

UNITED STATES PATENT OFFICE.

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APPARATUS FOR SCOURING METAL.

SPECIFICATION forming part of Letters Patent No. 455,045, dated June 30, 1891.

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To all whom it may concern:

Be it known that we, RAY HUBBELL and JAMES A. COLE, of Northville, in the county of Fulton and State of New York, have invented certain new and useful Improvements in Apparatus for Scouring Metal; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same.

Our invention relates to an improvement in polishing-machines, and more particularly to machines for scouring and polishing sheet metal, the object of the invention being to
15 produce a scouring and polishing machine whereby sheet metal in long strips or sheets may be quickly and effectually scoured and polished.

A further object is to produce a scouring
20 and polishing machine which shall be simple and comparatively cheap in construction, automatic in operation, and effective in the performance of its functions.

With these objects in view the invention
25 consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is
30 a longitudinal sectional view of the apparatus. Fig. 2 is a plan view of the upper block or clamp. Fig. 3 is a view of a modification.

A represents a frame comprising four pair
35 of uprights 1 2 3 4, which are connected at their tops by means of timbers 5.

Secured to the upper face of the block B and adapted to extend across the same is a series of projections *a*, the exposed faces of which are made convex, as shown in Fig. 1.
40 The projections *a* are preferably covered with soft material *a'*, such as buckskin or Brussels carpet, which material may be secured to the block B in any suitable manner. This covering is shown on a portion of the projections
45 in Fig. 1.

Located above the block B is a block C, having a series of ribs or projections *b* on its under face, said projections being similar in all respects with the projections *a* of block B and
50 covered with the soft material *b'*, as before explained, said projections *b* being arranged

to alternate with the projections *a*, as shown in Fig. 1.

The upper block C is provided with a series of perforations *c*, through which powdered
55 pumice-stone is inserted, which acts in conjunction with the projections *a b* to scour and polish the metal passing through the apparatus, as presently explained.

Located on top the block C in line with the
60 perforations *c* is a series of funnel-shaped projections *d*, adapted to direct the pumice-stone to the perforations. At opposite ends of the block or clamp C and on the opposing
65 edges thereof are projections *e*, adapted to enter elongated slots *f* in the uprights 2 3 and thus maintain the block or clamp C in proper relation to the block B and permit it to have a vertical movement.

Secured to and projecting upwardly from
70 the center of the upper block or clamp C is an arm D, being preferably braced to the block C by means of brace-rods *g g*. The upright 2 is extended above the connecting-timbers 5 and has pivotally connected to its upper end
75 a lever E, the short arm *h* of which is connected with the frame A by means of a spring F, and the long arm *h'* being extended somewhat beyond the opposite end of the frame. At a point in proximity to the pivotal connection
80 or fulcrum of the lever E the upper end of the arm D is pivotally connected to the long arm *h'* of said lever E, and depending from the free end of the arm *h'* is a rod *h²*, which latter is connected at its lower end to
85 a foot-lever G. This foot-lever G is preferably made of some length and is pivoted to the upright 2, as shown in Fig. 1.

Journaled between the uprights 4 4 is a shaft H, provided on one end with a pulley
90 H', adapted to receive a belt from any convenient source of power, whereby motion may be transmitted to the shaft H. The shaft H is provided with an elongated slot *i*, in which one end of the strip of metal to be scoured
95 and polished is inserted.

A box containing the coil of metal to be scoured may be placed on a platform J at one end of the frame, or the coil may be hung
100 upon a peg, if desired, and the free end passed between the blocks B C, as shown in Fig. 1, and secured to the shaft H, as previously ex-

plained. Motion being now transmitted to the shaft H, the metal will be drawn through the apparatus and thoroughly scoured and polished by the pumice-stone and frictional contact with the blocks B C or the projections thereon, the amount of friction being regulated through the medium of the lever mechanism hereinbefore explained. If desired, the modified construction shown in Fig. 3 may be adopted, in which case the projections or ribs *a b* are dispensed with and the metal passed between the blocks X Y, as shown. Funnel-shaped openings *x* are formed in the upper openings to receive and discharge powdered pumice.

It is evident that slight changes might be made in the details of construction of our invention without departing from the spirit thereof or limiting its scope. Hence we do not wish to restrict ourselves to the precise details of construction herein set forth; but,

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a polishing apparatus, the combination of two polishing-blocks, one of said blocks being vertically movable, and an operating-lever pivotally connected with said block, substantially as set forth.

2. The combination, with a fixed polishing-block, of a frame, a polishing-block constructed to slide vertically in said frame and maintain an approximately parallel relation to the other block, and means for moving said block, substantially as set forth.

3. In an apparatus for scouring metal, the combination, with two blocks, one of which is provided with a series of perforations, of soft material on the meeting faces of said blocks, substantially as set forth.

4. The combination, with a fixed block having projections thereon, of a sliding block also provided with projections, the latter arranged to alternate with the projections on the first block, the upper block provided with openings between its projections adapted to receive and discharge pumice or other material between the blocks, substantially as set forth.

5. In an apparatus for scouring metal, the combination, with two blocks between which the metal is adapted to pass, of a series of projections or ribs on each block and soft material on said projections or ribs, substantially as set forth.

6. The combination, with a frame, of a block secured thereto, a sliding block above the fixed block, a pivoted lever, an arm connecting said lever with the sliding block, a foot-lever, and a rod connecting the foot-lever with the first-mentioned lever, substantially as set forth.

7. The combination, with a frame, of a fixed block and a sliding block between which the metal is adapted to pass, an arm projecting from the sliding block, a pivoted lever connected at one end to the frame by a spring and connected at the opposite side of its fulcrum with the arm projecting from the sliding block, a foot-lever, and a rod connecting said foot-lever with the first-mentioned lever, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

RAY HUBBELL.
JAMES A. COLE.

Witnesses:

JNO. PATTERSON,
W. F. CARPENTER.