C. E. L. Holmes.

App's. for Scouring Sheet Metal.

No. 89,313. Patented Apr. 27, 1869.

Fig: 1.

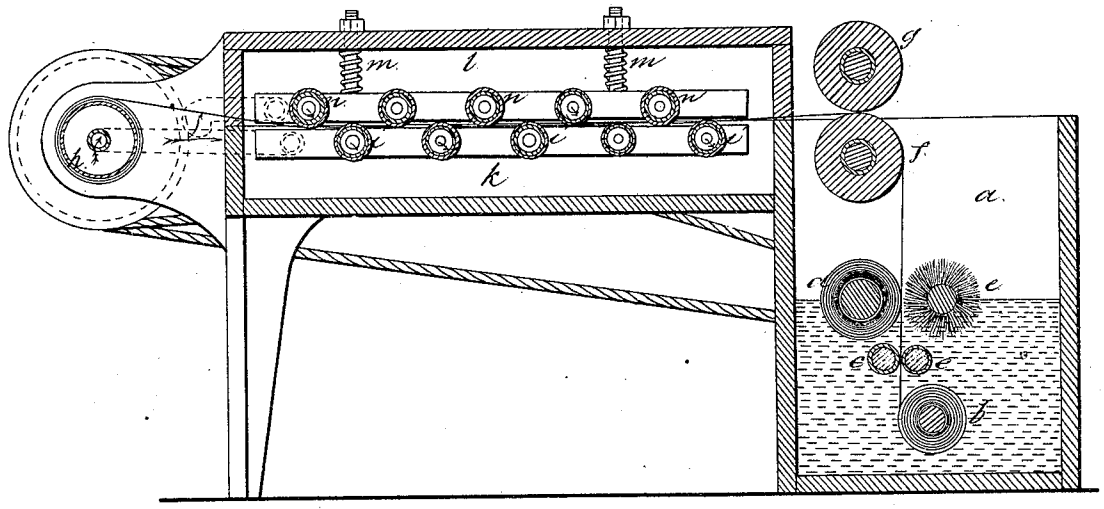
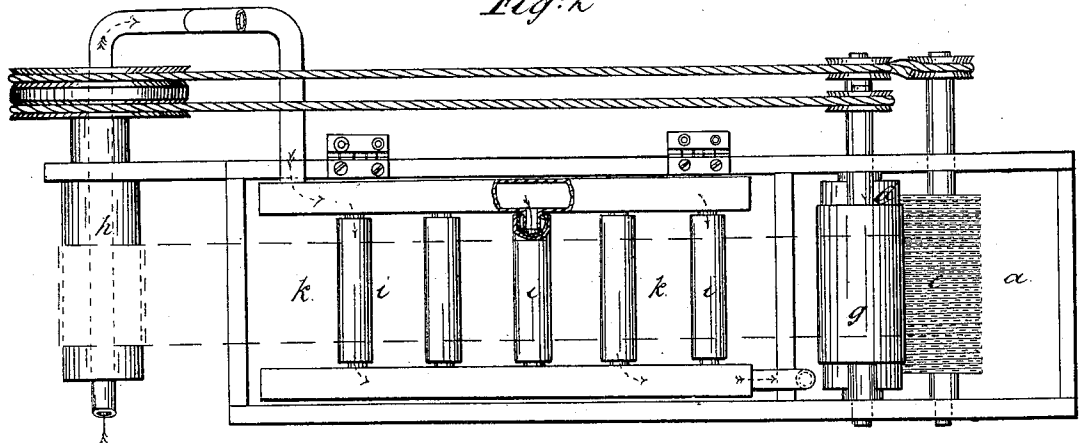


Fig: 2



Witnesses
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CHARLES E. L. HOLMES, OF NEW YORK, N. Y.

Letters Patent No. 89,313, *dated April* 27, 1869; *antedated April* 20, 1869.

IMPROVED APPARATUS FOR SCOURING AND DRYING SHEET-METAL.

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, CHARLES E. L. HOLMES, of the city and State of New York, have invented and made a certain new and useful Improvement in Scouring and Drying Sheet-Metal; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a vertical section of my machine for scouring and drying, and

Figure 2 is a plan of the same, with the upper range of rollers removed.

Similar letters denote the same parts.

In Letters Patent granted to me July 21, 1868, a machine is described for scouring sheet-metal, and wiping the same, to dry the surface; the object of scouring and drying sheet-metal for the removal of scale and oxidation is also set forth.

The present invention is for accomplishing the same object by the use of water, or other liquid, either alone for washing, or with sand, or other material for scouring the sheet-metal, by revolving brushes or cylinders, and I employ India-rubber, or other elastic rollers to force back the water, and prepare the sheet-metal surface for being dried as it passes along, and is heated previous to being wound up.

In the drawing—

a is a vat, to contain water, and into which the roll or sheet of metal is introduced, as at *b*.

c c are guide-rollers, for the sheet of metal.

d is a wiping-roller, covered with cloth, or other desired elastic material.

e is a revolving brush, and

f and *g* are elastic rollers, that press back the water from the surface of the sheet-metal.

According to the condition of the metal, so water alone may be employed, or sand, or other scouring material added, and I prefer to use the liquid in a heated state.

From the rollers *f g* the sheet of metal passes through the drying-chamber *k l*.

If the sheet-metal is thick, and not easily bent, the rollers *f g* may cause it to travel gradually through the drying-space, or the sheet may be drawn through by the roller *h*, as it is wound upon it.

The rollers *i* and *n* are shown as placed in two ranges, the upper range, *n*, being in a movable frame, kept down by the springs *m*, and for convenience in introducing the sheet, the rollers *n* can be lifted off or swung back with the box, forming the upper part *l*, of the drying-space. This is shown as removed in fig. 2.

The rollers *i n* are to be heated by steam, or hot air circulating through them, and to avoid scratching the sheet-metal, the rollers *i n* are made as sleeves, outside of a stationary axle, or pipe, connecting with steam or hot air. The escape heat may go into the vat *a*, to warm up the contents.

I prefer to heat the roller *h*, in order that the roll of sheet-metal may be kept hot, and insure the perfect drying of the roll from all moisture when taken off the roller, and thereby avoid the use of heating-ovens, heretofore employed for this purpose.

The means for revolving the respective rollers may be of any desired character.

My appartus is cheap, strong, and very effective. There is no sawdust employed in wiping off the metal, hence the metal will not have the same appearance, and the dies will not have the accumulation upon them of dust to interfere with the cutting operation.

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

1. The elastic rollers or brushes, to wash or scour sheet-metal on both sides, substantially in the manner specified.

2. The elastic squeezing-rollers *e f*, in combination with the water-vat *a*, and drying-chamber *k l*, substantially as set forth.

3. The combination of scouring-mechanism, for cleaning the surface of sheet-metal, with a heating-apparatus for drying the surface of the sheet-metal, with rapidity, previous to its delivery from the machine, as specified.

4. The yielding range of drying-rollers *n*, fitted with springs or weights, to keep them down, in combination with the standing range, *i*, of rollers, substantially as set forth, so as to accommodate different thicknesses of metal, and to facilitate the introduction of the sheet, substantially as set forth.

5. The drum, or roller *h*, made hollow, and heated, in combination with the scouring or drying-mechanism, substantially as specified, so as to keep the sheet-metal hot while being wound, as specified.

In witness whereof, I have hereunto set my signature, this 18th day of September, A. D. 1868.

CHAS. E. L. HOLMES.

Witnesses:

CHAS. H. SMITH,

GEO. D. WALKER.