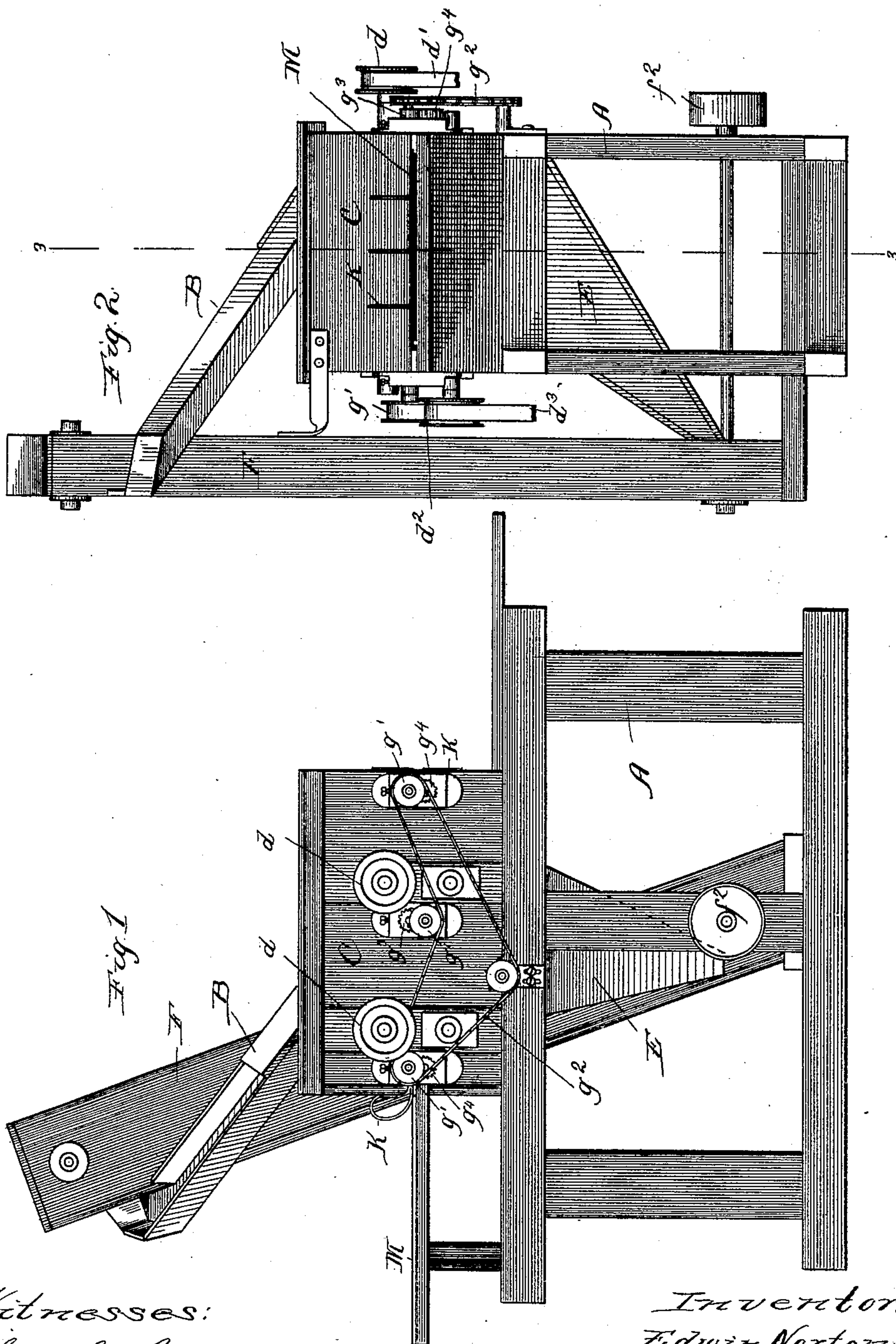


E. NORTON.

CLEANING TIN PLATE OR METALLIC SHEETS.

No. 487,763.

Patented Dec. 13, 1892.



Witnesses:

Lev. C. Curtis
A. W. Munday

Inventor:
Edwin Norton

By Munday, Curtis & Adcock
his Attorneys.

(No Model.)

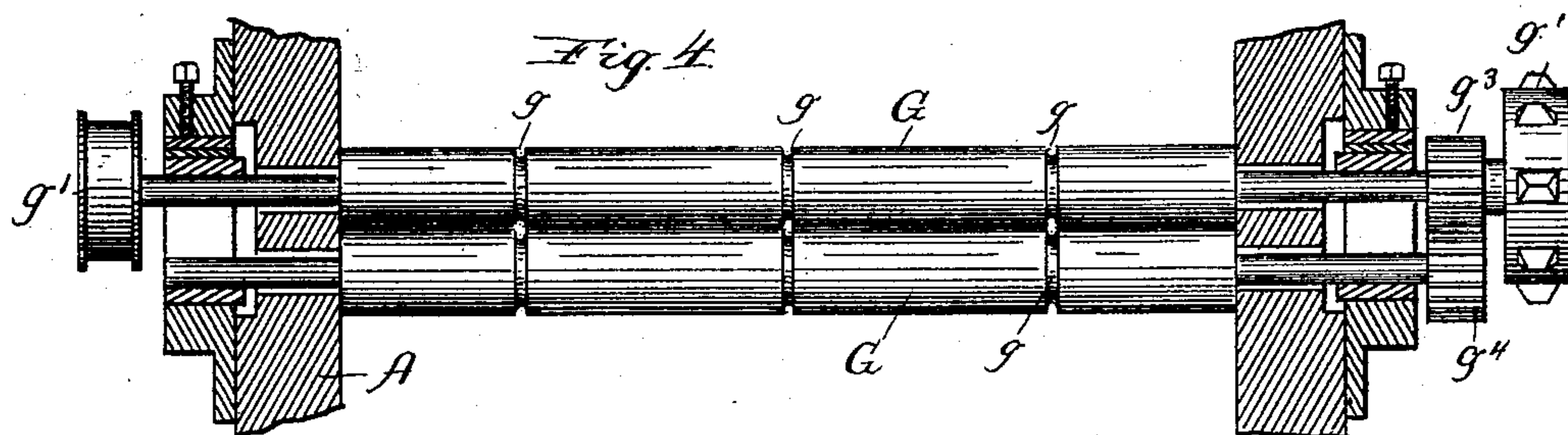
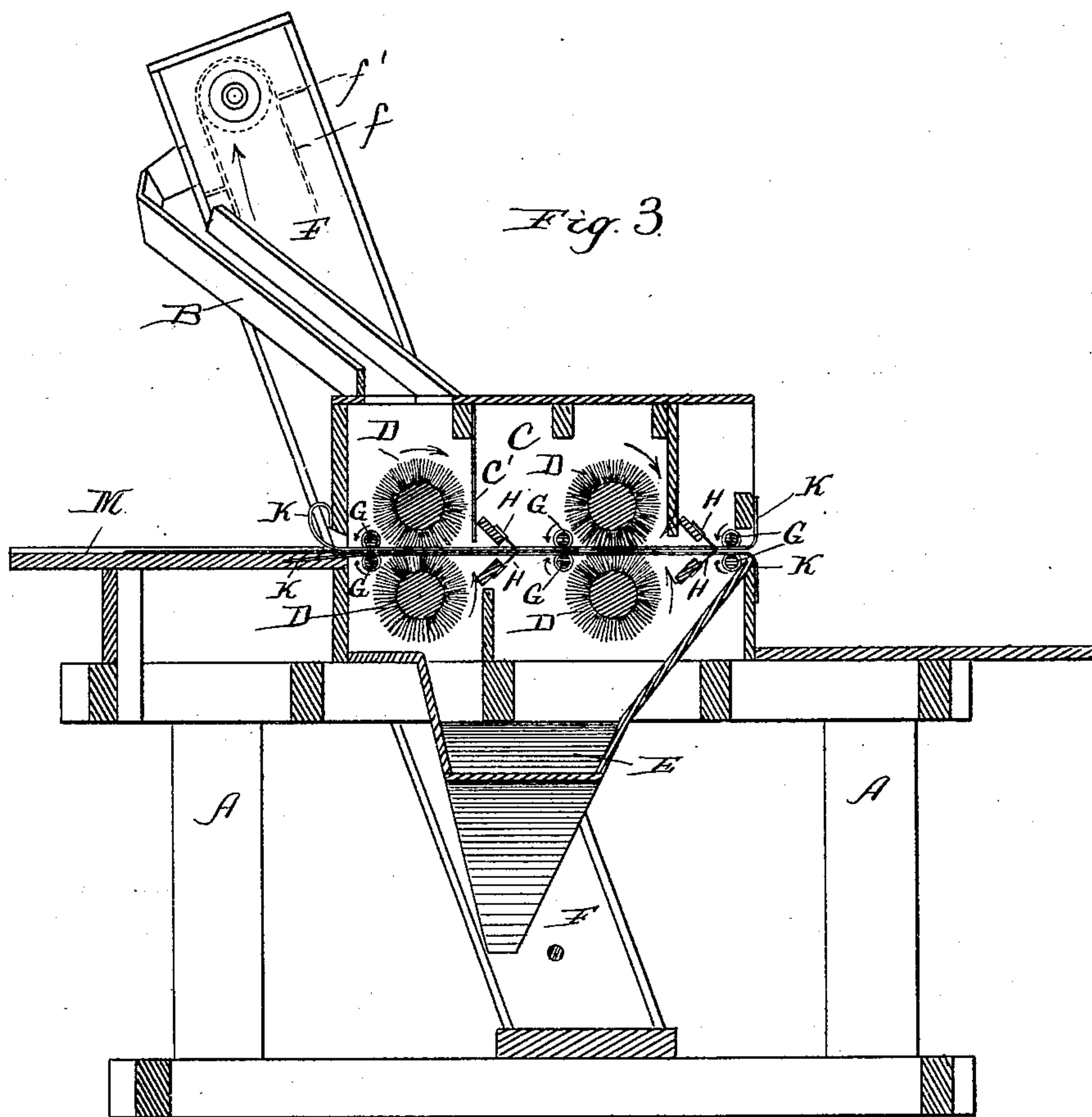
2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

EDWIN NORTON, OF MAYWOOD, ASSIGNOR TO HIMSELF, AND OLIVER W. NORTON, OF CHICAGO, ILLINOIS.

CLEANING TIN-PLATE OR METALLIC SHEETS.

SPECIFICATION forming part of Letters Patent No. 487,763, dated December 13, 1892.

Application filed November 12, 1890. Serial No. 371,251. (No model.)

To all whom it may concern:

Be it known that I, EDWIN NORTON, a citizen of the United States, residing at Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in the Art of and Machines for Cleaning Tin-Plate or Metallic Sheets, of which the following is a specification.

My invention relates to cleaning tin-plate or other metallic sheets.

In the manufacture of tin cans and other sheet-metal ware it is essential to good work that the metal sheets should have clean bright surfaces. In the manufacture of tin-plate it is usually customary after the iron or steel sheets have been coated with tin to clean or scour the tinned sheets; but the cleaning of the tin plates is often, if not generally, done so imperfectly at the tin-plate manufactory that the plates require to be recleaned before using them in the manufacture of tinware.

The object of my invention is to provide a simple and efficient means for cleaning or scouring tin or other metal sheets and whereby the work may be done rapidly and automatically.

In my invention the sheets to be cleaned are passed between revolving brushes supplied with bran or other cleansing material in a granular or pulverized state. The bran or pulverized cleansing material is automatically delivered to the brushes, or into the chamber in which the brushes revolve, through a spout or hopper. The inclosing case or chamber in which the brushes are mounted serves to prevent the pulverized cleaning material from being scattered by the centrifugal action of the brushes. Below the brush-chamber is a hopper or receptacle to receive the pulverized cleaning material, and from the lower hopper or chamber an elevator serves to convey or deliver the cleaning material into the upper hopper, so that the same cleaning material may be used over and over again. By this means also the pulverized cleaning material may be delivered or supplied to the brushes in a uniform and constant manner. One or more pairs of revolving brushes may be employed. The sheet to be cleaned is automatically fed through or

between the revolving brushes and supported during the cleaning operation by feed-rolls placed at intervals. The sheet is or may be further supported by longitudinal guides extending between the feed-rolls. These longitudinal guides may preferably consist of small rods or wires, the feed-rolls being grooved to receive the guides.

My invention consists in the novel devices and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a device embodying and which may be used in practicing my invention. Fig. 2 is a front view. Fig. 3 is vertical longitudinal section on line 3 3 of Fig. 2. Fig. 4 is an enlarged detail view of one pair of the feed-rolls.

In the drawings, A represents the frame of the machine; B, the feed-spout or hopper; C, the brush-chamber; D, the revolving brushes, preferably two pair being used; E, the hopper or receptacle below the brush-chamber; F, the elevator by which the granular or pulverized cleaning material is elevated and re-delivered to the hopper or spout B.

G G are the feed-rolls by which the sheet is fed to the brushes and supported during the cleaning operation.

H H are supplemental stationary brushes designed more particularly to wipe from the sheet any of the pulverized cleaning material that might otherwise adhere thereto.

K are the guides for assisting in supporting the sheet. There are two sets of these guides, one on each side of the sheet. They fit in annular grooves or channels *g* cut in the feed-rolls G and are preferably secured to the frame of the machine or to the walls of the chamber C at each end.

M is the feed-table upon which the sheets rest as they are fed into the machine between the feed-rolls G.

The revolving brushes D may be of any suitable or well-known composition or construction. I prefer, however, to make them with hair bristles. Instead, however, of hav-

ing hair, wire, or other bristles they may be made of or covered with felt, sheep-skin, or any other suitable or well-known brushing or scouring substance. I preferably also employ two pair of stationary brushes or wipers H. The brushing or wiping face of each of these brushes H may preferably be of bristles, as indicated in the drawings. The brush-chamber is preferably provided with a partition C' between the two pairs of brushes D D, so that the second pair of revolving and stationary brushes may better serve to remove the pulverized cleaning material from the surface of the sheet.

The revolving brushes D D are driven by pulleys d d , belt d' , pulleys d^2 d^2 , and belt d^3 or by any other suitable means. The feed-rolls G are driven by pulleys g' g' and belt or sprocket-chain g^2 , each pair of feed-rolls being geared together by gears g^3 g^4 .

The elevator F is or may be of any ordinary or well-known construction. It preferably has an endless chain or belt f , with buckets f' , and is driven by the pulley f^2 .

I claim—

1. The combination, with a closed brush-chamber, of a pair of revolving brushes D D, mounted therein, feed-rolls G G, and sheet-guides K K, extending through said brush-chamber and between said revolving brushes and feed-rolls, and means for automatically delivering granular cleaning material to said brushes D D, substantially as specified.

2. The combination, with a brush-chamber C, furnished with revolving brushes and provided with slots or openings in its opposite sides for the admission and discharge of the sheets, of continuous guides K K, extending through the brush-chamber and between the brushes, and means for automatically delivering granular cleaning material to said brushes, substantially as specified.

3. The combination, with a brush-chamber, of revolving brushes mounted therein and upper and lower guide rods or wires extending between the brushes, substantially as specified.

4. The combination, with a closed brush-chamber having slots or openings at its opposite sides for the admission and discharge of the sheets, of a pair of revolving brushes mounted in said chamber, guides for the sheets extending through the chamber and between the brushes, feed-rollers for feeding the sheets along said guides and between the brushes, a feed hopper or spout for delivering granular or pulverized cleaning material to said brushes, an elevator for returning the cleaning material to said spout or hopper, and a second hopper below the brushes for directing said cleaning material from said brush-chamber to said elevator, substantially as specified.

5. The combination of a closed brush-cham-

ber C, having a partition C', dividing it into two parts, and provided with slots or openings for the passage of the sheet through said brush-chamber and through the partition, a pair of revolving brushes mounted in said chamber on each side of said partition, guide rods or wires extending through the brush-chamber and between said brushes, and a series of feed-rollers furnished with grooves for said guide rods or wires, substantially as specified.

6. The combination of a closed brush-chamber C, having a partition C', dividing it into two parts, and provided with slots or openings for the passage of the sheet through said brush-chamber and through the partition, a pair of revolving brushes mounted in said chamber on each side of said partition, guide rods or wires extending through the brush-chamber and between said brushes, a series of feed-rollers furnished with grooves for said guide rods or wires, and a pair of stationary wiper-brushes at the opening in said partition, substantially as specified.

7. The combination of a closed brush-chamber C, having a partition C', dividing it into two parts, and provided with slots or openings for the passage of the sheet through said brush-chamber and through the partition, a pair of revolving brushes mounted in said chamber on each side of said partition, guide rods or wires extending through the brush-chamber and between said brushes, a series of feed-rollers furnished with grooves for said guide rods or wires, a pair of stationary wiper-brushes at the opening in said partition, and a hopper or spout for delivering pulverized cleaning material into said brush-chamber on one side of said partition, substantially as specified.

8. The combination of a closed brush-chamber C, having a partition C', dividing it into two parts, and provided with slots or openings for the passage of the sheet through said brush-chamber and through the partition, a pair of revolving brushes mounted in said chamber on each side of said partition, guide rods or wires extending through the brush-chamber and between said brushes, a series of feed-rollers furnished with grooves for said guide rods or wires, a pair of stationary wiper-brushes at the opening in said partition, a hopper or spout for delivering pulverized cleaning material into said brush-chamber on one side of said partition, and an elevator for returning said cleaning material to said hopper or spout, and a second spout or hopper below the brush-chamber for delivering said cleaning material to said elevator, substantially as specified.

EDWIN NORTON.

Witnesses:

H. M. MUNDAY,
EMMA HACK.