

No. 752,016.

PATENTED FEB. 9, 1904.

E. L. CRONMEYER.
TIN PLATE CATCHER.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

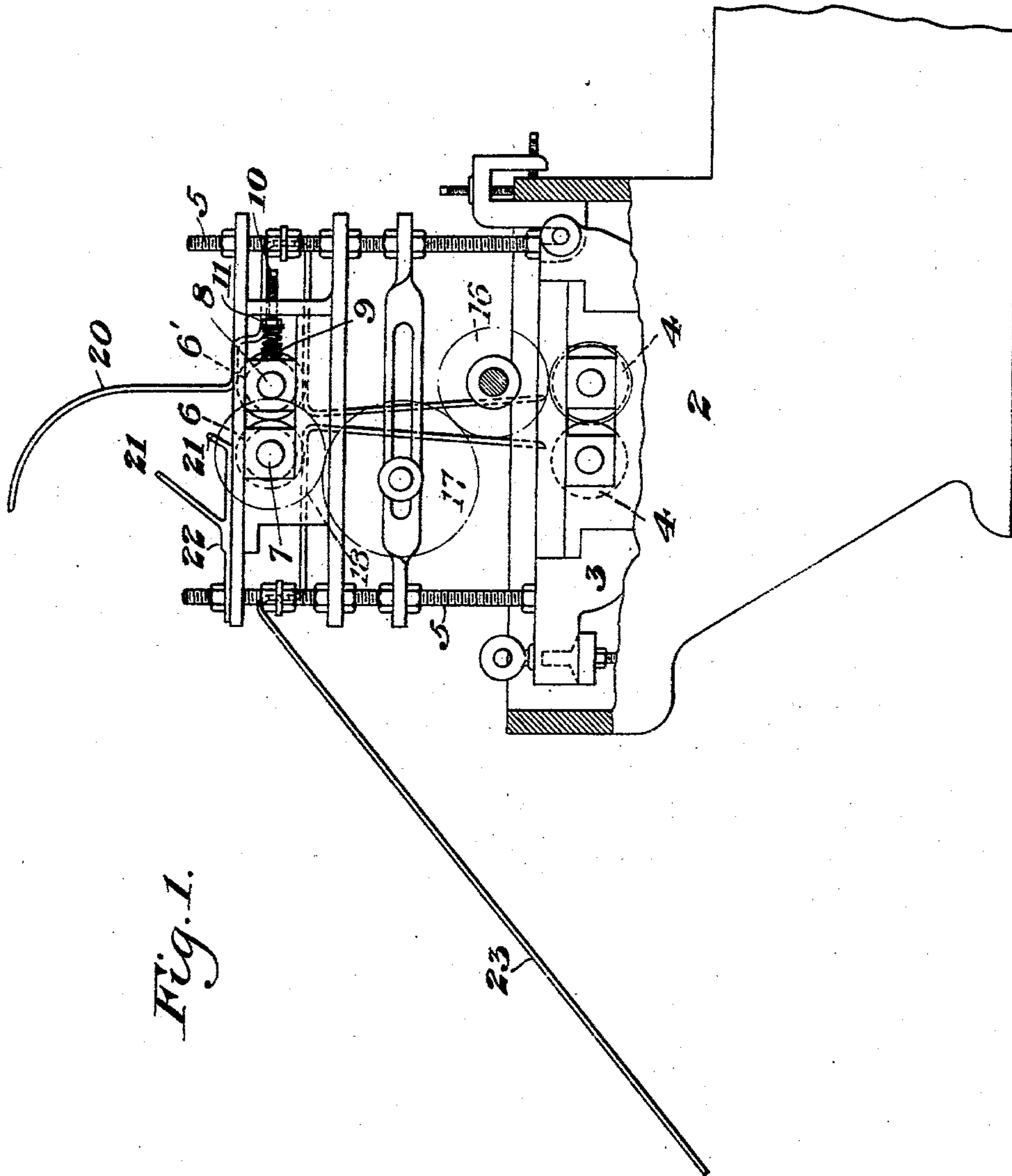


Fig. 1.

WITNESSES

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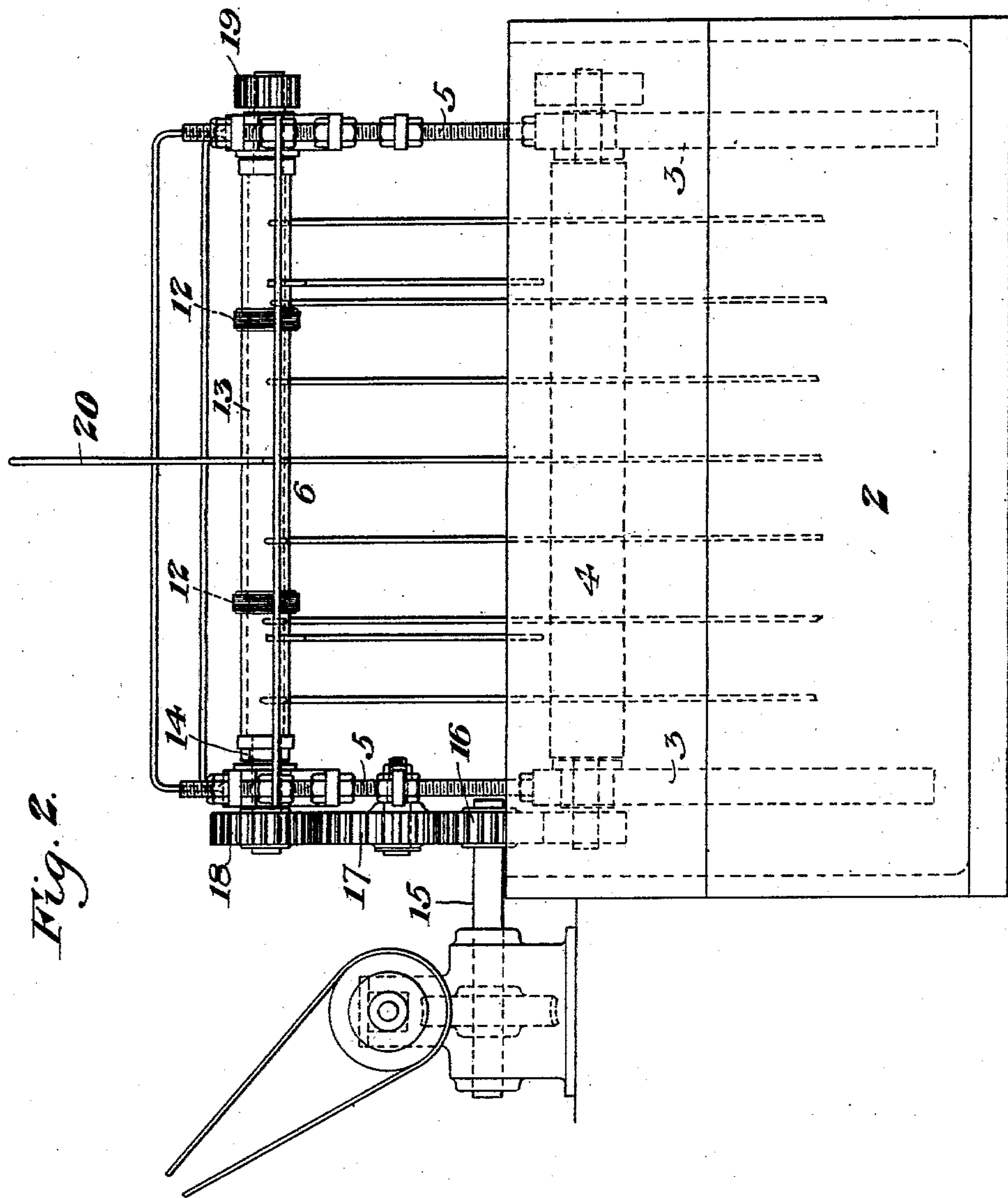
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3 SHEETS—SHEET 2.



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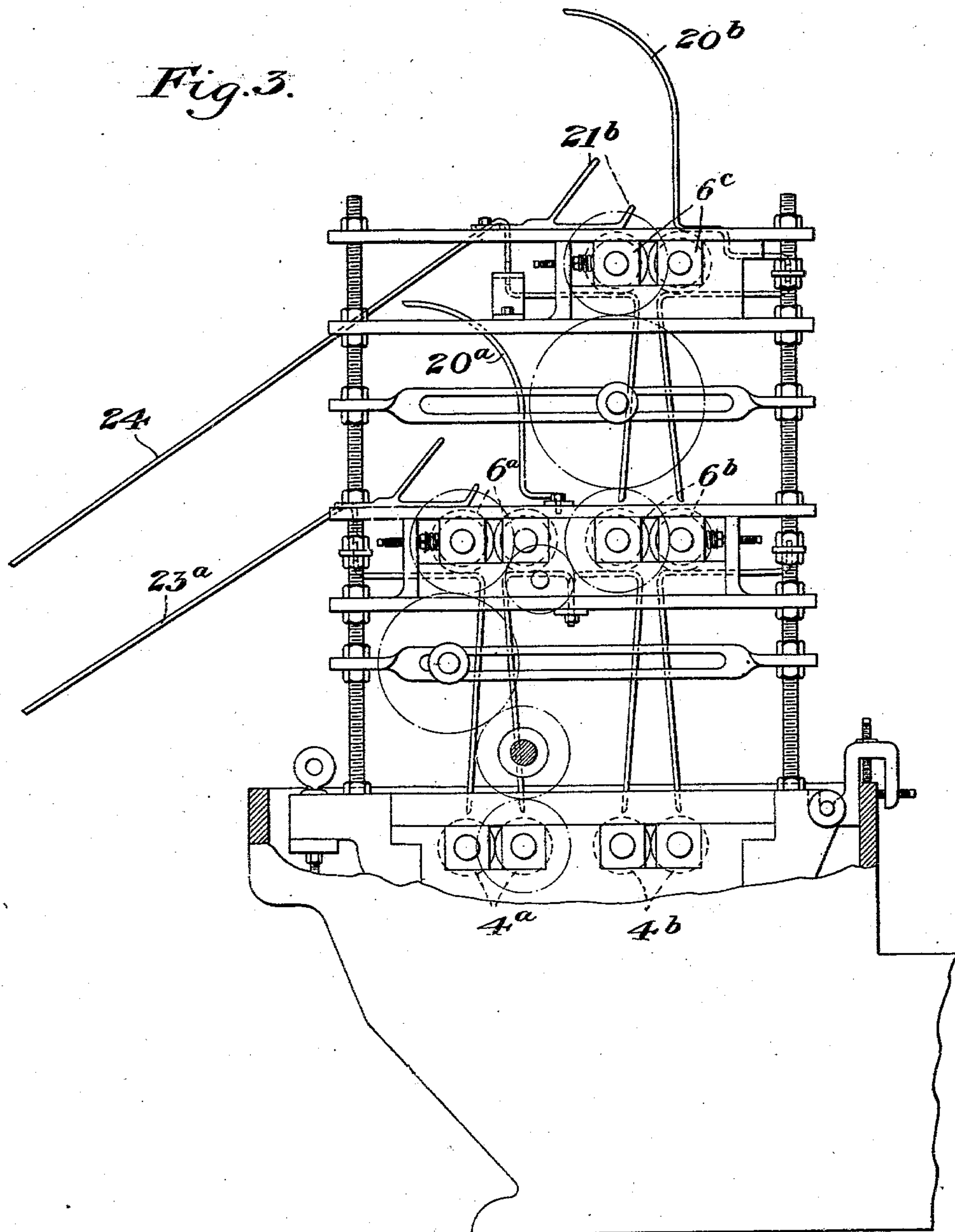
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3 SHEETS—SHEET 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ERNEST L. CRONEMEYER, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO
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TIN-PLATE CATCHER.

SPECIFICATION forming part of Letters Patent No. 752,016, dated February 9, 1904.

Application filed September 21, 1903. Serial No. 173,941. (No model.)

To all whom it may concern:

Be it known that I, ERNEST L. CRONEMEYER, of McKeesport, Allegheny county, Pennsylvania, have invented a new and useful Tin-Plate Catcher, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly broken away, showing my catcher applied to a tinning-pot. Fig. 2 is a front elevation of the same; and Fig. 3 is a view similar to Fig. 1, showing a modified form of my invention as applied to a double tinning-machine.

My invention relates to the catchers employed in connection with tinning-machines for receiving the plate as it emerges from the bath and discharging it from the machine.

The object of the invention is to provide a simple and effective device which will engage the emerging plate and deliver it without the use of magnets or other complicated mechanism heretofore used for this purpose.

To that end it consists in gripping-rollers arranged to engage a plate and feed it out, which rollers are arranged to prevent marking of the plates, which occurs whenever steel rollers are used for this purpose. I have found that by facing the gripping-rollers or their gripping portions with a material which is soft enough to prevent marking the plates and at the same time is not injured or destroyed by the heat of the coating I can employ a pair of catcher-rolls without injuring the plates. By using a deflector in connection with these rolls the plates as they come from the bath are delivered from the machine preferably onto an inclined chute leading to the branning-machine.

In the drawings, referring to the form of Figs. 1 and 2, 2 represents a tinning-pot of the ordinary type having a tinning-machine 3 supported therein. 4 4 are the positively-driven top rolls of the tinning-machine. On the frame of the tinning-machine I mount the catcher-frame, which preferably consists of four bolts or corner-posts 5, which are screw-threaded, so that the different parts of the

frame may be adjusted vertically. In the upper part of the catcher-frame I mount two rolls 6 6', having end bearings 7 and 8 for their shafts. The roll 6 is mounted in stationary bearings, while the sliding bearings 8 of the rolls 6' are pressed toward the roller 6 by springs 9. These springs surround a screw-threaded rod 10, extending through a hole in the frame and held by nuts 11, so that the tension of the spring may be varied. The rolls 6 6' are similar to each other and each is provided with separated disks 12, which project beyond the collar or body of the roller and engage the plate. These disks are made of a material which is soft enough not to mark the plate and at the same time is not injured by the heat of the plate and coating. For this purpose I have found that disks of linen or fabric are especially efficient, though fiber or wood or other materials may be used. The disks on the two shafts register with each other and may be secured to the shaft in any desired way. I have shown the shafts as provided with sleeves 13, between the ends of which the disks are secured or gripped by the endwise pressure of nuts 14, screwed on one end of the shaft. The rollers 6 6' may be driven in any desirable way; but I prefer to gear them directly to the top rolls 4. Thus I show the driving-shaft 15 as having a toothed wheel 16 engaging a toothed wheel on one of the rolls 4 and also a toothed wheel 17, which is an idler, mounted in the catcher-frame. The wheel 17 engages a toothed wheel 18, which is on the shaft of the roller 6, and the roller 6 is connected to the roller 6' by gearing 19 at the opposite end. Above the rollers 6 6' I place a curved deflector 20, which is shown as consisting of a central rod secured to the frame and overhanging the rollers. Beneath this deflector and above the roller 6 I provide one or more transverse supports 21. I have shown these as two in number located at different levels and secured to a slide 22, which is adjustably bolted to the top of the frame. These supports, which may be made of rods, as shown in Fig. 2, may thus be adjusted toward and from the deflector. I have found that

without these supports the plate as it strikes the deflector will become kinked as it bends over, since the weight of the plate will carry it down far enough to kink it; but by using the intermediate supports the drop-over of the plate is stopped and kinking prevented. The plate is preferably dropped upon an inclined chute 23, which leads to the branning-machine.

10 In using the apparatus the plate is carried up from the bath by the rolls 4 and enters the bite of the rolls 6, 6'. The soft covering of the disks prevents injury to the coating, which is still hot, while these rolls feed the plate upwardly. The deflector engages the plate and bends it over until it strikes the supports, and as the plate is fed on its overhanging portion causes it to drop on the chute. The pressure of the rolls 6 6' may be varied and the spring-pressed bearing allow for different thicknesses of coating and of plates. I preferably rotate the rolls 6 6' at a slightly greater peripheral speed than that of the rollers 4. This may be done either by making the circumference of the disk a fraction of an inch greater than that of the roll 4 or by arranging the driving connections so as to drive the rolls 6 6' at a slightly greater speed. As the lower end of the sheet emerges from the bath of molten tin a film of the molten metal hangs from its lower edge, and by causing the feed-out rolls to pull this lower edge quickly away from the rolls 4 this is removed. The plate is thus prevented from touching the roll 4 with its lower edge, and hence the lower edge of the plate is clean.

In Fig. 3 I show a form similar to that shown in Figs. 1 and 2, except that the invention is applied to a double tinning-machine. In this figure, 4^a and 4^b are the upper rolls of the tinning-pot, and 6^a and 6^b the catcher-rolls corresponding to those of the first figures. Above the rolls 6^b I place another pair of the catcher-rolls 6^c, with the deflector 20^b and supports 21^b, as in the first form. The sheets passing up between the rolls 4^b drop upon an upper chute 24, while those passing up between rolls 4^a contact with the deflector 20^a and drop upon the lower chute 23^a.

50 The advantages of my invention result from the use of the positively-driven catcher-rolls with soft gripping portions, which do not mark the plates, also from the slightly greater

speed of these rolls compared to the upper tinning-rolls, and, further, from the use of the deflector in combination with the supports, which prevent kinking. The device is simple, not liable to get out of order, and can be easily applied to existing machines of different types.

Many variations may be made in the form and arrangement of the rollers, the deflector, the sheet-support, and the material for the driven portions of the rollers, as well as in the driving mechanism, &c., without departing from my invention.

I claim—

1. A catcher for tinning-machines comprising a pair of positively-driven rollers having gripping portions provided with soft material to prevent marking of the plates; substantially as described.

2. A tinning-machine having upper rollers, and a plate-catcher comprising a pair of rollers and means for driving the rollers at a slightly greater peripheral speed than that of the upper rollers of the tinning-machine; substantially as described.

3. A plate-catcher having positively-driven catcher-rolls, said rolls having separated registering gripping portions of soft material; substantially as described.

4. A plate-catcher having a pair of driven rolls with soft gripping portions, a deflector above them, a raised support below the deflector and an inclined chute for the sheets as they leave the deflector; substantially as described.

5. A double tinning-machine having two sets of upper tinning-rolls, driven catcher-rolls at different levels above said sets of upper tinning-rolls, and deflectors arranged to deflect the plates at two different levels; substantially as described.

6. In a plate-catcher a pair of driven feed-rollers above the tinning-machine and having soft gripping portions, and means for yieldingly pressing at least one of said rollers toward the other; substantially as described.

In testimony whereof I have hereunto set my hand.

E. L. CRONEMEYER.

Witnesses:

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JOHN MILLER.