

E. DOUGLAS.
MARKING MACHINE.

APPLICATION FILED FEB. 26, 1921.

1,420,187.

Patented June 20, 1922.

3 SHEETS—SHEET 1.

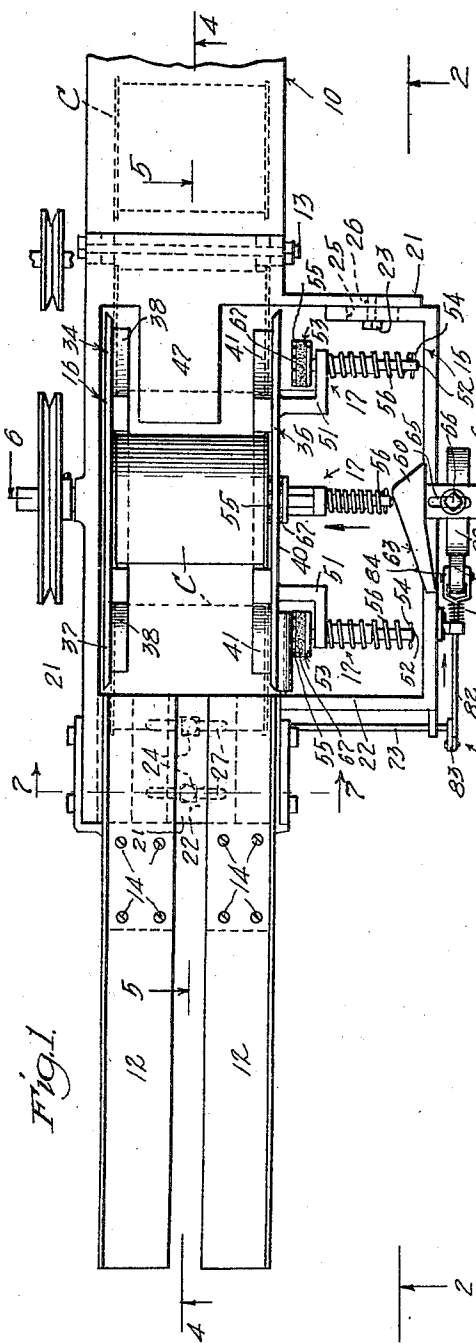


Fig. 1.

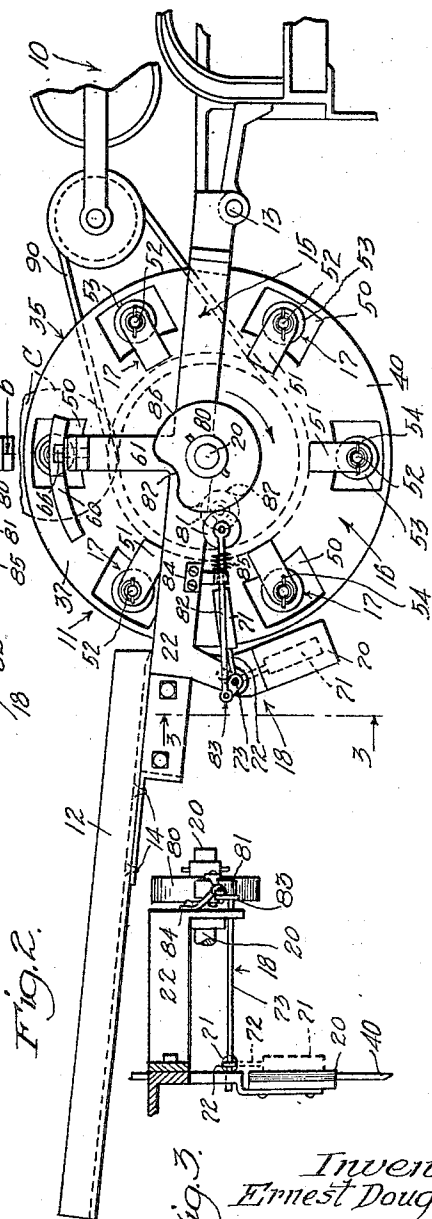


Fig. 2.

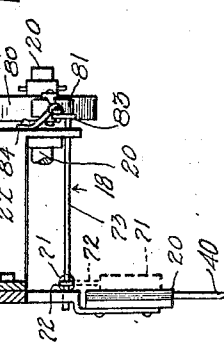


Fig. 3.

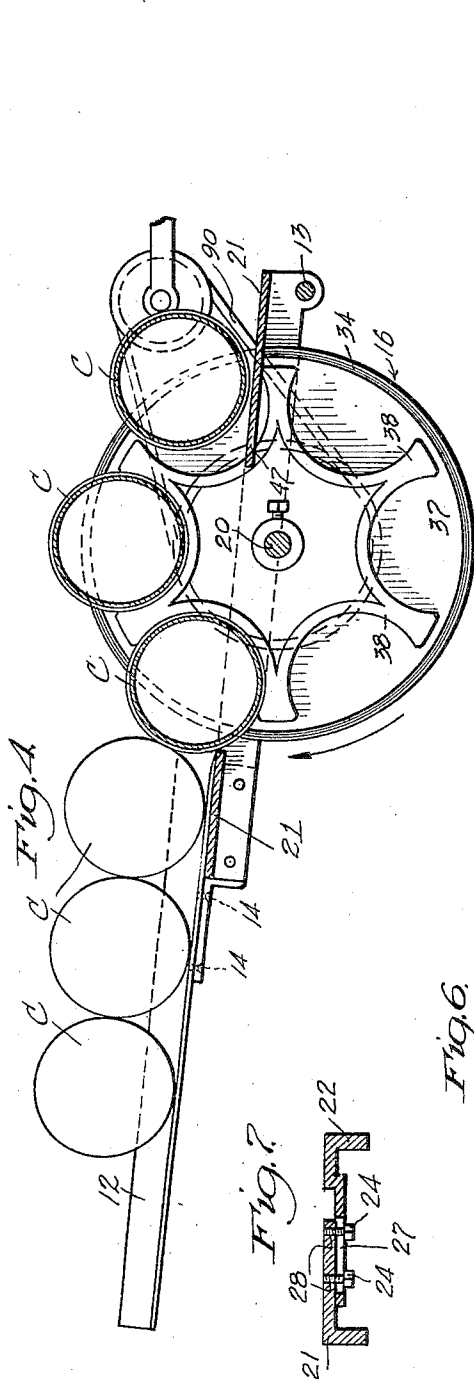
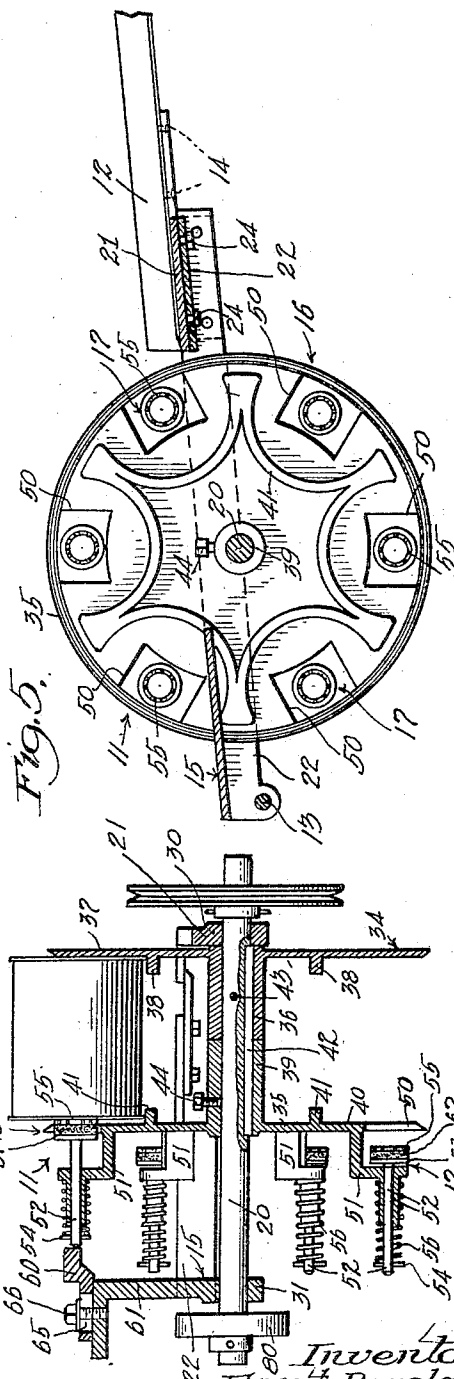
Inventor:
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By *James T. Barkley*
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3 SHEETS—SHEET 2.



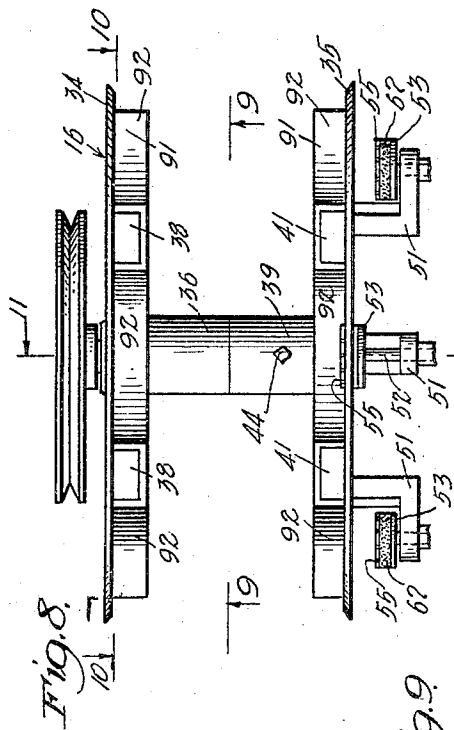
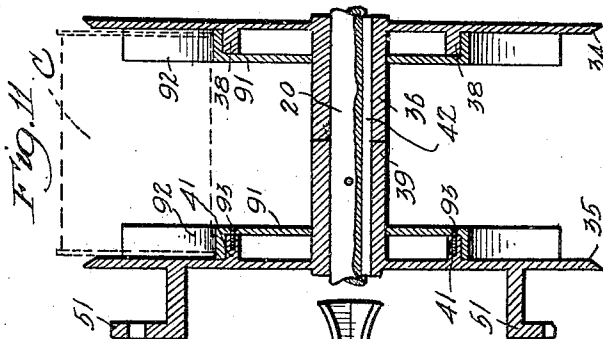
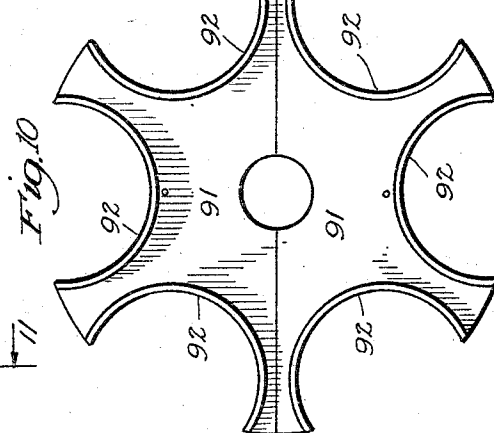
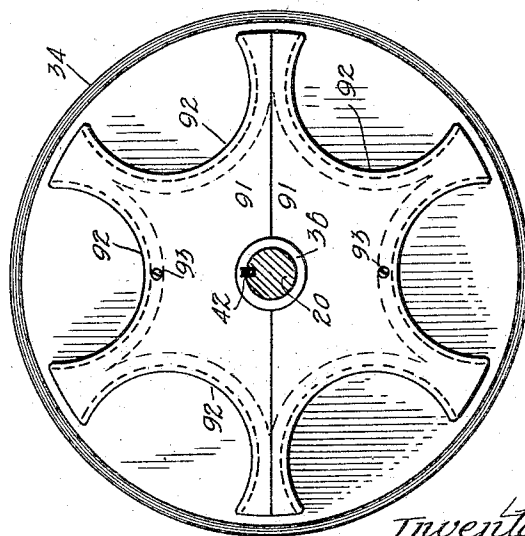
Inventor:
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ERNEST DOUGLAS, OF PORTERSVILLE, CALIFORNIA.

MARKING MACHINE.

1,420,187.

Specification of Letters Patent. Patented June 20, 1922.

Application filed February 26, 1921. Serial No. 448,003.

To all whom it may concern:

Be it known that I, ERNEST DOUGLAS, a citizen of the United States, residing in Portersville, county of Tulare, State of California, have invented new and useful Improvements in Marking Machines, of which the following is a specification.

This invention has to do with a marking machine and more particularly with a machine for marking containers such, for instance, as cans, and the like. It is a general object of the invention to provide a simple, effective and inexpensive machine of this character.

It is a particular object of the invention to provide a simple, effective, automatically inked stamping machine which will operate under ordinary circumstances without becoming filled with ink in a manner to make it mark indistinctly or unintelligibly. The stamps proper are automatically inked at proper intervals in a manner to deposit ink on their high or marking parts and not in their low parts.

The various objects of the invention and the corresponding features and advantages will be best and more fully understood from the following detailed description of a preferred embodiment of the invention throughout which reference is had to the accompanying drawings, in which—

Fig. 1 is a plan view of the machine provided by the present invention showing it connected to the feed end of a labeling machine; Fig. 2 is a side elevation of the machine, being a view taken as indicated by line 2—2 on Fig. 1; Fig. 3 is a view of the inking mechanism, being a view taken as indicated by line 3—3 on Fig. 2; Fig. 4 is a longitudinal sectional view of the machine taken as indicated by line 4—4 on Fig. 1; Fig. 5 is a longitudinal sectional view of a portion of the machine taken as indicated by line 5—5 on Fig. 1; Fig. 6 is a transverse sectional view of the machine, being a view taken as indicated by line 6—6 on Fig. 1; Fig. 7 is a sectional view taken as indicated by line 7—7 on Fig. 1; Fig. 8 is a plan view of a portion of the machine showing it equipped to handle small containers or cans; Fig. 9 is a view taken as indicated by line 9—9 on Fig. 8; Fig. 10 is a view of one of the parts adapted to be arranged in connection with the machine to make it applicable to handling small cans, being a view of such

a part taken as indicated by line 10—10 on Fig. 8; and Fig. 11 is a detailed sectional view taken as indicated by line 11—11 on Fig. 8.

The machine of the present invention, although not limited to marking containers of any particular character, is best adapted to mark cans, or the like, and although not limited to use in connection with any particular machine or machinery, may be advantageously arranged in connection with a labeling machine. For purposes of illustrating my invention and facilitating a clear and accurate understanding of it, I herein show the machine arranged, at or in connection with, the receiving end 10 of a labeling machine. The marking machine 11 is arranged between the feed trough or chute 12 and the receiving end of the labeling machine. In the particular arrangement shown in the drawings the marking machine 11 is hinged to the receiving end 10 of the labeling machine by a pivot pin 13 and is rigidly or firmly connected to the chute 12 by suitable screws 14. With this general arrangement the machine 11 and the feed chute 12 may be positioned at an angle so that cans placed on or delivered to the feed chute 12 will feed into the marking machine 11 by gravitational action whereupon they will be marked and delivered to the labeling machine as hereinafter described in detail.

The marking machine 11 comprises, generally, a frame 15, a can carrier 16 rotatably mounted in the frame 15 and adapted to carry the cans through the machine, a plurality of stamping devices 17 adapted to be operated to mark the cans as they are carried by the carrier 16, and an automatic inking mechanism 18 for the stamping mechanisms 17.

The frame 15 which carries the shaft 29 on which the carrier 16 is mounted, is formed in two sections 21 and 22 adjustably connected at their inner ends by a screw 23 and at their outer ends by screws 24. The screw 23 extends through a slot 25 in the frame part 22 and into a screw threaded bore 26 in the frame part 21. The screws 24 extend through slots 27 in the frame part 22 and extend into screw threaded bores 28 in the frame part 21. The slots 25 and 27 are arranged in the frame part 22 so that the frame parts 21 and 22 can be adjusted transversely, or, as to width. Each of the frame parts 21

and 22 carries a part or side of the feed chute 12 so that the feed chute is adjusted transversely with the frame 15. The frame part 21, and not the frame part 22, is pivotally connected to the receiving end 10 of the labeling machine, thus causing the frame part 21 to be the part moved relative to the labeling machine when the frame 15 is adjusted transversely. In general, the frame 15 is readily attachable to ordinary labeling machines and is adjustable so that the machine can be set to handle cans of various lengths. The shaft 20 which carries the carrier 16 is supported at one end by a suitable bearing 30 in frame part 21 and at the other end by suitable bearing 31 in frame part 22.

The carrier 16 is arranged on the shaft 20 within the frame 15 and comprises two sections 34 and 35. The section 34 of the carrier 16 comprises a hub 36, which carries the shaft 20, and a flange or disk-like part 37 extending from the outer end of the hub 36. A plurality of curved ribs or projections 38 extend from the inner face of the flange 37 to form can carrying sockets as clearly shown in Figs. 4 and 6 of the drawing. The projections 38 are curved about centers located near the periphery of the flange 37, are equally spaced around the flange 37 and are of such size or radius that their end parts come together or connect near the periphery of the flange 37.

The section 35 of the carrier 16 comprises a hub 39, similar to the hub 36, and a flange or disk-like part 40, similar to the flange 37, at the outer end of the hub 39. Ribs or projections 41 extend from the inner face or side of the flange 40, being curved and arranged the same as the projections 38 to form can carrying sockets corresponding to those formed by the projections 38. The sections 34 and 35 are secured on the shaft 20, against rotation and with the projections 38 and 41 opposite or in register with each other, by a key 42. The section 34 is secured on the shaft 20 adjacent the frame part 21 by a pin 43, while the section 35 is set in position on the shaft 20 by a suitable set screw 44. The pin 43 positively secures the section 34 on the shaft 20, while the set screw 44 sets the section 35 on the shaft 20 so that it can be released and moved or adjusted longitudinally on the shaft to any desired position. The projections 38 and 41 on the flanges 37 and 40, respectively, form approximately half circles and are of such size and curvature as to receive and support cans C. As the carrier 16 rotates the several projections 38 and 41 successively come in position where cans C from the feed chute 12 will roll or drop into them, as clearly illustrated in Fig. 4. The cans upon rolling into the projections 38 and 41 are supported or carried by the projections between the flanges 37 and 40 of the two sections of the carrier in the manner

clearly illustrated in Fig. 6 of the drawings. The cans C thus supported or carried in the carrier 16 are moved bodily around with the carrier in the direction indicated by the arrow in Fig. 4 until they are engaged by a projection 47 extending from the frame part 21, which prevent them from further moving around with the carrier and causes them to leave the projections 38 and 41, pass out from between the flanges 37 and 40, whereupon they are free to roll or pass from the marking machine 11 into the feed end 10 of the labeling machine. With continuous operation of the shaft 20 there is a continuous movement of cans through the machines. At any given time there is at least one can being bodily carried by the carrier, one can entering or about to enter the carrier, and one can leaving or about to leave the carrier.

Openings 50 are formed at the periphery of the flange 40 within the projections 41 and angular brackets 51 extend from the outer side of flange 40 at the notches 50. Each bracket 51 slidably carries a rod 52 having a head 53 on its inner end and a pin or washer 54 arranged near its outer end. A rubber stamp, or the like, 55 may be mounted on the head 53 and a spring 56 may be arranged around the rod 52 between the washer 54 and a portion of the bracket 51. The spring 56 thus arranged will normally hold the rod 52 in position where the head 53 is in or against the bracket 51.

As means for operating the rods 52 against resistance of springs 56 to move the heads 53 inwardly through the notches 50, a cam 60 is mounted on an extended portion 51 of frame part 22. The cam 60 has an inclined surface 63 and is supported by the extended part 15, of frame part 22, so that rotation of the carrier 16 will cause the outer ends of the rods 52 to successively come into engagement with the inclined surface 63 and thereby cause the rods 52 to move inwardly as indicated by the arrow in Fig. 1 of the drawings. The cam 60 is positioned so that the rod 52, carried by any particular bracket 51, is moved inwardly, in the manner above described, at a time when a cam C is carried by or in the projections 38 and 41 at that portion of the carrier where that particular bracket 51 is located. Further, the various parts of the apparatus, that is the rods 52, cam 60, etc., are so proportioned and designed that the inward movement of the rods 52 causes the stamps 55 on the heads 53 to engage the ends of the cans to mark them. The cans are not moved or displaced when being marked, but are firmly held against longitudinal movement by the flange 37 of section 34. It is preferred to form the cam 60 with a slot 65 and to mount it by means of a screw 66 arranged through said slot. This manner of mounting the cam 60 permits of its being adjusted to a position where it will

cause the rods 52 to be moved sufficiently to cause proper marking of the cans. In practice it is desirable to interpose a pad 67 of sponge, rubber, or the like, between the stamps 55 and heads 53. The pads 67 yieldingly support the stamps 55 and allow the cam 60 to be set to move the rods 52 slightly more than is absolutely necessary to cause marking of the cans. If the cam 60 is set to move the rods 52 slightly more than is normally necessary there is no danger of the stamps failing to reach and properly mark the cans.

The mechanism provided by the present invention for automatically inking the stamps 55 comprises an ink pad 70, an inking roller 71, adapted to receive ink from the pad 70 and distribute it on the stamps 55, and mechanism for automatically shifting the roller between the position where it inks the stamps 55 and the position where it receives ink from the pad 70. In the particular arrangement shown in the drawings, the pad 70 is stationary and the roller 71 is mounted on an arm 72 extending from a shaft 73. The various parts are arranged and proportioned so that the roller 71 can be moved from the pad 70 to a position where it will engage the stamps 55 by suitable rotation of shaft 73. In Figs. 1 and 2 of the drawings the roller 71 is shown in position where it will engage and ink the stamps 55 and in Fig. 2 it is indicated in position where it is in engagement with the pad 70. The proper rotation of the shaft 73 is effected by a cam 80 through a cam following roller 81, a push rod 82 and an arm 83. The arm 83 is mounted on the shaft 73, the cam 80 is mounted on the shaft 20, and the push rod 82 is supported by a bracket 84 and has one end connected to the arm 83 and carries the roller 81 at the other end in position where it will engage the cam 80. A suitable spring 85 is arranged in connection with the rod 82 to normally press it in the direction indicated by the arrow in Fig. 1 and thereby hold the roller 81 in engagement with the cam 80. The cam 80 has a high part 86 and a low part 87. The high part 86 is curved concentrically with the shaft 20 and is considerably longer than the low part 87 which is curved in such manner as to allow the roller 81 to drop or roll into it a sufficient amount to cause rotation of shaft 73 and movement of the inking roll 71 from the position where it will ink the stamps 55 to the position where it engages the inking pad 70. The low portion 87 of the cam is only sufficiently long to cause the roller to move from the position where it inks the stamps 55 to the pad 70 and immediately back to the first mentioned position. In practice the cam 80 is mounted on the shaft 20 so that the roller 71 moves from the position where it inks the stamps 55 to the pad 70 and back to the first mentioned posi-

tion at a time when no stamp 55 is to be inked. With the above mentioned construction and arrangement each stamp 55 is inked each time the carrier makes a revolution; thus assuring adequate inking of the stamps and therefore proper marking of the cans. Further, by providing a roller to distribute the ink from the pad 70 to the stamps 55, the stamps are not clogged or filled with ink in a manner to make them mark indistinctly or unintelligibly. The roller 71 rolls over the stamps 55 and rolls the ink onto the high or marking parts of the stamps and does not wipe ink into the low parts of the stamp. Although I now show only a single form of inking mechanism it will be understood that any suitable mechanism for evenly and adequately distributing the ink to the stamp may be provided. For instance there are various arrangements of inking disks, rollers, etc., that might be advantageously used.

With the construction above described it will be obvious how the frame 15 and carrier 16 may be adjusted or set so that the machine will carry or handle cans of various lengths. Further, it will be obvious how the carrier 16 may be constructed with various numbers of projections 38 and 41 so that it will carry or handle any desired number of cans each revolution. The shaft 20, and therefore the carrier 16, may, of course, be driven at any desired speed and in any desired manner. In the drawings I have shown the shaft 20 driven from the labeling machine by a belt 90.

In Figs. 8, 9, 10 and 11 of the drawings I illustrate a manner in which the carrier 16 may be adapted to handle and properly carry cans of smaller diameter than could be properly handled by it in the form in which it has been hereinabove described. Two plates or fillers 91, formed of two halves, are adapted to be arranged in connection with the carrier, one in connection with the section 34 and one in connection with the section 35, to make it applicable to handle cans of small diameter. The plates are made to fit against the inner faces of the flanges 37 and 40 and over, or within, the projections 38 and 41, and are provided at their peripheries with curved notches or recesses 92 forming sockets adapted to receive the cans in the same manner as the projections 38 and 41. The plates are formed in two parts so that they can be arranged on the two sections of the carrier 16 without taking the machine completely apart, and are adapted to be secured in place by suitable screws 93 arranged through them and into the flanges of the sections 34 and 35. From the drawings it will be readily understood how the plates act to make the carrier applicable for carrying cans of small diameter and it will be obvious how plates having various sized notches 92 may be provided so

that the carrier will properly handle cans of various sizes.

Having set forth only a preferred embodiment of my invention I do not wish to limit myself to the particular details hereinabove set forth but wish to reserve to myself any changes or variations that may appear to those skilled in the art or that may fall within the scope of the following claims.

10 Having described a preferred form of my invention, I claim:

1. In a machine for marking cans or the like, a frame, a can carrier rotatably mounted in the frame to receive cans at one end 15 of the frame and carry them to the other, a stamp carried by the carrier, a cam mounted on the frame to actuate the stamp to mark the cans while they are being carried by the carrier, an ink carrier, and a cam actuated roller adapted to receive ink from the ink carrier and deposit it on the stamp when the stamp is unactuated.

2. In a machine for marking cans or the like, a frame, a rotating shaft carried by the frame, a can carrier mounted on the shaft to receive cans at one end of the frame, carry them bodily, and deliver them at the other end of the frame, a stamp carried by the carrier, a cam mounted on the frame to 30 actuate the stamp to mark the cans while they are being carried by the carrier, an ink pad mounted on the frame, a roller mounted on the frame, and cam controlled means for normally holding the roller in position to be 35 engaged by the stamp and causing it to move into engagement with the pad between the times when it is engaged by the stamp.

3. In a machine for marking cans or the like and adapted to be attached to a labeling machine or the like, a can carrying and marking mechanism comprising a rotating

can carrier including two parts adjustable relative to each other to carry cans of different sizes, and a stamp mechanism in connection with one part of the can carrier 45 operating to mark cans while they are carried by the carrier, and an adjustable frame including two parts adjustable relative to each other to attach to various labelling machines and to allow for adjusting the parts 50 of the can carrier.

4. In a machine for marking cans or the like, a rotating can carrier having a socket adapted to receive and hold a can of one size, a filler adapted to be attached to the 55 can carrier to reduce the size of the socket so that it is adapted to receive and hold a can of smaller size, and a marking device cooperating with the carrier to mark cans carried by it when the filler is not attached 60 to it and when the filler is attached to it.

5. In a machine for marking cans or the like, a rotating can carrier including two spaced parts each having a socket adapted to receive and hold a can of one diameter, the 65 parts being adjustable relative to each other to vary their spacing so that they will receive and hold cans of different lengths, fillers adapted to attach to the parts of the carrier to reduce the size of the sockets so 70 that they will receive and hold a can of a smaller diameter and a marking device cooperating with the carrier to mark cans while they are carried by it.

In witness that I claim the foregoing I 75 have hereunto subscribed my name this 17 day of February, 1921.

ERNEST DOUGLAS.

Witnesses:

F. W. VELLIE,

A. HUTCHESON.