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PATENTED APR. 24, 1906.

W. P. LEWIS & T. R. WILLIAMS.
CATCHER FOR TINNING MACHINES.

APPLICATION FILED JULY 14, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

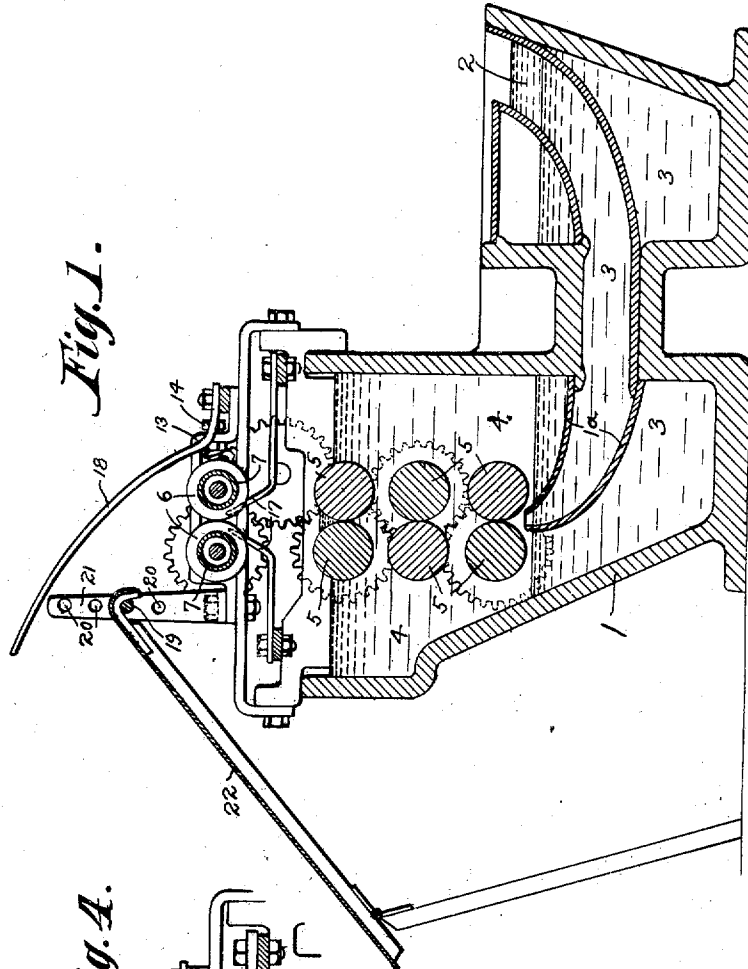
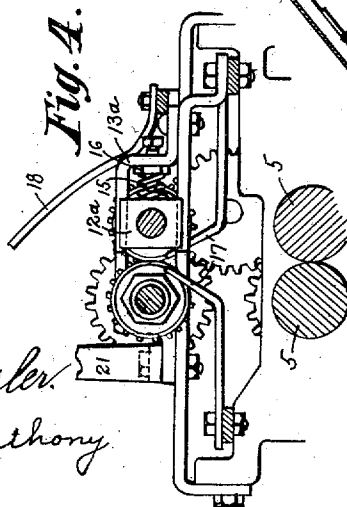


Fig. A.



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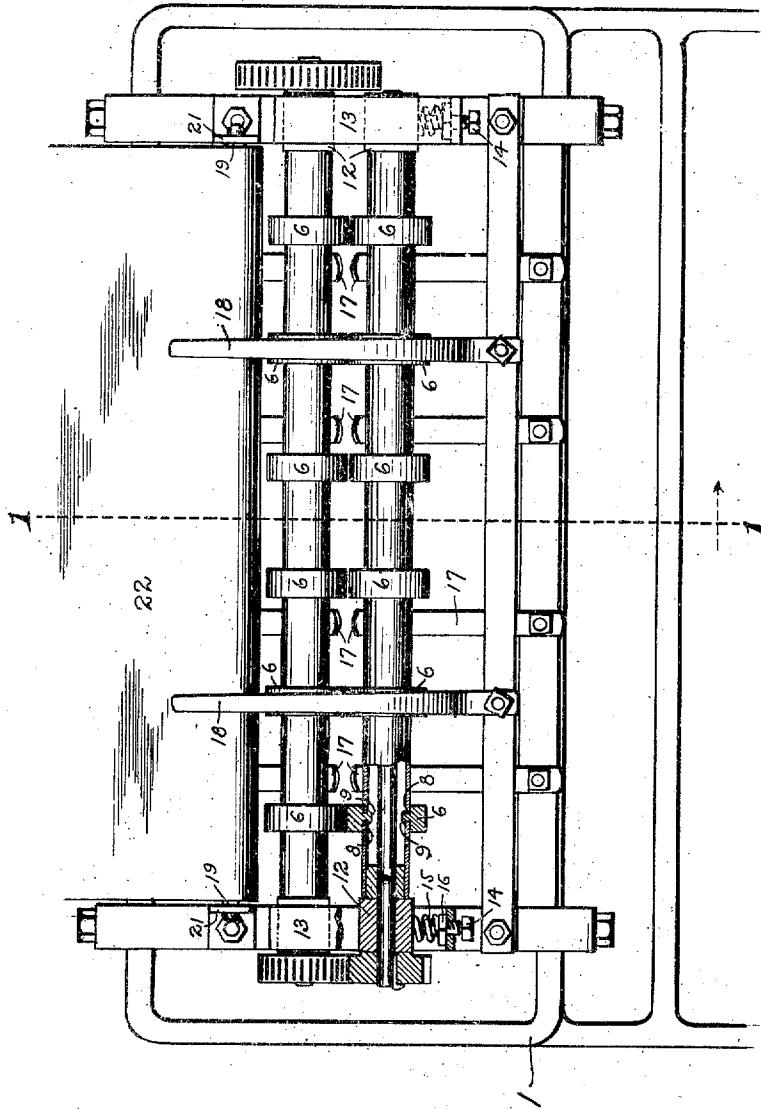
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3 SHEETS—SHEET 2.

Fig. 2.



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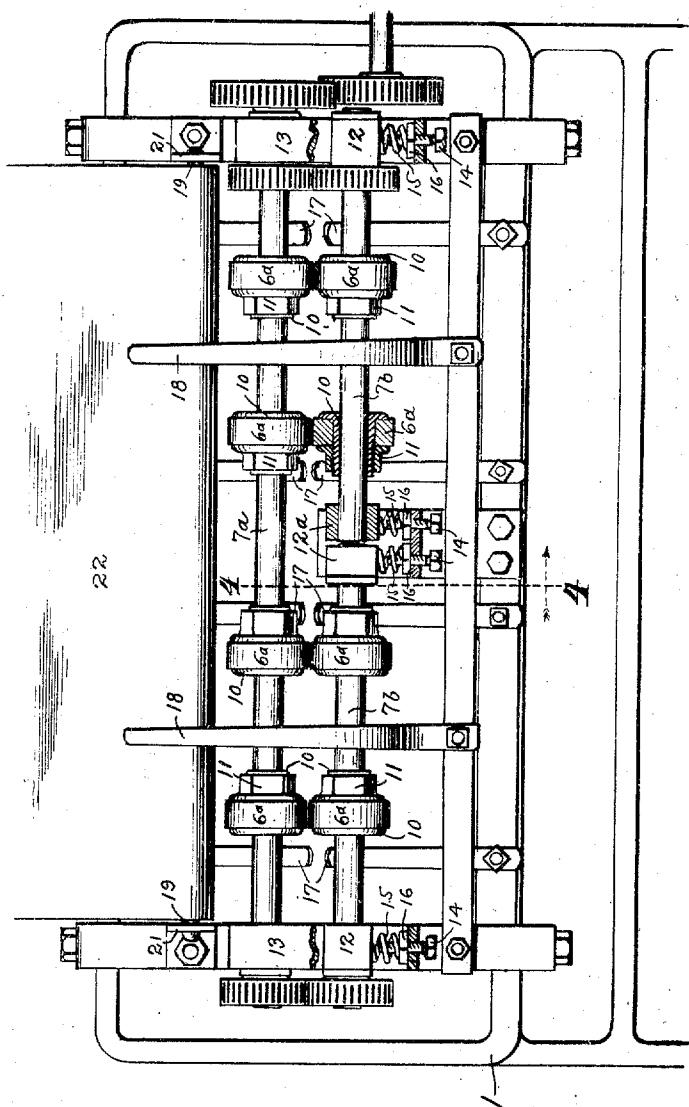
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3 SHEETS—SHEET 3.

Fig. 3.



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WILLIAM PRICE LEWIS AND THOMAS REESE WILLIAMS, OF CANTON,
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CATCHER FOR TINNING-MACHINES.

No. 818,838.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed July 14, 1905. Serial No. 269,585.

To all whom it may concern:

Be it known that we, WILLIAM PRICE LEWIS and THOMAS REESE WILLIAMS, citizens of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Catchers for Tinning-Machines, of which the following is a specification.

The invention relates to means for catching metal sheets as they emerge from a plating or tinning machine and for delivering the same to a receiving or carrying-off table; and the object of the improvement is to efficiently perform these functions without the aid of manual means and to do so without injuring, defacing, or destroying the sheet or the coating on the sides thereof. This object is attained by the construction, mechanism, and arrangement illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal section of a tinning-machine, showing a catcher applied thereon, on line 1 1, Fig. 2; Fig. 2, a plan view of one form of the catching-rolls; Fig. 3, a plan view of an alternate form of the rolls; and Fig. 4, a fragmentary section on line 4 4, Fig. 3, illustrating the middle bearing-bracket for a divided roll.

Similar numerals refer to similar parts throughout the drawings.

The tinning-machine illustrated is of an ordinary type and comprises the vessel or tinning-pot 1 with various compartments for the flux 2, the molten tin-bath 3, and the finishing-oil 4, and in the compartment containing finishing-oil are mounted the three several pairs of steel or hard metal tinning or finishing rolls 5, which rolls perform the usual function of conveying the metal sheets through the tin-pot and of compressing the coating of tin on the sides of the sheets and of limiting the thickness thereof.

The metal sheets are fed into the machine through the flux and tin-bath between the guides 1^a and are so directed by these guides that when they emerge from the bath into the finishing-oil they are caught between the lower pair of tinning-rolls and are passed between them and then on and between the two succeeding pairs of tinning-rolls, from the upper pair of which they emerge with the process of plating or tinning completed, but with the coating of tin on the sides of the sheets in a somewhat soft condition and susceptible

to being damaged or defaced by contact with a hard or foreign substance. The length of the tinned sheets is usually such that they must be caught as they emerge from the tinning-rolls before the coating of tin is cooled sufficiently to permit their being caught between rolls or disks having very hard gripping or contact faces, as of steel or other similar hard material.

A pair of rolls preferably composed of a series of adjacent collars or disks 6 on the shafts, 7 are mounted, preferably, directly over the tinning-rolls, the peripheral parts of which disk rolls are made of solid tin or other suitable relatively soft material, and a convenient manner of making these disk rolls is to cast the disks on a tubular shaft having apertures 8 therein, into which apertures the tin of the disk will adhere, as shown at 9 in Fig. 2. These disk rolls are preferably made of the same diameter as the tin-rolls and are geared to rotate in unison with them; but they may be made slightly larger in diameter than the tinning-rolls, so that when rotated in unison with them the disk rolls will have a slightly-faster peripheral speed and will accelerate rather than retard the movement of the sheets when they leave the nip of the rolls below.

The disk rolls may also be made of the separate collars 6^a, fastened on the solid shafts 7^a and 7^b by means of the flanged and threaded sleeves 10, which are fixed at the proper places on the shafts, and the flanged nuts 11, which are secured on the sleeves. The shafts of the disk rolls are journaled in the bearings 12, mounted in suitable housings 13, which are supported on and near the sides of the tinning-pot. These housings are preferably elongated, so that the bearings of one shaft can be adjusted with reference to the bearings of the other shaft, which adjustment may be made by the ordinary set-screws 14, turned through the ends of the housings, and when it is desired to cushion the contact of the disk rolls against the tinned sheet the spiral springs 15 may be used around the inner ends of the set-screws and arranged to act between the adjusting-nuts 16 on the screws and the adjacent bearings, in which latter event the set-screws do not abut directly against the bearings, and when the catcher is used on a double or "jumbo" machine, wherein two series of sheets are han-

dled, one in each side of the tinning-pot, the adjustable shaft may be divided in the middle and the adjacent ends thereof independently journaled and supported in the respective middle bearings 12^a, mounted in the housing 13^a, which is securely attached to the tinning-pot at or near the median line thereof, and these middle bearings may be adjusted and cushioned in the same manner as described for the end bearing.

For the purpose of directing a tinned plate of thin gage, so that it will properly enter between the catching-rolls, suitable guides 17 may be used; but it will be understood that these guides are not necessary for handling sheets of the thicker gages. The curved or inclined guides or deflectors 18 are fastened on the tinning-pot in front of the catching-rolls and extend upward and backward over the same, so that as the sheet emerges it is always deflected to the back side of the machine, and for the purpose of preventing a kinking of the sheet by its being deflected or bent too far by its weight as it emerges from the catching-rolls the bar 19 is mounted over the rear side of the catching-rolls, and this bar constitutes a support over which the sheet falls when fed out of a machine. This bar is conveniently mounted by being passed through the apertures 20 in the ordinary posts 21, fastened on the housings of the machine. By providing several of such apertures, the rod can be adjusted to various heights for properly supporting plates of different lengths. The inclined chute 22 is provided leading from the back side of the machine, onto which chute the sheets drop and will slide down on a carrying-off table or other form of conveyer, (not shown,) and this chute may be hooked over the supporting-bar, as illustrated.

The catching-rolls are preferably located some sixteen or more inches above the upper pair of tinning-rolls, so that when the newly-tinned sheet is caught between them the coating is cold and hardened to such an extent that the comparatively soft material out of which the disk rolls are made does not injure, deface, or destroy the coating or the body of the sheet in any manner. A certain amount of the finishing-oil is carried up with each sheet and accumulates on the periphery of the disk rolls, with the result that the sheet is usually somewhat smeared with this grease along the path of the disks; but this mark of grease is removed by the usual branning and polishing process by which the tinned sheet is cleaned.

It will be understood that the periphery of the catching-rolls can be made of some other suitable soft material than tin, and that the width of the disks can be increased at will even to the extent of making a solid tin roll; but we prefer to use the comparatively nar-

row disks for the saving in the solid tin required, and also for the greater freedom given to the sheet for cooling.

We are aware that adjacent rolls have been used to conduct and convey sheets, as the steel-finishing rolls in the machine shown, and of course do not claim the means for performing this function in itself; but we are not aware that such rolls have heretofore been adapted to successfully catch and convey newly-tinned sheets without permanently defacing the coating of tin thereon, and it is the means for performing this function with reference to the effect on the object acted upon, without injuring, defacing, or destroying it, that we believe to be new and useful.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. A catcher for a tinning-machine comprising a pair of rolls having their peripheral parts made of tin.

2. A catcher for a tinning-machine comprising a series of adjacent short rolls having their peripheral parts made of tin.

3. A catcher for tinning-machines comprising a pair of positively-driven rollers having gripping portions provided with tin to prevent marking of the plates.

4. A plate-catcher having positively-driven catcher-rolls, said rolls having separated registering gripping portions of tin.

5. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine, and having tin-gripping portions, one of the rollers being divided in the middle with means for yieldingly pressing each divided part toward the other roller.

6. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine and having tin-gripping portions, one of the rollers being divided in the middle, with means for adjusting each divided part with reference to the other roller.

7. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine, and having soft gripping portions, one of the rollers being divided in the middle with means for yieldingly pressing each divided part toward the other roller.

8. In a plate-catcher, a pair of driven feed-rollers above the tinning-machine and having soft gripping portions, one of the rollers being divided in the middle, with means for adjusting each divided part with reference to the other roller.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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RALPH L. YALEY.