July 7, 1953 P. L. NEWBOLD 2,644,627

CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 1

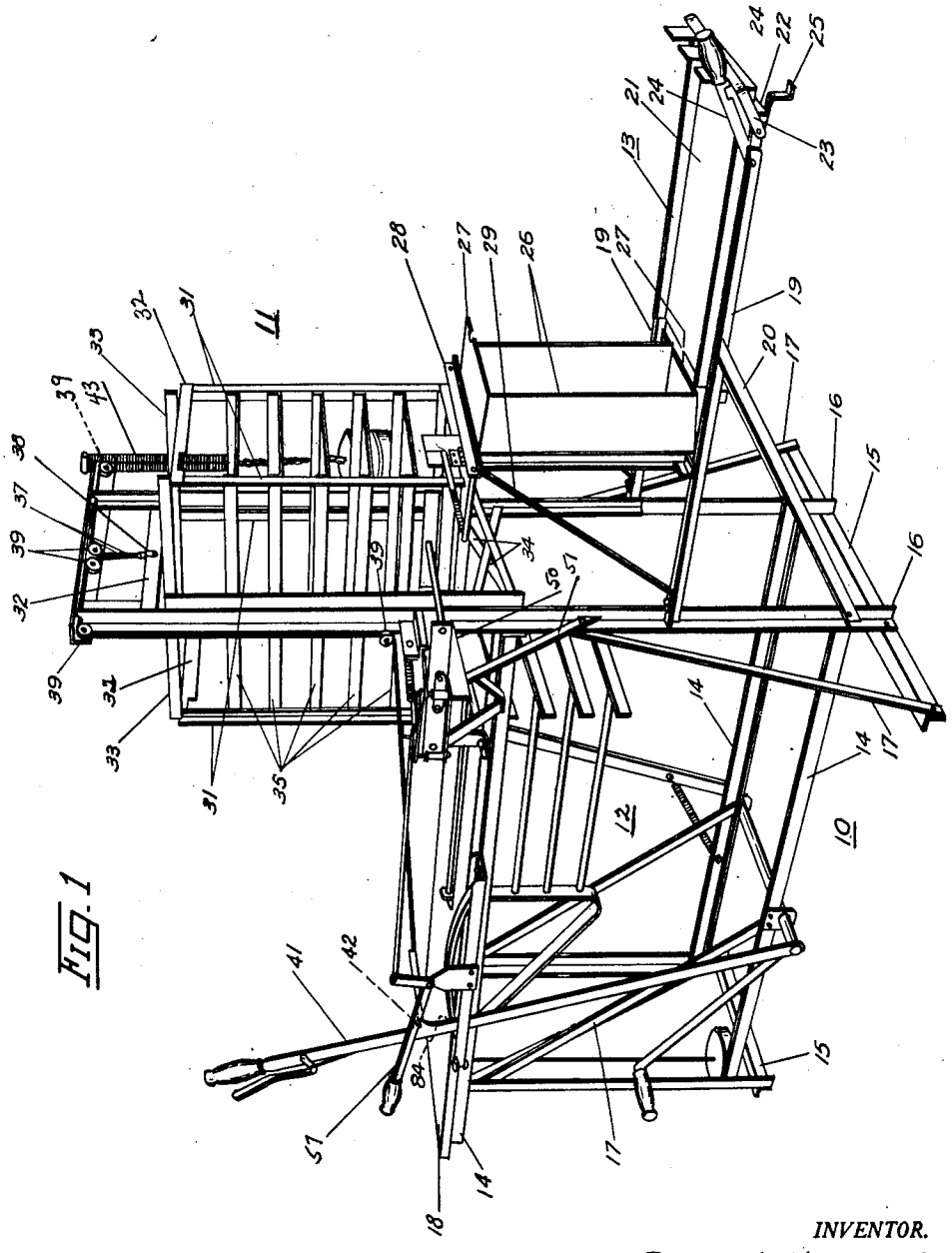

FIG. 1

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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 2

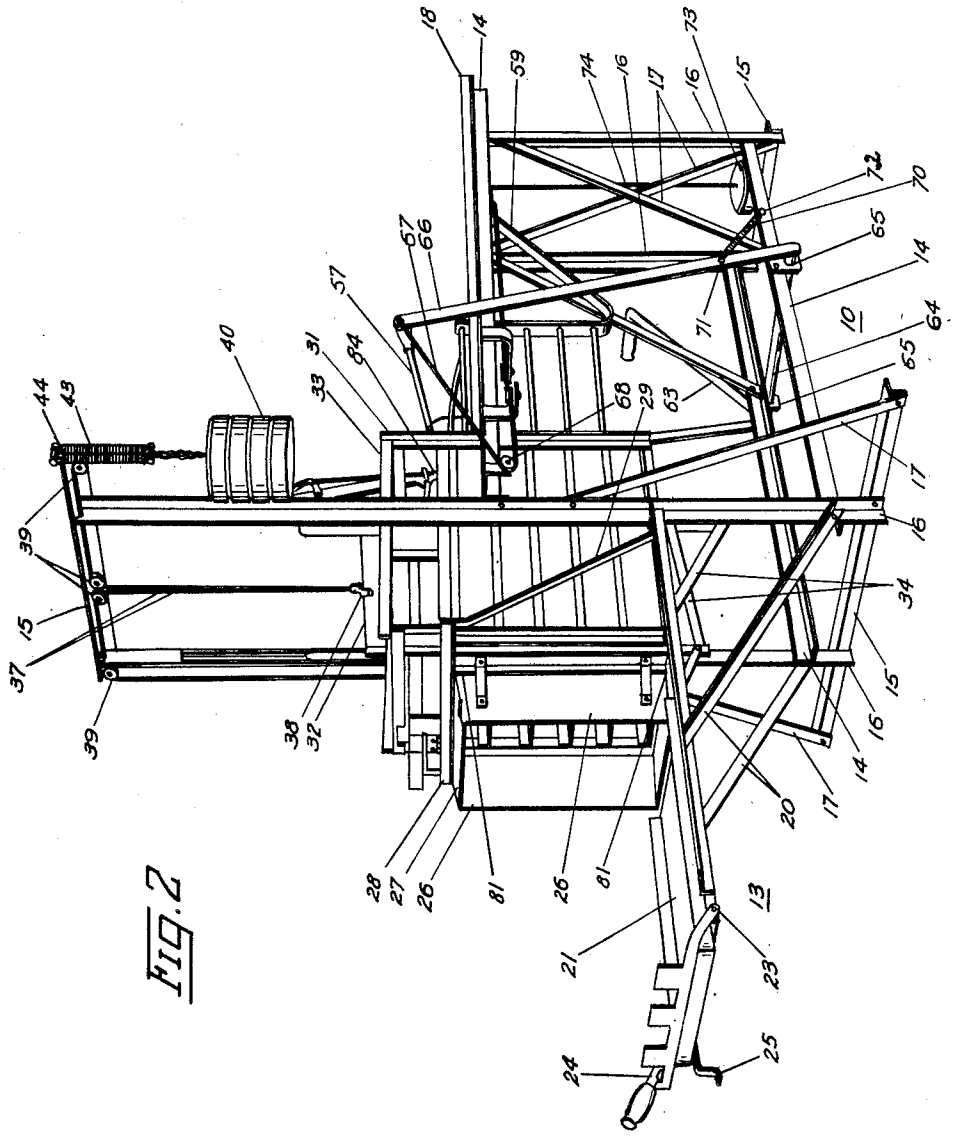

FIG. 2

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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 3

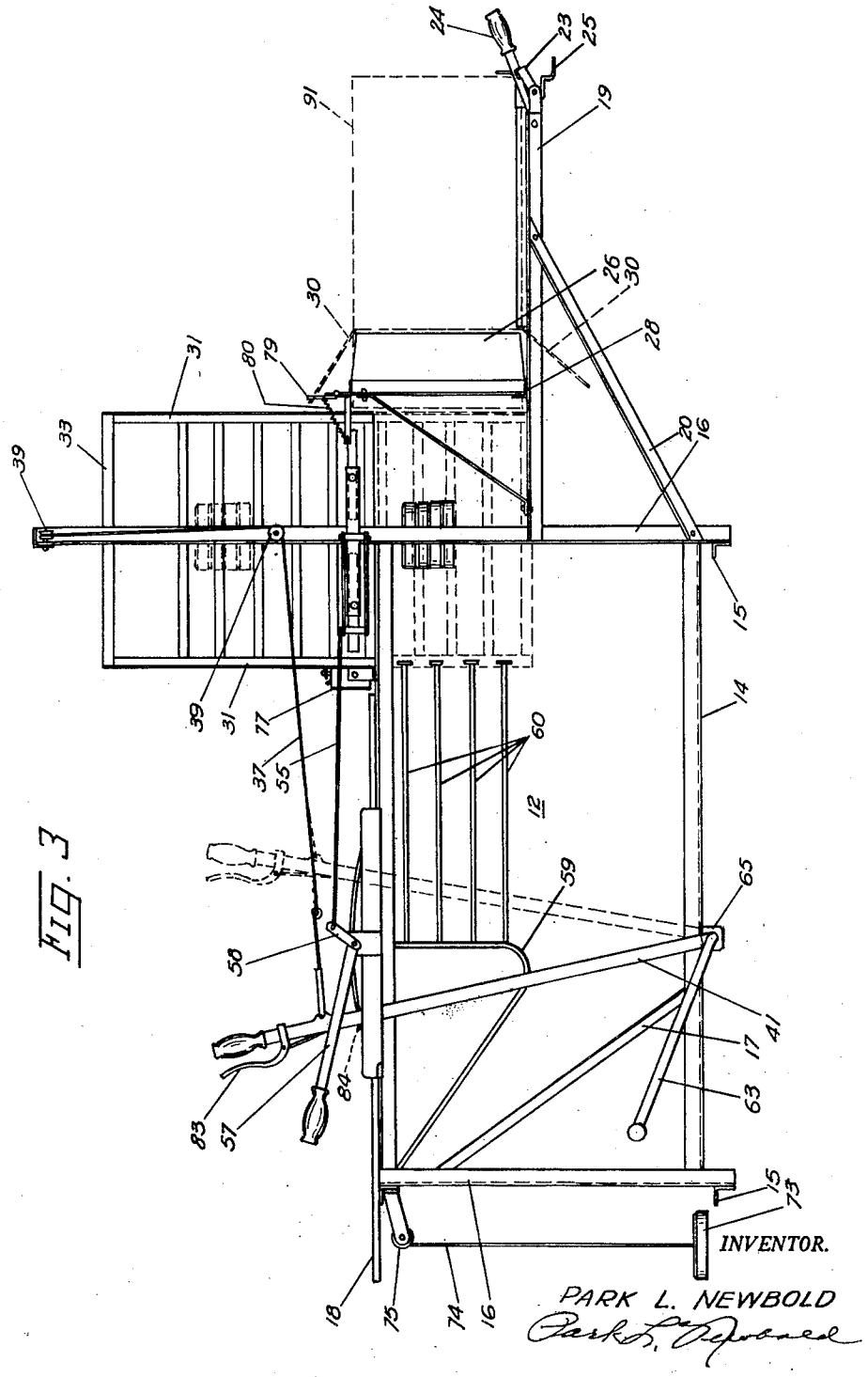

FIG. 3

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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 4

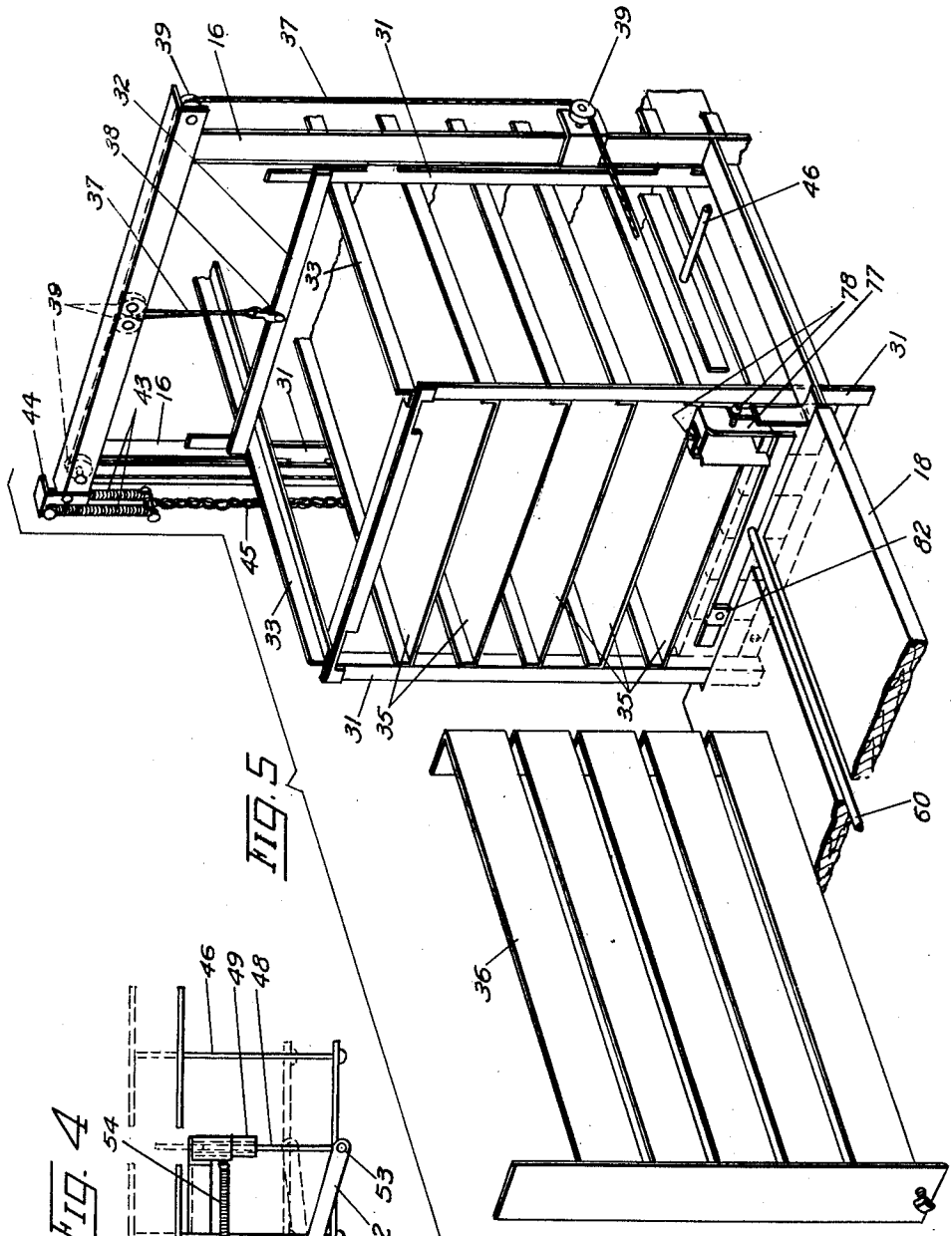

FIG. 5

FIG. 4

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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

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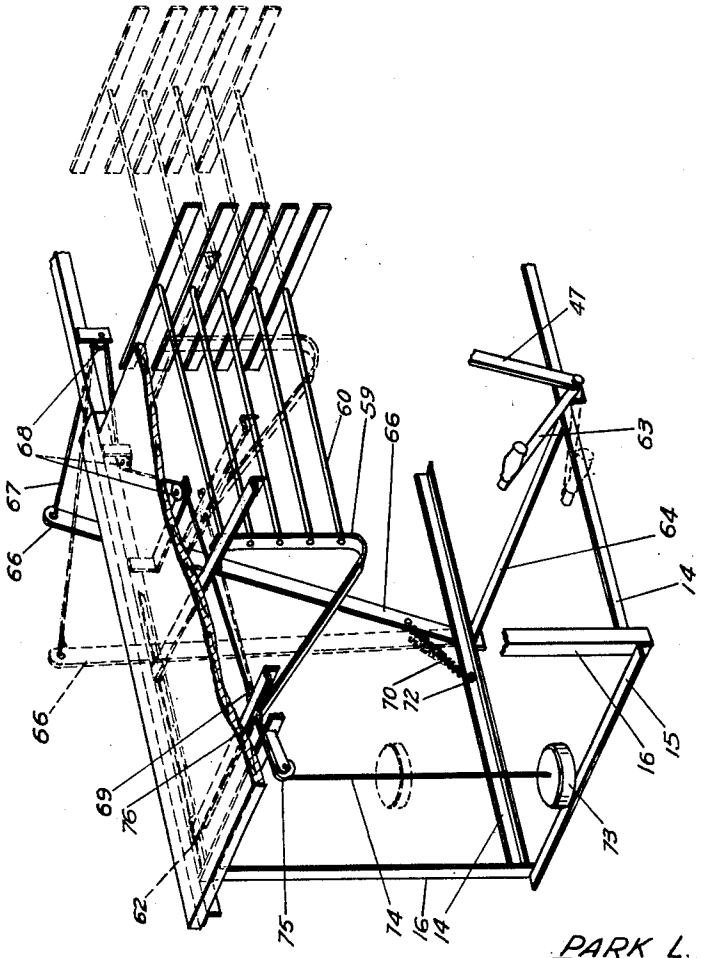
FIG. 6



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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 6

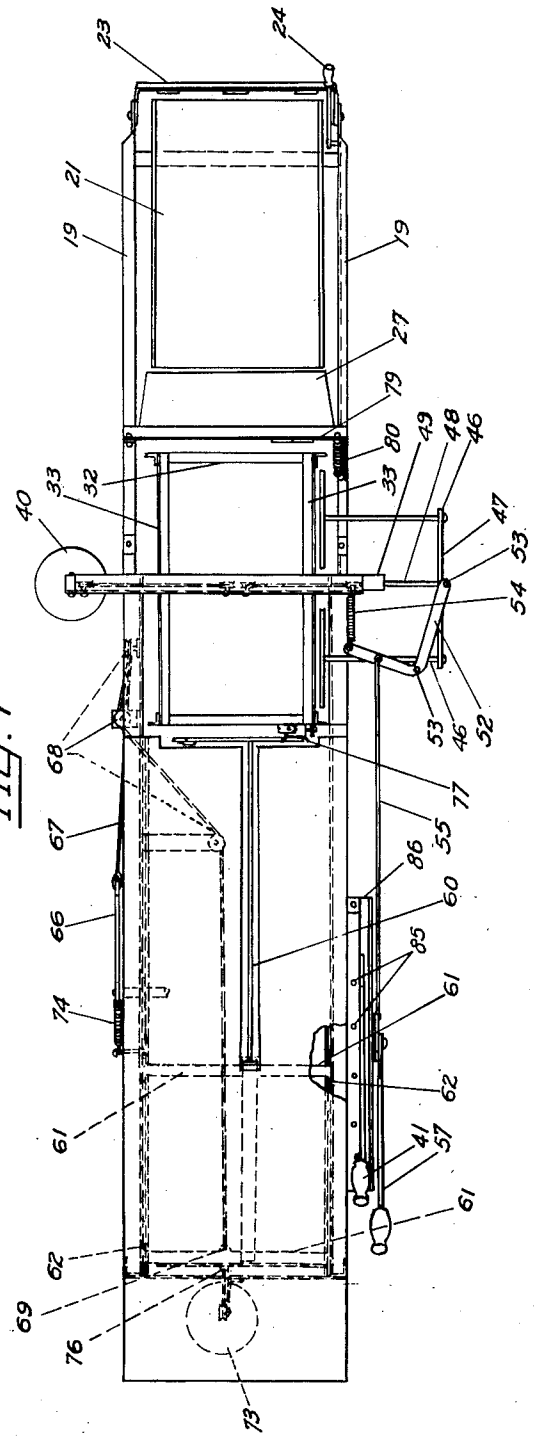

FIG. 7

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CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Filed March 30, 1948 7 Sheets-Sheet 7

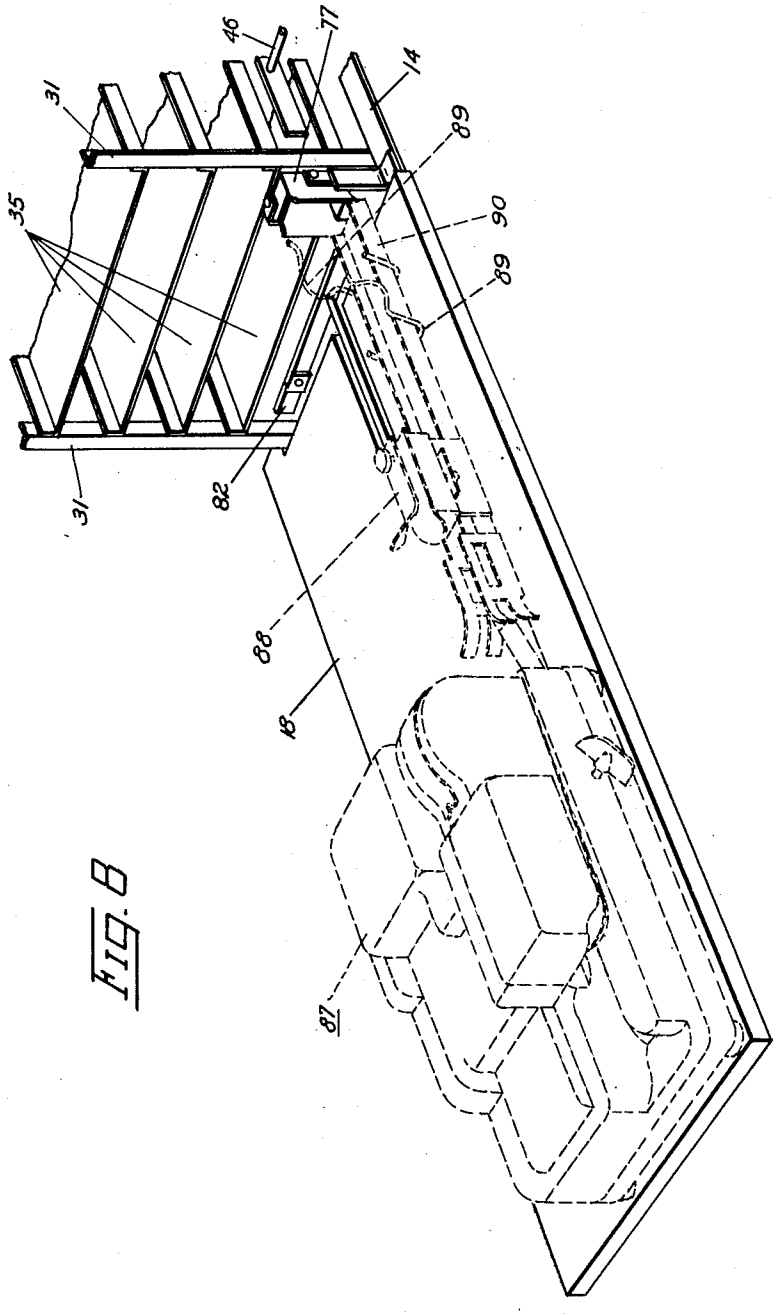

Fig. 8

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UNITED STATES PATENT OFFICE

2,644,627

CIGARETTE RECASER WITH ELEVATOR UNIT AND PUSHER MECHANISM

Park L. Newbold, Cedar Rapids, Iowa

Application March 30, 1948, Serial No. 17,952

2 Claims. (Cl. 226—16)

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This invention relates to a machine for recasing cigarettes after being metered for the application of the State cigarette tax stamp, or other purposes to which it may be adapted.

It is the object of my invention to provide a device of simple and inexpensive construction so that cigarettes are recased mechanically instead of by hand.

Another object of my invention is to provide a device that is easy to operate, does not require frequent adjustments and will give long service.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawings and following specifications wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes may be made therein as fall within the scope of the appended claims without departing from the spirit of the invention.

Figure 1 is a perspective view of my device when viewed from the right and shows in particular the operating levers, elevator unit in raised position and pedal location.

Figure 2 is a perspective view of the left side when viewed from the same angle and illustrates the elevator in lowered position, assisting weight and general outline.

Figure 3 is a right side view showing in detail the elevator operating lever, pusher arms and returning weight.

Figure 4 shows the lever operated position arms and operating arrangement.

Figure 5 shows the elevator tray unit, cigarette carton entrance, adjustment false side, operating pulleys, cable and compensating springs.

Figure 6 is a cut away view showing the pedal operated T pushing members, cooperating cable and return weight.

Figure 7 is a plan view and shows the general outline when viewed from above.

Figure 8 is a general outline of the meter referred to and its discharging trough leading to the entrance to the elevator trays.

Referring now to the drawings, a preferred embodiment of my invention includes a frame indicated generally at 10, elevator assembly 11, pusher arms 12 and discharge platform 13.

The frame 10 is composed of parallel upper and lower members 14, cross members 15, upright members 16, braces 17 and cover 18. Attached to the elongated upright frame members 16 is a platform 13 which is composed of side members 19, braces 20, floor 21, cross members 22,

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release member 23, ratchet lever 24 and rest 25. A tapered guide assembly composed of side members 26, ends 27, frame 28 and braces 29 is attached to the platform 13 in a position to receive the open end of a cigarette case, indicated at 30.

The elevator unit consists of upright frame members 31, cross members 32, side members 33, braces 34, trays 35 and side adjustment member 36. The unit is suspended between the elongated upright frame members 16 by cables 37 and movement is kept in direct line by slides secured to the center upright members 31 and fitting into adjacent grooves in the said elongated members 16.

Control of the elevator is obtained by twin cables 37 pivotally attached to center cross member 32 at 38 thence passing over pulleys located at 39. To the end of one of the cables is suspended a balance weight 40 and the end of the other cable is attached to control lever 41 at 42. A pair of compensating springs 43 are attached to the top cross member 15 at 44 and are connected with the weight 40 by a flexible connection 45.

An assembly composed of twin T shaped arms 46 secured together by cross bar 47 to which is attached a slide bar 48 placed parallel to the elongated parts of the said arms 46 and fitting within a grooved member 49. Said assembly is attached to the right elongated upright frame member 16 at 50 and supported by braces 51. Movement of said assembly is obtained by action of an L-shaped lever 52 pivoted at 53 and to which is attached a return spring 54. A rod member 55 pivotally connects to the L-shaped lever 52 at 56 and extends rearwardly to connect with lever 57 at 58.

A pedal operated pushing unit is placed between the upper parallel frame members 14 and is suspended by slides fitting in grooves in the said frame members. The unit is composed of a main support member 59 to which is attached T-shaped pusher arms 60. Member 59 is attached to cross arms 61 which slide within grooves mentioned above at 62. Foreward movement of this pushing unit is effcted by action of pedal 63 attached to cross shaft 64 and pivotally connected to lower frame members 14 at 65. At the opposite end of cross shaft 64 is attached a lever arm 66. A cable 67 is attached to the upper part of arm 66 and passes over pulleys at 68 to anchor to cross member 61 at 69. A tension spring 70 is connected to lever 66 at 71 and to frame member at 72. Return movement of the pushing unit is obtained by gravity action of a weight 73 attached

to cable 74 passing over pulley 75 and anchored to cross bar 61 at 76.

A guide is provided at 77 for the entrance of the cigarette cartons to the receiving trays 35. Pressure adjustment is regulated at 78. A safety hinged escape member 79 is placed opposite of the entrance guide 77 and is controlled by a spring 80.

To provide for different width cigarette cases one side of the guide assembly 26 is adjustable horizontally on members 28 as indicated at 81 in Figure 2 and an adaptor member 36 shown in Figure 5 consisting of parallel strips attached to an upright end plate with their outer free ends angled so that the unit when placed between the trays 35 reduce the lateral space and subsequent rows of cartons held. The adjacent ends of the pusher arms 60 are fitted with removable screw held extension shoes 82 that provide the necessary horizontal adjustments for these members.

Position of the elevator assembly 11 is controlled by a lever 41, cooperating cable 37, and a locking arrangement operated by a latch 83 pivotally attached to lever 41 and connected to a pin 84 as shown in Figure 2 fitting into spaced holes 85 in anchor member 86.

A meter machine is shown in general at 87, gluer 88, closing arms 89 and trough 90 leading to entrance guide 77. An empty case is shown in position at 91.

In use the elevator 11 is raised to upper position and the lower tray 35 is in place to receive cigarette cartons through guide 77 from trough 90. An empty cigarette case 91 is placed on platform 21 with its open end over guide 26.

The operator stands to the right of the meter 87 and adjacent to the right rear upright member 16. He inserts a cigarette carton, which has been opened to expose the tops of the packages, into a meter machine which prints the State tax on each package. The carton emerges from the meter and is reglued at 88 and closed by arms 89 and proceeds within the trough 90, through the guide 77 into the lower tray 35 as shown in Figure 8. The operation is again repeated thus placing into the lower tray in direct line two cartons of cigarettes. The operator now places his hand on lever 57 and pushes downward causing twin pusher arms 46 to move inwardly against the two cigarette cartons causing them to move sideways a distance equal to the width of the cartons. The operator releases pressure on the lever 57 and it and the pusher arms 46 are returned to normal position by spring 54. This entire process is repeated until the lower tray is filled which holds 10 or 12 cartons depending on the brand of cigarettes being stamped. The operator now grasps handle lever 41 and releases ratchet lever 83 causing the elevator to lower itself to the second tray position. The same process is again repeated until the five trays are full. The elevator is then lowered somewhat farther until the pusher arms 60 are directly in line with the cigarette cartons in the trays. The operator now places his foot on pedal 63, pushes downward causing the arms 60 to move forward against the cartons in the trays and thereby causes them to all move through the guide 26 into the case 91.

The pedal 63 is released and pusher arms 60 are returned to normal position by the weight 73 and the elevator is again raised to upper position by pulling lever 41 rearwardly. The operator now moves to the filled case still resting on the platform 21 and releases ratchet lever 24 causing member 23 to drop, then grasps the case and removes it from the platform.

I claim as my invention:

1. In a cigarette recasing device the combination of a frame, an elevator unit consisting of a series of superposed trays adapted to move vertically between elongated end members of said frame, means for actuating and balancing same, a platform placed in line with the open ends of the trays when in down position, an adjustable tapered box-like guide attached to said platform, an assembly composed of twin T-shaped pusher arms secured together by a cross bar and placed adjacent to the elevator, an actuating mechanism by which the T-shaped arms reciprocate laterally a predetermined distance to impel cartons into rows upon the elevator trays, a pushing assembly composed of a series of T-shaped pusher arms placed within the main frame side members and adapted to reciprocate longitudinally between the elevator tray members to eject said cartons from the trays into a receiving case, means for actuating the pushing assembly, an adjustable tension guide member through which each carton is propelled by a metering device to the trays, and a spring controlled safety outlet member placed in line with said tension guide to permit continuing movement of entering cartons in the event lateral action is interrupted.

2. In a cigarette carton recasing mechanism of the class described the combination of a frame, an elevator, comprising a series of superposed trays, adapted to move vertically between end members of said frame, a container supporting platform spaced to receive cartons from the trays, an adjustable tapered guide attached to the platform for guiding said cartons into the container, a pivotally connected ratchet controlled container release member attached to the platform, a lever and balance weight means for regulating the vertical movement of the elevator, a pair of T-shaped pusher arms placed adjacent to the side of the elevator and adapted to reciprocate laterally to impel cartons into rows upon the trays, an adjustable tension guide member through which each carton moves longitudinally from a meter propelling means to the trays, and a series of T-shaped arms suspended between, and movable parallel to the frame side members and adapted to move lengthwise between the elevator trays to eject cartons into a receiving container.

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