

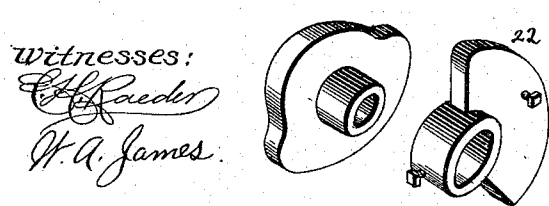
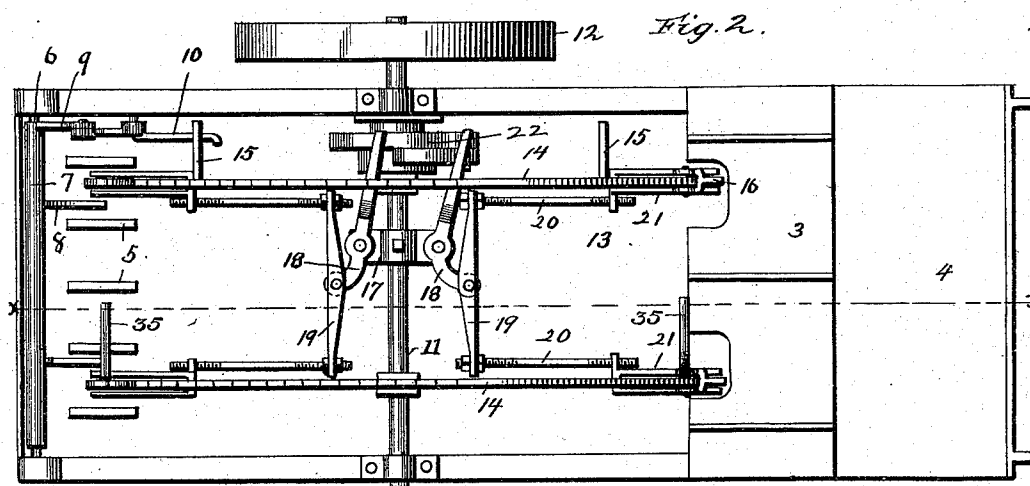
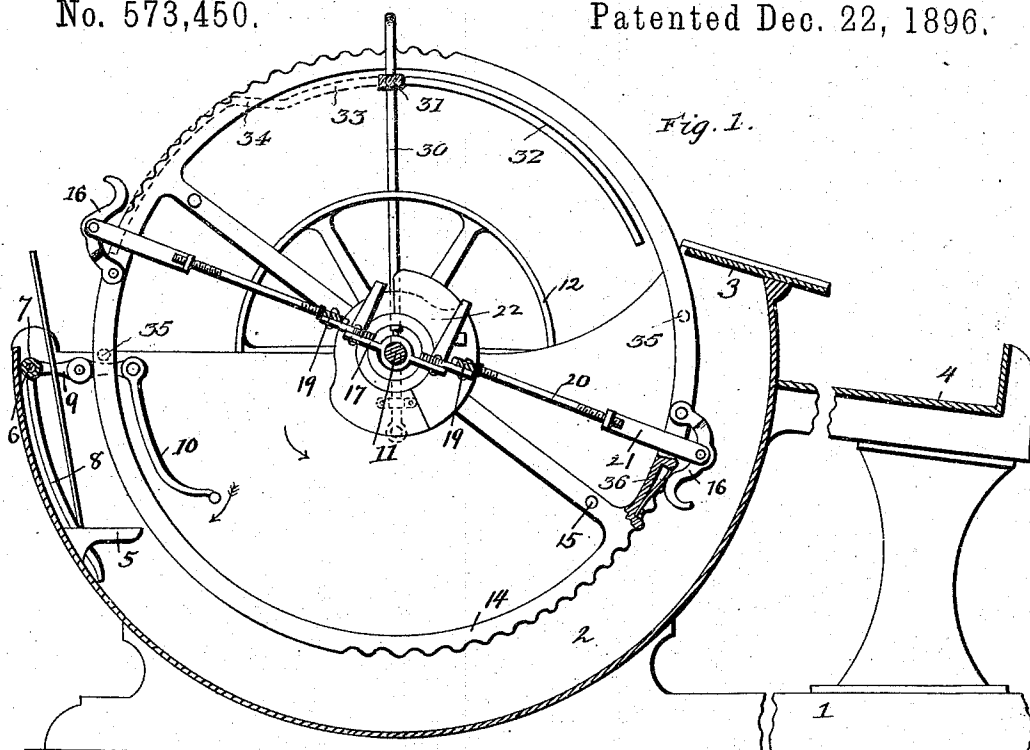
(No Model.)

2 Sheets—Sheet 1.

C. R. DAELLENBACH & J. R. PHILLIPS.
BRANNING MACHINE.

No. 573,450.

Patented Dec. 22, 1896.



Witnesses:
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W. A. James.

Inventors
Charles R. Daellenbach &
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By *James J. Shuey*
Attorney

(No Model.)

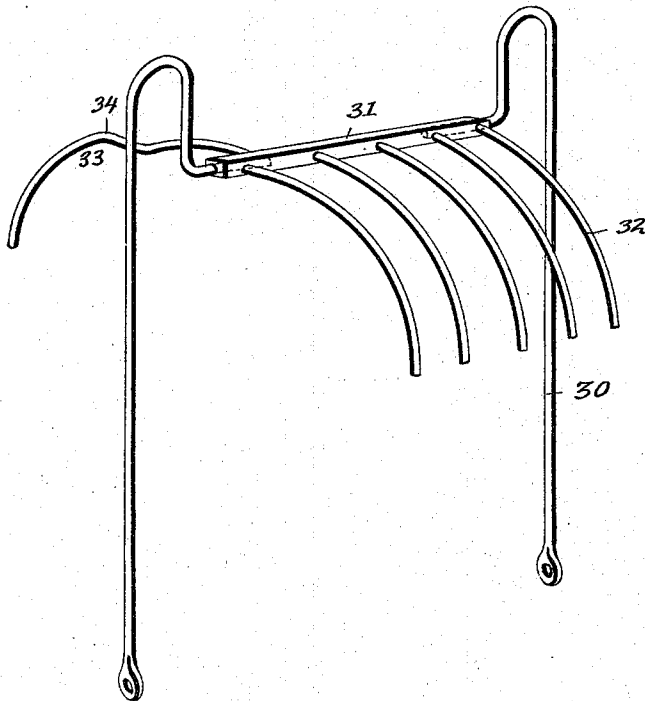
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Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES R. DAELLENBACH AND JAMES RUPERT PHILLIPS, OF ELLWOOD CITY, PENNSYLVANIA, ASSIGNORS TO THE ELLWOOD TIN-PLATE COMPANY, OF SAME PLACE.

BRANNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 573,450, dated December 22, 1896.

Application filed August 5, 1896. Serial No. 601,770. (No model.) -

To all whom it may concern:

Be it known that we, CHARLES R. DAELLENBACH and JAMES RUPERT PHILLIPS, citizens of the United States, residing at Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Branning-Machines; and we do 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 improvements in branning-machines for cleaning tin plates by carrying them through bran or similar material; and its novelty and many advantages will be fully understood from the following description and claims, when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a longitudinal central sectional view of our improved machine, taken in the plane indicated by the line *xx* of Fig. 2. Fig. 2 is a plan view of the same with the plate-discharging mechanism omitted. Fig. 3 comprises perspective views of parts of the cam, and Fig. 4 is a detail view illustrating the discharge mechanism of the machine.

In the said drawings similar numerals designate corresponding parts in all of the views, referring to which—

1 indicates the bed of our improved machine.

2 indicates the bran-receptacle, which is mounted upon the bed 1 and is preferably provided with a curvilinear bottom, as shown, and also with an inclined chute 3 for projecting the cleaned plates onto the receiving-table, and 4 indicates the said table, which is mounted upon a support rising from the bed 1 and is preferably connected to the receptacle 2, as shown.

The receptacle 2 is provided at about the point shown with a plurality of projections 5, which are designed to serve as supports for the plates to be cleaned or branned, and said receptacle is also provided above the projections 5 with a transverse shaft 6, upon which is loosely mounted a sleeve 7, having tangs 8, which depend below the projections 5, as shown. The sleeve 7 is provided at one end

with an arm 9, and this arm is loosely connected with one end of the lever 10, which is fulcrumed at an intermediate point of its length, as shown, whereby it will be seen that when the depending end of the lever is moved in the direction of the arrow in Fig. 1 the sleeve 7 will be caused to rock on the shaft 6 and the tangs 8 will be moved away from the bottom wall of the receptacle 2, so as to dislodge the plates from the projections 5, so as to enable the said plates to be engaged by jaws on the carrying-wheel presently described.

11 indicates a transverse shaft which is journaled in the side walls of the receptacle 2 and is provided with a pulley 12 to receive a band from a suitable motor, (not illustrated,) and 13 indicates the plate-carrying wheel, which is mounted on and designed to turn with the shaft 11. This wheel 13 comprises the two (more or less) parallel sections 14, which have their peripheries notched or toothed, as shown, so as to diminish the contact between the plates and the wheel; the lateral arms 15 on one of the sections, which are designed to engage the lever 10; the plate-clamping jaws 16, which are pivotally connected to the wheel-sections 14, in advance of the notched peripheral portions of the same; the support 17, which is fixed on the shaft 11 between the wheel-sections 14; the levers 18, fulcrumed on said support; the bars 19, loosely mounted on the levers 18, and the rods 20, which are adjustably connected to the levers 19 and to straps 21, loosely connected to the jaws 16, as shown.

The adjustable connection between the rods 20 and the levers 19 and straps 21 is desirable and advantageous because it permits of the parts being adjusted and adjustably fixed to enable the jaws 16 to properly hold plates of different thicknesses. We do not desire, however, to be understood as confining ourselves to such manner of connecting the levers 18 and the jaws 16, as they may be connected in any approved manner.

22 indicates a cam which is preferably constructed as shown, although it may be constructed in any other suitable manner. This cam 22 is fixed with respect to the receptacle

2 and is arranged in the path of the levers 18, so as to be engaged by said levers at a time and for a purpose presently pointed out.

In the practical operation of our improved machine the receptacle 2 is charged with a sufficient quantity of bran and the wheel 13 is rotated in the direction indicated by arrow in Fig. 1. The tinned plates to be cleaned or branned are placed one by one by the operator on the projections 5, one of such plates being illustrated in such position in Fig. 1. Now when the arm 15 reaches the lever 10 it will rock said lever, as before described, and the tangs or fingers 8 will dislodge the plate from the projections 5. When this action takes place, the jaws 16, being in advance of the arm 15, will rest in a position to receive the lower edge of the plate between them and the peripheries of the wheel-sections 14, and immediately after the plate is so received the lever 18 connected with the jaws will come into engagement with the enlarged part of the cam 22, and the jaws will be forced against the plate, so as to securely clamp the same between them and the wheel. The plate being thus held to the wheel will be dragged through the bran and thoroughly cleaned thereby, and said plate will not be released from the jaws until the lever 18 connected with the jaws reaches the end of the enlarged portion of the cam. When this point is reached, the lower end of the plate will have been raised above the chute 3 and will have, in virtue of its resiliency, sprung out over the chute, whereby it will be seen that when released it will fall upon the chute 3 and from thence will drop onto the receiving-table. When one pair of the jaws 16 are in the act of releasing a plate that has been carried through the bran, the other pair of jaws is in a position to receive a plate from the projections 5, and it will therefore be seen that the operation is practically continuous, the plates being taken from the projections 5 as fast as the attendant can place them there.

When plates are thin and flexible, they are liable to cling to the peripheries of the sections 14 when the jaws 16 are released. To remedy this and insure the plates leaving the peripheries of the wheel-sections when the jaws 16 are released, we provide what we term the "discharge mechanism." (Shown in Fig. 1 of the drawings.) This mechanism, by preference, comprises the uprights 30, which are connected to opposite sides of the bran-receptacle and are curved inwardly over the wheel-sections 14 and down between the same, the transverse bar 31, which is fulcrumed on or pivotally connected to the ends of the uprights 30 and is provided with the rearwardly-extending curved tangs 32, which are arranged at intervals between the wheel-sections 14, the arm 33, which extends forwardly from the bar 31, adjacent to one of the wheel-sections 14, and is provided with the inclined shoulder 34, and the arms or projections 35, (see Fig. 2,) which are connected to one of

the wheel-sections 14, and are designed and adapted to engage the upper side of the shoulder 34 of arm 33. The arms 35 are arranged in advance of the jaws 16 and at such points on the wheel-section 14 that they will engage the shoulder 34 of arm 33 at the same time that the jaws 16 are released or immediately afterward. When the arms 35 so engage the shoulders 34 of arm 33, they will depress the said arm and consequently throw the tangs 32 outwardly and thereby push the plates from the peripheries of the wheel-sections 14 and cause said plates to fall upon the chute 3.

To further prevent the plates from clinging to the peripheries of the wheel-sections, we prefer to provide the wheel-sections with countersunk springs 36 at the points where the plates are pressed against them by the jaws 16. These springs by tending to press outward prevent the plates from clinging to the wheel-sections 14 at the points where the jaws 15 contact with the plates.

It will be seen from the foregoing that an improved machine while very simple is entirely automatic in its action and may be operated by a single attendant, who has nothing to do but place the plates one by one on the projections 5. It will also be seen that large and small plates may be cleaned equally well without changing the adjustment of the machine or the quantity of bran employed, and that no bran will be carried out of the machine with the plates, and consequently there will be no waste of material. It will be further seen that the plates will not be in any way damaged by their passage through the machine.

Having described our invention, what we claim is—

1. In a machine for cleaning or branning tin plates; the combination of a bran-receptacle, a plate-carrying wheel arranged in the bran-receptacle, means carried by said wheel for holding a plate thereto; means for automatically releasing the plate, a discharge device connected with the bran-receptacle and adapted to force plates from the wheel when said plates are released and a projection on the wheel adapted to engage and actuate the discharge device, substantially as and for the purpose set forth.

2. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle having a support for the plates, a lever having tangs for dislodging the plates from said support, a second lever loosely connected with the said lever, a stationary or fixed cam, a plate-carrying wheel arranged in the bran-receptacle and having an arm adapted to engage the last-named lever, jaws loosely connected with the wheel, a lever fulcrumed on the wheel and adapted to engage the stationary or fixed cam, a lever fulcrumed on the cam-engaging lever, and a connection between the opposite ends of the latter lever and the jaws, substantially as and for the purpose set forth.

3. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged in the bran-receptacle, a stationary or fixed cam, jaws loosely connected with the wheel and adapted to clamp a plate against the same, a lever fulcrumed on the wheel and adapted to engage the stationary or fixed cam, a lever fulcrumed on the cam-engaging lever, and a connection between the opposite ends of the latter lever and the jaws, substantially as and for the purpose set forth.

4. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged and adapted to turn in said receptacle and having that portion of its periphery against which the plates rest toothed or corrugated and means for holding the plates to the wheel while passing through the bran, substantially as and for the purpose set forth.

5. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged and adapted to turn in said receptacle and having that portion of its periphery against which the plates rest toothed or corrugated, a jaw for pressing the plates against the periphery

of the wheel while passing through the bran, and a countersunk spring arranged in the periphery of the wheel at the point where the jaw presses against the plates and adapted to force the plates away from the wheel when the jaw is released substantially as and for the purpose set forth.

6. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle having a support for the plates, mechanism for dislodging the plates from said support, a chute, a plate-carrying wheel arranged in the bran-receptacle, a jaw carried by said wheel and adapted to hold plates against the same, means for forcing said jaw toward the wheel at intervals, a pivoted discharge device adapted to force plates from the wheel when the jaw is released and having an arm provided with a shoulder, and a projection on the wheel adapted to engage said shoulder, substantially as and for the purpose set forth.

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

CHARLES R. DAELLENBACH.

JAMES RUPERT PHILLIPS.

Witnesses:

JOS. F. RYAN,

J. C. LEOHNER.