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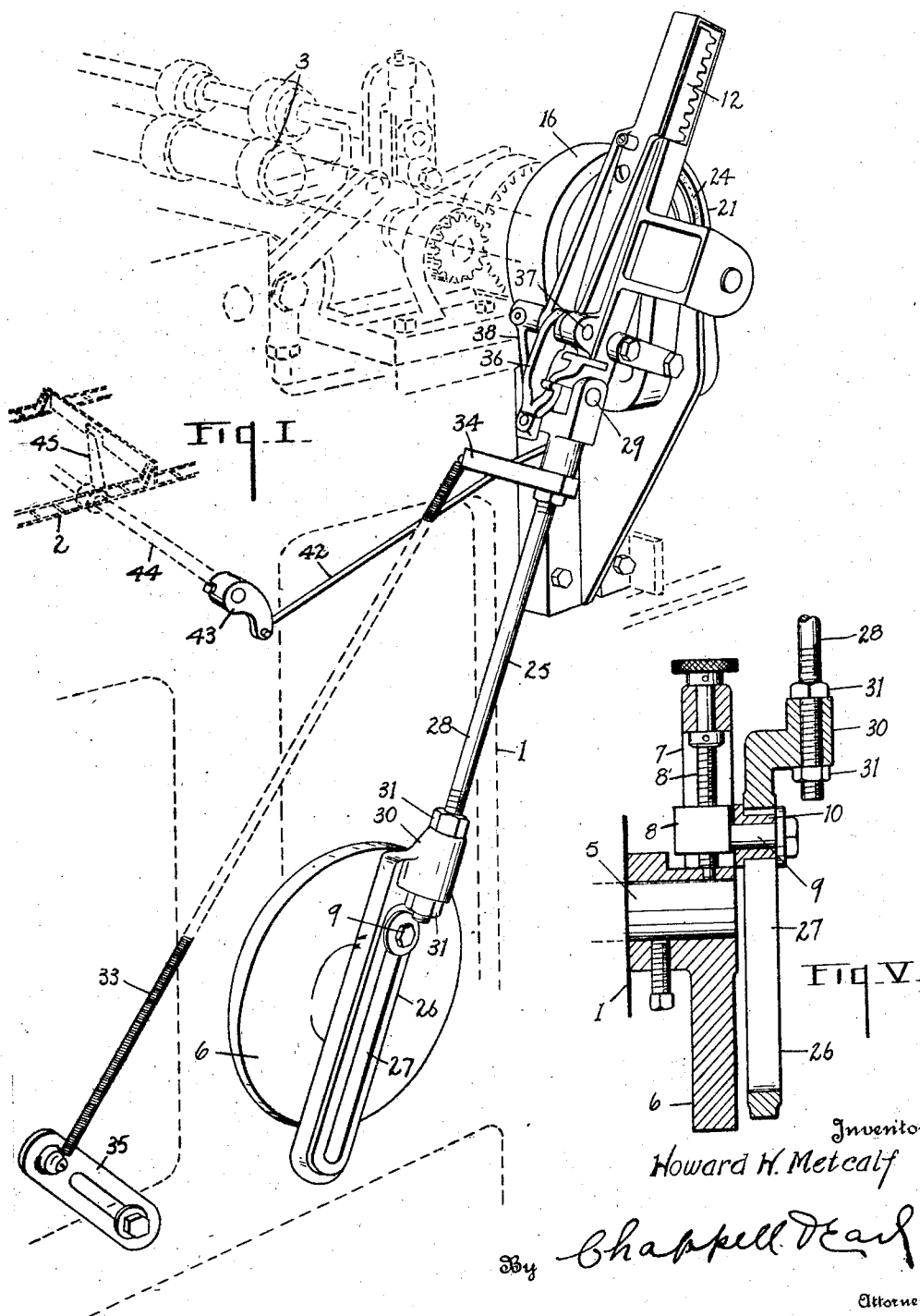
H. H. METCALF

DRIVING MECHANISM

Filed July 24, 1925

1,555,067.

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

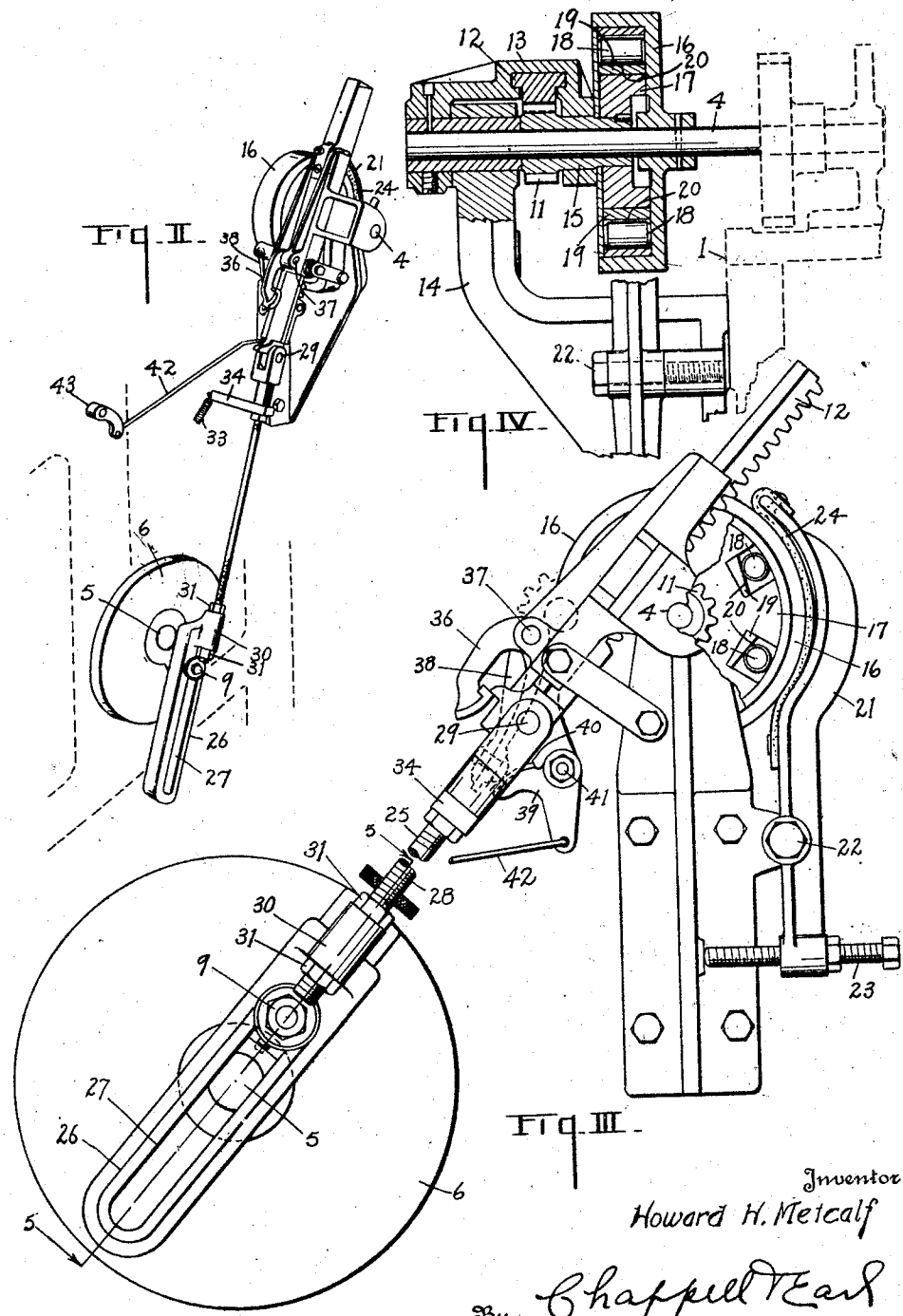


FIG. III.

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UNITED STATES PATENT OFFICE.

HOWARD H. METCALF, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO BATTLE CREEK
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DRIVING MECHANISM.

Application filed July 24, 1925. Serial No. 45,816.

To all whom it may concern:

Be it known that I, HOWARD H. METCALF, a citizen of the United States, residing at Battle Creek, county of Calhoun, State of Michigan, have invented certain new and useful Improvements in Driving Mechanisms, of which the following is a specification.

This invention relates to improvements in driving mechanisms.

My improvements are especially designed by me and I have illustrated the same as embodied in driving mechanism for paper feed of wrapping machines, although my improvements may be readily adapted for and are desirable for use in other relations.

The main objects of this invention are:

First, to provide an improved driving mechanism which is adapted to intermittently drive a part, the same being controlled by means of an article controlled trip, as in a wrapping machine, or for timed actuation, as may be desired.

Second, to provide an improved driving mechanism whereby parts may be actuated only at desired intervals from continuously driven parts.

Further objects, and objects pertaining to details and economies of construction and operation of my invention will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly defined in the accompanying drawing forming a part of this application, in which:

Fig. I is a perspective view of a driving mechanism embodying the features of my invention, parts of a sealing machine being illustrated to show an operative embodiment of my invention.

Fig. II is a fragmentary perspective of certain parts shown in Fig. I in another position.

Fig. III is a fragmentary side elevation of the parts in the position shown in Fig. I.

Fig. IV is a fragmentary view partially in section further illustrating the structural details.

Fig. V is a fragmentary view mainly in section on a line corresponding to line 5-5 of Fig. III.

In the drawing similar numerals of reference indicate similar parts in all of the views.

Referring to the drawing, 1 represents the frame of a sealing machine such as that of the Brownell Patent No. 1,416,165, dated May 16, 1922, and 2 the feed conveyor thereof. 3 indicates the paper feed mechanism which includes a driven shaft 4. Only such parts of the sealing machine are shown as is deemed necessary to illustrate an application of my improvements.

The driving shaft 5 is provided with a crank disk 6 having a radial slot 7 therein to receive the supporting block 8 of the wrist pin 9, this wrist pin carrying a roller 10. The block 8 is adjustably supported in the slot 7 by means of the screw 8' thereby regulating the throw or stroke of the wrist pin.

On the driven shaft 4 is a driving pinion 11 which is driven from the driving rack 12 supported in the slide 13 mounted on the bracket 14 which supports the outer end of the shaft 4, the slide also embracing the hub 15 of the pinion, see Fig. IV.

I provide a ratchet driving connection for the pinion to the shaft 4 which in the structure illustrated comprises the driven drum 16 pinned to the shaft 4 and the driving ratchet member 17 which is keyed to the hub of the pinion. The ratchet rollers 18 are arranged in brackets 19 provided therefor in the driving ratchet member 17, these brackets having inclined surfaces 20 supporting the roller so that on the forward rotation of the member 17 the drum is driven, but is automatically released on the rearward rotation of the member 17.

To prevent overthrow I provide a brake arm 21 which is pivoted at 22 and adjusted by means of the screw 23. This brake arm has a friction shoe 24 coacting with the periphery of the drum 16. The brake may be adjusted to secure the desired friction and to compensate for wear.

The rack 12 is connected by the connecting rod 25 to the crank, the connection comprising a section 26 longitudinally slotted at 27 to engage the wrist pin. The section

28 of the connecting rod is pivoted to the rack at 29 and is disposed through a boss 30 on the section 26 and threaded to receive the nuts 31 whereby adjustment is effected.

5 The spring 33 is connected to an arm 34 on the connecting rod and to an adjustable arm 35 on the frame 1 whereby the spring may be properly tensioned to return the rack to its initial position. The spring, however, is not an essential as the parts are arranged so that gravity tends to return them. However, the spring insures prompt action and is a desirable element in the combination as it may be used to return the parts when they are not so arranged that gravity will effect that result.

The rack is held in its actuating position by means of the dog 36 which is pivoted at 37 and provided with an arm 38 coacting with the trip lever 39 which has a shoe 40 engaging the end of the arm 38. This trip lever is pivoted at 41 on the rack slide, the dog also being mounted on the slide.

The trip lever 39 is connected by a link 42 to an arm 43 on the rockshaft 44 having an arm 45 projecting in the path of the articles carried along the conveyor 2, so that when an article to be wrapped is carried along the conveyor the dog 36 is released, allowing gravity and the spring 33 to carry the rack and connecting rod 28 downwardly to engage the upper end of the slot 37 of the connecting rod with the wrist pin. On the up-stroke of the wrist pin, the rack is actuated to position to be engaged by the dog 36 so that an intermittent drive is provided for the shaft 4, the shaft being driven only when it is desired to feed paper.

I have illustrated and described my improvements in an embodiment which I have found very practical in use. I have not attempted to illustrate or describe various possible adaptations or embodiments which I contemplate as I believe this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

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

50 1. The combination of a driving crank provided with a radially adjustable wrist pin, a driven shaft, a driving pinion rotatably mounted on said driven shaft, a ratchet driving connection for said driving pinion to said driven shaft comprising a driven ratchet drum secured to said driven shaft, a driving member secured to said driving pinion and disposed within said driven ratchet drum, clutch rollers coacting with said driving and driven ratchet members, a brake coacting with said driven ratchet drum, a driving rack coacting with said driving pinion, a supporting slide for said rack, an adjustable connecting rod longitudinally slotted to engage said wrist pin and pivotally connect-

ed to said rack, a return spring for said rack, a dog for holding said rack in its actuated position pivotally mounted on said slide, said dog being provided with a trip arm, a pivoted trip having a shoe coacting with said trip arm, and control means for actuating said trip.

2. The combination of a driving crank provided with a wrist pin, a driven shaft, a driving pinion rotatably mounted on said driven shaft, a ratchet driving connection for said driving pinion to said driven shaft comprising a driven ratchet drum secured to said driven shaft, a driving member secured to said driving pinion and disposed within said driven ratchet drum, clutch rollers coacting with said driving and driven ratchet members, a brake coacting with said driven ratchet drum, a driving rack coacting with said driving pinion, a supporting slide for said rack, a connecting rod longitudinally slotted to engage said wrist pin and connected to said rack, a dog for holding said rack in its actuated position pivotally mounted on said slide, said dog being provided with a trip arm, a pivoted trip having a shoe coacting with said trip arm, and control means for actuating said trip.

3. The combination of a driving crank provided with a radially adjustable wrist pin, a driven shaft, a driving pinion rotatably mounted on said driven shaft, a ratchet driving connection for said driving pinion to said driven shaft comprising a driven ratchet drum secured to said driven shaft, a driving member secured to said driving pinion and disposed within said driven ratchet drum, clutch rollers coacting with said driving and driven ratchet members, a brake coacting with said driven ratchet drum, a driving rack coacting with said driving pinion, an adjustable connecting rod longitudinally slotted to engage said wrist pin and pivotally connected to said rack, a return spring for said rack, a dog for holding said rack in its actuated position, and a trip means for said dog.

4. The combination of a driving crank provided with a wrist pin, a driven shaft, a driving pinion rotatably mounted on said driven shaft, a ratchet driving connection for said driving pinion to said driven shaft comprising a driven ratchet drum secured to said driven shaft, a driving member secured to said driving pinion and disposed within said driven ratchet drum, clutch rollers coacting with said driving and driven ratchet members, a brake coacting with said driven ratchet drum, a driving rack coacting with said driving pinion, a connecting rod longitudinally slotted to engage said wrist pin and connected to said rack, a dog for holding said rack in its actuated position, and a trip means for said dog.

5. The combination of a driving crank

provided with a radially adjustable wrist pin, a driven member, a driving pinion, a ratchet driving connection for said driving pinion to said driven member, a brake co-
5 acting with said driven member, a driving rack coacting with said driving pinion, an adjustable connecting rod longitudinally slotted to engage said wrist pin and pivotally
10 connected to said rack, a return spring for said rack, a dog for holding said rack in its actuated position, and a control means for releasing said dog.

6. The combination of a driving crank provided with a wrist pin, a driven member,
15 a driving pinion, a ratchet driving connection for said driving pinion to said driven member, a brake coacting with said driven member, a driving rack coacting with said driving pinion, a connecting rod longitudi-
20 nally slotted to engage said wrist pin and connected to said rack, a dog for holding said rack in its actuated position, and a control means for releasing said dog.

7. The combination of a driving crank provided with a radially adjustable wrist 25 pin, a driving pinion, a brake coacting with said driven member, a driving rack coacting with said driving pinion, an adjustable connecting rod longitudinally slotted to engage
30 said wrist pin and pivotally connected to said rack, a return spring for said rack, a dog for holding said rack in its actuated position, and a control means for releasing said dog.

8. The combination of a driving crank 35 provided with a wrist pin, a driving pinion, a brake coacting with said driven member, a driving rack coacting with said driving pinion, a connecting rod longitudinally slot-
40 ted to engage said wrist pin and connected to said rack, a dog for holding said rack in its actuated position, and a control means for releasing said dog.

In witness whereof I have hereunto set my hand.

HOWARD H. METCALF.