

April 13, 1954

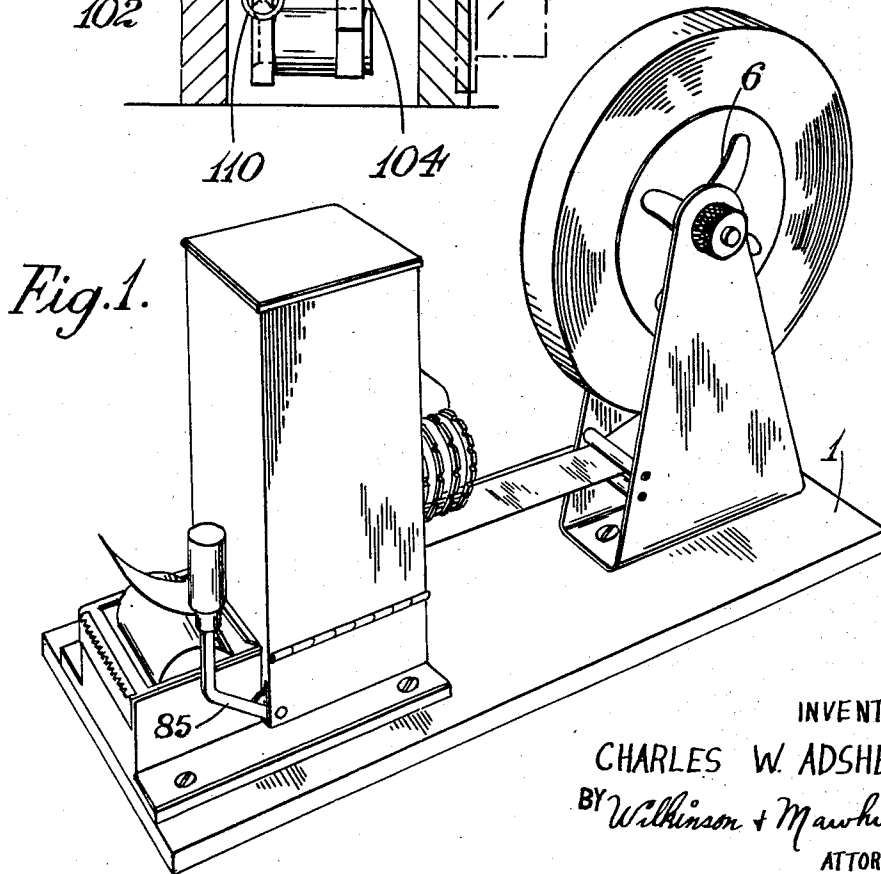
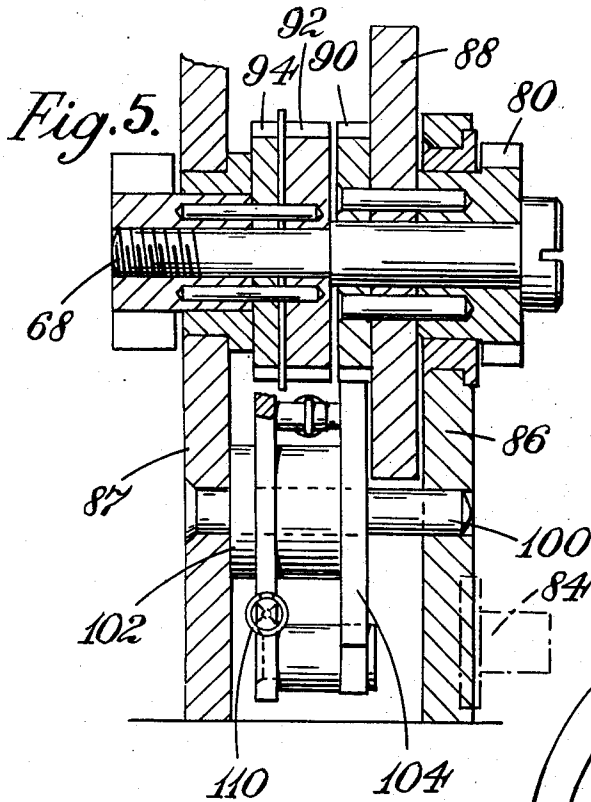
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DRIVE AND FULL-STROKE MECHANISM

Filed Jan. 30, 1950

5 Sheets-Sheet 1



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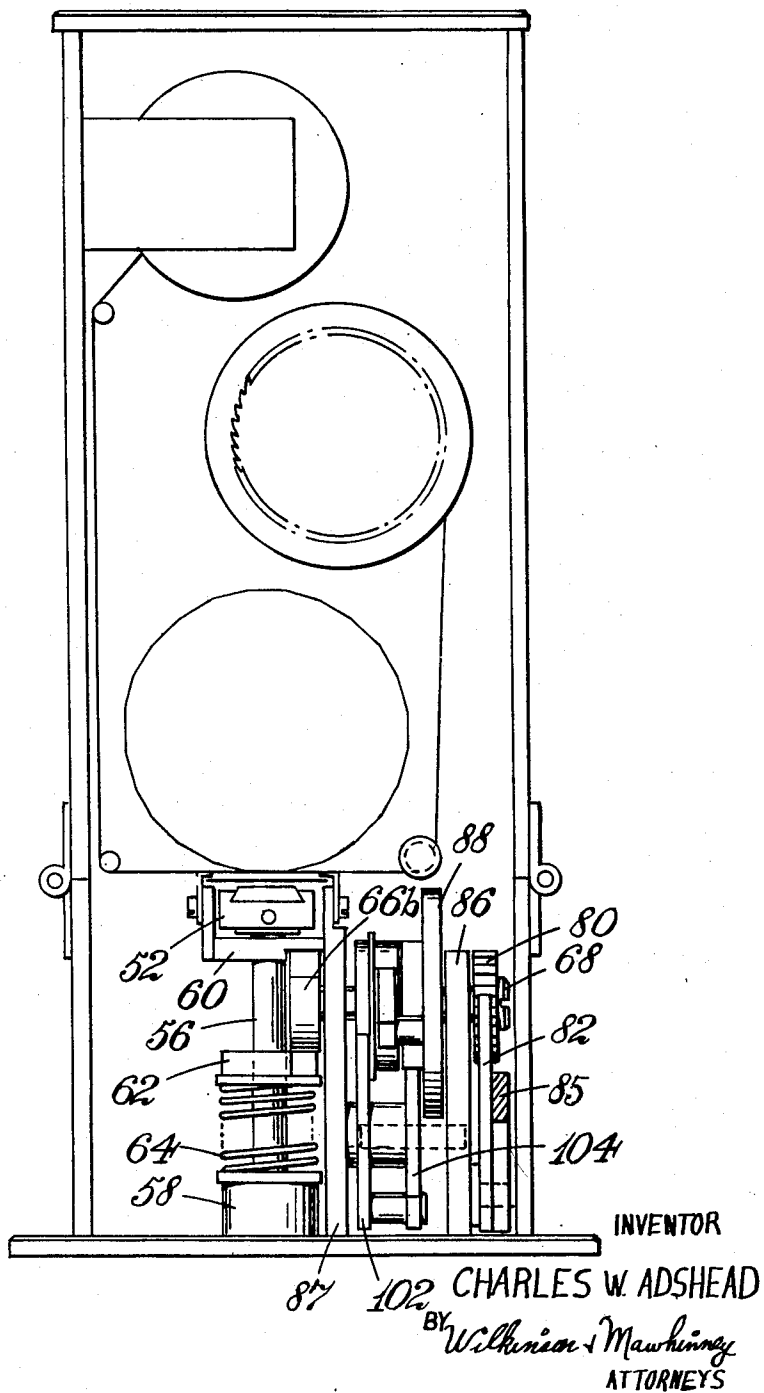
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Filed Jan. 30, 1950

5 Sheets-Sheet 2

Fig. 2.



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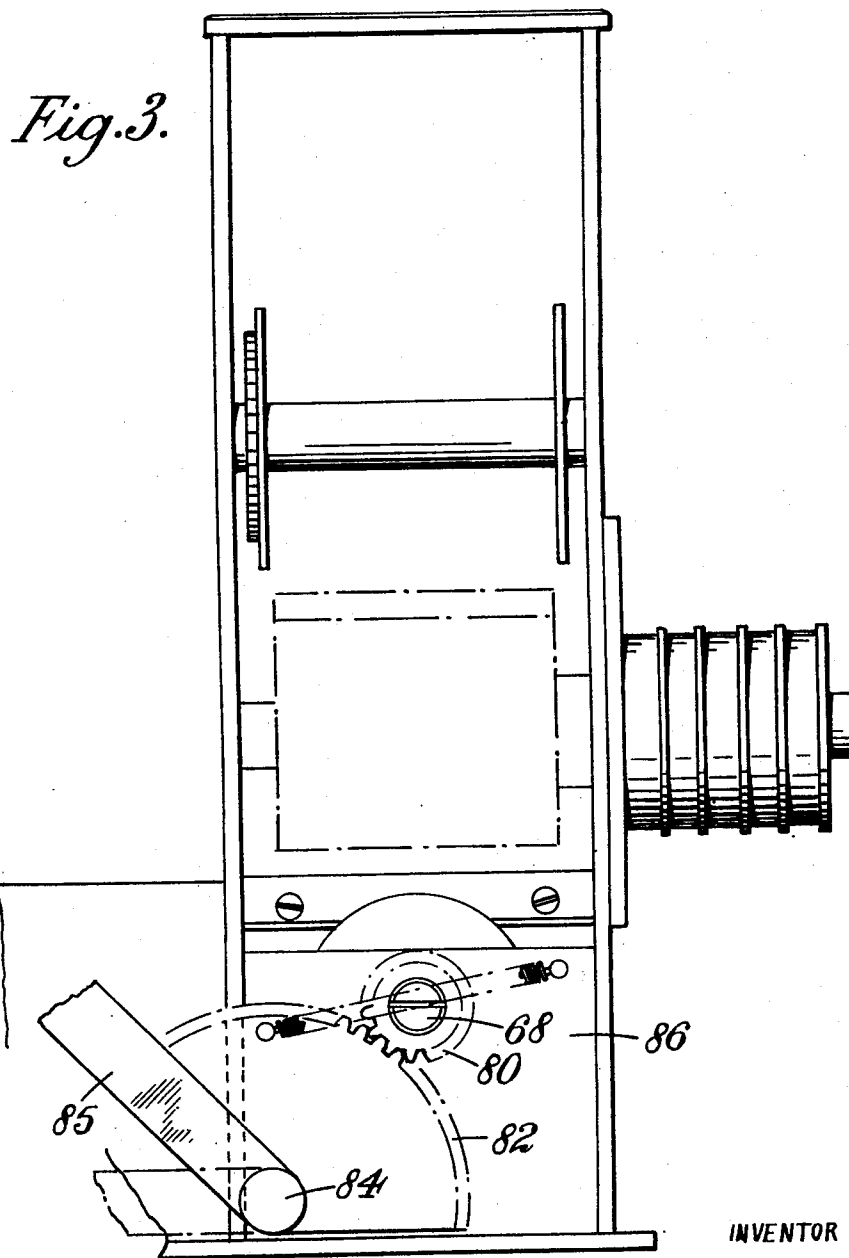
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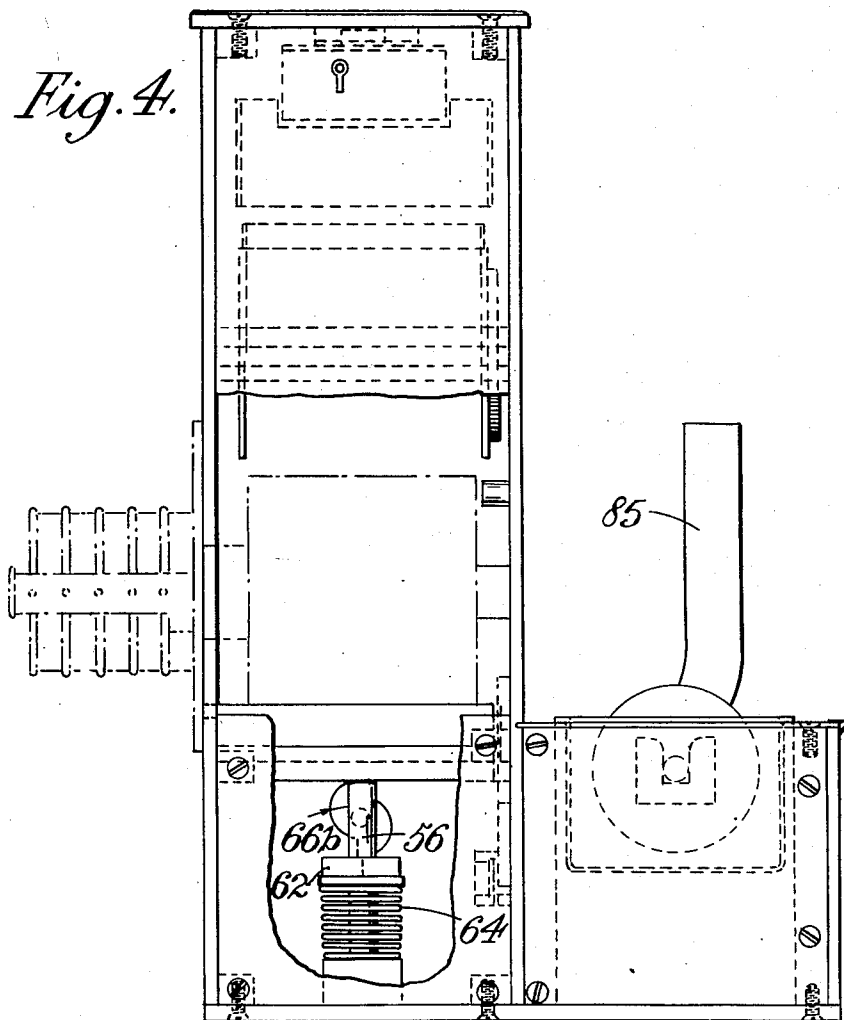
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5 Sheets-Sheet 4

Fig. 4.



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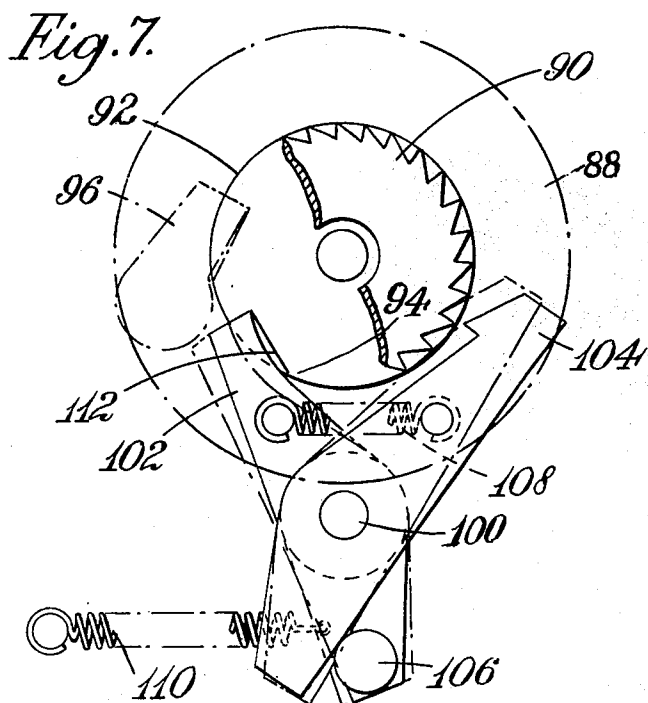
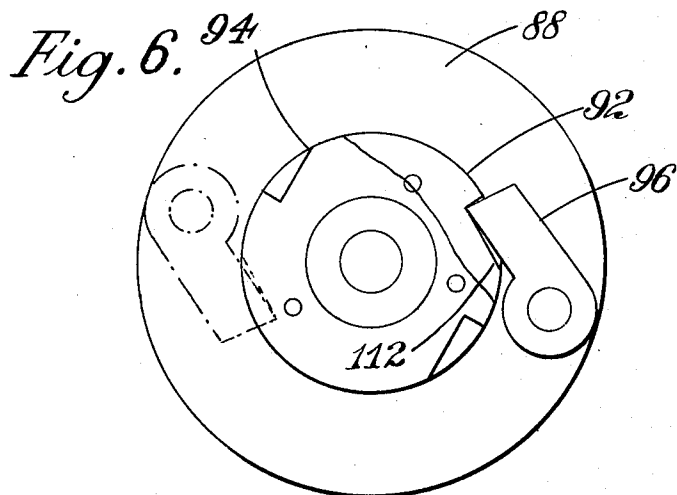
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DRIVE AND FULL-STROKE MECHANISM

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DRIVE AND FULL-STROKE MECHANISM

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Claims priority, application Great Britain
February 3, 1949

1 Claim. (Cl. 74—142)

1

The invention relates to a machine for printing identification tabs, labels and tapes for securing wrappings.

The machine may include handle operated means for effecting reciprocatory movements of the platen towards and away from the discs which constitute the printing means and comprising a shaft or the equivalent, one or more cams on the shaft engaging the platen or a part movable therewith to effect reciprocation of the platen on rotation of the shaft, an oscillatory handle, a driving connection between the handle and the shaft including a driving pawl and ratchet wheel one-way clutch, a non-return pawl and ratchet wheel preventing reverse movement of the handle and means for automatically disengaging the non-return pawl from the ratchet wheel when the handle reaches the end of its operating stroke and to hold the pawl disengaged during the return stroke of the handle whereby it is necessary to effect a complete operating stroke of the handle before it can be returned to its starting position. In one arrangement of the machine the driving ratchet wheel or a wheel movable therewith, is rotated by the handle during its operative stroke and remains stationary during the return stroke and has teeth at spacings corresponding to a complete operating stroke of the handle, engaged by a detent when the handle is at the end of its stroke and the detent is arranged when engaged in a tooth to release the pawl on the non-return ratchet wheel.

A specific embodiment of a machine according to the invention for printing and preparing for use adhesive wrapping tapes will now be described by way of example, and with reference to the accompanying drawings in which:

Figure 1 is a perspective view of the machine,

Figure 2 is a view in the direction II—II in Figure 3 showing the platen and associated mechanism,

Figure 3 is a view in the direction III—III in Figure 2,

Figure 4 is a view in the direction IV—IV in Figure 2,

Figure 5 is an enlarged sectional view of part of the platen operating mechanism shown in Figure 2,

Figure 6 is a detail view in the direction IX—IX in Figure 5 (part of ratchet wheel 94 being shown cut-away to expose part of ratchet wheel 92), and

Figure 7 is a detail view in the direction X—X in Figure 5.

The machine according to this example is mounted on a rectangular base plate 1 and is

2

intended to be secured to the edge of a packing table (see particularly Figure 1).

The machine comprises a vertically movable platen 52 which has a downwardly extending stem 56 supported in a guide bearing 58 and a further bearing 60. The stem is provided with a collar 62 intermediate its length, and a compression spring 64 is mounted around the stem between the collar 62 and the guide bearing 58, such that the spring urges the collar 62 and so the platen 52 vertically upwards into its operating or printing position. A cam 66b engages the upper surface of the collar 62 so that, on rotation of the cam, the platen is moved alternately to its operating position by the spring and then from its operating position by the action of the cam.

The cam shaft 68 carries a gear 80 which is free on the shaft and is engaged by a quadrant 82 pivoted to the casing at 84 and secured to an oscillatable operating handle 85 (Figures 2 and 3). The shaft 68 is supported in bearings in a sub-frame 86, 87 (Figure 5) and the gear 80 has a boss which passes through the bearing in the frame member 86 and is secured to a disc 88 and a ratchet wheel 90 (Figure 5). The cam 66b which is fixed to the shaft 68 has a boss 166 passing through the bearing on the frame member 87 and secured by pins 167 to two ratchet wheels 92, 94 each of which has two teeth. The teeth 194 of the wheel 94 have rear faces 294. Each ratchet tooth 194 extends circumferentially around wheel 94 from its rear face 294 to the rear face 294 of the other tooth 194, and each tooth 194 includes a sloping portion 394. The disc 88 carries a pawl 96 which engages the ratchet wheel 92 and the arrangement is such that when the handle 85 is operated by movement from the upright position to the lower position shown in Figure 3 the wheel 80 is rotated half a turn and, by engagement of the pawl 96 with the wheel 92, rotates the cam 66b half a turn.

Independently pivoted on a short shaft 100 supported in the sub-frame there are two pawls 102, 104 spring-urged together against a stop 106 on the pawl 102 by a spring 108 (Figures 5 and 7). The pawl 102 engages the wheel 94 and is spring urged into such engagement by a spring 110. The purpose of the arrangement just described is to prevent return movement of the handle 85, after an operating stroke has been begun, until the stroke has been completed. At the beginning of an operating stroke the pawl 102 rides up the side 112 of the notch in the wheel 94 and the two pawls 102, 104 are rocked, as a unit, anti-clockwise thereby to engage the pawl

3

104 in the teeth of the wheel 90 and to prevent backward movement of the wheel 90 and consequently of the handle. When the pawl 104 drops into the next notch in the wheel 94 the pawls 102, 104 are swung clockwise as a unit and the pawl 104 is disengaged from the wheel 90 thereby freeing the handle for return movement.

The invention is not restricted to the details described in the above example. It may, for instance, be applied to the printing of additional information on pre-printed labels or slips. Further the tape reel and the supporting bearings therefor may be incorporated in the casing for the printing mechanisms.

I claim:

In a machine for printing identification tabs, labels and tapes for securing wrappings, a drive and full-stroke mechanism comprising an oscillatory handle, a rotatable shaft, an operative connection between said handle and said shaft, said operative connection comprising a pawl-and-ratchet device constituting a one-way clutch, whereby said shaft is driven to rotate on movement of the handle in one direction, a second pawl-and-ratchet device associated with said handle and constituting a one-way brake operative to prevent reverse rotation of said handle, means for automatically rendering said second pawl-and-ratchet device inoperative when said handle completes a forward stroke of predetermined length in the said one direction and for maintaining said second pawl-and-ratchet device inoperative during a return stroke of the handle in the opposite direction, which means comprise at least one ratchet tooth extending

4

around the shaft and rotatable therewith, said ratchet tooth having a circumferential length corresponding to the amount of rotation of the shaft produced by a complete forward stroke of the handle, a detent pawl, resilient means urging said detent pawl to ride on the said ratchet tooth during the forward stroke of the handle and to engage behind the tooth when the handle reaches the end of its forward stroke, a connection between the detent pawl and the pawl of the said second pawl-and-ratchet device operative to disengage the said pawl of the said second pawl-and-ratchet device from the ratchet thereof on movement of the said detent pawl to engage behind the said ratchet tooth as aforesaid and to maintain said pawl of said second pawl-and-ratchet device disengaged from said ratchet thereof during said engagement of said detent pawl behind said ratchet tooth.

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