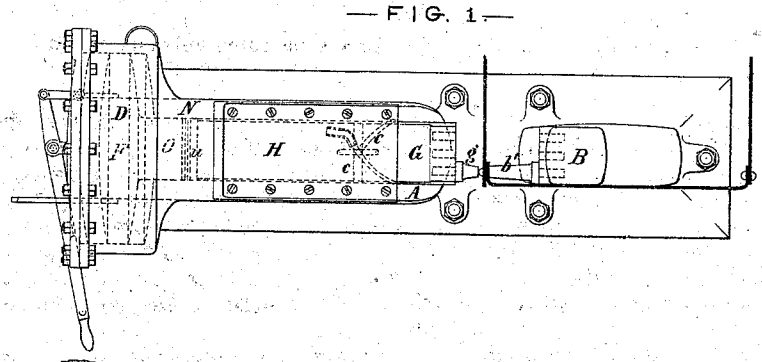
# W. SELLERS.

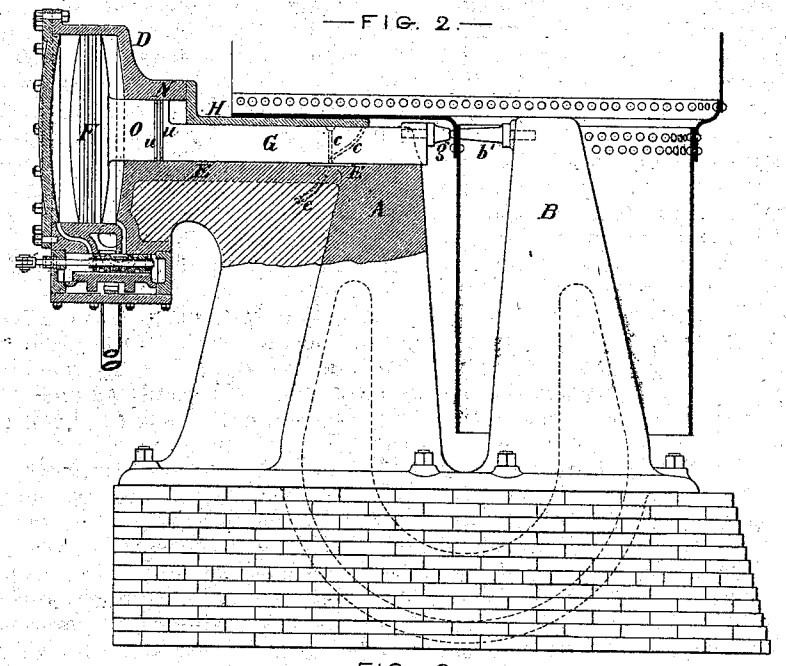
## Riveting-Machines.

No. 136,100. Patented Feb. 18, 1873.

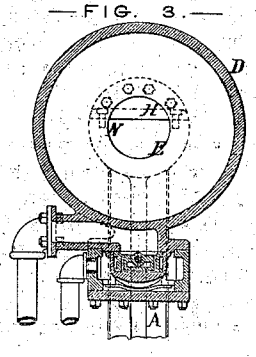
—FIG. 1.—




—FIG. 2.—




—FIG. 3.—




WITNESSES:

Wm. E. Morgan.

Hobart Hutton

INVENTOR:

Wm. Sellers

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

# UNITED STATES PATENT OFFICE.

WILLIAM SELLERS, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN RIVETING-MACHINES.

Specification forming part of Letters Patent No. **136,100**, dated February 18, 1873.

*To all whom it may concern:*

Be it known that I, WILLIAM SELLERS, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Machines for Riveting Plate or Boiler Iron, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a plan of a steam riveting-machine embodying my said improvements; Fig. 2, a side elevation and section through the center of the cylinder and valve-chest; Fig. 3, an end view of the cylinder and valve-chest.

My present improvements relate to the steam riveting-machine for which Letters Patent of the United States were granted to me February 7, 1871, and in which the cylinder D and guide E are connected together so as to form a bearing of great length for the piston-rod G, and in which the cylinder D is supported by means of the connection of the guide E to the post A, so that in driving up the piston the pressure in the cylinder is transferred in a direct line to the post. The rivet-punch *g* is secured in the forward end of the piston-rod G, three positions being provided for the punch *g* in the piston-rod—viz., a central position for ordinary cylindrical and plain work, and respective side positions for riveting the corners of fire-boxes and other similar work—three corresponding positions being provided in the outer posts B for the die *b'*. This piston-rod G I have heretofore made semi-cylindrical through its entire length, and flat on its upper surface, so as to reduce to the narrowest limits consistent with requisite stiffness the distance from the center of the punch to the upper side of the piston-rod, to meet the requirements, for example, of such work as the riveting of the fire-box to the cylindrical shell of a locomotive-boiler; in which case, the first line of rivets being but two inches from the flat side of the fire-box, the unobstructed turning space for the flat side of the fire-box, below the shell of the boiler, must come within a plane not exceeding two inches above the center of the punch.

The trough or guide E, corresponding in form to the semi-cylindrical shape of the piston-rod G, I have heretofore covered in by a flat plate, H, secured on the trough by means of screws, and having a flange at the end by which it is secured to the cover of the cylinder D.

Although the piston-rod G is required to play freely within this trough, its great length has been found sufficient to prevent the escape of steam through the trough under any ordinary pressure, the water of condensation following the piston being carried off through suitable ducts or channels *c c* in the sides and bottom of the guide E, and thus prevented from reaching the work where otherwise it would create steam or vapor, and prevent the operator from managing his work efficiently.

Now, it is the object of my present invention to secure still greater perfection in the working of this part of my machine, and to provide more effectually against all leakage of steam through the joints between the flat plate H, cover of cylinder D, and trough E, and to afford additional support to the cylinder D; and to this end my improvements consist in making the end of the trough E cylindrical next the cylinder D, and making the corresponding end of the piston-rod G to conform with this cylinder, so that, in fact, I have a large cylinder, D, connected with a smaller cylinder, N, and a large piston, F, connected with a smaller piston, O.

This cylindrical part O of the piston-rod I provide with suitable steam-tight packing, using, by preference, two or more steel packing-rings, *u u*, having a square section, fitting easily within corresponding spaces in the piston-rod, the rings being of such diameter that, when cut apart and compressed within the cylindrical guide N, they will exert upon it sufficient pressure to prevent the escape of steam.

By this means I further combine with my other improvements in the riveting-machine

all the advantages of a stuffing-box without cutting off the connection between the cylinder and the guides, and without using independent supports for each.

What I claim herein, and desire to secure by Letters Patent, is—

1. The combination of the cylinder N with the cylinder D and trough or guide E.

2. The combination of the piston O and cylinder N with the piston F and cylinder D.

3. The combination of the packed piston F with the packed piston-rod G and trough E.

WM. SELLERS.

Witnesses:

WM. E. MORGAN,

WM. S. LYNN.