

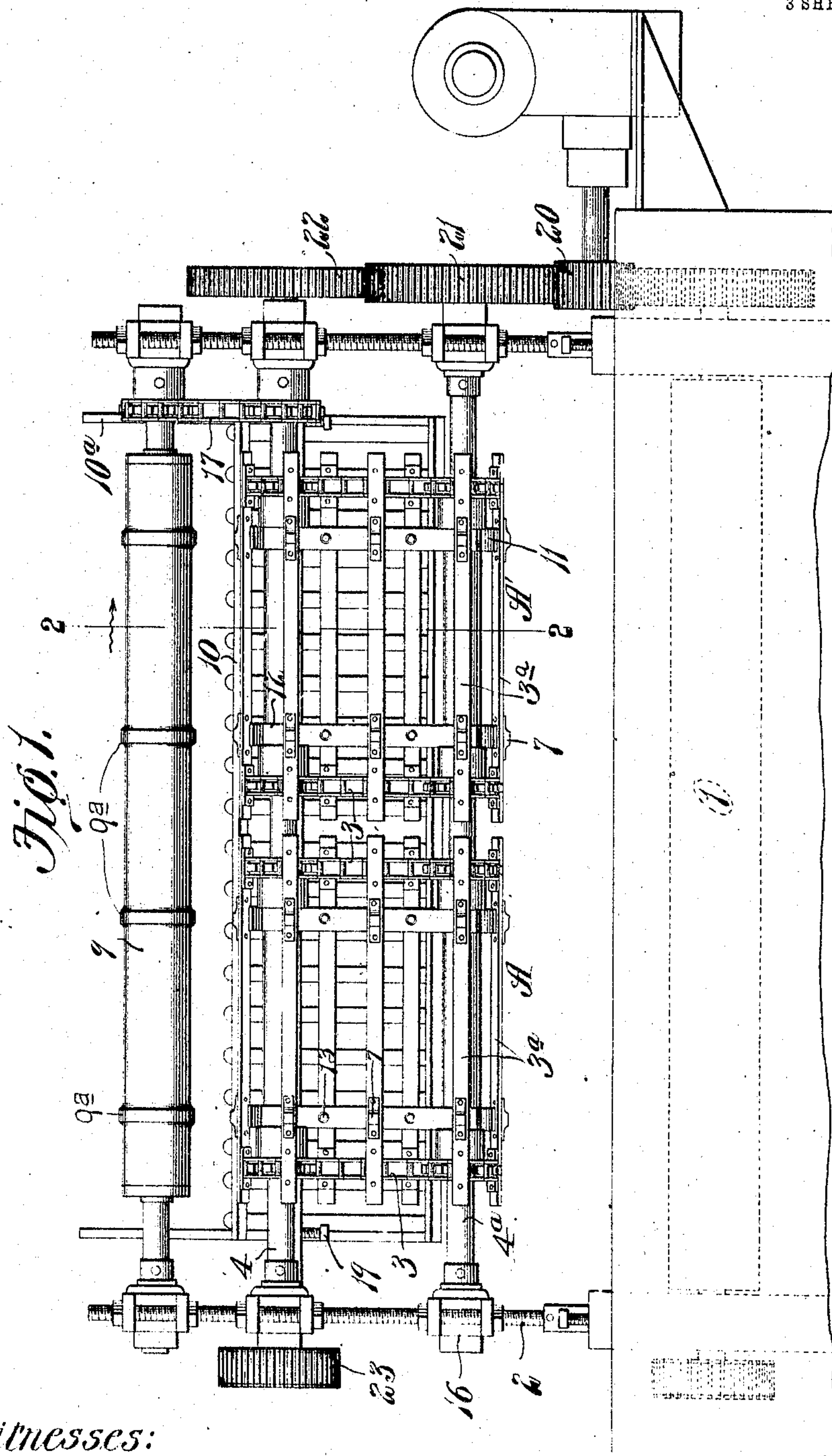
No. 885,729

PATENTED APR. 28, 1908.

E. L. CRONMEYER.  
TIN PLATE CATCHER.

APPLICATION FILED NOV. 15, 1907.

3 SHEETS—SHEET 1.



Witnesses:  
Geo. R. Lidson  
Wells L. Church

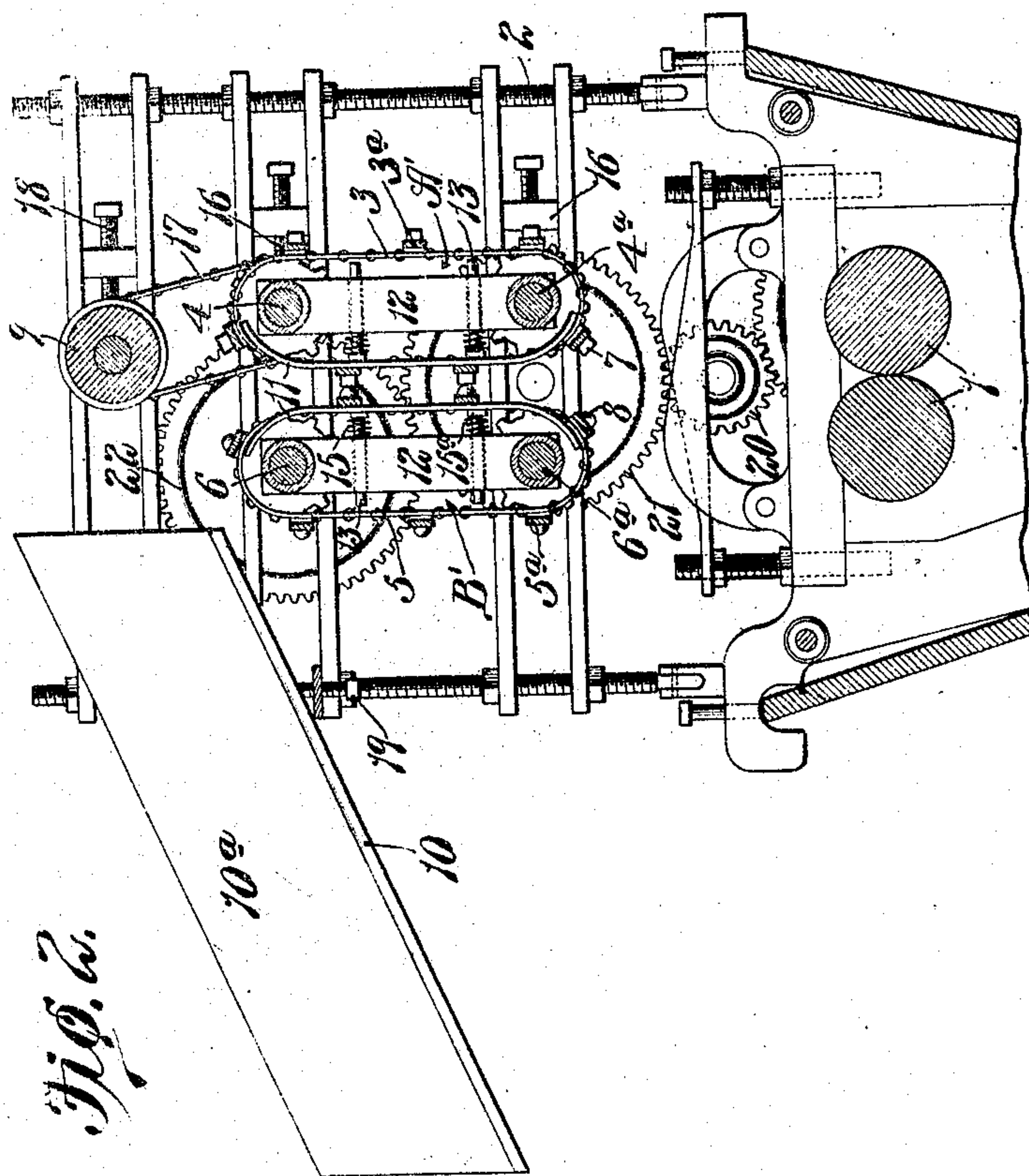
Inventor:  
Ernest L. Cronmeyer.  
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Witnesses:

Geo. R. Ladson  
Wells L. Church

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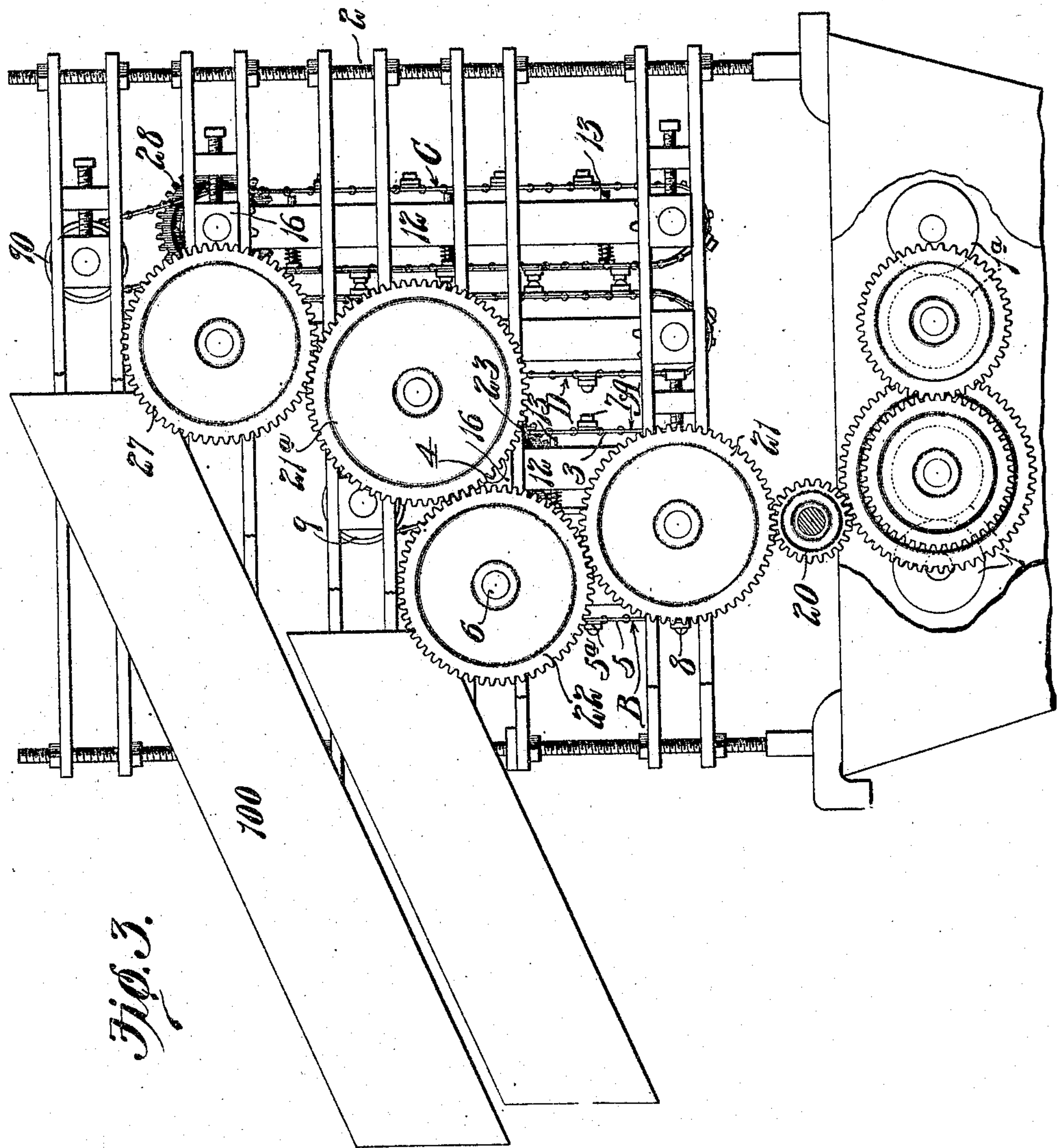
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3 SHEETS—SHEET 3.



Witnesses:

Geo. R. Ladson.  
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# UNITED STATES PATENT OFFICE.

ERNEST L. CRONEMEYER, OF GRANITE CITY, ILLINOIS.

## TIN-PLATE CATCHER.

No. 885,729.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed November 15, 1907. Serial No. 402,280.

*To all whom it may concern:*

Be it known that I, ERNEST L. CRONEMEYER, a citizen of the United States, residing at Granite City, Illinois, have invented a certain new and useful Improvement in Tin-Plate Catchers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a rear elevation of a tin plate catcher constructed in accordance with my invention; Fig. 2 is a vertical sectional view taken on the line 2—2 of Fig. 1 looking in the direction of the arrow; Fig. 3 is an end elevation of a tin plate catcher embodying the features of my invention and designed for use with a double tinning-machine.

This invention relates to devices commonly called tin plate catchers that are used in connection with tinning-machines for delivering a freshly coated plate from the rolls of the tinning-machine to a chute.

The main object of my present invention is to provide a device of simple construction that will lift the coated plates from the rolls of the tinning-machine and discharge them onto a chute without the use of feed rollers which have a tendency to smirch and mar the hot oily plates.

Briefly described, my improved tin plate catcher comprises endless conveyers provided with small gripping devices which engage the freshly coated plates as they emerge from the rolls of the tinning-machine and feed them away from said rolls without marking or marring the plates. The catcher also preferably comprises a ribbed deflecting roller that guides the plates to a chute and prevents them from buckling or kinking.

Referring to Figs. 1 and 2 of the drawings which illustrate the preferred form of my invention, 1 designates the rolls of the tinning-machine, and 2 designates the frame of my improved tin plate catcher which is mounted on the tinning-machine above the rolls 1 thereof, said frame 2 being preferably so constructed that parts thereof can be adjusted vertically. The frame 2 carries vertically disposed endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage the plates as they emerge from the rolls 1 of the tinning-machine and feed them vertically away from

said rolls. The machine shown in Fig. 1 is adapted to simultaneously feed two plates arranged side by side from the rolls of the tinning-machine and is therefore provided with two sets of conveyers A, A' and B, B', but it will, of course, be understood that the catcher could be provided with only one pair of conveyers without departing from the spirit of my invention.

The conveyers A and A' consist of sprocket chains 3 that travel over sprocket wheels on shafts 4 and 4<sup>a</sup> arranged in vertical alinement with each other, and the conveyers B and B' consist of sprocket chains 5 that travel over sprocket wheels on shafts 6 and 6<sup>a</sup> arranged parallel to the shafts 4 and 4<sup>a</sup>, as shown in Fig. 2, the chains 3 being provided with slats or cross bars 3<sup>a</sup> and the chains 5 being provided with slats or cross bars 5<sup>a</sup>. While I have herein shown conveyers which consist of sprocket chains to which cross bars are connected, I do not wish it to be understood that my broad idea is limited to such a construction as the conveyers could be formed in various other ways.

The conveyers A and A' are provided with gripping devices 7, and the conveyers B and B' are provided with gripping devices 8 and when said cooperating gripping devices come into alinement with each other they will engage the plates as they emerge from the rolls 1 of the tinning-machine and feed them vertically to a roller 9 which deflects the plates onto an inclined chute 10. The cooperating gripping devices 7 and 8 of the conveyers may be formed of steel, lead, aluminum or any other suitable material but I prefer to form them of steel coated with block tin, the gripping devices 7 consisting of flat-faced blocks that are secured to the cross bars 3<sup>a</sup> adjacent the ends thereof, and the gripping devices 8 consisting of blocks connected to the cross bars 5<sup>a</sup> adjacent the ends thereof and having rounded or curved faces. The particular construction of these gripping devices, however, is immaterial so far as my broad idea is concerned.

The conveyers travel over tracks or guides 11 that are carried by bars 12 which are supported by the horizontal shafts that carry the sprocket wheels, and each of said tracks is provided with laterally projecting shanks 13 that pass through openings in the supporting bars 12. The tracks 11 for the respective conveyers are forced toward each other by means of coiled expansion springs 15 sur-



rounding the shanks 13 and interposed between the tracks and their supporting bars 12 so as to cause the cooperating gripping devices 7 and 8 on the conveyers to yieldingly engage the plates, thus enabling them to accommodate themselves to plates of any thickness. Preferably, the shanks 13 are provided with adjusting nuts 15<sup>a</sup> which enable the tension of the springs 15 to be varied so as to regulate the tension of the gripping devices on the conveyers. I also prefer to mount the shafts 4 and 4<sup>a</sup> for the conveyers A and A' in adjustable bearings 16 that can be moved toward and away from the shafts 6 and 6<sup>a</sup>, thus providing an additional means for varying the tension of the gripping devices. The deflecting roller 9 is arranged above the conveyers and is so disposed relatively thereto that it will gradually deflect the plates onto the inclined chute 10 as they emerge from the conveyers, said chute being provided with a smooth or corrugated bottom and side pieces 10<sup>a</sup> that guide the plates down the chute. The deflecting roller 9 is provided with ribs 9<sup>a</sup> preferably arranged in alinement with the gripping devices on the conveyers, as shown in Fig. 1, so as to engage the edge portions of the plates and thus prevent them from bending perpendicularly as often occurs with the tin plate catchers heretofore in use which were provided with deflectors which consisted of curved rods. The deflecting roller 9 may be formed of wood, metal or any other suitable material and said roller is driven continuously by the sprocket chain 17 which passes over sprocket wheels on the shaft of said roller and on one of the conveyer shafts, preferably, the shaft 4. The shaft of said deflecting roller 9 is mounted in movable bearings that can be adjusted horizontally by means of screws 18 and the inclined chute 10 can be adjusted vertically by means of adjusting screws 19.

Various means can be employed for driving the conveyers and I have herein shown them as being driven by a train of gears that are actuated by a pinion 20 which drives the rolls 1 of the tinning-machine. The pinion 20 meshes with an idler 21 that meshes with a gear 22 on one end of the horizontally disposed shaft 6 and on the other end of said shaft is a gear that meshes with the gear 23 on the horizontally disposed shaft 4, said gears being preferably proportioned so that the conveyers and deflecting roller will travel at the same speed as the rolls 1 of the tinning-machine.

The gripping devices 7 and 8 on the conveyers are so arranged that each plate will always be engaged at at least four separated points as it is passing between the conveyers so that it will be impossible for the plate to shift or become displaced, and as the plate is engaged at only a few points and by gripping devices that have very small engaging faces, the hot

oily coating on the plate will not be marred or defaced.

In Fig. 3 I have shown a catcher that is adapted to be used with a double or duplex tinning-machine, said catcher being of substantially the same construction as that shown in Figs. 1 and 2, except that additional sets of conveyers C and D are provided for cooperating with the extra set of rolls 1<sup>a</sup> of the tinning-machine, the catcher also comprising an inclined chute 100 and a deflecting roll 90 that cooperates with the conveyers C and D, said conveyers being longer than the conveyers A and B so that the plates will be deflected therefrom at a higher level. The mechanism for driving the conveyers A and B is substantially the same as that shown in Figs. 1 and 2, and the conveyers C and D are driven by means of an idler 21<sup>a</sup> meshing with the gear 22 and with a gear 27 on the drive shaft of the conveyer D, said drive shaft being provided at its opposite end with a gear that meshes with a gear 28 on the drive shaft of the conveyer C.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A catching device for tinning-machines, comprising a pair of endless conveyers arranged adjacent to each other and provided with devices for gripping a plate as it emerges from the rolls of the tinning-machine and feeding it away from said rolls; substantially as described.
2. A catching device for tinning-machines, comprising a pair of parallel conveyers provided with separated gripping devices adapted to engage a plate and feed it away from the tinning-machine; substantially as described.
3. A catching device for tinning-machines, comprising a pair of vertically disposed endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the tinning-machine; substantially as described.
4. A catching device for tinning-machines, comprising endless conveyers arranged parallel to each other and provided at intervals with cooperating gripping devices, the gripping devices on one conveyer having flat engaging faces and those on the other conveyer having rounded or curved engaging faces; substantially as described.
5. A catching device for tinning-machines, comprising a pair of vertically disposed conveyers arranged adjacent to each other, and each consisting of sprocket chains and cross bars connected thereto, and cooperating gripping devices on said crossbars which are adapted to engage a plate and feed it vertically away from the rolls of the tinning-machine; substantially as described.
6. A catching device for tinning-machines,



comprising separated gripping members which engage the edge portions of a plate and feed it away from the rolls of the tinning-machine; substantially as described.

7. A catching device for tinning-machines, comprising movable members arranged parallel to each other, and provided at intervals with cooperating gripping devices that engage a plate and feed it vertically away from the rolls of the tinning-machine; substantially as described.

8. A catching device for tinning-machines, comprising a plurality of sets of positively driven conveyers arranged in pairs and having cooperating gripping devices which engage a plurality of plates and feed them simultaneously away from the rolls of the tinning-machine; substantially as described.

9. A catching device for tinning-machines, comprising a pair of endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, and means for varying the contact of said gripping devices; substantially as described.

10. A catching device for tinning-machines, comprising a pair of endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, and means for causing said gripping devices to exert yielding pressure on said plate; substantially as described.

11. A catching device for tinning-machines, comprising a pair of endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, and means for changing the position of one conveyer relatively to the other to vary the distance between the cooperating gripping devices; substantially as described.

12. A catching device for tinning-machines, comprising a pair of endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, and yielding tracks or guides over which said conveyers travel; substantially as described.

13. A catching device for tinning-machines, comprising a pair of endless conveyers arranged parallel to each other and provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, tracks or guides over

which said conveyers travel, springs for forcing the tracks of one conveyer toward the tracks of the other conveyer, and means for varying the tension of said springs; substantially as described.

14. A catching device for tinning-machines, comprising a pair of parallel conveyers provided with cooperating devices that engage a plate and feed it away from the rolls of the tinning-machine, a chute or support, and a deflecting roller arranged adjacent said conveyers for deflecting the plate onto said chute; substantially as described.

15. A catching device for tinning-machines, comprising parallel conveyers provided with cooperating gripping devices that engage a plate and feed it away from the rolls of the tinning-machine, a chute, and a roller arranged adjacent the upper ends of said conveyers and provided with ribs which engage the plate and deflect it onto said chute; substantially as described.

16. A catching device for tinning-machines, comprising means for feeding a plate vertically away from the rolls of a tinning-machine, a ribbed roller arranged above said means, a chute, and means for adjusting said roller horizontally and the chute vertically; substantially as described.

17. A catching device adapted to be used with a tinning-machine which is provided with means for simultaneously ejecting two plates side by side, said catching device comprising a double set of vertically disposed endless conveyers provided with cooperating gripping devices, a deflecting roller arranged adjacent the upper ends of said conveyers, and means for driving said conveyers and roller at the same speed as the rolls of the tinning-machine; substantially as described.

18. A duplex tinning-machine having two sets of upper rolls which eject a plurality of plates one behind the other and a catching device adapted to be used with said machine and comprising a pair of endless conveyers arranged above each pair of rolls of the tinning-machine and provided with cooperating gripping devices, one pair of conveyers being longer than the other pair, and ribbed rollers arranged adjacent said conveyers for deflecting the plates therefrom at different levels; substantially as described.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this thirteenth day of November 1907.

ERNEST L. CRONMEYER.

Witnesses:

WELLS L. CHURCH,  
GEORGE BAKWELL.