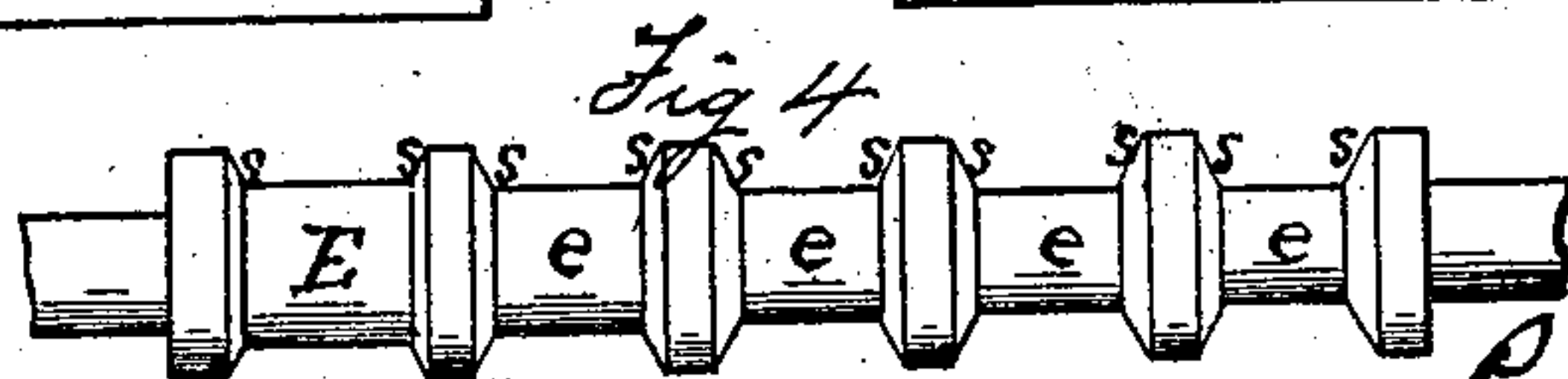
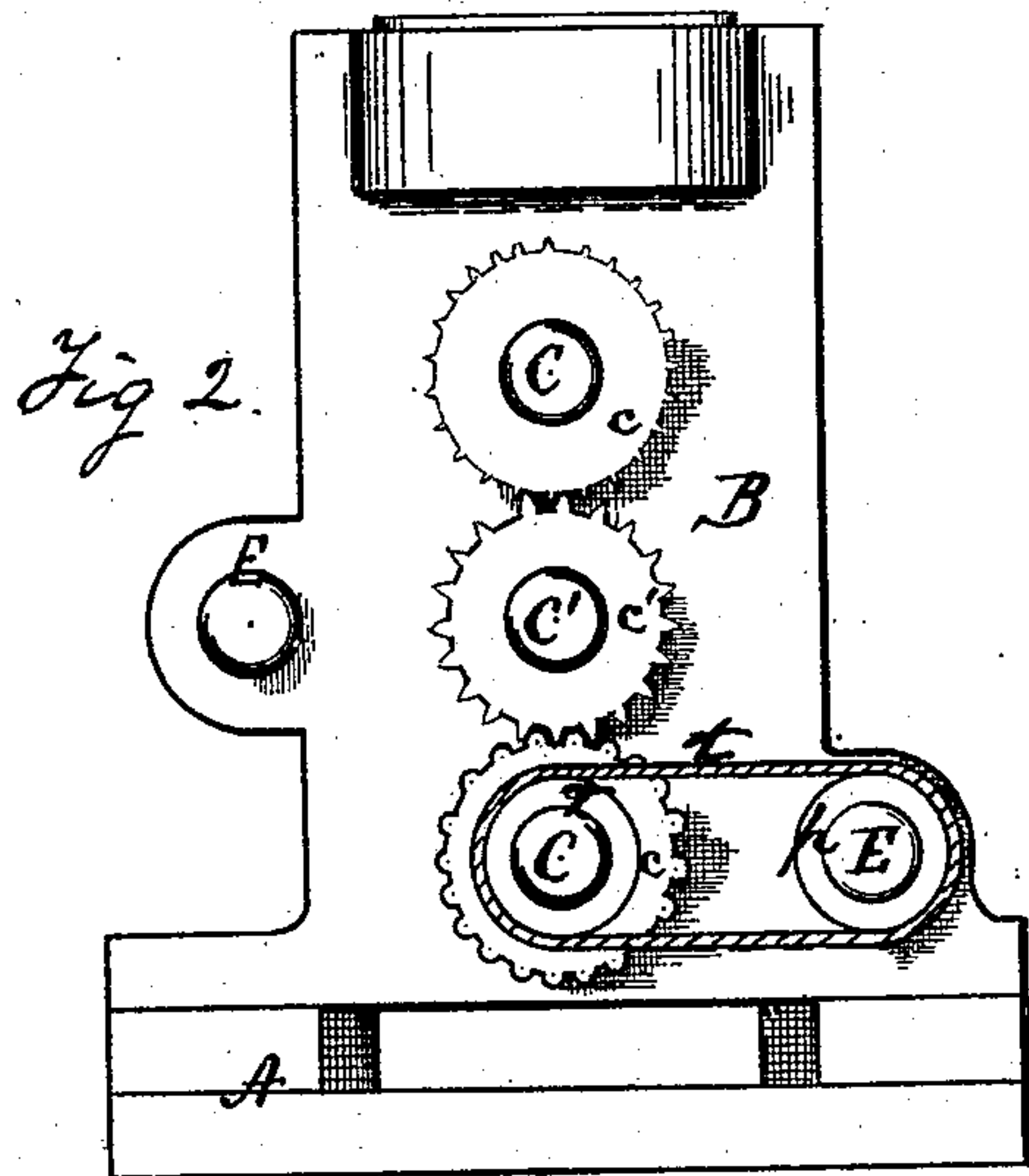
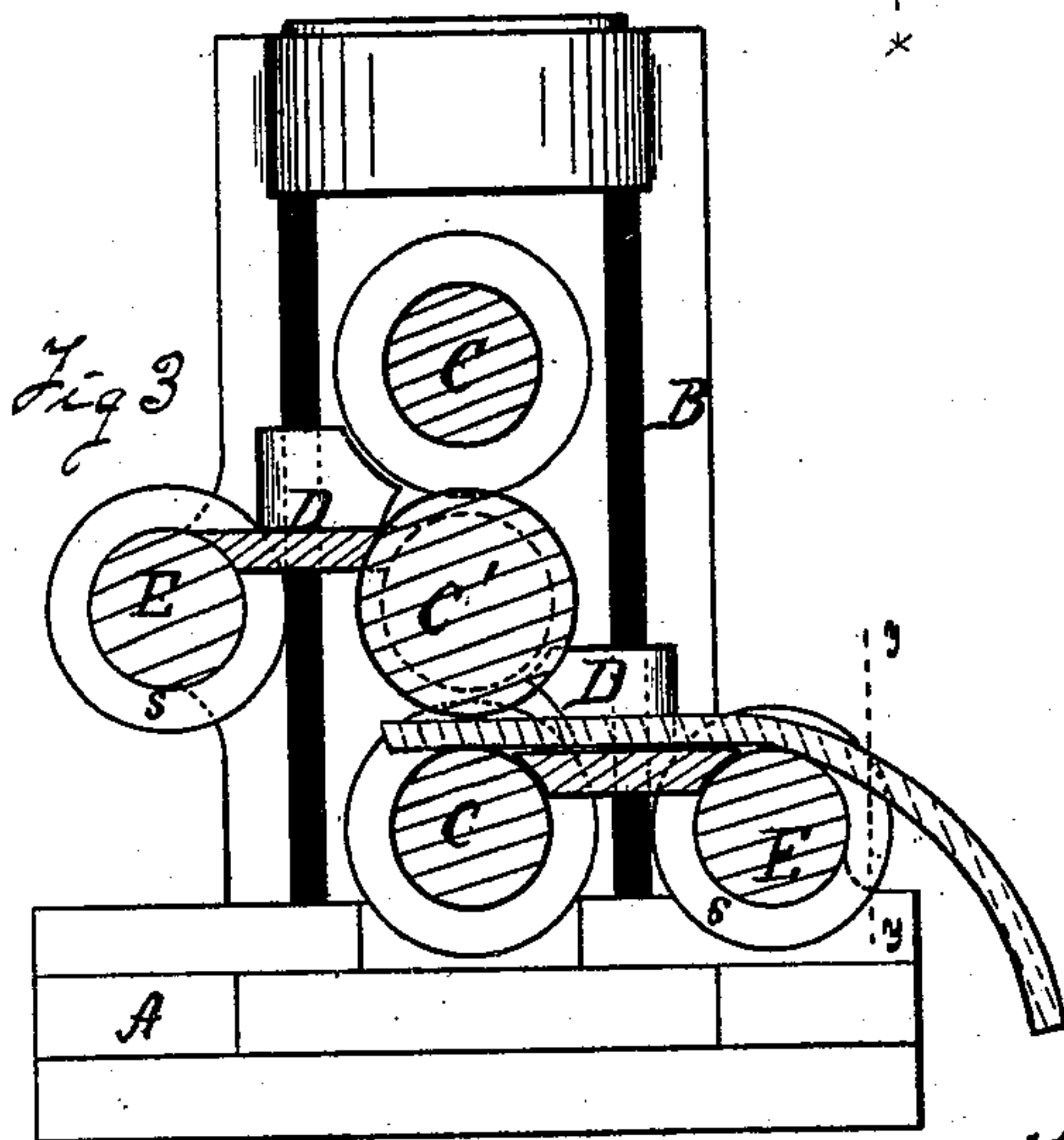
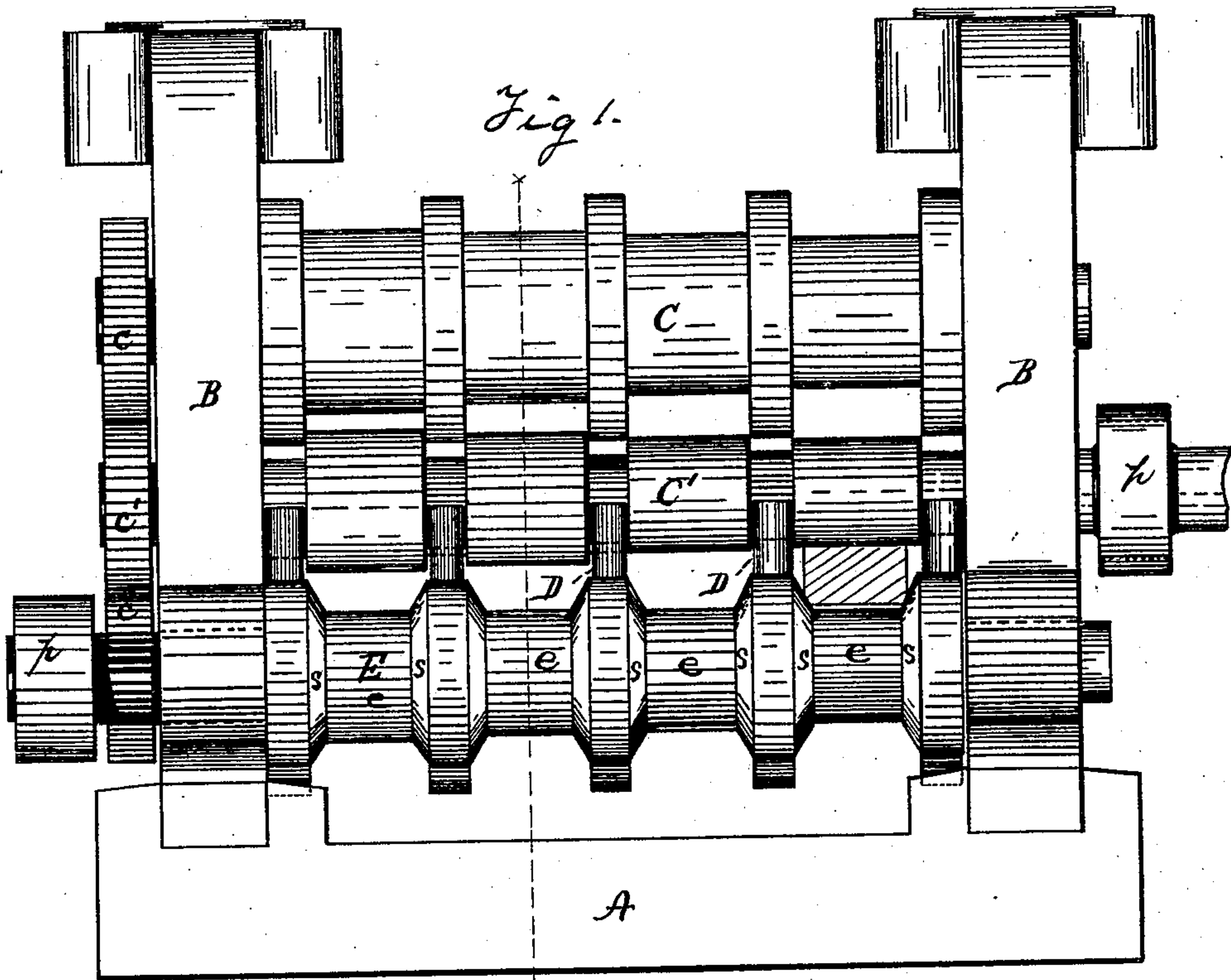


P. McGANN.  
ROLLING-MILL.

No. 188,476.

Patented March 20, 1877.



WITNESSES

James I. Ray  
J. R. Smith.

INVENTOR.

Patrick McGann  
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# UNITED STATES PATENT OFFICE

PATRICK MCGANN, OF ALLEGHENY, ASSIGNOR TO LEWIS, OLIVER & PHILLIPS, OF PITTSBURG, PENNSYLVANIA.

## IMPROVEMENT IN ROLLING-MILLS.

Specification forming part of Letters Patent No. **188,476**, dated March 20, 1877; application filed February 16, 1877.

*To all whom it may concern:*

Be it known that I, PATRICK MCGANN, of Allegheny city, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Rolling-Mills; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a front elevation of a rolling-mill embodying my invention. Fig. 2 is an end view. Fig. 3 is a transverse section of the same, and Fig. 4 is a detached view of the feed roll.

Like letters refer to like parts wherever they occur.

My invention relates to devices employed for feeding metal to work-rolls; and consists in the use with work-rolls of a feed roll or rolls having a groove or grooves with sloping sides, or otherwise formed to seize the metal and feed it to the work-rolls.

For the purposes of illustration I have shown my devices in combination with a three-high hoop-mill, as the invention is especially applicable to hoop-mills, and has been successfully employed therewith; but I do not wish to be understood as limiting my invention thereto.

In the drawing, A indicates the bed, upon which are erected suitable housings B, in which are journaled the work-rolls C C'—in the present instance three collared and grooved rolls—for rolling hoop-iron. The ordinary tightening-screws (not shown) may be employed, and the guides D are provided and arranged as usual.

In brackets on the main housing, or in suitable housings erected on bed A, I journal one or more feed-rolls, E, the number of said rolls corresponding to the character of the mill, whether it is two, three, or more high. The roll E is grooved or collared to form grooves *e*, with inclined or sloping sides *s*, the groove at its bottom being somewhat less than the width of the iron to be fed, so that the metal will wedge slightly, thus enabling the feed-rolls E to force the metal into the bite of the work-rolls C C'. The work-rolls may be geared, as at *c c'*, and the feed-rolls driven from the work-rolls by pinions, but preferably are driven by friction-gearing,

as shown in the drawing, in which *p* is a pulley secured on the shaft of the work-roll, and *r* a similar pulley on the shaft of the feed-roll, power being communicated from one roll to the other by a belt, *t*.

The advantages of the friction-gearing over the positive or pinion gearing is, that if the metal is not fed properly, or jams in the rolls or against collars thereon, the slipping of the driving-gear will give the attendant time and opportunity to correct the error in the feeding.

The operation of my devices is as follows: The metal to be fed to the rolls, whether in bar-plate or other form, is heated in the usual manner, and the leading end placed in the guide D. The weight of the metal, as well as its condition, will cause it to sag, as indicated in Figs. 1 and 3, so as to wedge somewhat in the groove, whereby the feed-roll gains sufficient purchase on the metal to enable it to push it into the work-rolls.

The advantages arising from my invention are, first, the reduced labor and mechanism required, and, secondly, that greater lengths can be rolled than heretofore.

By the usual methods of feeding the metal, especially plates for tubing, the leading end is guided into the rolls by one laborer, while one or more men are required to control and force the metal into the rolls, and the distant end and along the length of the plate, while with my devices a single laborer can manage the metal, and the power for introducing the metal into the roll is applied within a short distance of the leading end.

The feed-rolls may be employed with any class of metal-working rolls.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination of one or more feed-rolls, having a groove or grooves with inclined sides, with a pair of work-rolls, substantially as and for the purpose specified.

In testimony whereof I, the said PATRICK MCGANN, have hereunto set my hand.

PATRICK <sup>his</sup> X MCGANN.  
mark.

Witnesses:

JAMES I. KAY,  
F. W. RITTER, Jr.