

A. F. WARDEN.

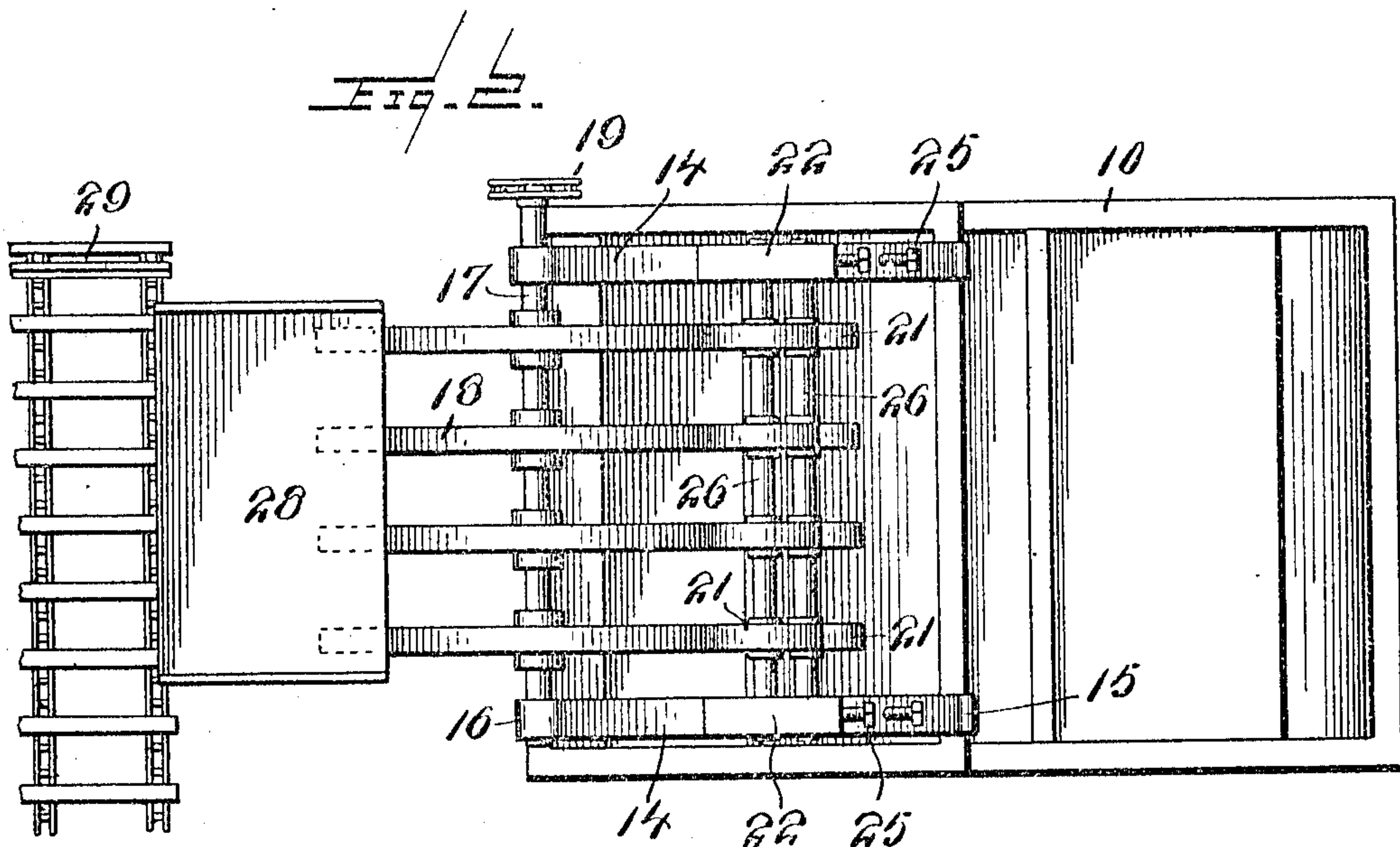
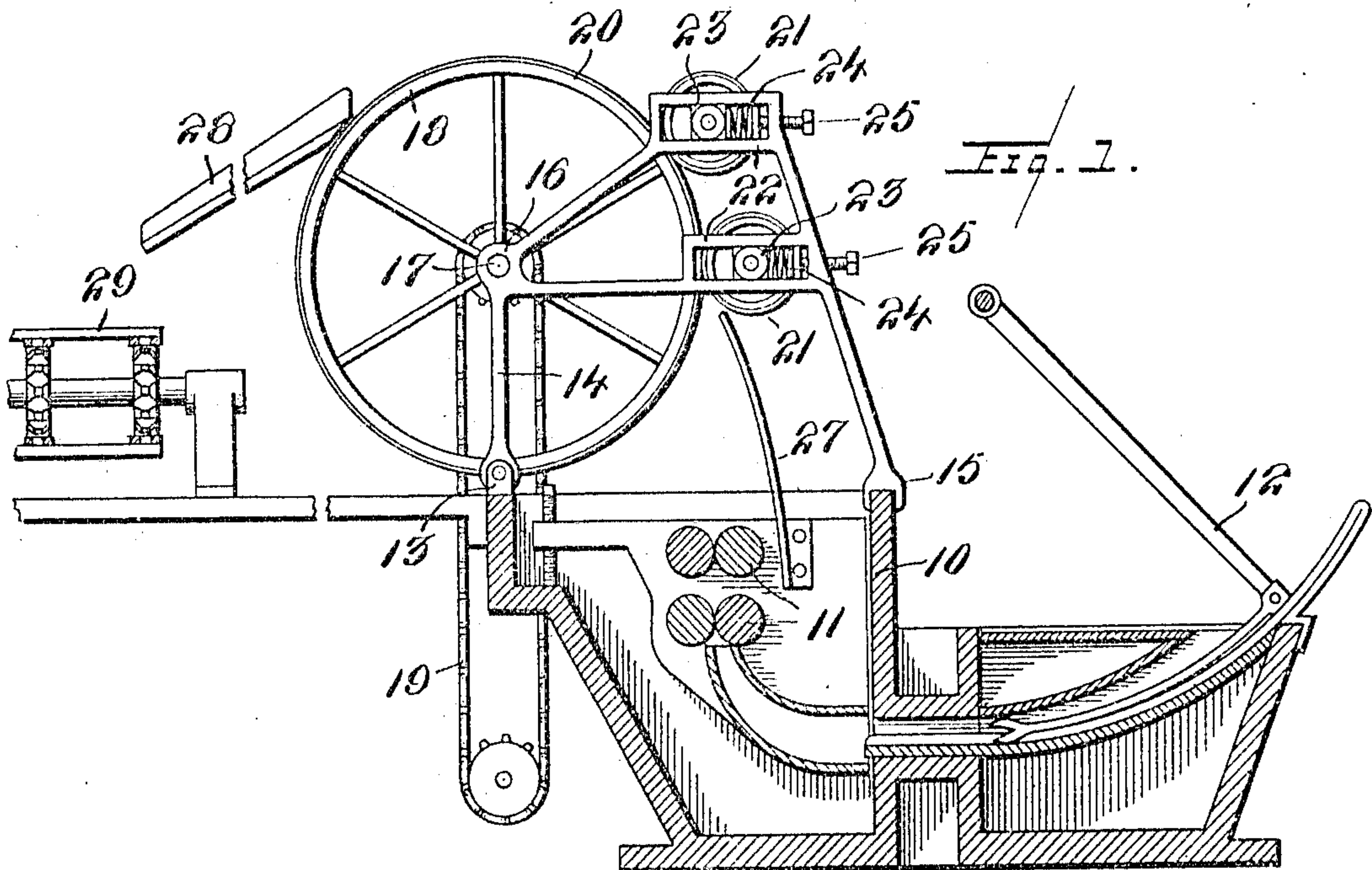
PLATE CATCHER.

APPLICATION FILED NOV. 24, 1909.

947,361.

Patented Jan. 25, 1910.

2 SHEETS—SHEET 1.



WITNESSES:

H. F. W. Co.
Alfred T. Sage

INVENTOR

Alva F. Warden.

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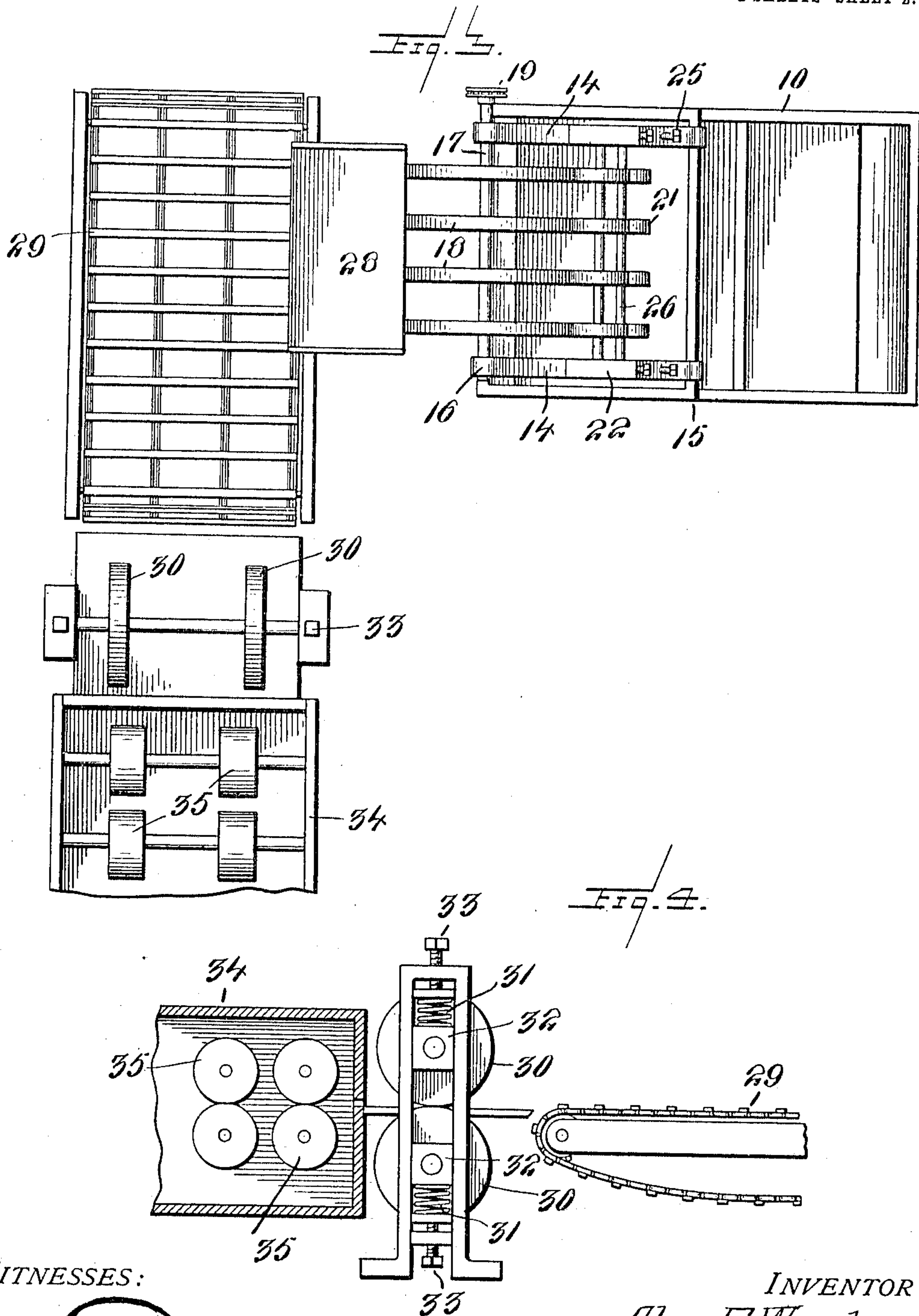
Attorney

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UNITED STATES PATENT OFFICE.

ALVA F. WARDEN, OF CANONSBURG, PENNSYLVANIA, ASSIGNOR TO STANDARD TIN
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PLATE-CATCHER.

947,361.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed November 24, 1909. Serial No. 529,811.

To all whom it may concern:

Be it known that I, ALVA F. WARDEN, a citizen of the United States, residing at Canonsburg, county of Washington, State of Pennsylvania, have invented certain new and useful Improvements in Plate-Catchers, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to a plate catcher and particularly to an apparatus adapted for use in the manufacture of tin or similar plates to remove them from the coating pot or vat.

15 The invention has for its object to provide a novel and improved construction of catcher comprising a plurality of transferring wheels having two or more holding wheels disposed in yielding contact with the periphery of each transfer wheel.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features defined by the appended claims.

25 In the drawings—Figure 1 is a vertical section of the tinning vat with the catcher in elevation; Fig. 2 is a top plan of the invention; Fig. 3 is a similar view of the conveyer, feeding rolls and cleaner for the plates; and Fig. 4 is a detail elevation of these parts.

Like numerals of reference refer to like parts in the several figures of the drawings.

35 The numeral 10 designates the tinning vat or pot which may be of any desired construction or configuration and is provided with the usual feed rolls 11 and the plate pusher 12, these parts being of ordinary construction. The upper portion of the vat is provided with pivoting lugs 13 upon which the frame 14 is mounted. The opposite end of this frame is provided with the bifurcated end 15 adapted to seat upon the wall of the vat as shown in Fig. 1. This frame is provided with a bearing 16 in which a shaft 17 is mounted. Upon this shaft 17 a series of transfer wheels 18 are secured and the shaft may be driven by any desired connections, for instance as shown at 19. These wheels 45 may be of any desired size or construction and are here shown as provided with a peripheral band 20 of soft metal so as to avoid injuring or marring the coated surfaces of the plate. Coöperating with each of these

bands is a plurality of holding wheels 21 55 mounted to contact therewith at different points on the periphery of the wheel 20, each being provided with a similar soft metal bearing surface as shown in Fig. 1. For the purpose of mounting the holding wheels 21, the opposite end frames 14 are each provided with boxes 22 adapted to receive the slide bearings 23 in which the wheels 21 are mounted. These wheels are held in yielding contact with the transfer wheels 18 by 65 means of springs 24, the tension of which may be adjusted by the screws 25 so as to secure the proper contact with the plate to cause it to travel with the wheels 18 and to avoid any marking or marring thereof or 70 bending of the plate during this action.

Any desired number of transfer and co-operating holding wheels may be used, the same being separated from each other and the number being governed by the size of the 75 plate to be handled or the vat in which it is to be coated. Any desired number of the frames 14 may be used and these are connected together by the shaft 17 for the transfer wheels and the shafts 26 upon which the 80 holding wheels are mounted.

The coated plates, when fed upward from the vat 10 by the rolls 11 therein, are guided toward the transfer wheels 18 by means of the plate or guide 27 and after being carried 85 over this wheel are discharged therefrom upon the chute 28 which delivers them upon a conveyer 29 by which they are carried to the feed rolls or disks 30. These rolls or disks are normally in contact with each 90 other and are yieldingly held in such contact by the springs 31 which contact with the bearing boxes 32 of the rolls, by the tension of these springs. The plates are fed by the rolls 30 into the cleaner 34 which is pro- 95 vided with the usual devices 35 for cleaning and polishing the coated plate.

In the operation of the invention, the plate to be coated is passed through the vat of molten metal and into the vat of metal 100 and oil in the usual manner. It is then raised and caught by the transfer wheel by which it is lifted from the vat and discharged upon the conveyer and carried to a cleaner so as to effect the complete coat- 105 ing and delivery of the plate. The transfer wheel is of such diameter as to lift the plate to a height sufficient to provide a clearance

for the delivery of the plate or sheet to the conveyer without the necessity of manually handling the same. The holding wheels are adjusted to such a tension as to
 5 cause the plate to be frictionally lifted by the transfer wheel without marring, marking or injuring the coating of the plate. They hold the plate in contact with the wheel but do not bend, bulge or crimp the
 10 plate but release it below the top of the wheel in order to insure a positive delivery upon the chute from the top thereof.

The frame in which the catcher members are mounted is pivotally supported upon the
 15 vat so that it can be readily swung away when it is desired to secure access to the same. The transfer wheels may be driven by any desired connection and their speed properly regulated.

20 Having described my invention and set forth its merits what I claim and desire to secure by Letters Patent is—

1. In a plate catcher, a frame, a transfer wheel mounted thereon, and a plurality of
 25 holding wheels disposed opposite different radial points upon the periphery of said transfer wheel at one side of the vertical axis thereof at a distance therefrom sufficient to prevent bending of the plate whereby plates
 30 are fed upon and over the transfer wheel.

2. In a plate catcher, a frame, a transfer wheel mounted thereon, a plurality of holding wheels disposed opposite different radial
 35 points upon the periphery of said transfer wheel at one side of the vertical axis thereof at a distance therefrom sufficient to prevent bending of the plate whereby plates are fed upon and over the transfer wheel, and ten-
 40 sion means to yieldingly move said holding wheels toward the transfer wheel.

3. In a plate catcher, a frame, a transfer wheel mounted thereon, a plurality of holding wheels disposed opposite different radial
 45 points upon the periphery of said transfer wheel at one side of the vertical axis thereof at a distance therefrom sufficient to prevent bending of the plate whereby plates are fed upon and over the transfer wheel, and
 50 springs mounted to engage the bearings of said holding wheels to move the same toward the transfer wheel.

4. In a plate catcher, a frame provided with parallel bearing ways, a shaft mounted
 55 in said frame and having a series of transfer wheels thereon, and holding wheels slidingly mounted in said ways to engage each of said transfer wheels at different radial points
 60 upon the periphery thereof at one side of their vertical axis at a distance therefrom sufficient to prevent bending of the plate.

5. In a plate catcher, a frame provided with parallel bearing ways, a shaft mounted
 65 in said frame and having a series of transfer wheels thereon, holding wheels slidingly mounted in said ways to engage each of said

transfer wheels at different radial points upon the periphery thereof at one side of their vertical axis at a distance therefrom sufficient to prevent bending of the plate, tension springs mounted in said ways to en-
 70 gage the bearings of said holding wheels, and adjusting screws mounted in said frame to engage said springs.

6. In a plate catcher, a frame provided with parallel bearing ways, a shaft mounted
 75 in said frame and having a series of transfer wheels thereon, holding wheels slidingly mounted in said ways to engage each of said transfer wheels at different points upon the periphery thereof, tension springs mounted
 80 in said ways to engage the bearings of said holding wheels, and a pivotal bearing for said frame disposed beneath the shaft of said transfer wheel.

7. In a plate catcher, the combination 85 with a tinning pot, of a frame having a pivotal bearing upon the upper portion thereof and a bifurcated end to embrace a wall of said pot, a transfer wheel mounted in said
 90 frame, and a plurality of holding wheels of less diameter than the transfer wheel and disposed opposite different points upon the periphery thereof.

8. In a plate catcher, a frame, a transfer wheel mounted thereon and having a periph-
 95 ery of soft metal, and a plurality of holding wheels of less diameter than the transfer wheel and having a periphery of soft metal, said holding wheels being disposed opposite different radial points upon the periphery of
 100 said transfer wheel at one side of the vertical axis thereof and at a distance therefrom to prevent bending of the plate.

9. In a plate catcher, a frame, a transfer wheel mounted thereon, a plurality of hold-
 105 ing wheels of less diameter than the transfer wheel and disposed opposite different points upon the periphery thereof, a chute disposed adjacent said transfer wheel upon the opposite side thereof from the holding wheels,
 110 and a flexible driving connection extended from a driving member disposed beneath the center of said transfer wheel.

10. In a plate catcher, a frame, a transfer wheel mounted thereon, a plurality of hold-
 115 ing wheels of less diameter than the transfer wheel and disposed opposite different points upon the periphery thereof, a chute disposed adjacent said transfer wheel upon the opposite side thereof from the holding wheels, a
 120 conveyer disposed to receive material from said chute, spring actuated feed rolls adapted to receive material from said conveyer, and a cleaning device adapted to receive material from said feeding disks.
 125

11. In a plate catcher, a frame, a transfer wheel mounted thereon, and a plurality of
 holding wheels of less diameter than the transfer wheel and disposed opposite differ-
 130 ent points upon the periphery thereof with

one above the horizontal axis of the transfer wheel.

12. In a plate catcher, a frame, a transfer wheel mounted thereon, and a plurality of
5 holding wheels disposed in different horizontal planes opposite the periphery of the transfer wheel.

In testimony whereof I affix my signature in presence of two witnesses.

ALVA F. WARDEN.

Witnesses:

W. H. RICHARDS,
BYARD W. BENNETT.