

A. H. HOLMES.

Improvement in Machines for Rolling Harrow-Teeth.

No. 124,062.

Patented Feb. 27, 1872.

Fig. 1

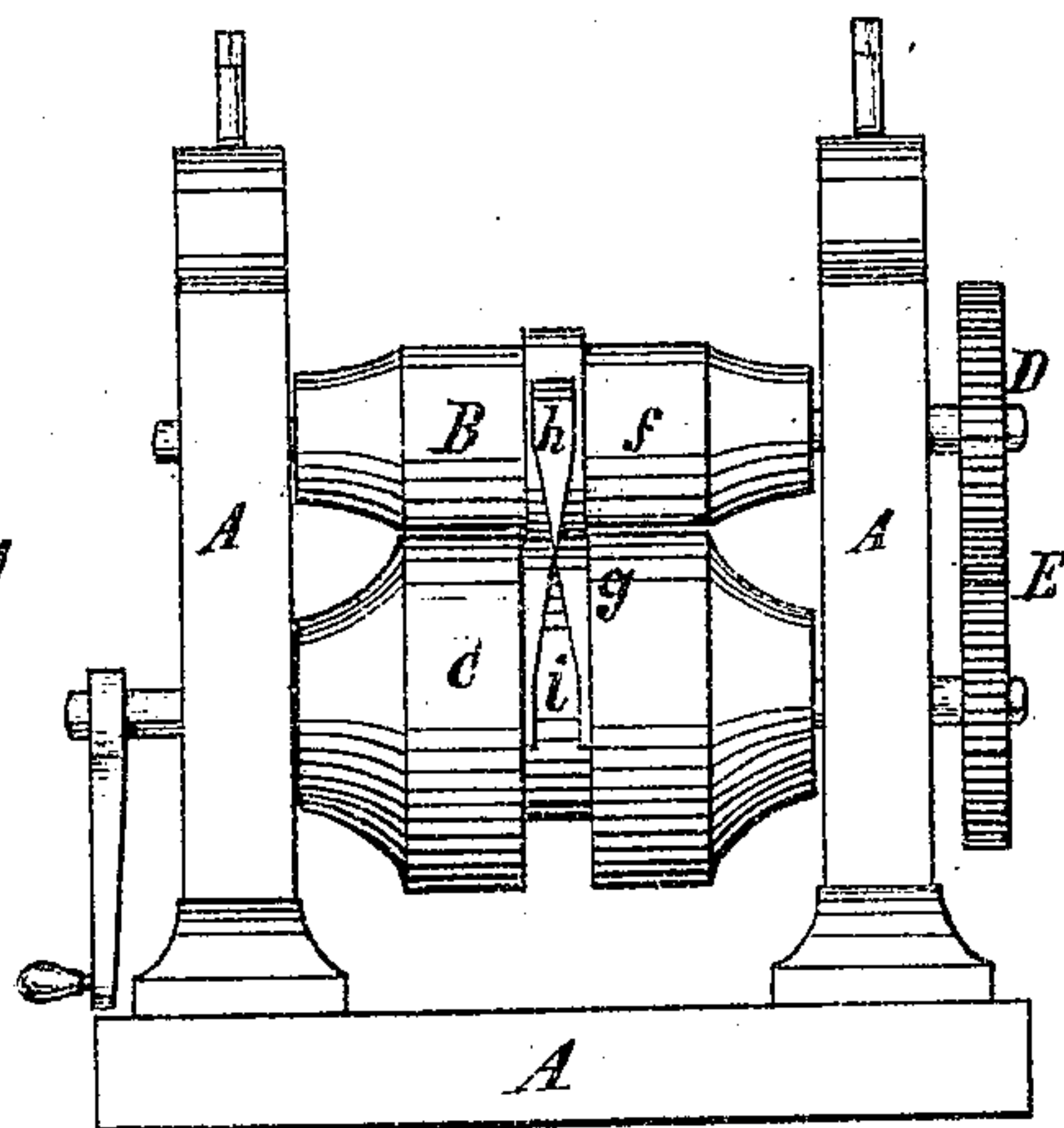


Fig. 2

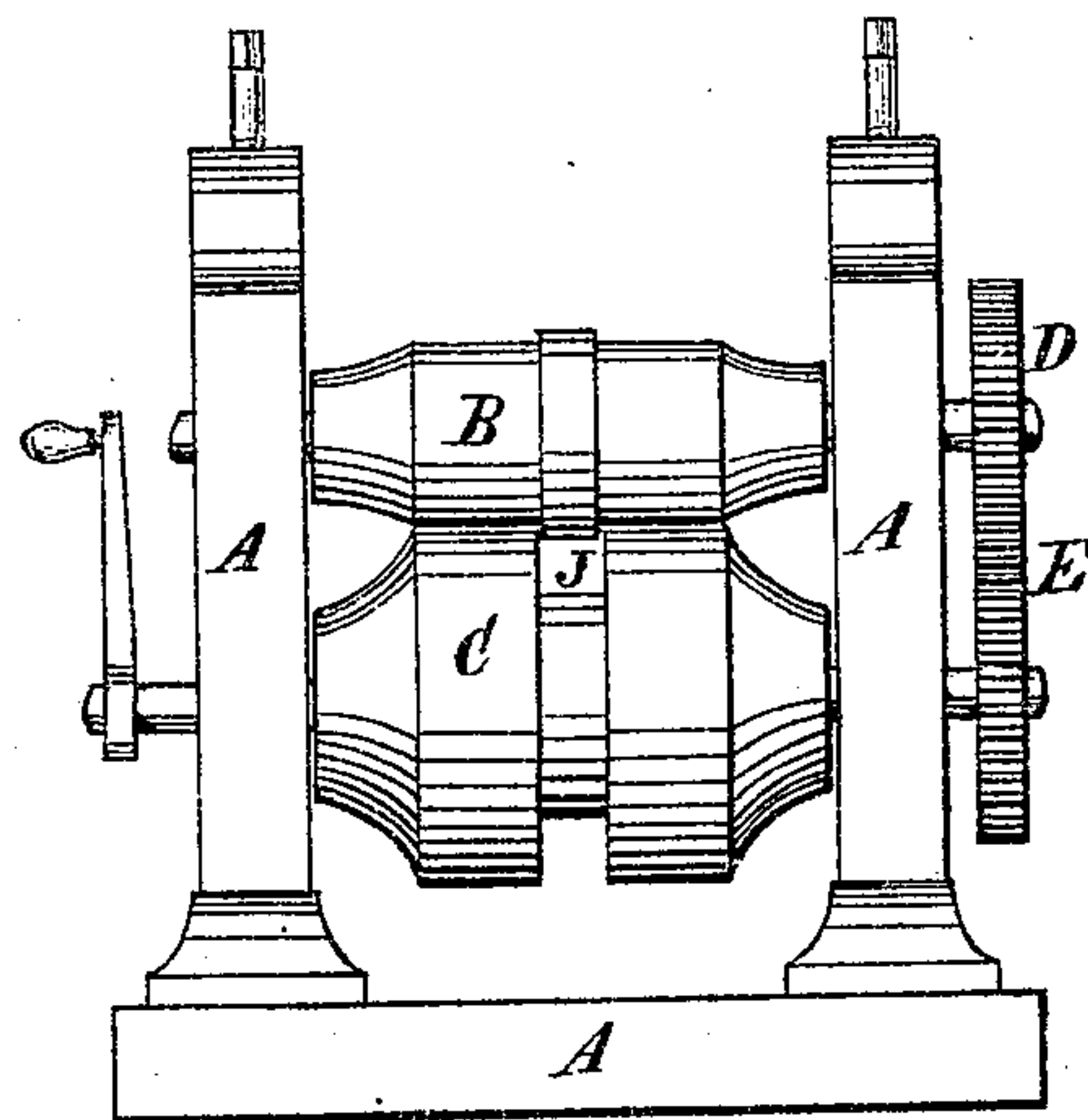
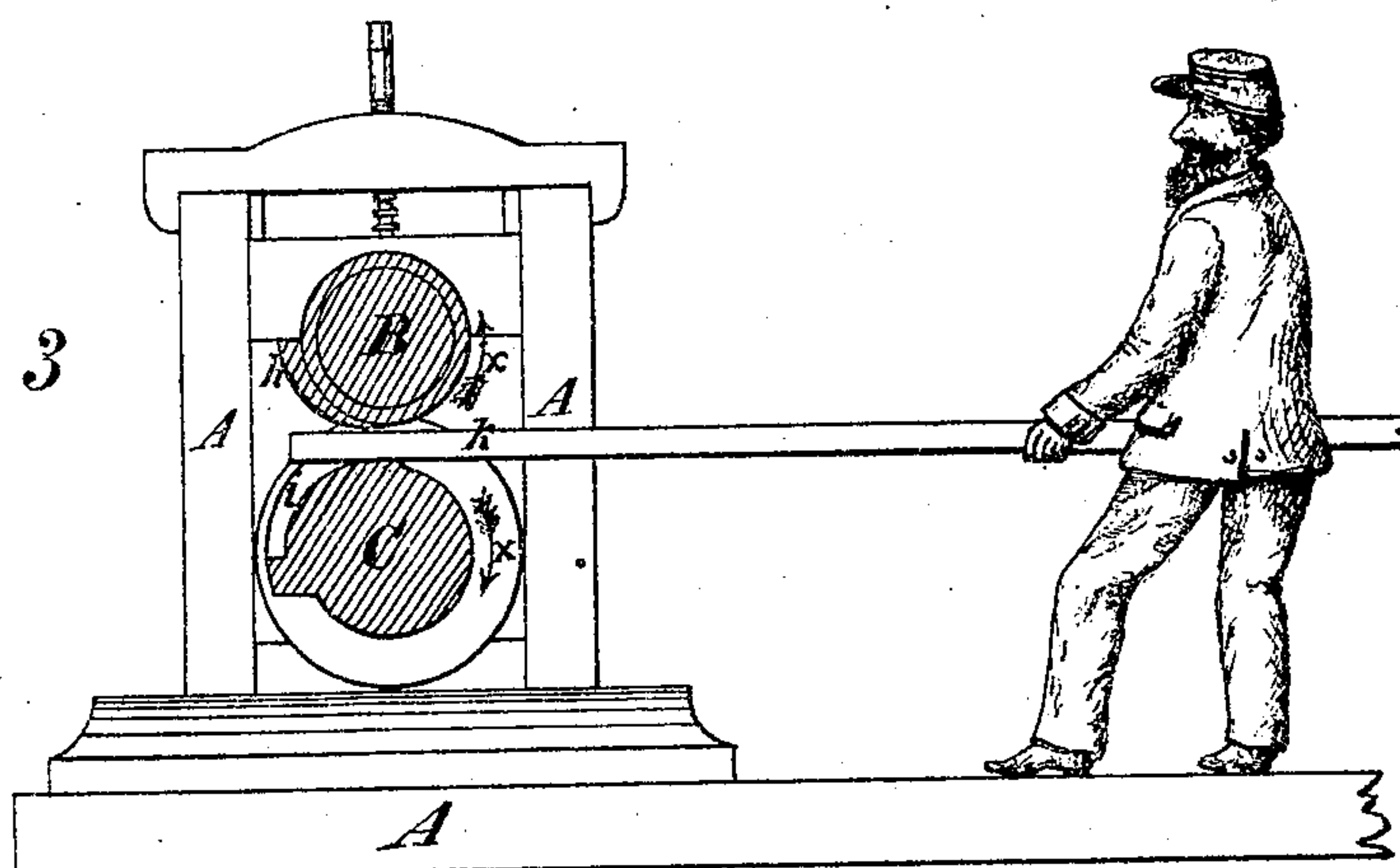


Fig. 3



Witnesses

A. C. Johnston.  
James J. Johnston for

Inventor

Andrew H. Holmes By  
James J. Johnston his attorney



# UNITED STATES PATENT OFFICE

ANDREW H. HOLMES, OF ALLEGHENY, PENNSYLVANIA.

## IMPROVEMENT IN MACHINES FOR ROLLING HARROW-TEETH.

Specification forming part of Letters Patent No. 124,062, dated February 27, 1872.

*To all whom it may concern:*

Be it known that I, ANDREW H. HOLMES, of the city and county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Machine for Pointing Harrow-Teeth; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in a machine having a rotating male die working into a rotating female die, said dies being so constructed and operating in conjunction in such manner that they will draw iron for harrow-teeth to a suitable form for the point of such teeth.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawing, which forms part of my specification, Figure 1 is a front elevation of my improvement in machine for pointing harrow-teeth, representing the position of the dies when they have completed the formation of the point of a harrow-tooth. Fig. 2 represents the position of the rolls when ready to receive the iron to be pointed by the dies. Fig. 3 is a transverse and vertical section of the machine, representing the position of the iron with relation to the dies when they commence drawing down the iron for forming the point on it for a harrow-tooth.

In the accompanying drawing, A represents the frame of the machine. B and C represent rolls. D and E represent the wheels for driving the rolls. *f* and *g* represent the dies used for pointing the iron for harrow-teeth; these dies are fitted in rolls B and C. The male die is fitted on the periphery of the upper rolls B, and the female die *g* is fitted on the periphery of the lower roll C, and are so arranged with relation to each other that the projection *h* of the male die *f* enters the concavity *i* of the female die *g*. The form of the projection *h* and concavity *i* of the dies are clearly shown in Figs. 1 and 3, and the relation that they bear to each other will be readily understood by the skillful mechanic.

As the construction of my improvement in machine for pointing harrow-teeth, and the relation of its several parts to each other, are

all fully shown in the accompanying drawing, and will be easily comprehended by the foregoing description, I will therefore proceed to describe the operation, which is as follows: Power is applied to the wheels D and E, so as to revolve the rolls B and C in the direction indicated by the arrows marked *x*. Bars of iron, of the desired size for the teeth, and of convenient length for manipulating them, or of a suitable length for teeth, are heated (one end) to a proper heat for being drawn out by the ordinary process of forging; and when the rolls are in the position represented in Fig. 2, the iron is inserted in the groove J of the roll C, as indicated in Fig. 3, the iron projecting sufficiently to fill about half the length of the concavity *i*. The revolving of the rolls B and C will cause the projection *h* of the male die *f* to impinge on the iron K, and force it down and forward in the concavity in the female die *g*, thereby forming a uniform, smooth, and well-formed point on the iron for harrow-teeth. The iron, after being pointed in the manner and by the means hereinbefore described, is cut off in suitable lengths for harrow-teeth. The iron may, if desired, be cut in the desired length for the teeth, heated, and then pointed. The machine may be provided with a stop or gauge for gauging the distance that the iron should be inserted in the groove J. This may be found to be necessary, when unskilled mechanics can, without difficulty, gauge the insertion of the iron without the use of a stop or gauge.

I am aware that roller-die grooves circular in cross-section, and with convergent bounding walls or surfaces, for rolling bars to a tapered form, are common; and also that roller-die grooves more or less rectangular in cross-section, and with convergent bounding walls or surfaces, are and have been used for rolling bayonet-blades and, perhaps, other articles; and it is also known to me that Samuel C. Murdock, of Pittsburg, Pennsylvania, claims to have invented a device, and has applied for a patent therefor, for rolling harrow-teeth, consisting in part of a pair of rolls, on or in one of which is mounted a series of die-grooves, the bottoms and walls of which grooves, severally, are convergent and perpendicular to one another when viewed in cross-section, while upon the other roll is



mounted a series of projecting tongues of length and breadth, severally, corresponding to the length and breadth, severally, of the die-groove, and of which the peripheries are eccentric; said series of grooves and tongues, two or more of each in number, being from first to last of gradually-diminished area, and the mode of operation of the device being the passage of the bar successively through all of the several grooves in the series, but turned one-quarter round after each pass, the result of which, it is said, is to gradually reduce the bar to a taper form, rectangular in cross-section. These inventions, all and severally, I hereby disclaim; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The device consisting of the rolls B and C, the single die-groove *i*, rectangular in cross-section, and with convergent walls or bounding surfaces, and the single tongue or projection *h*, rectangular in cross-section, having an eccentric periphery, and corresponding accurately in length and breadth to the die-groove; the mode of operation of the device being to reduce the bar subjected to its action, on all four sides and at one pass, to a tapered form, rectangular in cross-section, substantially as set forth.

A. H. HOLMES.

Witnesses:

JAMES J. JOHNSTON,  
A. C. JOHNSTON.