

No. 721,458.

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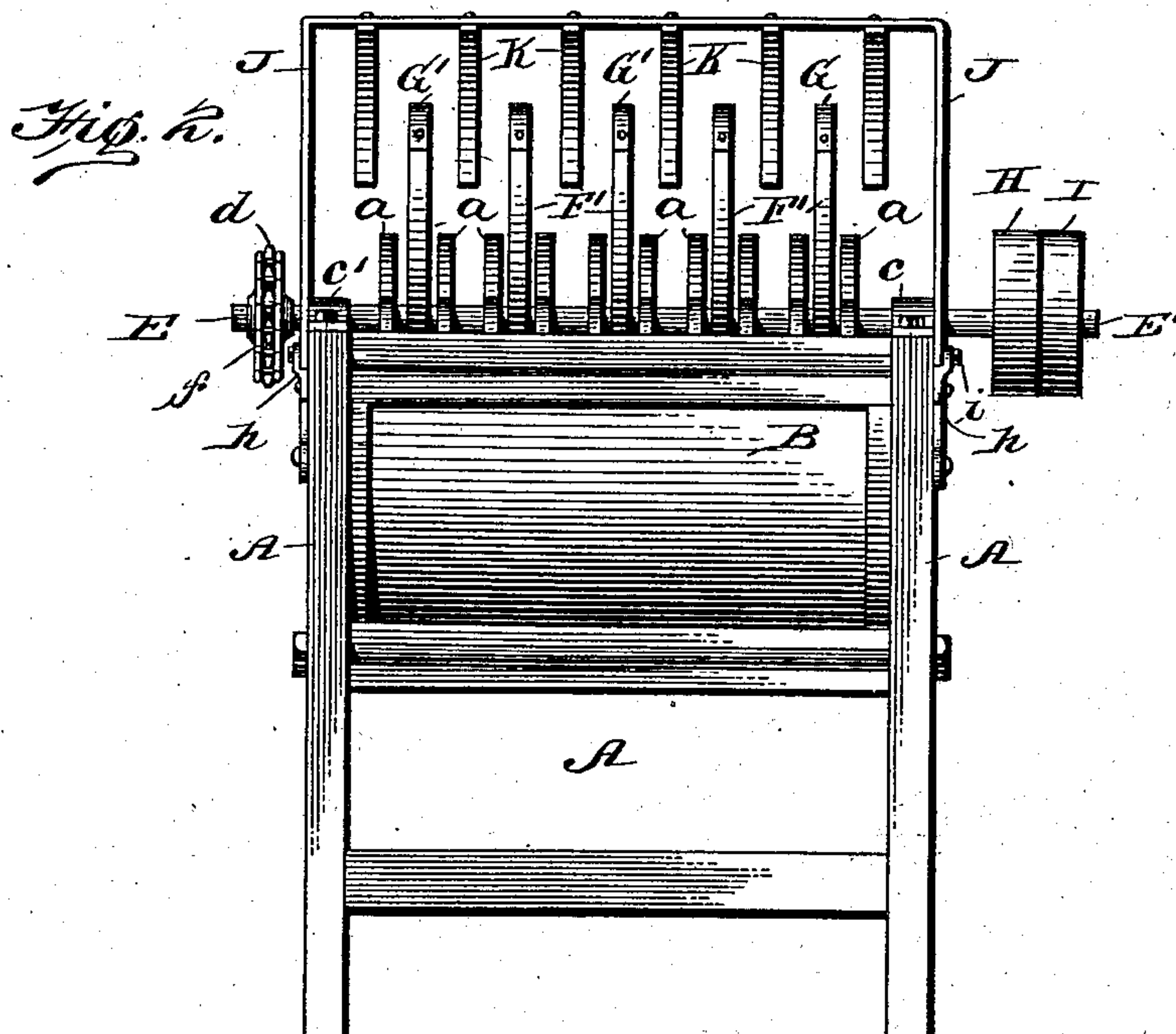
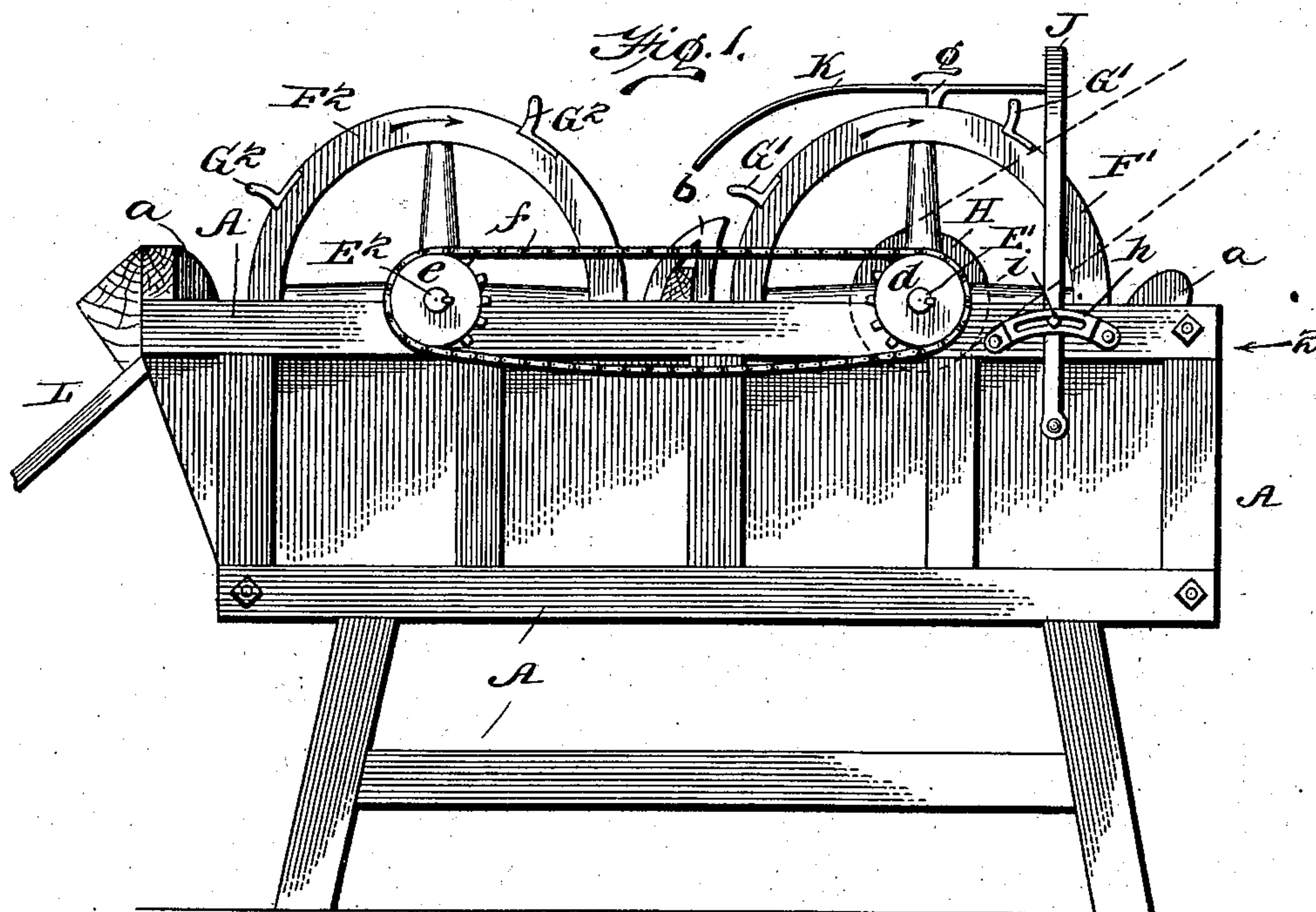
W. McCORD & T. GILL.

MACHINE FOR CLEANING AND POLISHING TIN PLATES.

APPLICATION FILED MAY 29, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
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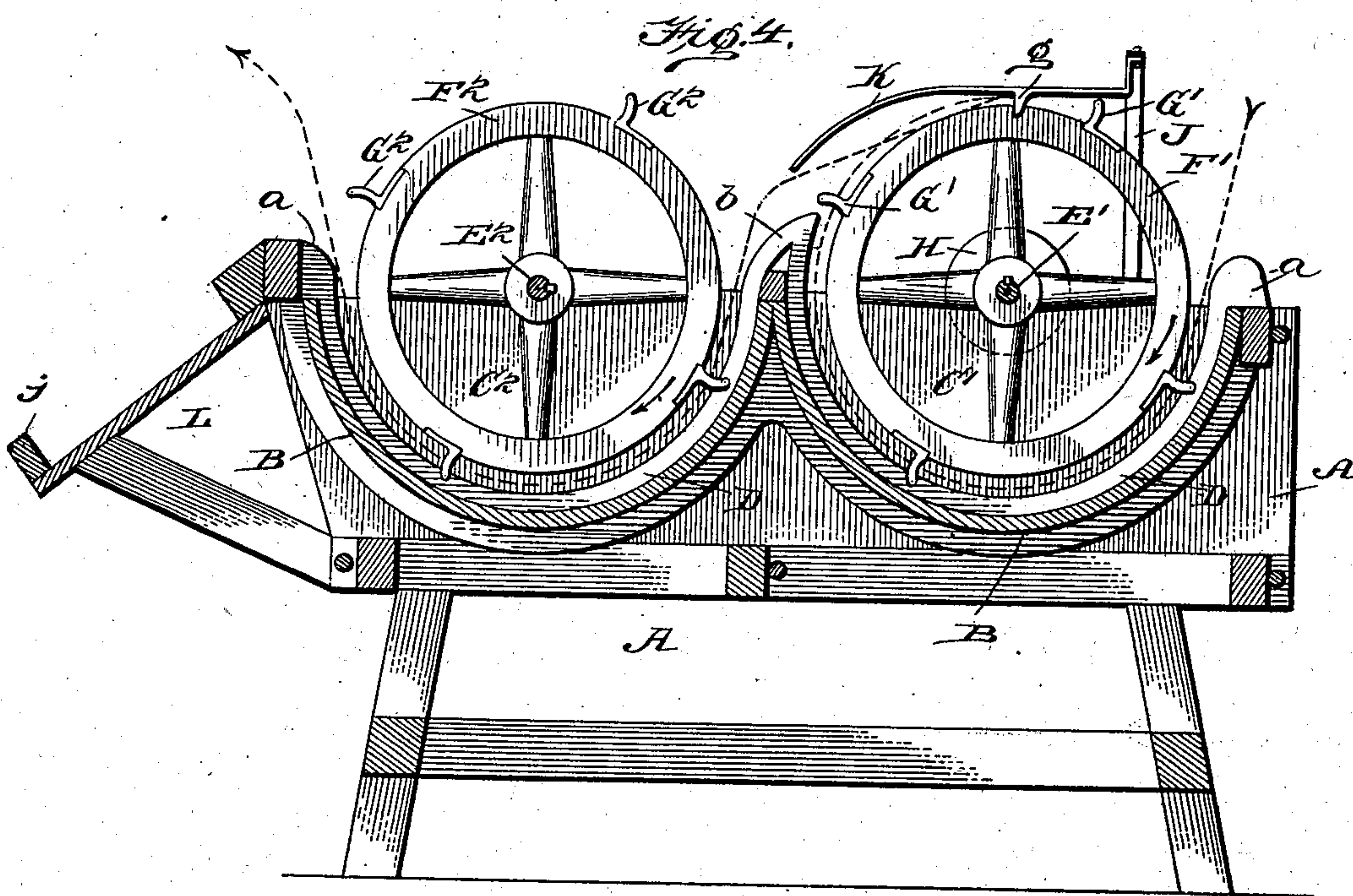
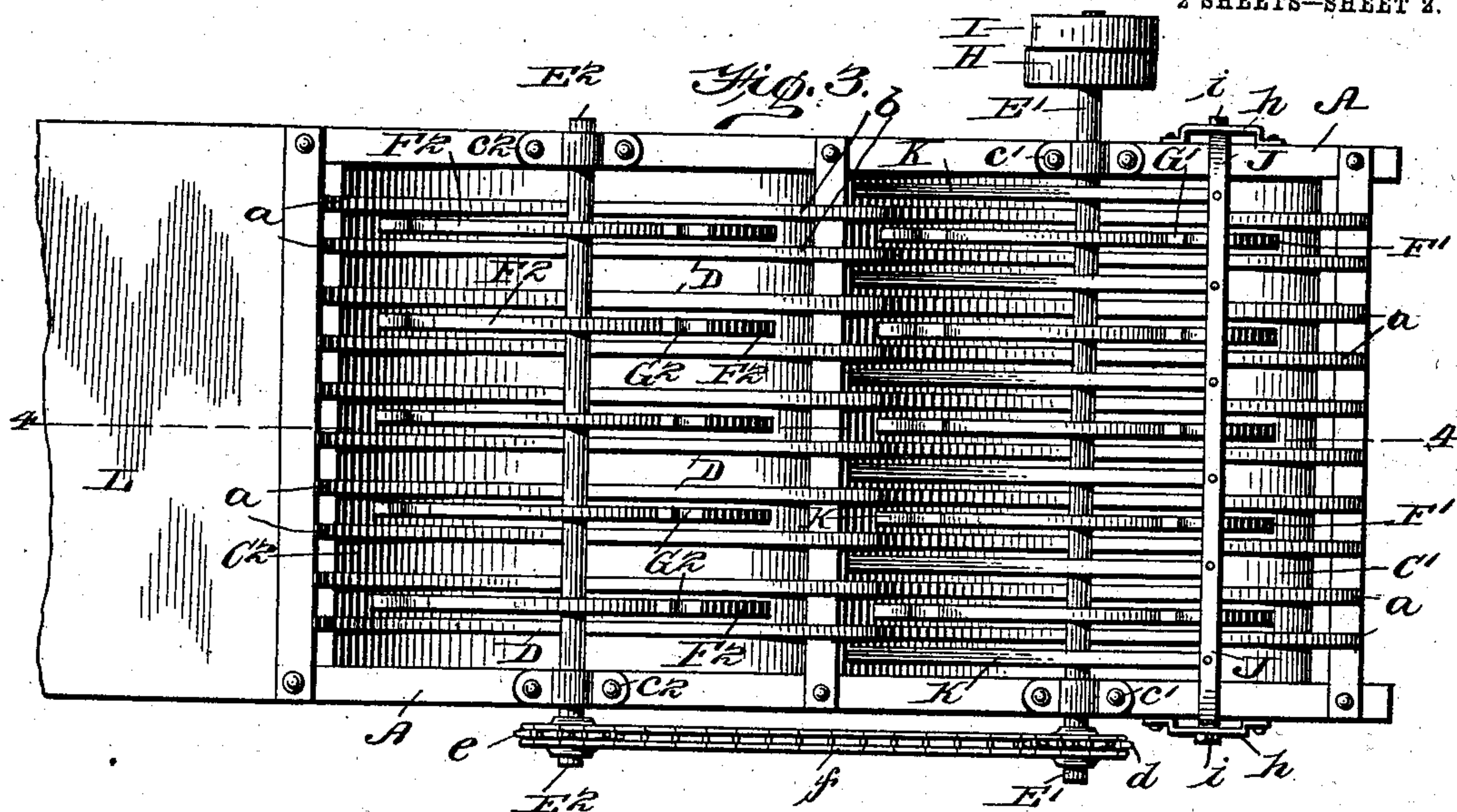
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UNITED STATES PATENT OFFICE.

WESLEY McCORD AND THOMAS GILL, OF LISBON, OHIO.

MACHINE FOR CLEANING AND POLISHING TIN PLATES.

SPECIFICATION forming part of Letters Patent No. 721,458, dated February 24, 1903.

Application filed May 29, 1902. Serial No. 109,557. (No model.)

To all whom it may concern:

Be it known that we, WESLEY McCORD and THOMAS GILL, citizens of the United States, residing at Lisbon, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Machines for Cleaning and Polishing Tin 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 appertains to make and use the same.

Our invention relates to mill appliances, and has particular reference to an apparatus for cleaning, drying, and polishing tin plates after they come from the tin-pot in the course of manufacture, for the purpose of finally freeing them from oil or grease, and for polishing them prior to dusting and boxing.

More particularly stated, the invention, which we term a "branner," comprises mechanism for receiving tinned plates from the tin-pot of a mill, automatically conveying them into and through a body of bran, sawdust, or other suitable cleansing material, inverting said plates and conducting them similarly through a second body of cleansing material for the purpose of removing all traces of oil or grease, and finally delivering them in polished condition upon a suitable receiving-table ready for packing.

The invention also comprises certain peculiarities of construction and arrangement of coöperating parts, modifications, and mechanical equivalents thereof, as will be hereinafter more particularly described, and pointed out in the claims.

In the accompanying drawings, which form part of this specification, and whereon corresponding letters of reference indicate same parts in the several views, Figure 1 represents a side elevation of our invention in position for operation. Fig. 2 is a front elevation of same from a point of view indicated by arrow 2 in Fig. 1. Fig. 3 is a top plan view of the mechanism complete; and Fig. 4 is a longitudinal section taken on the line 4 4, Fig. 3, and showing by dotted lines the course of plates while undergoing the cleaning and polishing operation.

Reference being had to the drawings and letters thereon, A indicates the framework of

our machine, preferably of wood and rectangular in form, though obviously the material or materials employed throughout, as also the form of construction, is wholly immaterial, provided the mechanical functions of the machine are not interfered with.

B indicates the curved bottom of branner, forming two independent semicylindrical cleaning chambers or compartments C' C^2 , extending transversely from side to side of the machine.

Running longitudinally from end to end of frame A is a series of parallel tracks D, arranged in pairs and conforming in shape to the curved bottom B. These tracks constitute a ribbed inner surface for said bottom and, as best shown by Figs. 1 to 4, project upward at their ends a a and center b , beyond the confines of frame A, for purposes that will later appear.

Keyed to a common shaft E' , journaled in the sides of frame A, as at c' c' , is a primary series of disk or wheel conveyers F' , concentrically mounted with relation to compartment C' and each provided with a series of radially-arranged operating-fingers G' , said fingers of each particular conveyer traveling between one pair of the tracks D in the course of each complete revolution made by the conveyers. Similarly in the semicylindrical compartment C^2 is rotatably mounted, as at c^2 c^2 , upon cross-shaft E^2 a secondary series of conveyers F^2 , bearing radial fingers G^2 . By preference the individual conveyer-wheels of the primary and secondary series are arranged in alinement, and consequently travel in corresponding vertical planes, although this arrangement is by no means essential to the mechanical and successful operation of the machine.

Upon one end of driving-shaft E' is a fixed belt-pulley H and an idler I, by agency whereof, together with a shifting belt, (not shown,) power may readily be applied to the machine at will of the operator. Obviously any clutch mechanism may be substituted for the pulleys shown, provided only that an intermittent action may be obtained when desired. Upon the opposite projecting end of shaft E' and also upon the corresponding end of shaft E^2 are secured sprocket-wheels d e , respectively connected by a sprocket-chain f , as the

means of transmitting power from one shaft to the other and imparting to the aforesaid primary and secondary series of conveyers rotary motion in unison and in the same direction, as indicated by arrows.

At front of the structure is pivotally mounted upon opposite sides of frame A a gage and guide bar J, which rising vertically from its points of support bridges the compartment C' above the primary conveyers F' and is provided with a series of rearwardly-projecting downwardly-curved spring guide-arms K, in staggered arrangement with relation to the wheels or disks F', each of said arms bearing upon its under side a downwardly-projecting gage-lug *g*, as best shown by Figs. 1 to 4. After adjustment the bar J may be firmly secured in its adjusted position by means of the segmental rack *h* and a suitable set screw or nut *i*, and it will be apparent from a description of operation to follow that the number and location of guide-arms K may be variously altered without materially impairing their usefulness. To the opposite or rear end of frame A is bolted or otherwise secured an inclined table L, having an upstanding end rail or stop *j* to arrest and retain the finished plates preparatory to boxing, and it will be particularly noted that said rail or stop *j* may serve also in the capacity of a gage to regulate and determine the number of plates that should accumulate before removal by a sweep toward either unobstructed side. In like manner the stop *j* may, if desired, be made adjustable in height and provided with a graduated scale for the purpose of actually counting the plates and automatically bundling them in accordance with their gage, weight, or size and the standards prevailing as to number of sheets to the box.

The use and operation of this invention is substantially as follows: Tin plates as they come from the tin-pot still warm in the course of manufacture are introduced into the cleaning and polishing machine at its front end, where they are engaged by fingers G' upon the revolving primary conveyer-wheels F' and forced down through a body of bran or analogous cleaning and drying material contained in the compartment C'. Taking the course indicated by the continuous arrow in Fig. 4, they are next elevated until their advance edges impinge upon the under side of guides K, surmounting said primary conveyer F', and are conducted thence to stops *g*, by which they are arrested. At that instant, springing clear of the curved central projection *b* on tracks D, the plates fall by gravity onto a set of fingers G² of revolving secondary conveyer F² in an inverted position and are similarly conducted down and through a second body of dry bran or similar material contained in the compartment C². Rising thence as indicated by the continuous arrow aforesaid, the plates emerge from the machine thoroughly cleansed, dried, polished on both sides, and straightened, whereupon, overbal-

anced by their own weight, they fall onto the receiving-table L, ready for dusting and boxing.

Having thus described our invention, its use and leading points of advantage, what we claim, and desire to secure by Letters Patent, is—

1. In a machine for cleaning and polishing metallic plates the combination with a cleaning-chamber containing curved guide-tracks, of a rotary conveyer concentrically mounted with relation to said tracks, radial fingers upon said conveyer for coöperating with the tracks aforesaid to advance plates through the cleaning-chamber, and a suitable stop surmounting said conveyer for arresting the plates and delivering them from the conveyer, substantially as specified.

2. In a machine for cleaning and polishing metallic plates the combination with a cleaning-chamber containing curved guide-tracks, of a rotary conveyer concentrically mounted with relation to said tracks, radial fingers upon said conveyer for coöperating with the tracks aforesaid in advancing plates through the cleaning-chamber, and a series of surmounting adjustable stops for arresting the plates and delivering them from the conveyer, substantially as specified.

3. In a machine for cleaning and polishing metallic plates the combination with a primary cleaning-chamber and conveyer, of a secondary cleaning-chamber and its conveyer and a series of adjustable stops surmounting said primary conveyer for arresting the plates and delivering them from the primary to the secondary conveyer, substantially as specified.

4. In a machine for cleaning and polishing metallic plates the combination with a primary cleaning-chamber and conveyer, of a secondary cleaning-chamber and its conveyer, and a series of adjustable stops surmounting said primary conveyer for automatically transferring plates from one conveyer to the other, and for inverting them at the instant of such transfer, substantially as specified.

5. In a machine for cleaning and polishing metallic plates the combination with a cleaning-chamber, of primary and secondary conveyers rotatably mounted in said chamber, guide-tracks underlying said conveyers, guide-arms surmounting the primary conveyer for directing the plates in their course, and a series of adjustable stops surmounting said primary conveyer for arresting the plates and delivering them in an inverted position to the secondary conveyer, substantially as specified.

6. In a machine for cleaning and polishing metallic plates the combination with a cleaning-chamber, of primary and secondary rotary conveyers comprising a series of independent wheels or disks mounted upon a shaft common to each series, underlying guide-tracks arranged in pairs, a series of guide-arms surmounting said primary con-

veyer-wheels and arranged in adjacent vertical planes, and a series of adjustable stops for arresting the plates and delivering them in an inverted position to the wheels of said secondary conveyer, substantially as specified.

7. In a machine for cleaning and polishing metallic plates the combination with a cleaning-chamber comprising two semicylindrical compartments, of primary and secondary rotary wheel or disk conveyers, continuous guide-tracks underlying said conveyers, guide-arms surmounting the primary conveyer for directing the plates in their course,

adjustable stops for arresting said plates and delivering them in an inverted position to the secondary conveyer, and a suitable table upon which the finished plates are automatically delivered by the secondary conveyer, substantially as specified.

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

WESLEY McCORD.
THOMAS GILL.

Witnesses:

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