

T. Fowler,

Rolling Metal Bars.

No. 102,389.

Patented Apr. 26. 1870.

Fig. 1.

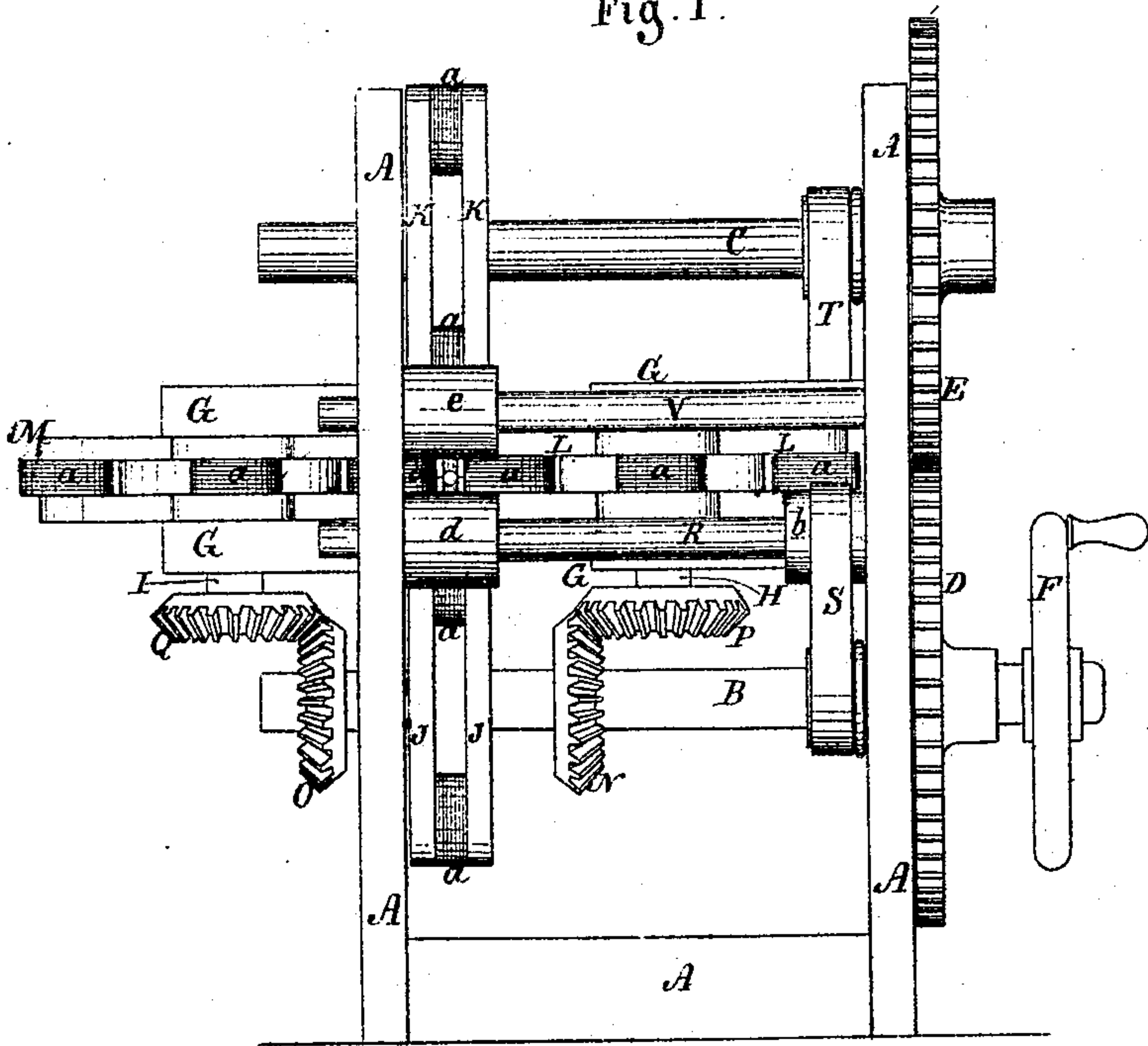
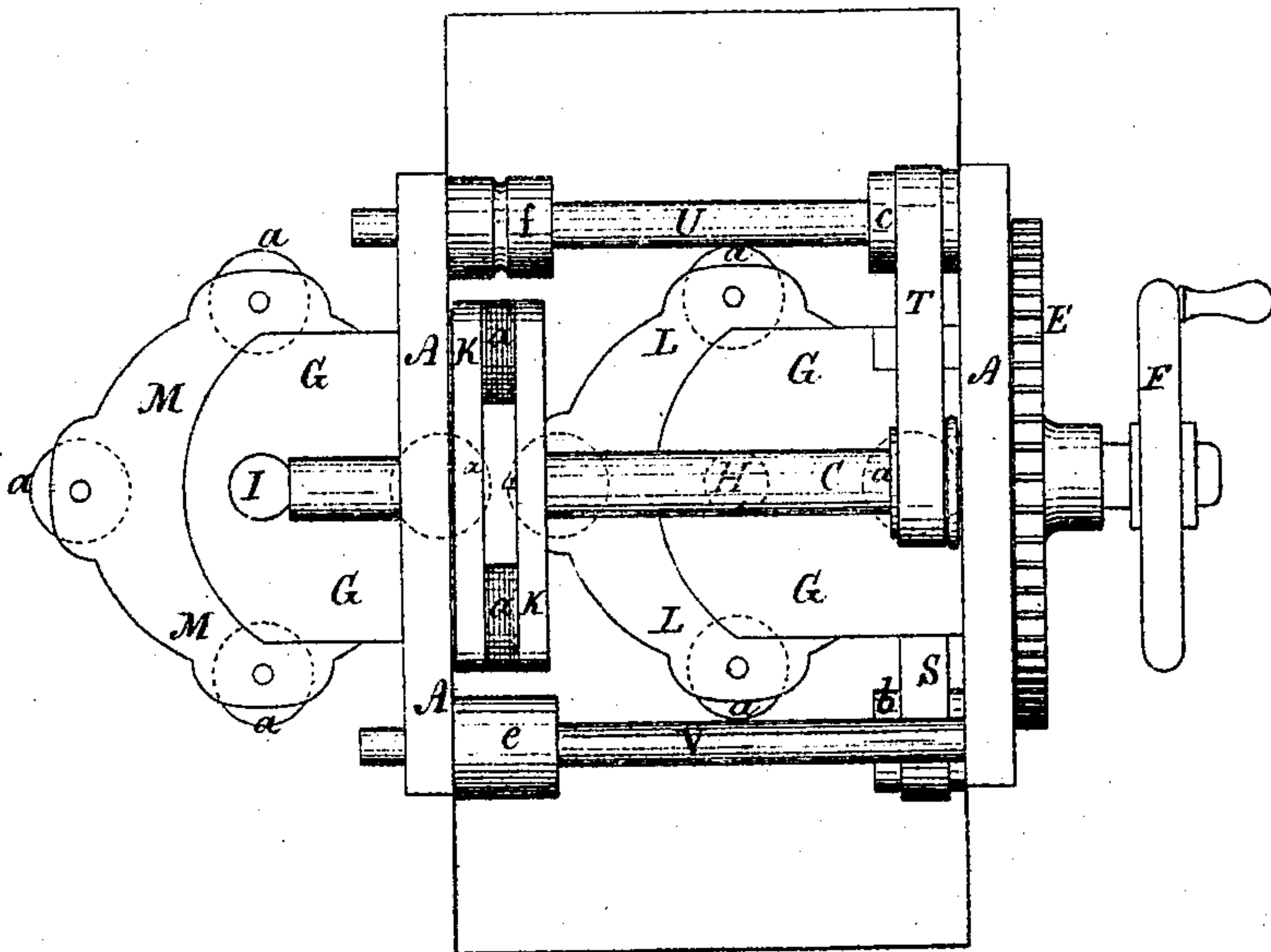


Fig. 2.



Witnesses.
S. W. Pool.
Edmund Mason.

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United States Patent Office.

THADDEUS FOWLER, OF SEYMOUR, CONNECTICUT.

Letters Patent No. 102,389, dated April 26, 1870.

IMPROVED MACHINE FOR ROLLING METAL BARS.

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, THADDEUS FOWLER, of Seymour, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Machines for Reducing or Rolling Metal Bars; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents an elevation of that side of the machine where the bar that is to be reduced is fed in.

Figure 2 represents a top plan of the machine.

Similar letters of reference, where they occur in the separate figures, denote like parts in both of the drawings.

I am aware that two pairs of reducing-wheels or rolls, one pair on vertical and the other pair on horizontal shafts, and both pairs performing their reducing operation at or near the same point, or in the same plane, have been used for many purposes, and these I do not claim.

My invention consists in the combination of the two pairs of reducing-rolls or wheels, arranged to operate in or nearly in the same plane, but alternating with each other, in their reducing operation, with a pair of holding-rolls, where the bar is fed in, and a pair of feeding and finishing-rolls on the opposite side of the reducing-rolls, as will be explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

In a frame, A, are hung two horizontal shafts, B C, which are connected by gears D E, so as to be turned by the crank or band-wheel F toward each other; and in horizontal projecting portions G G of said frame are hung two other short shafts, H I.

These two pairs or sets of shafts carry, respectively, wheels, frames, or disks J K and L M, with reducing-rolls *a a a a* arranged in them, so that, as the wheels or frames are rotated, their reducing-rolls shall act in concert against opposite sides of the bar of metal that is to be reduced by them.

The rolls of one set of wheels alternate with the rolls of the opposite set upon the bar, so that they never conflict with each other.

On the shaft B are placed two bevel-gears, N O, which mesh respectively with the bevel-gears P Q on the short shafts H I, and, by means of this gearing,

the two sets of wheels or disks J K and L M, with their reducing-rolls *a a*, &c., are operated and so timed that the reducing-rolls or dies of each pair of wheels or frames alternate with each other, and thus said reducers may revolve and work through a point or space very small, without striking against each other; and to prevent the bar from slipping away from the action of the reducing-rolls, they are creased or roughened on their perimeters.

From a pulley on the shaft B an endless belt S, passes to and over a pulley, *b*, on a shaft, R; and from a pulley on the shaft C an endless belt, T, passes to and over a pulley, *c*, on the shaft U, by which means the two shafts R U are driven.

Immediately above the shaft R, and in the same plane with it, is placed another shaft, V.

The two shafts R V have each a roll, *d e*, upon them, which form a pair, and, though the bar to be reduced enters between these rolls *d e*, they are not feed-rolls, but, on the contrary, retarding or holding-rolls, to prevent the bar from going through too fast.

On the other side of the reducing-rolls are two grooved rolls, only one, viz: that *f*, on the shaft U, being distinctly seen, its mate or fellow being directly underneath it, but the circular opening made by the two grooves in the two rolls is distinctly seen in fig. 1.

These rolls (*f* and its fellow) are the feed-rolls, as they gripe and draw the bar through. They also perform another duty, viz: finish or round up the bar, which is only reduced between the rolls or dies *a a a a*, &c., so that the first pair of rolls *d e* simply gives direction to the bar to be reduced. The rolls, swedges, or dies *a a a a* reduce it in rectangular form, and the grooved rollers beyond draw the bar through by their bite, and, at the same time, round and finish it.

By making the wheels or disks that carry the reducers adjustable in the frame, and substituting other grooved or finishing-rolls, different sized bars may be made in the same machine.

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

In combination with the wheels, disks, or frames, carrying reducing-rollers *a a*, the holding-rollers *d e* on one side, and the drawing and finishing-rolls on the other side, all operating together in the manner and for the purpose described and represented.

THADDEUS FOWLER.

Witnesses:

EDM. F. BROWN,
A. B. STOUGHTON.