

May 8, 1951

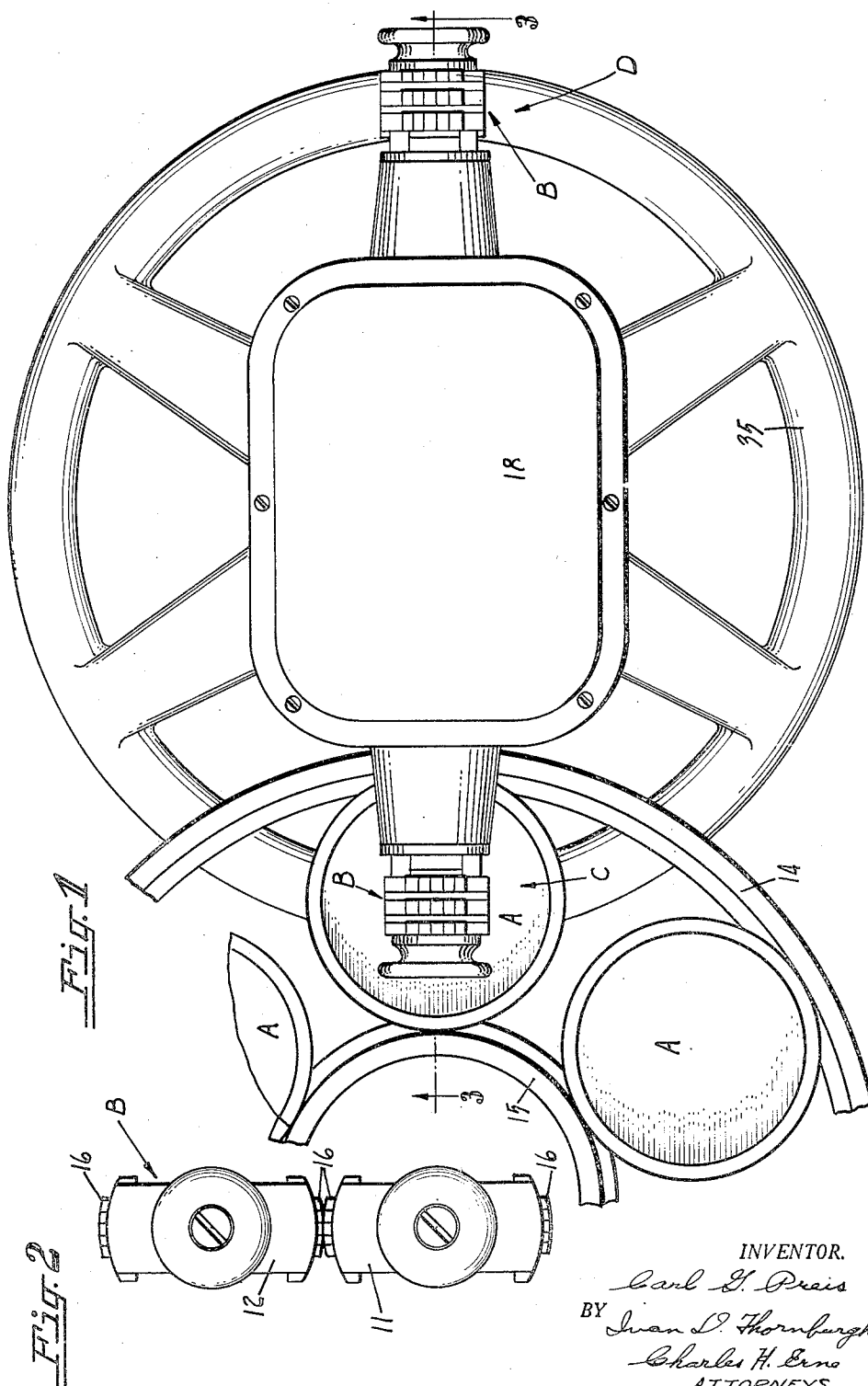
C. G. PREIS

2,551,633

CHANGEABLE MARKING MECHANISM

Filed June 26, 1946

2 Sheets-Sheet 1



May 8, 1951

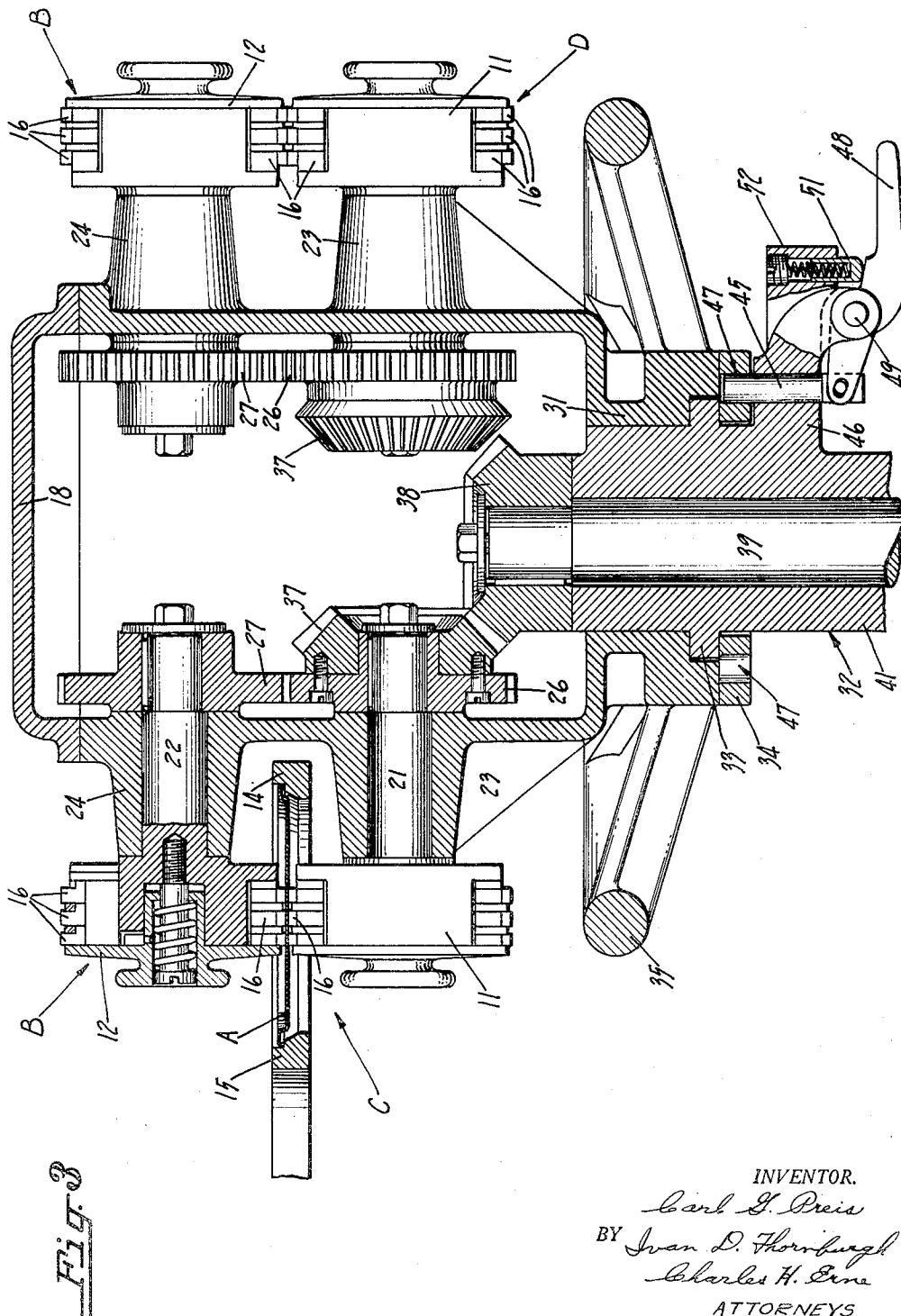
C. G. PREIS

2,551,633

CHANGEABLE MARKING MECHANISM

Filed June 26, 1946

2 Sheets-Sheet 2



INVENTOR.

Carl G. Preis

BY *Ivan D. Thornburgh*

Charles H. Eme

ATTORNEYS

UNITED STATES PATENT OFFICE

2,551,633

CHANGEABLE MARKING MECHANISM

Carl G. Preis, Forest Hills, N. Y., assignor to
American Can Company, New York, N. Y., a
corporation of New Jersey

Application June 26, 1946, Serial No. 679,425

4 Claims. (Cl. 101—6)

1

The present invention relates to a marking mechanism for a machine for marking container or can parts by way of a rotating marking head and has particular reference to a multiple unit mechanism comprising active and inactive marking units which are quickly interchangeable to facilitate proper marking of the can parts.

An object of the invention is the provision of a marking mechanism for marking can parts by way of a rotating marking head wherein the mechanism is provided with a multiplicity of marking units so that while one of the units is actively engaged at a marking station, another of the units is inactively disposed at a service station where it is readily accessible for servicing for subsequent use.

Another object is the provision of such a marking mechanism wherein an inactive serviced marking unit may be quickly interchanged for an actively engaged unit with a minimum time loss in the actual marking of the can parts.

Another object is the provision of such a marking mechanism wherein only a marking unit placed in operative position at the marking station may be actuated for marking can parts while all other marking units are held in an inactive or idle condition so they may be adjusted or otherwise serviced for subsequent use.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a top plan view of a marking mechanism embodying the instant invention;

Fig. 2 is a front elevation of a marking unit used in the mechanism; and

Fig. 3 is a sectional view taken substantially along the line 3—3 in Fig. 1, with parts broken away.

As a preferred embodiment of the instant invention the drawings illustrate a marking mechanism for embossing or impressing into sheet metal can ends A a desired mark or indicia such as those used in the can making and packing industries. The mechanism may form a part of a more elaborate machine and is equally well adapted to printing and other marking operations and to applying such mark or indicia to numerous articles other than can ends.

Embossing of the can ends is effected preferably by a marking unit B which includes a pair of rotary marking heads 11, 12 (Figs. 1, 2 and 3) between which the can ends pass at a marking

2

station C, as the heads rotate to perform the marking operation. During this passage between the marking heads, the can ends are supported on a pair of spaced and parallel stationary tracks or guide rails 14, 15 disposed adjacent the marking mechanism and secured to the machine to which the mechanism is attached. The can ends are propelled along these tracks and through the marking station in any suitable manner in time with the rotation of the marking heads. The marking is done by interchangeable type elements 16 or other marking elements which are carried in the marking heads.

The marking mechanism illustrated in the drawings shows two marking units B and these units are located one each in two opposing sides of a rotatable housing 18. The marking heads 11, 12 of each unit are disposed preferably one above the other. The two heads are mounted on the outer ends of rotatable spaced and parallel shafts 21, 22 carried in bearings 23, 24 formed in the housing 18. The inner ends of the shafts carry meshing spur gears 26, 27 which are driven in a manner which will be hereinafter explained. By this means the heads 11, 12 of each unit will rotate in unison.

The housing 18 is rotatable so that one or the other of the marking units B may be rotated into operative or active position at the marking station C for marking the can ends A as they pass along the guide rails 14, 15 as hereinbefore mentioned. For this purpose the housing 18 is formed with a depending hub 31 which is rotatably mounted on the upper end of a stationary cylindrical support or column 32. The column may be a part or may be secured to the frame of the machine to which the marking mechanism is attached.

The lower end of the housing hub 31 rests on a flange 33 which is formed on the column. A retainer ring 34 secured to the hub and engaging against the lower surface of the flange retains the housing in place against vertical movement while permitting the housing to rotate on the column. Rotation of the housing preferably is effected manually and a handwheel 35 is provided for this purpose. This handwheel is formed on the hub 31 and completely surrounds the hub.

Hence by manipulating the handwheel 35, the housing 18 may be freely rotated and through this rotation, either one or the other of the marking units B may be shifted into active position at the marking station C. When one marking unit B is in such an active position at the marking

station, the opposite marking unit is located in an inactive position at an idle or service station D where it is clear of other parts of the machine. At this service station free access may be had to the inactive marking unit. Changing of the type 16 or adjustment of the heads 11, 12 or any other servicing required to fit the unit for subsequent use may be effected while the unit is inactive. Such service often includes changing for a different mark or a different position of the mark.

The heads 11, 12 of a marking unit B when shifted into an active position at the marking station C are rotated continuously by a bevel gear 37 which is mounted on the inner end of the lower marking head shaft 21. There is one of these gears 37 on each marking unit B. When a unit is at the marking station the gear meshes with a bevel driving gear 38 which is mounted on the upper end of a vertical drive shaft 39.

The drive shaft 39 is journaled in a bearing 41 formed in the stationary column 32. The shaft is continuously rotated in any suitable manner in time with the movement of the can ends A to be marked as they pass through the marking station C. The bearing 41 in which the shaft is journaled is disposed in an eccentric position in the column 32 so that the driving gear 38 on the shaft will mesh only with the bevel gear 37 of the marking unit B disposed at the marking station. In this position, the driving gear is clear of the bevel gear 37 of the unit disposed at the service station and thus this unit is inactive. Therefore the heads of the inactive unit remain stationary as long as the unit is at this idle station.

Hence when the housing 18 is rotated to shift a marking unit B from inactive position at the idle station, into active position at the marking station, the gear 37 of the unit being shifted comes into mesh with the driving gear 38. The driving gear thereafter rotates the heads of the unit to perform its marking operation. In making this shift, the machine preferably is stopped momentarily to prevent injury to the parts of the mechanism.

As the serviced marking unit B enters the active position at the marking station C, the opposite marking unit simultaneously enters the service station. This action of the outgoing unit takes its driving gear 37 out of mesh with the driving gear 38 and hence this unit is reduced to an inactive status. In this manner the two marking units B are quickly interchangeable with a minimum loss of machine operation to facilitate proper marking of the can parts.

After each shift or partial rotation of the housing 18 during an interchange of the marking units B, the housing is locked against rotation to retain the marking units at their proper stations. This locking of the housing against movement is brought about preferably by a locking pin 45 (Fig. 3) which is carried in a lug 46 formed on the column 32 adjacent its support flange 33. This locking pin engages in a hole 47 formed in the housing retainer ring 34. There are two of these holes 47, one for each marking unit B.

Manipulation of the locking pin 45 into and out of the locking holes 47 in the retainer ring is brought about manually by way of an actuating lever 48. This lever is mounted on a pivot pin 49 carried in the lug 46. The inner end of the lever is loosely connected to the lower end of the locking pin. A spring barrel 51 carried in an extension 52 of the lug 46 presses against the lever 48 and thus holds the locking pin 45 in locking position in the ring 34.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. In a marking mechanism for a machine for marking container parts, the combination of a support, a housing rotatably mounted on said support in axial alignment therewith, a plurality of marking units carried in said housing, each of said units including a rotatable marking head for marking a container part disposed adjacent said head at a marking station, and marking unit driving means mounted eccentrically in said support relative to the axis of said support and housing, said housing being thus rotatable on said support for moving a selected one of said units into an operative position at said marking station and for engaging it with said eccentrically mounted driving means for rotating the marking head of the selected unit only while at the marking station, the while moving another of said units into an inoperative position and out of engagement with said driving means.

2. In a marking mechanism for a machine for marking container parts, the combination of a support, a housing rotatably mounted on said support, a pair of marking units carried in said housing on opposing sides thereof, each of said units including a pair of rotatable marking heads and actuating gears for marking a container part interposed between said heads at a marking station, and a marking unit driving gear eccentrically mounted in said support, said housing being rotatable on said support for moving one of said units into an operative position at said marking station and for engaging its actuating gears with the eccentrically mounted driving gear for rotating the marking heads of the unit only while at the marking station, the while moving the other of said units into an inoperative position at a service station and out of engagement with said driving gear.

3. In a marking mechanism for a machine for marking container parts, the combination of a drive shaft, a housing mounted for rotation around and eccentric of said drive shaft, a plurality of marking units carried in said housing, each of said units including a marking head, a single unit being selectively positioned by rotation of said housing into a marking station, a driving connection interposed between said drive shaft and the marking head at the marking station for engagement with said container parts to mark the same, and means for rotating said housing to move the selected marking unit into the marking station and into operative relation with said driving connection for operating the marking head in the marking station, the rotation of said housing simultaneously moving other marking units away from the marking station and out of engagement with said driving connection.

4. In a marking mechanism for a machine for marking container parts, the combination of a support, a drive shaft journaled in said support, a driving gear secured to said shaft and rotatable thereby, a housing mounted on said support and enclosing said driving gear, said housing having rotation around said drive shaft and eccentric

thereto, a plurality of marking units carried on outer walls of said housing, each of said units including a marking head for marking a container part at a marking station, said marking heads having connection with operating gears 5 inside of said housing, the operating gears of a marking head at the marking station being driven by said driving gear to rotate the marking head to mark a container part, a handwheel secured to said housing for rotating it on said 10 support to position one of said marking units at the marking station while simultaneously locating the other marking units away from the marking station and in inoperative position, and locking means for locking said handwheel on 15 said support to selectively hold a marking unit at the marking station.

CARL G. PREIS.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
39,178	Smith -----	July 7, 1863
793,809	Tonge -----	July 4, 1905
1,359,807	Huber -----	Nov. 23, 1920
1,374,225	Peacock -----	Apr. 12, 1921
1,443,164	Bracken -----	Jan. 23, 1923
1,661,178	Jobst -----	Mar. 6, 1928
1,906,363	Browning -----	May 2, 1933
2,425,167	Whitehead -----	Aug. 5, 1947