No. 888,816. PATENTED MAY 26, 1908.

F. KAESER.

CAN POLISHING MACHINE.

APPLICATION FILED FEB. 21, 1908.

3 SHEETS—SHEET

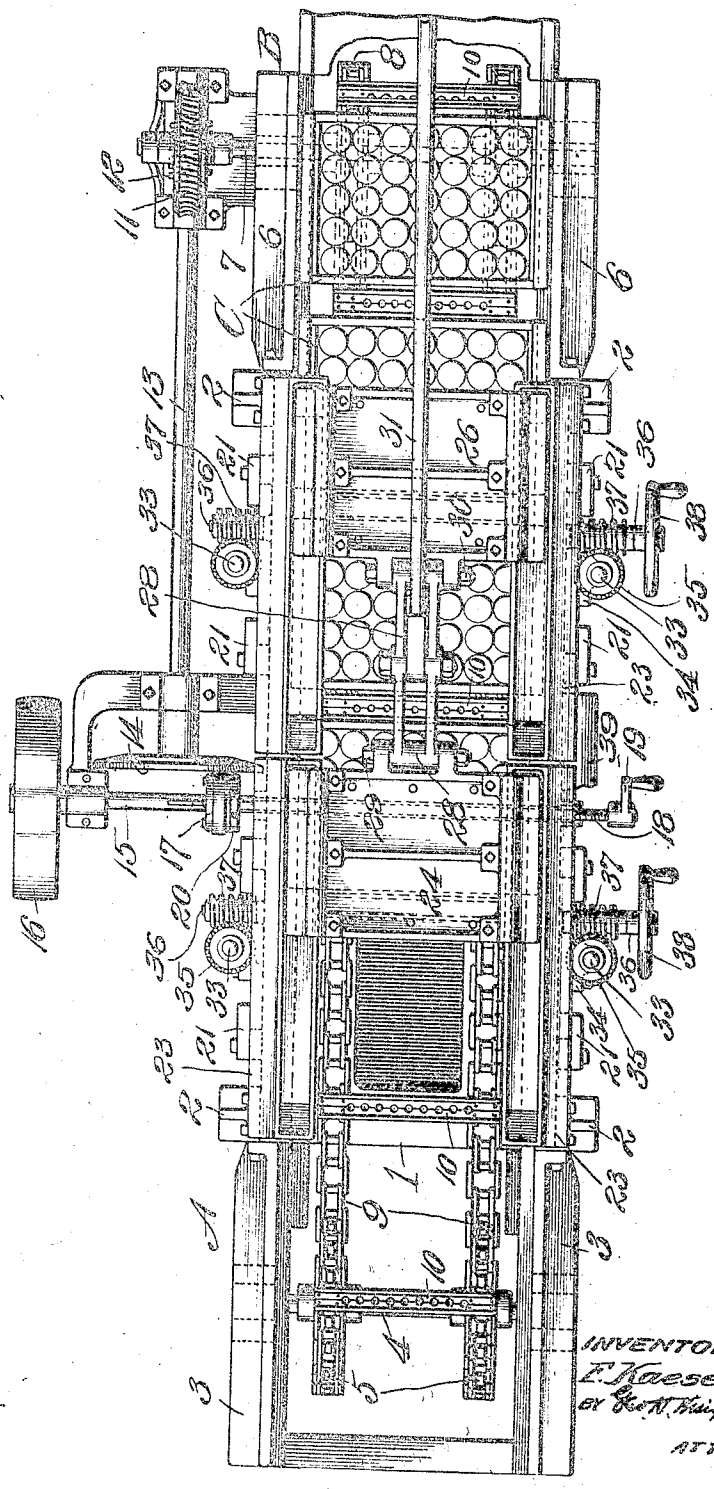


Fig. 1.

ATTEST:

INVENTOR:
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BY Geo. H. Knight
ATTY.

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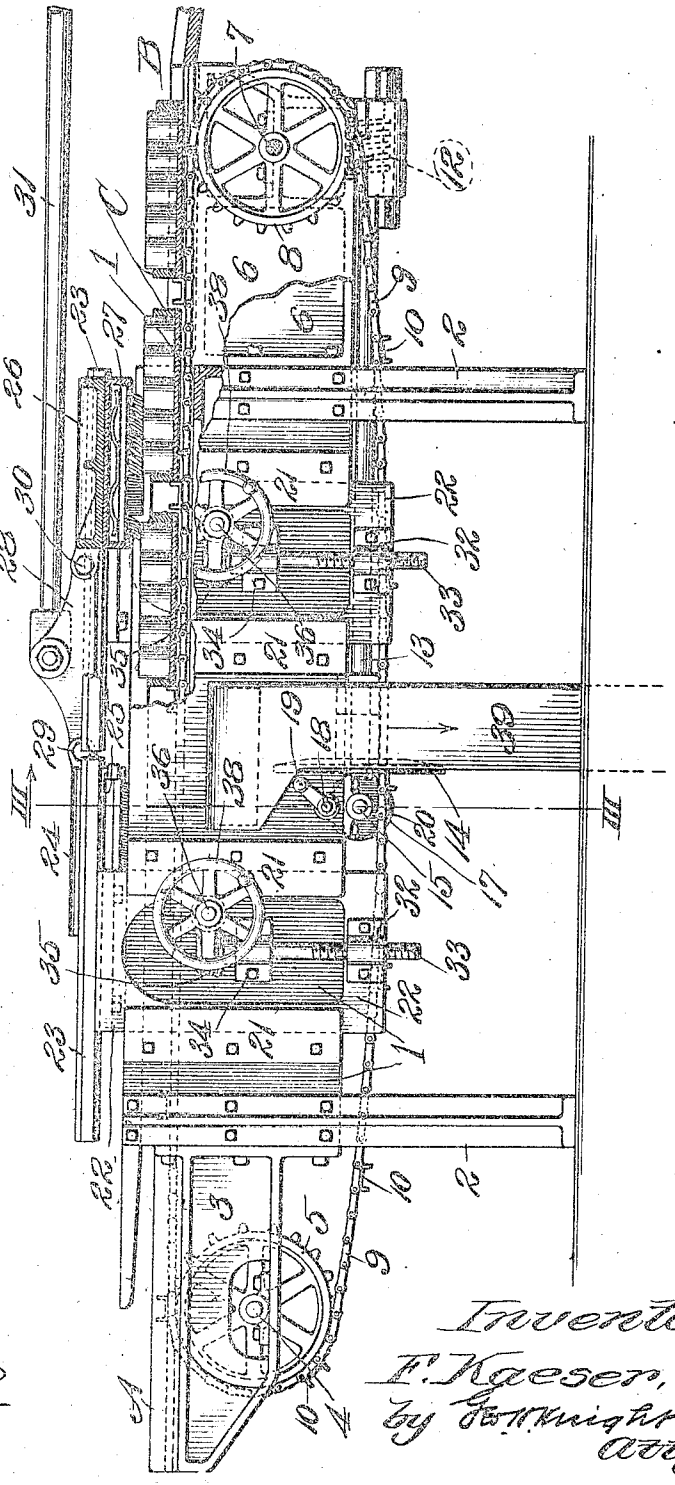
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3 SHEETS—SHEET 2.

Fig. II.



Witnesses:
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Blanche Hogan

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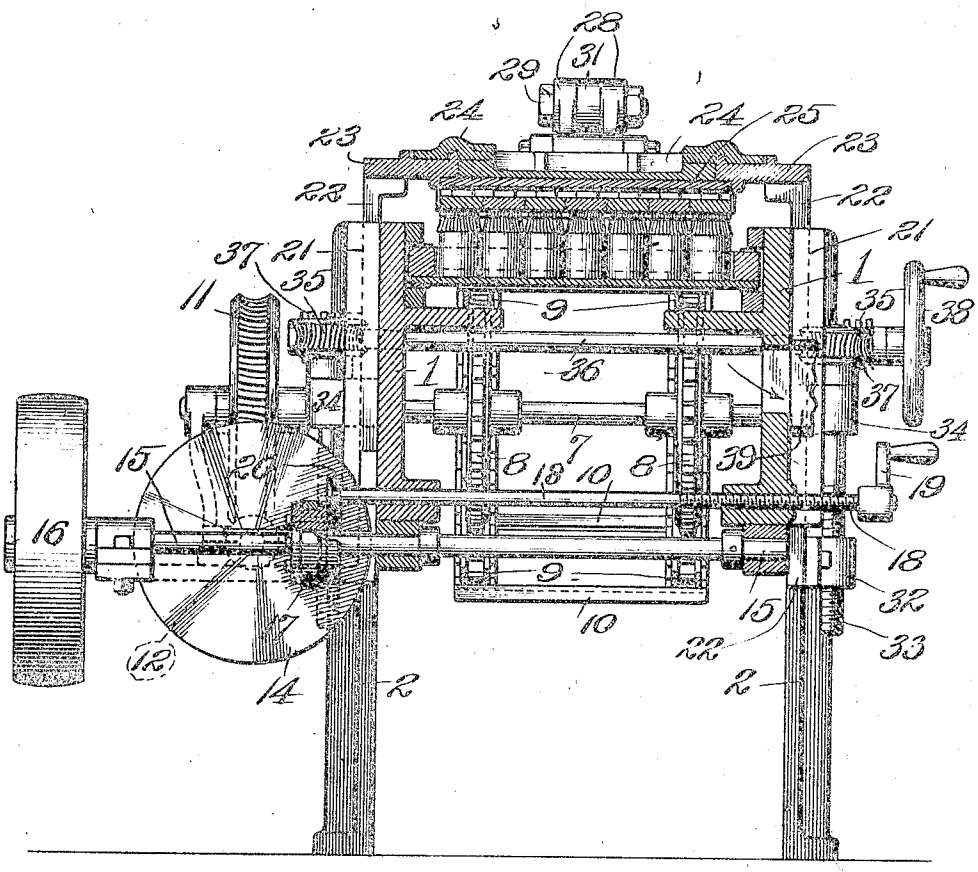
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3 SHEETS—SHEET 3.

Fig. III.



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UNITED STATES PATENT OFFICE.

FRITZ KAESER, OF HIGHLAND, ILLINOIS.

CAN-POLISHING MACHINE.

No. 888,816. Specification of Letters Patent. Patented May 26, 1908.

Application filed February 21, 1908. Serial No. 417,054.

To all whom it may concern:

Be it known that I, FRITZ KAESER, a citizen of the United States of America, residing at Highland, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Can-Polishing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a machine for polishing the ends of sheet metal cans and contemplates improvements upon the can polishing machine shown and described in Letters Patent of the United States No. 693,029, issued to me February 11, 1902.

The main objects in the present invention are the construction of a machine whereby the cans are mechanically delivered to the polishing brushes, thus dispensing with the employment of a workman to transfer the cans from one part of the machine to another; also a construction that provides for a plurality of polishing brushes being supported for adjustment independently of each other; also other features of construction that render the machine more efficient in operation.

Figure I is a top or plan view of my improved machine. Fig. II is a view partly in side elevation and partly in vertical section of the machine. Fig. III is an enlarged vertical cross section taken on line III—III, Fig. II.

In the accompanying drawings: 1 designates the main frame of my machine which is supported by legs 2. At the receiving end A of the machine is an extension frame 3, see Figs. I and II, that furnishes a support for a shaft 4 equipped with sprocket wheels 5 and at the delivery end B of the machine is an extension frame 6 that furnishes a support for a shaft 7 equipped with sprocket wheels 8. The sprocket wheels 5 and 8 support an endless conveyer consisting of a pair of chains 9 and cross bars 10 and which is adapted to travel above the main frame 1 and return beneath said main frame. The endless carrier is adapted to receive trays C in which the cans to be polished are placed and which are held in position upon the carrier by its cross bars while the trays are being conducted from the receiving end to the delivery end of the machine.

One of the sprocket wheel shafts that serve to drive the endless carrier of the machine, for instance that 7, is provided with a worm wheel 11, see Fig. I, that meshes with a worm 12 carried by a driven shaft 13 extending longitudinally of the machine and supported in suitable journal bearings. The driven shaft 13 is provided at its end opposite to that occupied by the worm 12 with a friction disk 14.

15 is a drive shaft that is equipped with a drive wheel 16 to which power may be communicated and which extends transversely of the machine, being journaled in the main frame 1. The drive shaft 15 has feathered to it a friction drive wheel 17 which is arranged in contact with the face of the friction disk 14 and is adapted to transmit power from the drive shaft to the driven shaft 13. To provide for a variation in the speed at which the driven shaft 13 is driven by the drive shaft I employ a screw shift rod 18 that extends transversely in the main frame of the machine. This shift rod is provided at one end with suitable means for rotating it, such as a crank handle 19, and it is fitted at its other end to a shift disk 20 that is loosely associated with the friction wheel 17 and is adapted to shift said friction wheel on the drive shaft 15 toward and away from the axis of the friction disk 14 when the shift rod 18 is operated.

By the construction just described, I am enabled to provide for any desired degree of speed of operation of the endless carrier of the machine, inasmuch as the carrier will be driven at a diminished speed when the friction wheel 17 is remote from the axis of the friction disk 14 and at a greater speed when the friction wheel is moved closer to the axis of said disk.

At the sides of the main frame of the machine are vertical guides 21 which are arranged in pairs.

22 are vertically disposed lift plates operable in the guides 21 and independently of each other, there being preferably two of said lift plates at each side of the machine and each plate being mated with the plate that is directly opposite to it at the other side of the machine. Each lift plate 22 has secured to it at its upper end a guide rail 23 which is independent of the guide rail carried by the other lift plate at the same side of the machine.

24 and 26 are polishing brush holders that have secured to the lower sides brushes 25 and 27, the former of which is an initial or damp polishing brush while the latter is a

final or dry polishing brush. The brush holder 24 operates upon the guide rails 23 nearest to the receiving end of the machine while the brush holder 26 operates upon the guide rails 23 nearest the delivery end of the machine.

28 designates a connecting member to which the brush holders 24 and 26 are pivotally united at 29 and 30, thereby providing for independent rise and fall motion of said brush holders with their brushes.

31 is an operating rod attached to the connecting member 28 and by which, upon the application of suitable power thereto, said connecting member and the brush holders may be reciprocated longitudinally of the machine, during which action the brush holders travel upon the guide rails 23.

To provide for the raising and lowering of the guide rails 23 in order that the brush holders and their brushes may be supported at varying elevations above the endless carrier of the machine according to the heights of the cans being conducted upon said carrier and being polished, I employ the following mechanism by which the lift plates 22 are raised and lowered. Each lift plate is provided with an interiorly screw-threaded box 32 that receives a vertically disposed lift screw 33 loosely mounted in a box 34 attached to the main frame of the machine. At the upper end of each lift screw is a worm wheel 35. 36 are operating shafts that extend transversely through the machine, being mounted in the main frame, and which are provided with worms 37 that mesh with the worm wheels 35 of the lift screws 33. The operating shafts are provided with suitable means by which they may be rotated, such as hand wheels 38, and they are adapted to perform the operation of raising and lowering the pairs of lift plates 22 which are opposite to each other transversely of the machine so that each pair of said lift plates may be raised and lowered independently of the other pair of said plates.

By providing the separate and independent means described for raising and lowering the lift plates 22 arranged in pairs transversely of the machine and the brush holder guide rails 23 carried by said lift plates, I so support the brush holders that they may be held irrespective of each other at the desired elevations above the tops of the cans being polished. Therefore, if one brush becomes worn, more than the other brush, the brush holder may be so lowered as to create the proper contact thereof with the cans to be polished while the other brush holder is upheld at a greater elevation for its polishing action. It will also be seen that the provision of means for upholding the brushes at different elevations makes it possible to vary the degree of pressure of one brush upon the cans relative to the pressure of the other brush as may be desirable for either scrubbing action by the damp brush or polishing action by the dry brush.

To provide for the delivery of the polishing substance that is used in my machine as it falls from the cans and the brushes into the machine after it has been utilized, I employ a collecting device for such substance. This collecting device comprises a suction flue 39 which has communication with the interior of the main frame of the machine into which the polishing substance enters. This section flue is preferably equipped with a suction fan not shown and by which the polishing substance is drawn into the flue and carried to any desirable point of delivery to be removed from the machine.

I claim:

1. In a can polishing machine, a main frame, pairs of vertically movable supports fitted to said frame, one pair of supports being arranged forward of the other pair of supports, means for independently raising and lowering each pair of said supports, brush holders movably mounted upon said paired supports, and means for reciprocating the brush holders upon the supports, substantially as set forth.

2. In a can polishing machine, a main frame, a carrier whereby the cans to be polished may be conducted through said machine, pairs of vertically movable brush holder supports fitted to said frame each pair of supports being susceptible of vertical movement independent of the other pair of supports, means for independently raising and lowering each pair of said supports, brush holders movably mounted upon said paired supports, and means for reciprocating the brush holders upon the supports, substantially as set forth.

3. In a can polishing machine, a main frame, pairs of brush holder lift plates fitted to said frame, guide rails carried by each pair of said lift plates and arranged independent of each other, means whereby said lift plates may be raised and lowered in pairs independent of any other pair, brush holders movably mounted upon the pairs of guide rails, and means for reciprocating the brush holders upon the supports, substantially as set forth.

4. In a can polishing machine, a main frame, a carrier whereby the cans to be polished may be conducted through said machine, pairs of lift plates fitted to said frame, guide rails carried by said lift plates and arranged independent of each other, means whereby said lift plates may be raised and lowered in pairs independent of any other pair, and brush holders movably mounted upon the pairs of guide rails, substantially as set forth.

5. In a can polishing machine, a main frame, a carrier whereby the cans to be

polished may be conducted through said machine, pairs of lift plates fitted to said frame, guide rails carried by said lift plates and arranged independent of each other, means whereby said lift plates may be raised and lowered in pairs independent of any other pair, brush holders reciprocally mounted upon the pairs of guide rails, and a connecting member to which said brush holders are pivoted for vertical play independent of each other substantially as set forth.

6. In a can polishing machine, a main frame, a carrier whereby the cans to be polished may be conducted through said machine, pairs of vertically movable brush holder supports fitted to said frame, means for independently raising and lowering each pair of said supports, brush holders movably mounted upon said supports, means for reciprocating the brush holders upon the supports and means whereby said carrier may be operated at different speeds, substantially as set forth.

FRITZ KAESER.

In presence of—
SAMUEL WERNLI,
THEO. ITTUER.