

A. WOOD, Jr.
Rolling-Mills.

No. 142,316.

Patented August 26, 1873.

Fig 1.

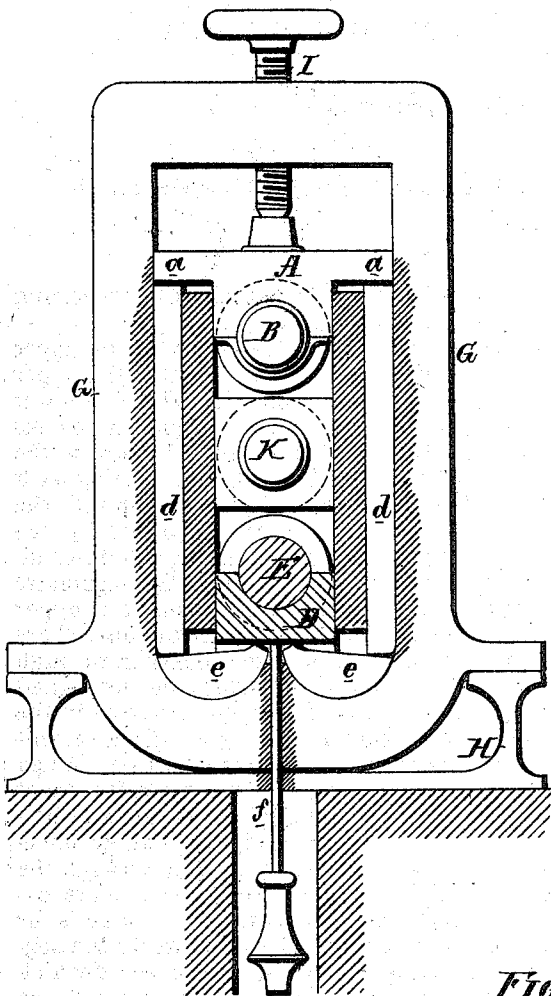


Fig. 2.

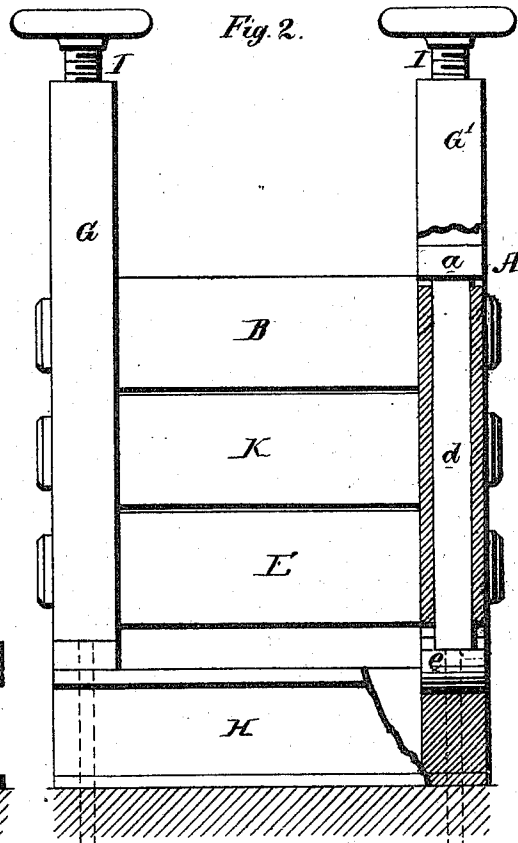
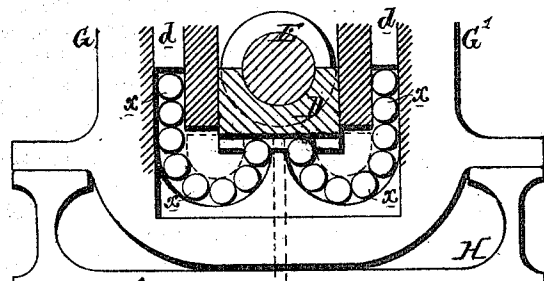


Fig. 3.



Witnesses,

Wm. A. Steel
Thomas McPherson

Alan Wood Jr.
by his Atty.
Howson and Son

UNITED STATES PATENT OFFICE.

ALAN WOOD, JR., OF CONSHOHOCKEN, PENNSYLVANIA.

IMPROVEMENT IN ROLLING-MILLS.

Specification forming part of Letters Patent No. **142,316**, dated August 26, 1873; application filed August 1, 1873.

To all whom it may concern:

Be it known that I, ALAN WOOD, JR., of Conshohocken, Montgomery county, Pennsylvania, have invented an Improvement in Three-High Rolls, of which the following is a specification:

The object of my invention is to dispense with the costly mechanism usually employed in three-high rolls for adjusting the upper and lower rolls, and this object I attain by combining with the bearings A of the top roll and bearings D of the bottom roll bars *d d* and segmental blocks *e e*, or their equivalents, as shown in the partly-sectioned side view, Fig. 1 of the accompanying drawing, so that any movement of the upper roll consequent upon the operation of the screw I will be simultaneous with a like movement in a contrary direction of the lower roll. The two frames or housings G and G' are secured to a substantial base, H, (see front view, Fig. 2, which is partly in section,) and each housing has, at the top, the usual screw I, for controlling the bearing A of the top roll. This bearing fits snugly, but so that it can slide freely in the housing, and has projections *a a* for bearing on the top of the above-mentioned bars *d d*, the latter being adapted to and arranged to slide vertically in chambers formed in the housing. The lower end of each bar bears against the outer end of a segmental block, *e*, which is so fitted to a concave recess in the housing as to move freely therein, the inner ends of both blocks *e e* being in contact with the under side of the bearing D of the bottom roll E, which bearing is arranged to slide vertically in the housing, and has a rod, *f*, passing through the said housing and through the base-plate, and having, at its lower end, a weight contained within a pit formed in the foundation of the mill. As usual in three-high rolls, the intermediate roll K re-

volves in fixed bearings secured to or forming part of the housings.

When, by operating the screw I, the upper roller is depressed, the movement of the upper bearing A will be communicated to the lower bearing D by the rods *d* and segmental blocks *e e*, the latter serving as levers to elevate the bearings of the bottom roll. On turning back the screws I, so as to relieve the top roll, the bottom roll and its bearings, aided by the weights suspended to the latter, will descend, at the same time, by means of the segmental blocks *e e* and bars *d d*, elevating the upper roll; in other words, the bottom and top roll are balanced and so connected together, through the medium of the segmental blocks *e e* and bars *d d*, that any movement imparted to the top roll must be followed by a like movement of the lower roll in a contrary direction. When the rolls are grooved for the manufacture of bars but little adjustment of the top and bottom rolls is required, and this limited movement may be easily communicated through the segmental levers *e e*; but when a more extended movement is required, as in rolls for manufacturing plates, I substitute for the segments *e* a series of rollers, *x*, the effect of which on the movements of the bars *d d* will be readily understood without explanation.

I claim as my invention—

In three-high rolls, the combination, substantially as described, of segmental blocks *e e*, or their equivalents, and bars *d d* with the bearings of the top and bottom rolls.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALAN WOOD, JR.

Witnesses:

JAWOOD LUKENS,
GEORGE CORSON.