2 Sheets--Sheet 1.

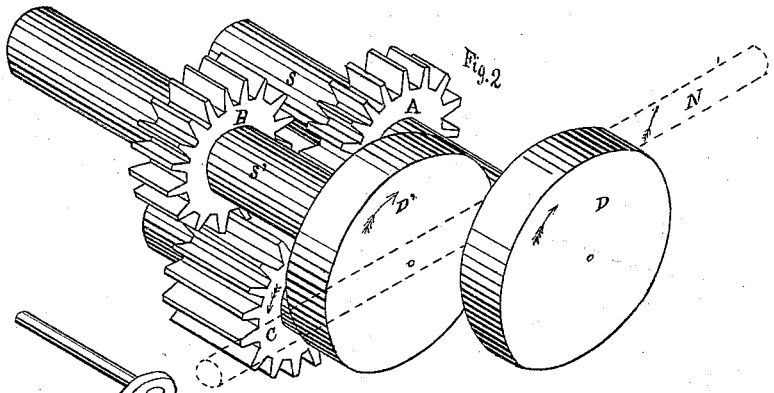
M. H. BROOKSBANK.

Metal Rolling-Machines.

No. 151,079. Patented May 19, 1874.

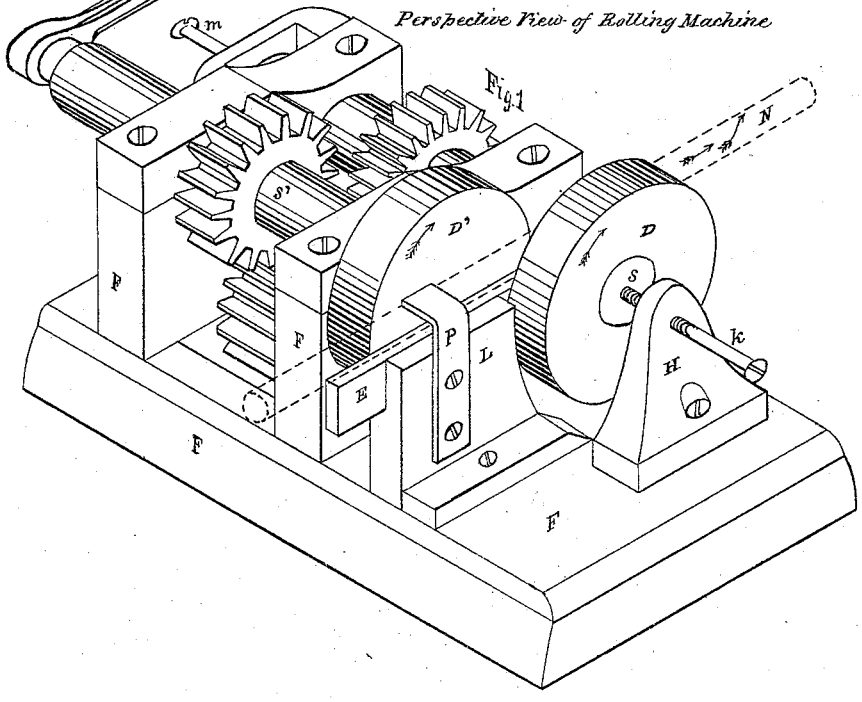
Perspective View of Rolls and gearing without frame

Fig. 2



Perspective View of Rolling Machine

Fig. 1



Witnesses { John D. Poppin
Wm. A. Henson

Matthew H. Brooksbank.

AM. PHOTO-LITHOGRAPHIC CO. N. Y. (OSBORNE'S PROCESS.)

2 Sheets--Sheet 2.

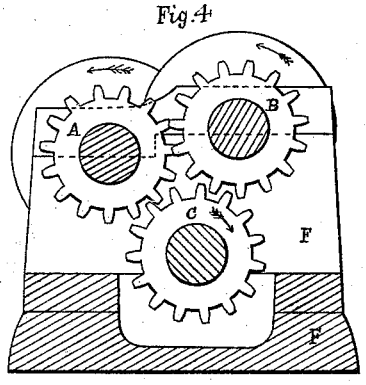
M. H. BROOKSBANK.

Metal Rolling-Machines.

No. 151,079. Patented May 19, 1874.

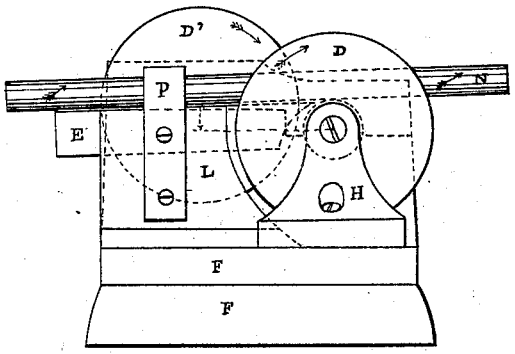
Section through x, x, Fig 3

Fig. 4



End View

Fig. 5



Scale.

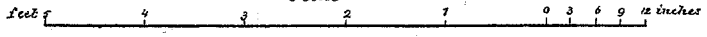
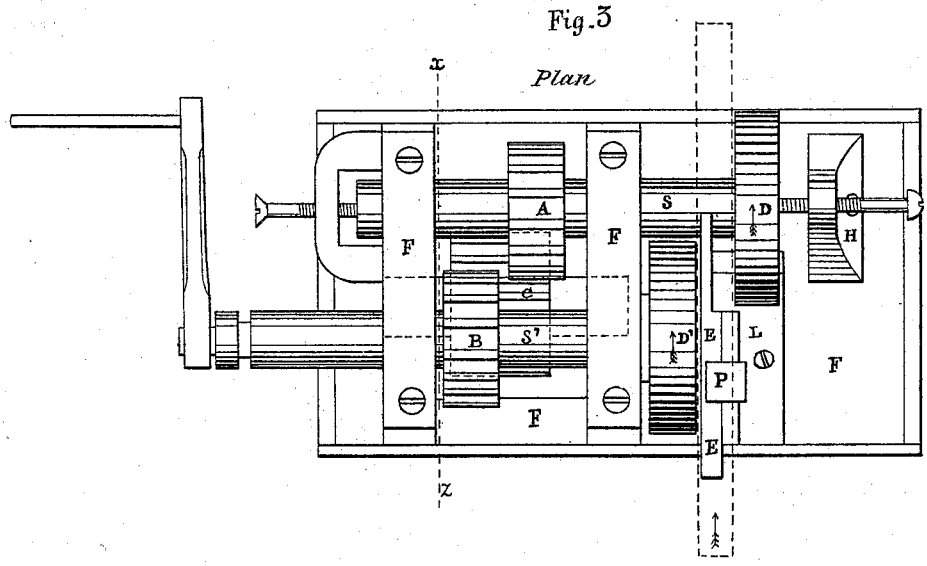


Fig. 3

Plan



Witnesses { John D. Poppius
Wm. A. Henson

Matthew H. Brooksbank.

AM. PHOTO-LITHOGRAPHIC CO. N. Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

MATTHEW H. BROOKSBANK, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN METAL-ROLLING MACHINES.

Specification forming part of Letters Patent No. **151,079**, dated May 19, 1874; application filed April 13, 1874.

To all whom it may concern:

Be it known that I, MATTHEW H. BROOKSBANK, of the city of Newark, State of New Jersey, have invented an Improved Rolling-Machine, being an improvement in that class of rolling-machines known as disk-rolls, constructed of hard metal, of which the following is a specification:

The object of my invention is to simplify the construction of that class of rolling-machines known as plane disk-rollers, by remodeling the general arrangement; avoiding the expensive hollow shaft, which forms a conspicuous feature in my application for improvements in rolling-machines filed January 31, 1874, yet retaining all the efficiency and compactness pertaining to that design without sacrificing facility of manipulation or excellence of working qualities, it being intended to accomplish the same description of work as the improved rollers above mentioned, viz., the rolling and finishing of rough round bars of iron, steel, brass, or other metals, by reducing them to the condition of perfect cylinders with polished surfaces, adapted for shafting, spindles, and many other useful purposes, without requiring to be turned in a lathe, according to the usual practice.

D′ and D, Figures 1, 2, 3, 4, 5, are the plane-faced disk-rolls, made of hard metal, and of equal diameters, attached to parallel horizontal shafts S′ and S. By referring to Fig. 5 it will be seen that the disk-roll D′ is somewhat higher than the other roll, D—that is, the center of D′ should be about one and one-fourth the radius of the shaft above the center of D, deviating from this more or less, according to the mean radiuses of the bars to be rolled. The two disk-rolls are connected together by the spur-wheels A B and the intermediate wheel C, and when motion is communicated to the shaft S′ it is transmitted through the intervention of the spur-wheels B C A to the shaft S, which will revolve in the same direction as S′, carrying the disk-rollers with them. F F F is the framing for mounting and supporting the rollers and shafts. H is a strong block, supporting the adjusting-screw *k* for regulating the distance of the roller D from the roller D′. *m* is another adjusting-screw, to hold the shaft S and its roller D against the adjusting-screw *k*. E is a guide-piece, supported by the block-piece L. This guide-piece extends between the faces of the rolls, close up to the shaft S, and its upper side ranges about the same level as the upper side of the shaft S. P P is a preventer-piece, to prevent the metal bar from rising while being operated upon.

The mode of operating the rolls is as follows: The disk-roll D being properly adjusted to suit the diameters of the metal bars to be rolled, and suitable power being applied to the end of the shaft S′ to drive the disk-rolls at a suitable velocity, as found by practice, a rough round bar of metal is made hot, and the leading end inserted upon the guide-piece E, under the preventer-piece P, and pressed forward between the disk-rollers D′ and D. As soon as the rollers gripe the end of the bar it will commence to revolve and advance in the direction of the arrows marked on the bar N, Fig. 5. The disk-roller D being lower than D′ is the cause of this advancing motion, when the rollers are revolving in the direction of the arrows. The shaft S, which carries the disk-roll D, if desired, can be made so as to project through the roller toward the block H, (see Fig. 1,) and the block H can easily be so modified as to give powerful support to said projecting shaft and its roll.

These disk-rollers D′ and D are differently arranged to those described in my application of January 31, 1874, the latter being designed to revolve in opposite directions. The conical-faced disk-rollers of Reese, No. 65,832, patented June 18, 1867, also revolve in opposite directions, and the screw-threading faced rollers of Prosser, No. 103,776, patented May 31, 1870, also revolve in opposite directions; whereas, by reference to drawing, Fig. 5, it will be seen that by the relative positions of the rolls to each other, and the mode of connection by the spur-wheels, while the rollers both revolve in the same direction, those portions of each roller only which are situated respectively opposite a portion of the other roller move relatively in opposite direc-

tions. Therefore, my new invention, as above described, is clearly different to all others.

I claim—

The combination of two plane-faced disk-rollers, made of hard metal, of equal diameters, and both revolving in the same direction, and situated relatively to each other as shown, with the shafts, spur-wheels, supporting-frame, the guide E, and the preventer P, and the two adjusting-screws *m k*, all arranged substantially as shown and described, and for the purposes above mentioned.

MATTHEW H. BROOKSBANK.

Witnesses:

JOHN D. TOPPIN,

WM. S. HENSON.