

(No Model.)

3 Sheets—Sheet 1.

R. LEWIS & G. MORGAN.

APPARATUS FOR CLEANING AND POLISHING COATED METAL PLATES.
No. 509,745.

Patented Nov. 28, 1893.

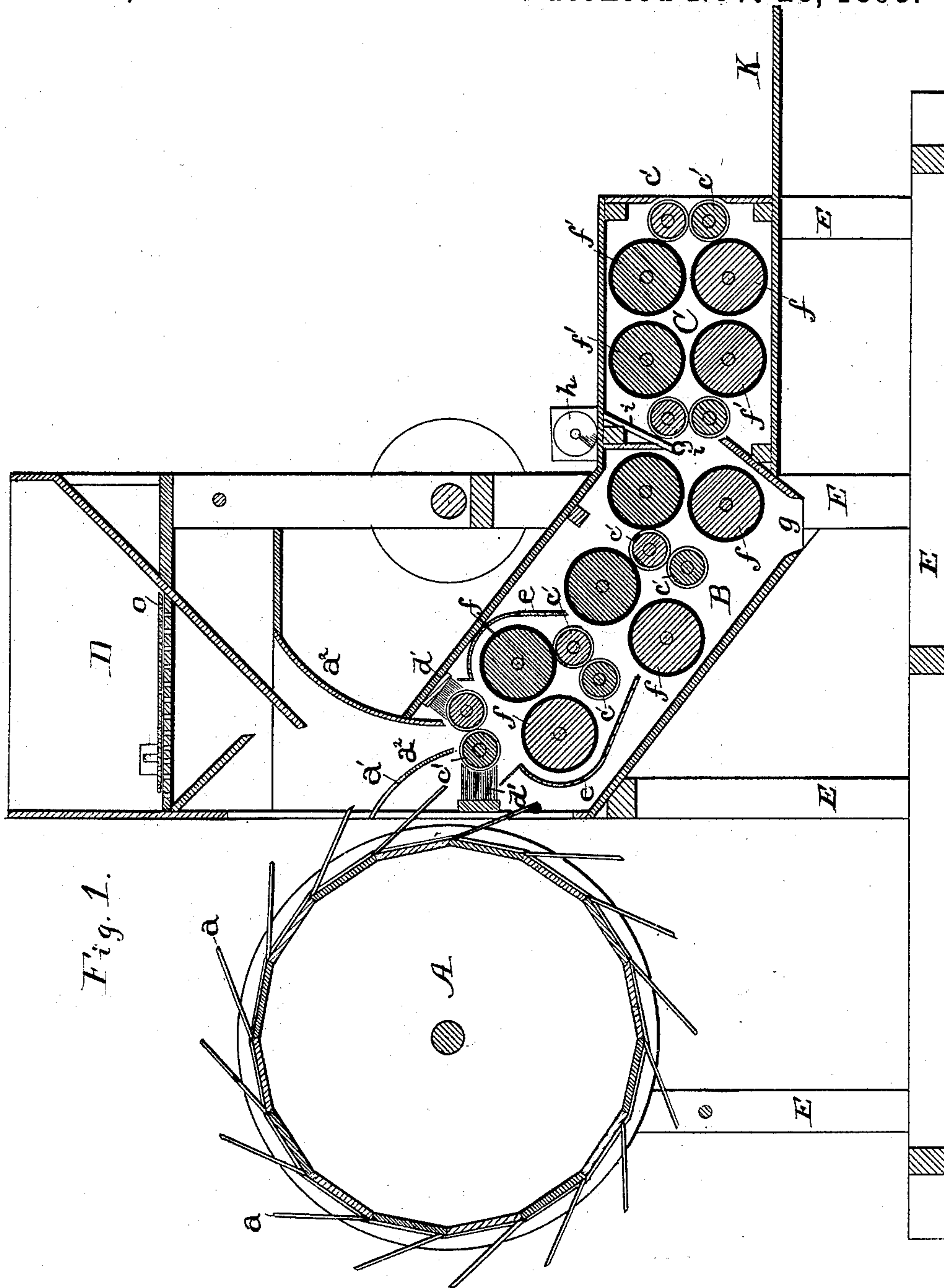


Fig. 1.

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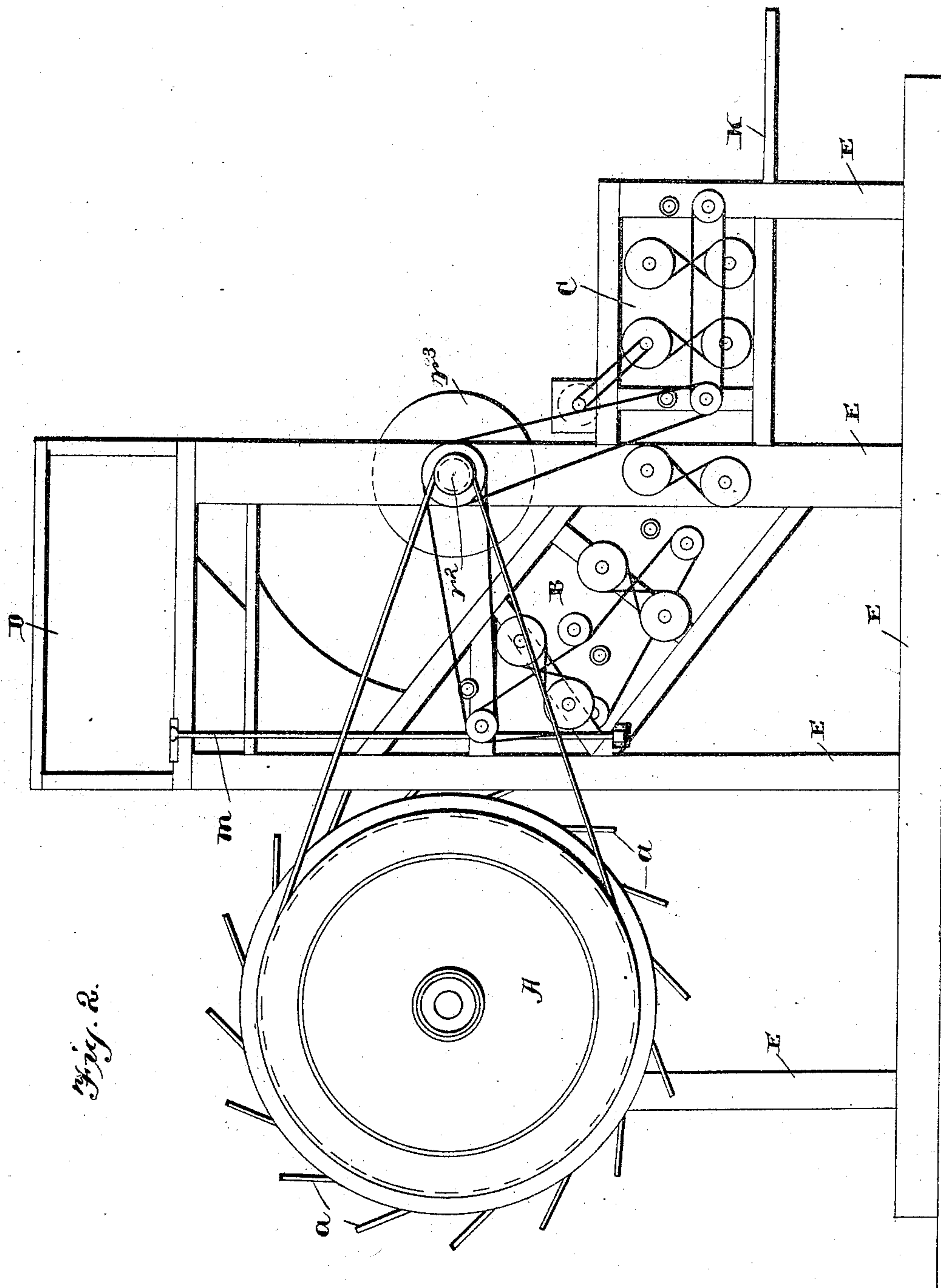
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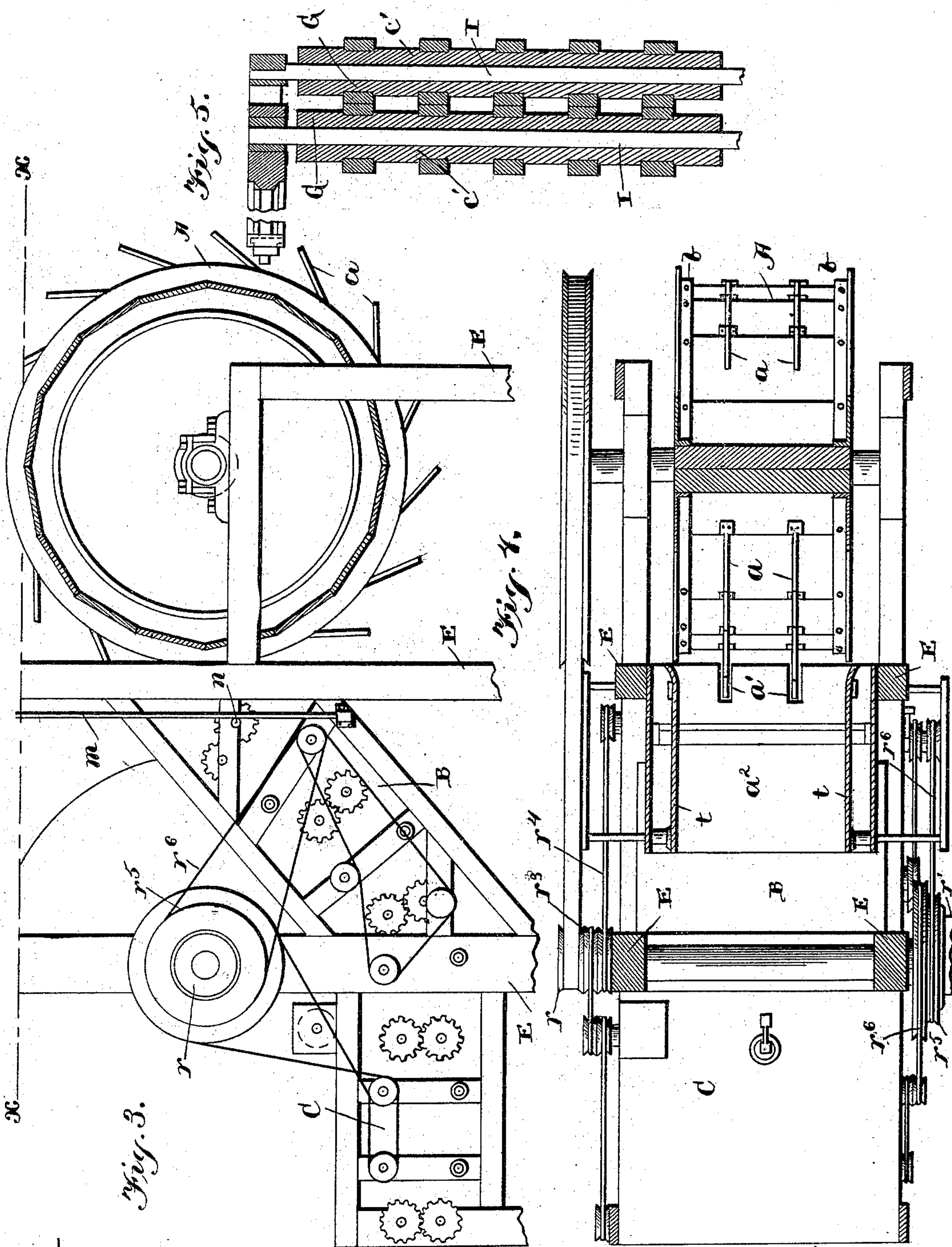
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UNITED STATES PATENT OFFICE.

RICHARD LEWIS, OF NORRISTOWN, PENNSYLVANIA, AND GWILYM MORGAN,
OF WEST NEW BRIGHTON, NEW YORK.

APPARATUS FOR CLEANING AND POLISHING COATED METAL PLATES.

SPECIFICATION forming part of Letters Patent No. 509,745, dated November 28, 1893.

Application filed January 18, 1893. Serial No. 458,822. (No model.)

To all whom it may concern:

Be it known that we, RICHARD LEWIS, of Norristown, in the county of Montgomery and State of Pennsylvania, and GWILYM MORGAN, of West New Brighton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Apparatus for Cleaning and Polishing Coated Metal Plates; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in apparatus for cleaning and polishing metal-coated plates and it consists in the combination and arrangement of parts which will be fully described hereinafter and particularly referred to in the claims.

The object of our invention is to provide a simple and efficient apparatus for conveying the plates from the metal pot and delivering them automatically to the machine, and for cleaning and polishing them at one operation.

In our invention, the tin or other metal coated plates are placed by the "riser" in a rack fixed upon a revolving drum which conveys and delivers them automatically to a pair of rolls fixed in a box, which is kept supplied with bran or other cleaning material. This and other pairs of rolls convey the plates obliquely downward through the cleaning chamber. Between each pair of guide rolls the plates are rubbed by larger wooden rolls covered with sheep skins or other suitable material, which revolve at a high rate of speed between two sheet iron plates which prevent the bran or other cleaning material from being scattered by the rubbing rolls. Means is provided by a small fan to remove the dust from the upper surface of the plates before entering the second or polishing chamber. The plates are conveyed by guide rolls horizontally from the cleaning box through the polishing chamber and in their passage through the polishing chamber they are again rubbed by two or more pairs of wooden rolls covered with sheep skins, leather or other

suitable material, which are made to revolve at a higher rate of speed than those in the cleaning chamber. The cleaned and polished plates are finally deposited automatically on a table ready for removal to the sorting room.

In the drawings which form part of this specification and explain the apparatus we have adopted, Figure 1, is a sectional view of the whole apparatus. Figs. 2 and 3, are side elevations. Fig. 4, is a sectional view through the line $x-x$, of Fig. 3, to show how the plates are delivered to the cleaning machine. Fig. 5, is an enlarged sectional view of a pair of the guide rolls.

In the drawings like letters of reference refer to the same parts of our machine.

In the drawings, A represents the drum to which the rack pins a, a , are fixed obliquely. b, b , are hooks of angle iron which can be adjusted to keep plates of different sizes in a proper position on the drum.

B is the cleaning chamber.

c', c' , are combined feed and guide rolls. These guide rolls are of wood G with an iron core I and having grooves into which are fitted rings of rubber or other suitable material, as shown in Fig. 5. By this means the cleaning material is allowed to pass between the rubber rings L into the cleaning chamber B.

d', d' , are a pair of brushes to keep the guide rolls clean.

e, e are two plates preferably of sheet iron extending across the cleaning chamber forming a trough to keep the upper rubbing rolls f, f , supplied with bran or other cleaning material.

g is an outlet for bran which has passed through the cleaning trough.

a^2, a^2 , are transverse metal sheets serving to guide the plates as they descend from the rack into the nip of the first pair of guide rolls. The rack pins pass through the slots a' in the sheet, as shown in Figs. 1 and 4.

h is a fan forcing air through the pipe I extending horizontally across the cleaning chamber serving to remove the dust from the upper surface of the plates before entering the polishing chamber.

C is the polishing chamber.

f, f , are polishing rolls of suitable material working at a high rate of speed.

K is the table on which the plates are deposited on leaving the machine.

D represents the chamber from which the bran is supplied to the cleaning chamber by means of a hopper or otherwise. We prefer the arrangement shown in our drawings, which consists of a vertical steel rod *m*, (Fig. 3) kept vibrating by the cam which vibrates the sieve *o*, (Fig. 1,) to which it is connected at the bottom of the bran box.

E, E, represent the frame of the machine.

Figs. 2, 3 and 4, show the gearing. r' , (Figs. 3 and 4,) is the driving pulley. r^2 is a pulley driving the drum A. r^3, r^4 , are pulleys driving the guide rolls. r^5 , is a pulley driving the cleaning rolls and r^6 , another pulley driving the polishing rolls. t, t , are a pair of adjustable plates acting as guides. We prefer to make our pulleys of wood and to use rope driving, except in the case of the guide rolls where we make one roller of each pair drive the other by means of toothed wheels *s, s*, preferably of solid leather.

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

1. The combination of the feed drum A, the cleaning chamber B, in which the plates are conveyed by guide rolls obliquely downward, and the polishing chamber C, through which the plates pass horizontally to the table.

2. A metal cleaning machine comprising cleaning rolls, upwardly extending guiding plates above the said rolls having their lower ends adjacent to the meeting peripheries of said rolls, a traveling plate delivery depositing said plates between the said guiding

plates, a hopper above the said guide plates and a trough or chute delivering polishing material between the guiding plates.

3. A metal cleaning machine comprising cleaning rolls, cleaning material delivery above the rolls, and plates curved around and adjacent to the outer peripheries of the rolls for holding the material thereto.

4. A metal plate cleaning machine comprising a series of pairs of cleaning rolls arranged one pair above the other for the purpose described, a material delivery above the rolls, and feeding rolls in advance of the cleaning rolls, the said feeding rolls having annular grooves for the passage of the cleaning material from one pair of rolls to the other.

5. A metal plate cleaning machine comprising an oblique cleaning chamber for causing a gravity feed of cleaning material and a substantially horizontal cleaning chamber.

6. A metal plate cleaning machine comprising an oblique cleaning chamber to cause a gravity feed of the cleaning material, a substantially horizontal polishing chamber at the lower end of the said oblique chamber, and an outlet for the cleaning material at the junction of the two chambers.

In testimony whereof we affix our signatures in presence of two witnesses.

RICH'D. LEWIS.

GWILYM MORGAN.

Witnesses for Richard Lewis:

HENRY S. SECHLER,

GEO. W. GROFF.

Witnesses for Gwilym Morgan:

J. M. NESBIT,

ROLAND A. FITZGERALD.