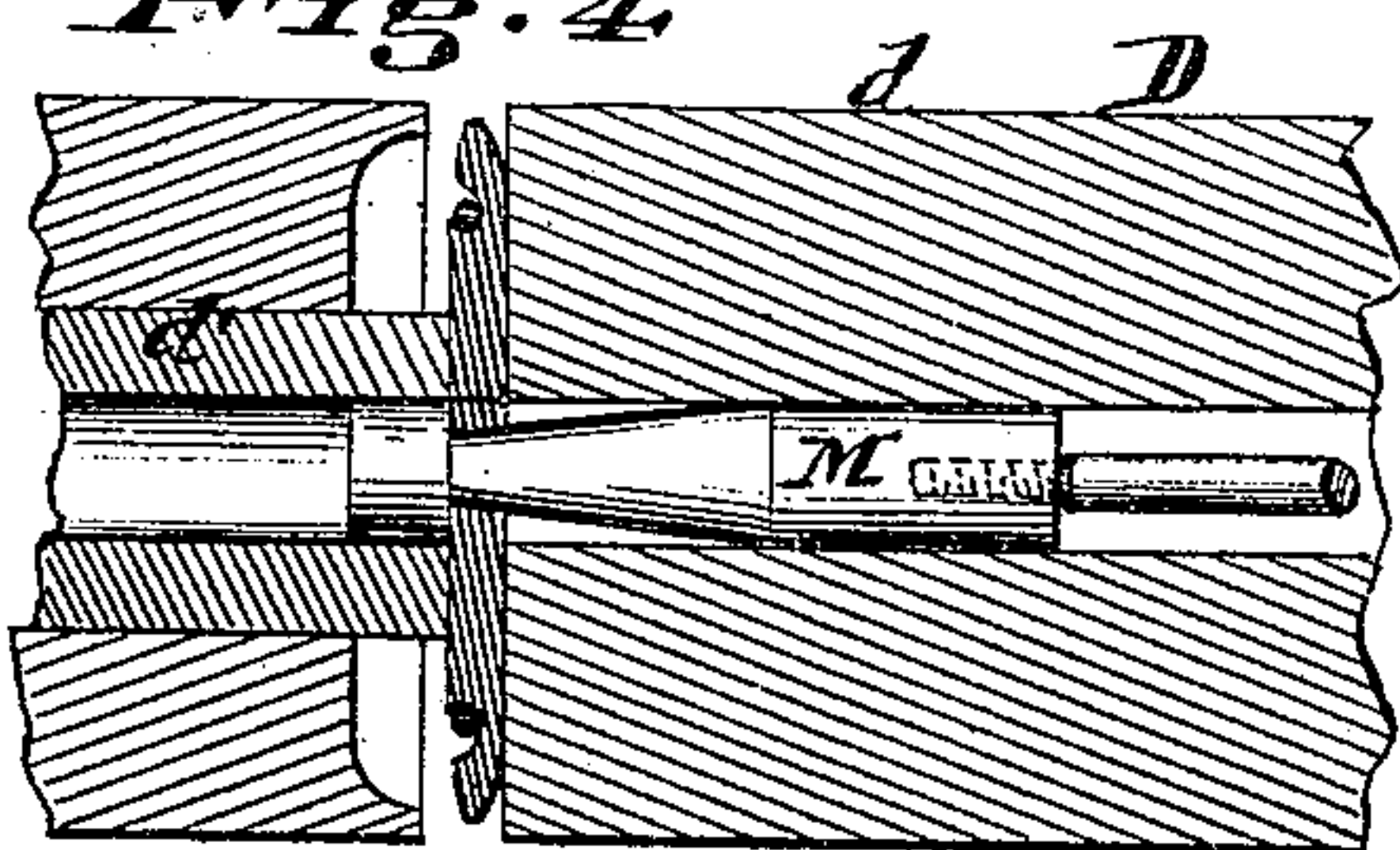


Fig. 4



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Fig. 5

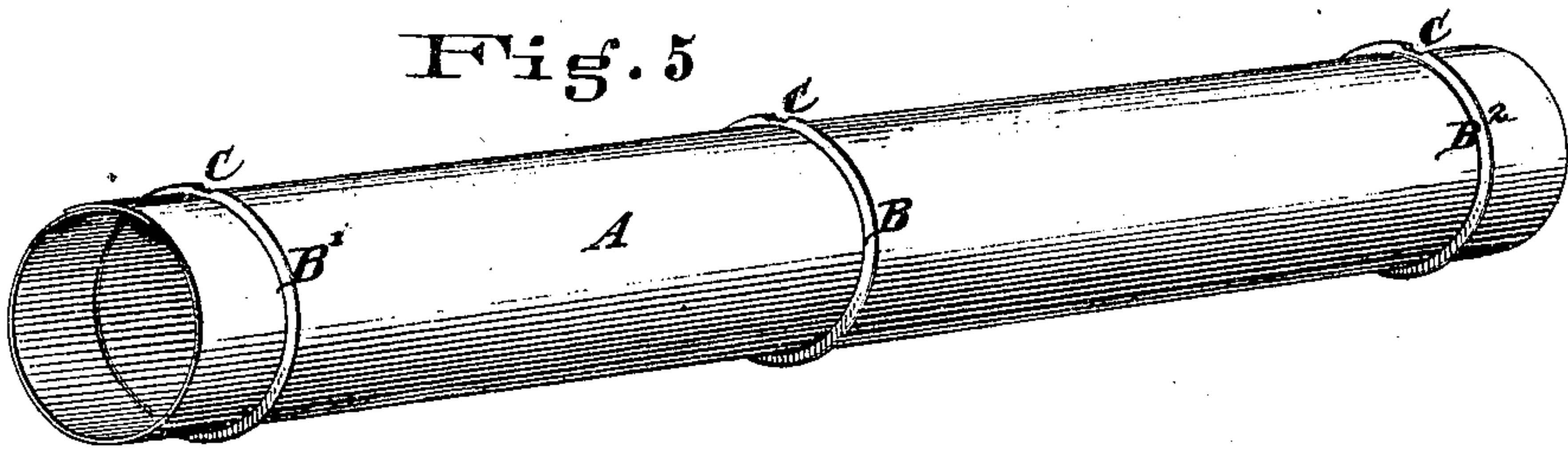
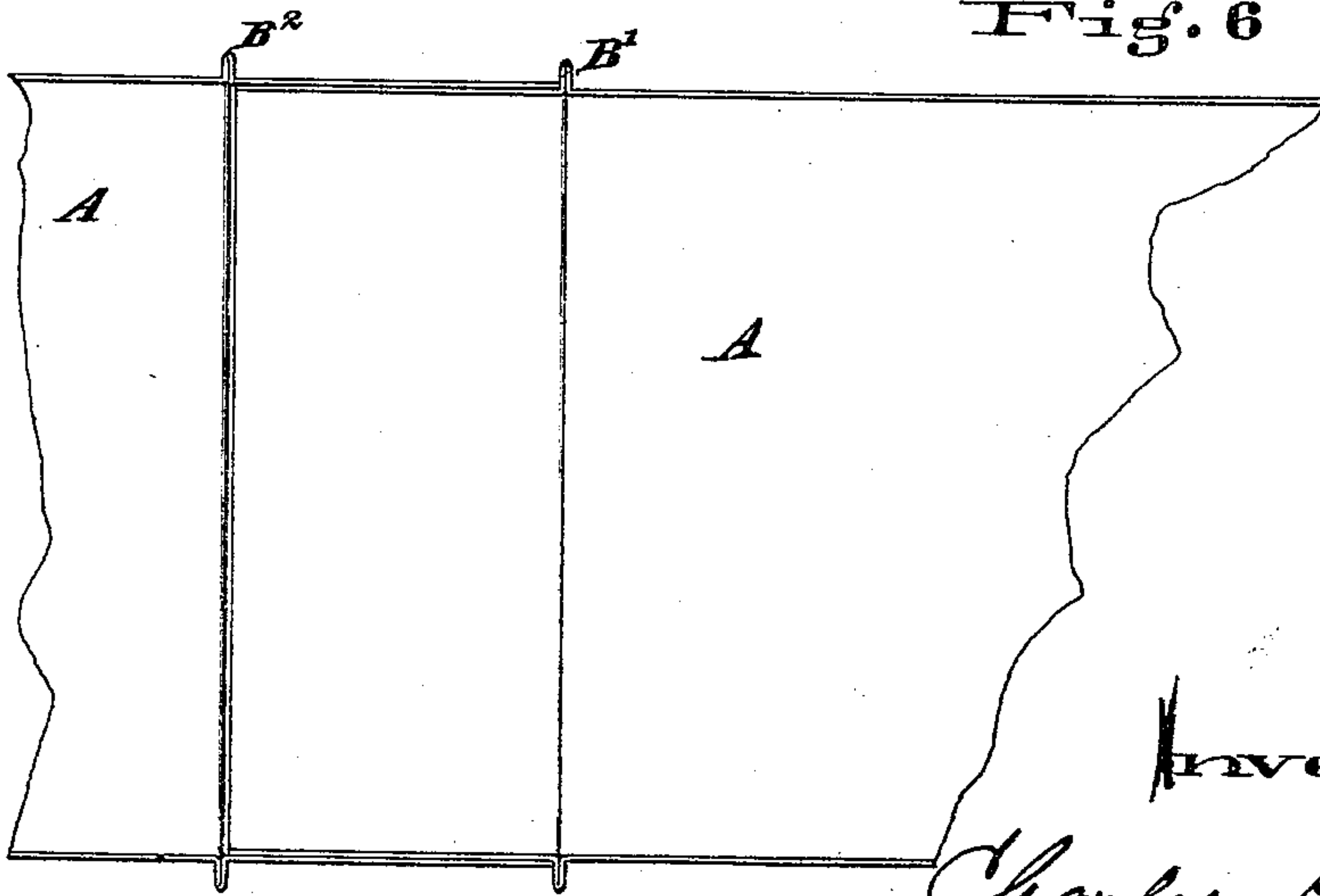


Fig. 6



Inventor

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# UNITED STATES PATENT OFFICE.

CHARLES HOELLER, OF BONN, PRUSSIA.

## IMPROVEMENT IN STOVE-PIPES.

Specification forming part of Letters Patent No. 175,560, dated April 4, 1876; application filed February 2, 1876.

*To all whom it may concern:*

Be it known that I, CHARLES HOELLER, of Bonn, District of Cologne, and Kingdom of Prussia, have invented an Improvement in Stove-Pipes, or sheet-metal pipes for other purposes, of which the following is a specification:

My invention has for its object such a construction of stove-pipes as that rivets for securing the joints may be avoided or dispensed with, the pipe materially strengthened for shipment or use, and flat shoulders provided for each section of pipe to rest against in composing a line of pipe.

My invention consists in forming near the ends of each section, and at suitable intervals between, if desirable, flattened creases, by a process herein described, by which the iron is not only so bound together as that rivets may be dispensed with, but said flattened creases at the ends of the section form shoulders, against which the shoulders of contiguous sections squarely abut.

Figure 1 is a side view, and Figs. 2, 3, and 4 details, of a machine by whose process of operation the crimps are formed. Fig. 5 represents a perspective view of a section of my stove-pipe; and Fig. 6, a section of the same, with the end of an adjoining section inserted thereon.

Each section A of the pipe is made of a single sheet of metal, as heretofore, and, by the operation of the machine, hereinafter described, flattened crimps B are formed, which, either by themselves or with the aid of indentations C made therein, serve to hold the joint of the sheet together, and greatly strengthen the tube as a whole, the end crimps B<sup>1</sup> B<sup>2</sup> serving, as shown, also as shoulders, to enable the contiguous sections to abut against for stiffness, adjustment, and regularity. Each sheet of metal, after being rolled into a cylindrical tube, is slipped over the mandrel D, and secured in the sliding head E by pinching-clamp E'. The head E has a feed-bar, *f*, attached, which enables the arm F and pawl G to move the tube forward for the formation of creases, the length of each notch in the bar *f*, apart or at intermediate points, if desired. The shaft of arm G is operated by a powerful hand-lever secured to said shaft, and reciprocated by

the operator to feed the tube in one direction, and form the crease when returning. H I are two clamps, made substantially as shown in Fig. 2, to open and close, and fasten upon the pipe of metal, the clamp H pressing upon the end *d* of the mandrel, and the clamp I upon the sliding head J, the latter being adapted to slide on the projection *d'* of the mandrel D. The inner ends *k* of four sections, K, slide in apertures in the projection *d'*, and retained in circular form by the circular wire spring L. These sections K are made expansible for the purpose of enabling their ends to form, when expanded, a preliminary crease in the metal of the pipe to be operated upon, such as is shown between the clamps H I of Fig. 1. The sections are expanded by the inward movement of the conical-ended rod M, operated by any suitable connection with the lever N. The shaft *g* of arm G has, in addition to this arm and the hand-lever, two cams secured to it, which are attached to two side rods, O, which pass through slots P in the clamp I, and are fitted with nuts *i*, so that the return movement of the operator's lever will serve to draw the clamp I into contact with the clamp H. A spindle, Q, and lever R are fitted in bearing *s* of clamp I, the spindle having at the inner end a punch-point, *q*, to form, by the movement of said lever, sharp indentations C in the lap in the pipe, to assist, if necessary, in the holding of the pipe from slipping at the lap. Between the two clamps H I springs T are introduced on each side, to force the clamp I outward after each crimp is flattened or completed.

Operation: After the tube to be crimped is placed and held, as before explained, the tube is pushed forward until its front edge occupies such a position in the clamp I as to leave it in position for the formation of the first crimp between the two clamps. The clamps are then closed, one upon the end *d* of the mandrel, and the other upon the sliding head J, the sheet-metal pipe being securely bound between. At this stage the clamps are apart from each other, as in Fig. 1. Then the lever N is operated, so as to expand the crimper-sections K, Fig. 3, and so produce the preliminary crease shown in Fig. 1. The lever N is then reversed, so as to release the crimpers, as in Fig. 4. Then the

large operator's lever is operated so as to draw the clamp I toward the clamp H, and thus flatten the sides of the crimp into a square-faced rib, as shown in Figs. 5 and 6. The lever R is then operated to make a notch, C, and then the clamps are released, and the operation repeated at the proper places in the tube. The clamps both swing on the pivot-bolt U, and the clamp I, which has a wider opening than clamp H, may be assisted in closing by the provision of arm V, for the operator's knee to press against.

After or during the process of forming the crimps, they can, if desired, be laid or lapped flat down close against the body of the pipe, and it is obvious that, in place of being formed exteriorly on the tube, they may be formed in the interior of the tube with the same result as to strength, formation of shoulders, and dispens-

ing with rivets, and with the additional result of giving a smooth exterior surface.

I do not propose to claim herein the machine shown, but simply the article manufactured thereby, as it is obvious that other constructions of machine may be used to produce the same peculiar construction of pipe, and I propose to make separate application for my machine hereafter.

I claim—

A straight sheet-metal tube for stove pipe or other uses, having flattened crimps, substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

CHARLES HOELLER.

Witnesses:

KEEVER,  
T. A. LINN.