CERTIFICATE OF APPROVAL No 6/4D/1

VARIATION No 1

CANCELLED

This is to certify that the following modifications of the pattern and variants of the

Toledo Valuematic II Model 8001 Weighing Instrument 0/1

approved in Certificate No 6/4D/1 dated 1 April 1971

submitted by Toledo-Berkel Pty Ltd,
525 Graham Street,
Port Melbourne, Victoria, 3207,

have been approved under the Weights and Measures (Patterns of Instruments) Regulations as being suitable for use for trade.

Date of Approval: 21 August 1974.

The approved modifications are as follows:

1. Weight scale of capacity 10 kg by 10-g graduations and ticket printer of capacity 9,995 kg by 5-g graduations;

2. Unit-price selection by coded price tabs;

and are described in Technical Schedule No 6/4D/1, Variation No 1, and in drawings and specifications lodged with the Commission.

The approval is subject to review on or after 1 September 1979.

All instruments conforming to this approval shall be marked with the approval number "NSC No 6/4D/1".

Signed

Executive Officer

Indexed

21/8/74

CANCELLED

COMMONWEALTH OF AUSTRALIA

NATIONAL STANDARDS COMMISSION

Weights and Measures (National Standards) Act 1960-1966

Weights and Measures (Patterns of Instruments) Regulations

Certificate of Approval

CERTIFICATE NUMBER 6/4D/1

In respect of the pattern of

Toledo Valuematic II Model 8001 Pre-packaging Scale.

Submitted by: Toledo-Berkel Pty. Ltd.,
525 Graham Street,
Port Melbourne,
Victoria. 3207.

Manufactured by: Toledo Scale,
Division of Toledo Scale Corporation,
Toledo, Ohio,
U. S. A. 43612.

This is to certify that the pattern of the instrument illustrated and described in this Certificate has been examined by the National Standards Commission under the provisions of the abovementioned Regulations and has been approved as being suitable for use for trade.

The pattern was approved on 19th May, 1967.

Approval was granted on condition that all instruments made in conformity with this Certificate:

1. are appropriately marked NSC No 6/4D/1;

Cont'd over

2. comply with the General Specifications for Weighing and Measuring Instruments to be Used for Trade; and

3. are tested in accordance with the test procedure described in the General Notes to this Certificate.

This Certificate comprises:

Pages 1 to 7 dated 1st April, 1971.
Figures 6/4D/1 - 1 to 9 dated 1st April, 1971.

Date of issue 1st April, 1971.

Signed

A person authorised by the Commission to sign Certificates under the abovementioned Regulations.

DESCRIPTION OF PATTERN

The pattern (see Figure 1) is of a self-indicating, price-computing, ticket-printing counter machine of 25 lb capacity, known as the Toledo Valuematic II Model 8001.

The pattern is made up in three units:

1. Scale unit,
2. Electronic computer unit,
3. Printer unit,

which together weigh, compute the price for the selected unit price and print the weight, unit price and package price on a heat-seal ticket. The unit-price range is from 0 to $9.99 in 1-cent increments.

Other information, such as date, store code and commodity name, may be set up manually for printing on the ticket. Figure 2 is a block schematic diagram of the major sections of the pattern and the function of each section is described below.

1. Scale unit

The weighing mechanism, shown schematically in Figure 3 and in the photograph Figure 4, is a second-order single-lever system with a spring resistant. The load receptor is supported on a bracket mounted below the main lever and connected by a parallel linkage to maintain the load receptor in the horizontal position. All the bearings of the main lever and load-support bracket are of cageless ball construction and totally enclosed.

Compensating adjustments, attached to the lever mechanism, are used to linearise the action of the spring resistant.

Mounted on one side of the main lever nose-end is a transparent graticule (see Figure 5) with a printed weight scale, graduated from minus 0.5 lb to 25 lb by 0.01 lb graduations, which is transmitted by an optical projection system to a translucent screen fitted with an external magnifying lens; the denomination "lb" appears on the screen. The same optical projection system

transmits motion signals to the motion detector from a section of the graticule. This signal inhibits the computer cycle until the lever mechanism is at rest.

Taring is controlled by pushing down one of ten selector tabs on the control panel (see Figure 6) which adjust the anchor position of the spring resistant. Nine of the ten tabs select preset tares which have screwdriver adjustments under a hinged panel below the selector tabs; the tenth engages a taring mechanism with a knob on the control panel. The tare range is 0 to 0.5 lb.

Mounted on the other side of the main lever nose-end is a second graticule marked with a digital code. Digitally encoded weight data is transmitted by a second optical projection system to the code converter, where a bank of photo-electric cells converts the light pattern from the encoder into a series of electrical signals which are converted to a computer-compatible code.

2. Electronic computer unit (see Figure 7)

consists of the programmer, which provides the timed switching necessary to direct the processing of input data from the scale unit by the computing and printing sections; computers 1 and 2, which carry out the multiplication of the digital-weight and unit-price data to give the total price; the binary store, which accumulates and holds the total-price and unit-price data ready for printing; and the coincidence section, which checks the printer settings against the stored data before printing can take place.

Also included is a power supply providing stabilised voltages for all logic circuits of the system.

3. Printer unit (see Figure 8)

In this unit are housed the mechanical parts of the printer with a continuously running electric motor to drive the printing operations. The motor drives the printing wheels which are set by the commutators, which produce data-compatible signals in

the coincidence section when the print wheels are set correctly, and the print-locking solenoids, which lock the print wheels in the correct positions on receipt of signals generated by the establishment of coincidence between the commutators and data store.

The printer also includes devices for aligning tickets to receive the printed figures in the correct spaces, for heating and catching the printed tickets and indicating when the ticket roll is nearing the end.

Operating Procedure

When the power is switched on, the instruction light on the control panel (see Figure 6) reading "set name, price, tare and lock" is illuminated and the weight scale is projected on to the translucent screen. The operating sequence is as follows:

(a) Commodity and grade identification plates are inserted in the printer.

(b) Store code and data are set on the printer.

(c) Unit price is set on the three switches on the control panel.

(d) The tare is selected by the control panel tabs.

(e) The lock switch is pressed.

The "ready" light will now be illuminated, indicating that weighing may proceed.

When the article to be weighed is placed on the load receptor, the "ready" indicator is switched off and after the weighing process is completed "take label" is illuminated. Depressing the ticket retainer to remove the ticket (see Figure 9) resets the "ready" condition, when the next package may be placed on the load receptor. The weighing and printing cycle proceeds only after the motion detector signals the computer that the load receptor is stationary.

The printing of a ticket is inhibited for weights of 10 lb or more at unit prices of $5 or more, and also for weights of 20 lb or more at unit prices of $4 or more. If a weighing is attempted in either of the restricted regions, a lamp on the control panel illuminates a sign reading "excess value".

The sign reading "add label" indicates that the supply roll has run out

or is unable to deliver further tickets.

GENERAL NOTES

Test Procedure

The following series of 55 weighings on the 8001 will check that the electronic circuitry is functioning correctly in the following respects:

(a) Conversion of all Gray code numbers to Binary Coded Decimal.
(b) All BCD digits are handled correctly during multiplication.
(c) Rounding is occurring correctly.
(d) Limits on price printing are operating.
(e) Price setting of all digits is correct.
(f) Printing of all digits in all positions is correct.

Weight	Unit Price		Ticket	
lb	$	$/lb	lb	$
0.10	9.99		No ticket printed	
0.12	9.99	9.99	0.12	1.20
1.01	"	"	1.01	10.09
2.01	"	"	2.01	20.08
3.01	"	"	3.01	30.07
4.01	"	"	4.01	40.06
5.01	"	"	5.01	50.05
6.01	"	"	6.01	60.04
7.01	"	"	7.01	70.03
8.01	"	"	8.01	80.02
9.01	"	"	9.01	90.01
10.00	"		No ticket printed	
10.01	4.99	4.99	10.01	49.95
11.23	"	"	11.23	56.04
12.34	"	"	12.34	61.58
13.45	"	"	13.45	67.12
14.56	"	"	14.56	72.65
15.67	"	"	15.67	78.19
16.78	"	"	16.78	83.73
17.89	"	"	17.89	89.27
18.90	"	"	18.90	94.31
19.00	"	"	19.00	94.81
20.00	"		No ticket printed	
20.02	3.99	3.99	20.02	79.88
24.02	"	"	24.02	95.84
25.02	"	"	25.02	99.83

Weight	Unit Price		Ticket	
lb	$	$/lb	lb	$
1.01	5.45	5.45	1.01	5.50
1.01	5.55	5.55	1.01	5.61
17.71	0.01	0.01	17.71	0.18
"	0.02	0.02	"	0.35
"	0.03	0.03	"	0.53
"	0.04	0.04	"	0.71
"	0.05	0.05	"	0.89
"	0.06	0.06	"	1.06
"	0.07	0.07	"	1.24
"	0.08	0.08	"	1.42
"	0.09	0.09	"	1.59
"	0.17	0.17	"	3.01
"	0.27	0.27	"	4.78
"	0.37	0.37	"	6.55
"	0.47	0.47	"	8.32
"	0.57	0.57	"	10.09
"	0.67	0.67	"	11.87
"	0.77	0.77	"	13.64
"	0.87	0.87	"	15.41
"	0.97	0.97	"	~~17.81~~ 17.18
"	1.77	1.77	"	31.35
"	2.77	2.77	"	49.06
"	3.77	3.77	"	66.77
"	4.77	4.77	"	84.48
9.71	5.77	5.77	9.71	56.03
"	6.77	6.77	"	65.74
"	7.77	7.77	"	75.45
"	8.77	8.77	"	85.16
"	9.77	9.77	"	94.87

GENERAL

Notice of approval of the pattern described in this Certificate was given in Memorandum of Approval No 66 dated 22nd May, 1967.

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/4D/1

VARIATION No 1

Pattern: Toledo Valuematic II Model 8001 Weighing Instrument

Submittor: Toledo-Berkel Pty Ltd,
525 Graham Street,
Port Melbourne, Victoria, 3207.

Date of Approval of Variants: 21 August 1974

The modifications described in this schedule apply to the pattern and variants described in the following pages and figures of Certificate No 6/4D/1 dated 1 April 1971:

Pages 3 to 7 dated 1 April 1971
Figures 6/4D/1 - 1 to 9 dated 1 April 1971

All instruments conforming to this approval shall be marked "NSC No 6/4D/1".

Description:

This variation approves:

1. The optical-projection weight scale without magnifying lens (see Figure 10) graduated to 10 kg by 10-g graduations, and the ticket printer to print weight from 0,040 kg to 9,995 kg in 5-g increments (see Figure 11).

   A test button behind the hinged panel covering the tare adjustments overrides the inhibition of the printer below 0,040 kg, allowing the zero of the printer to be checked.

2. The unit price selected by coded "price rite" tabs attached to the commodity plate on the ticket printer. The insertion of the "price rite" commodity plate overrides the manual price setting and allows

a bank of photocells in the ticket printer to read the unit price set on the coded price tabs (see Figure 12).

Special Tests:

The printing of weight, unit price, and total price as listed in Table 1 will indicate whether the price-computing and weight circuits are functioning correctly. The exact figures must be printed; rounding is effected within the computer.

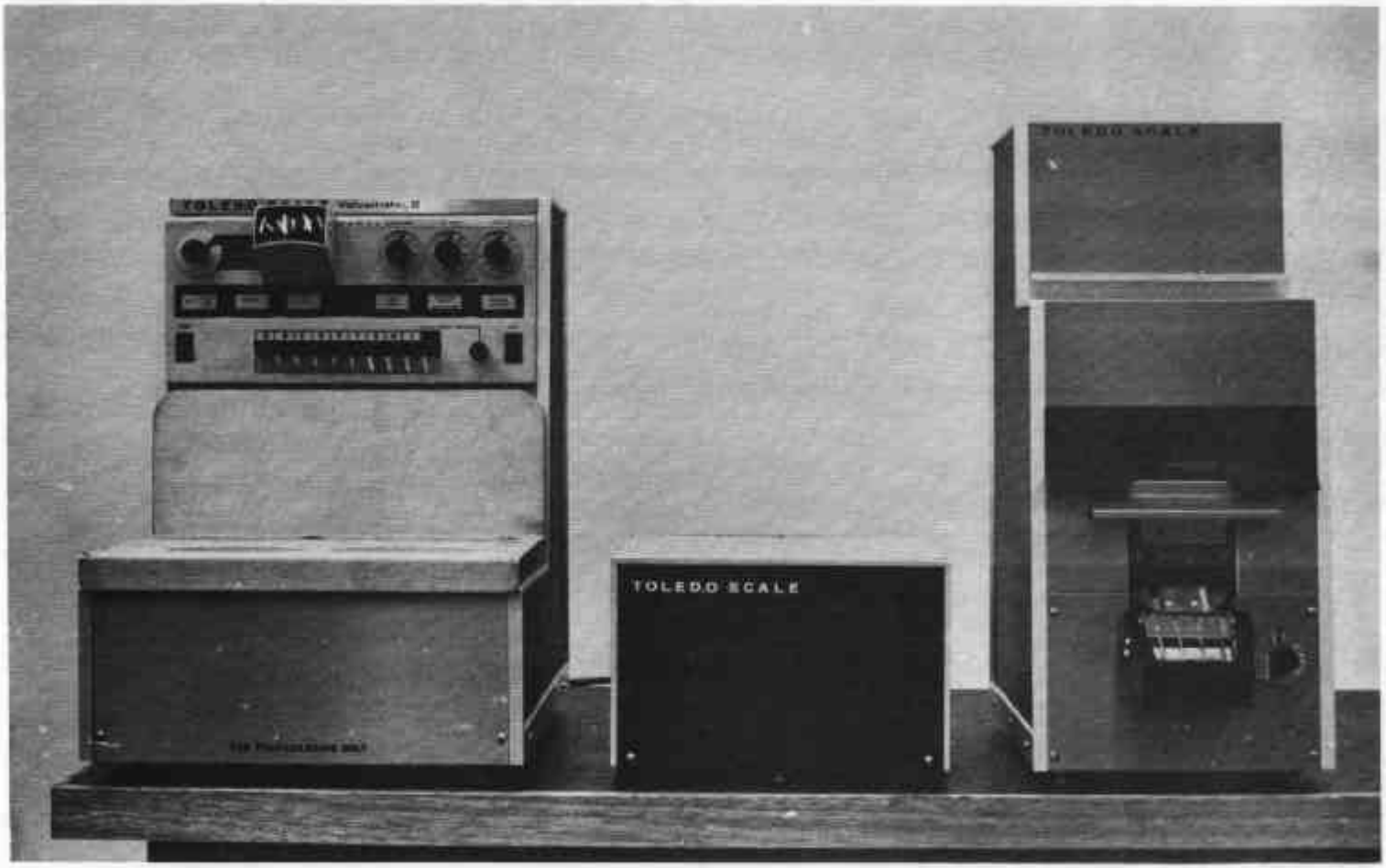
The test button beneath the hinged panel covering the tare adjustments must be pressed when checking the zero adjustment of the ticket printer.

Note: When the test button is pressed, weights below zero (for example, tare weight) will be printed.

TABLE 1

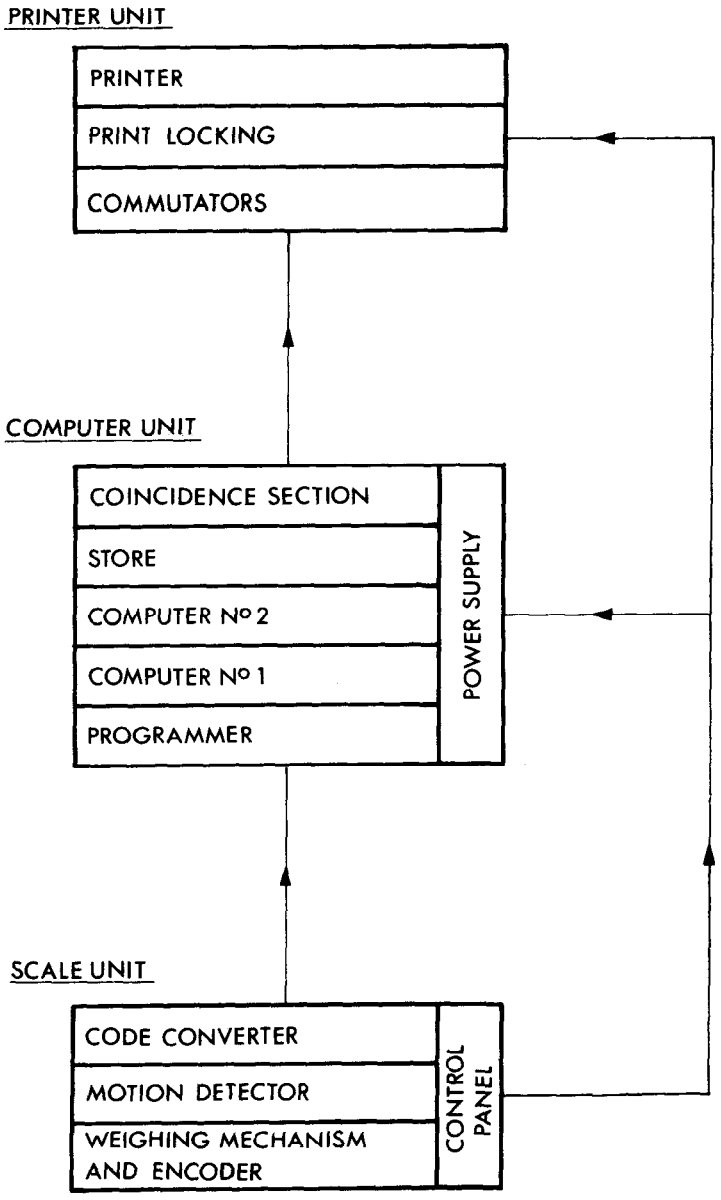
Printed Weight	Selected and Printed Unit Price	Printed Price
kg	$/kg	$
0	0	0
0,040	1,05	0,04
0,045	1,10	0,05
0,050	1,20	0,06
0,060	1,30	0,08
0,070	1,40	0,10
0,080	1,56	0,12
0,090	1,69	0,15
0,100	1,74	0,17
0,110	1,83	0,20
0,120	1,92	0,23
0,130	2,31	0,30
0,200	2,37	0,47
0,300	2,08	0,62
0,400	3,80	1,52
0,500	3,50	1,75
0,600	4,00	2,40
0,700	5,50	3,85
0,800	6,60	5,28
0,900	7,10	6,39
1,000	8,21	8,21
2,000	9,00	18,00
3,000	9,10	27,30
4,000	9,20	36,80
5,000	9,30	46,50
6,000	9,10	54,60
7,000	9,70	67,90
8,000	9,85	78,80
9,000	9,90	89,10
9,990	9,99	99,80
9,995	9,99	99,85

FIGURE 6/4D/1 - 1



Toledo 8001

FIGURE 6/4D/1 - 2



Block Diagram - Toledo Model 8001

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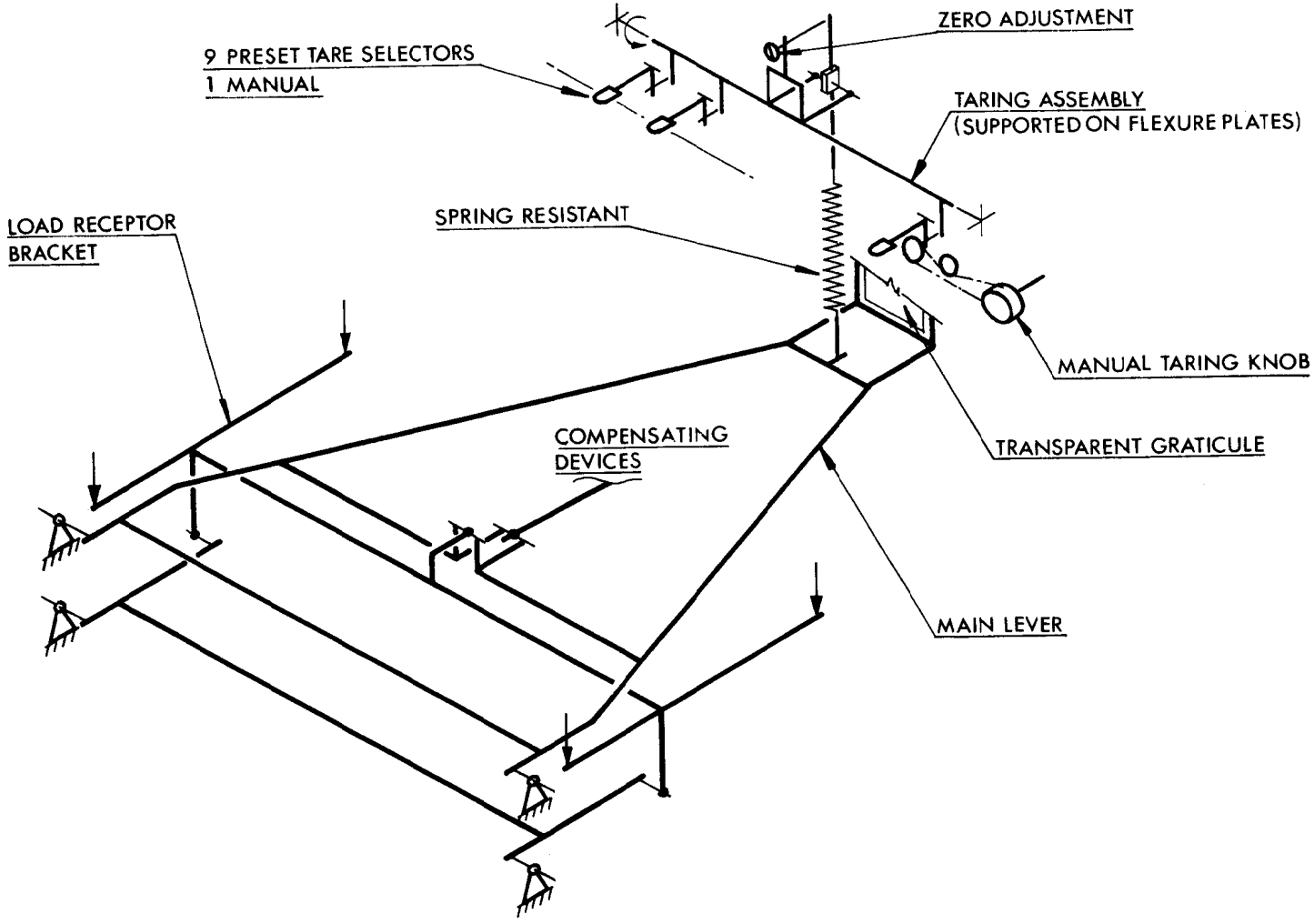
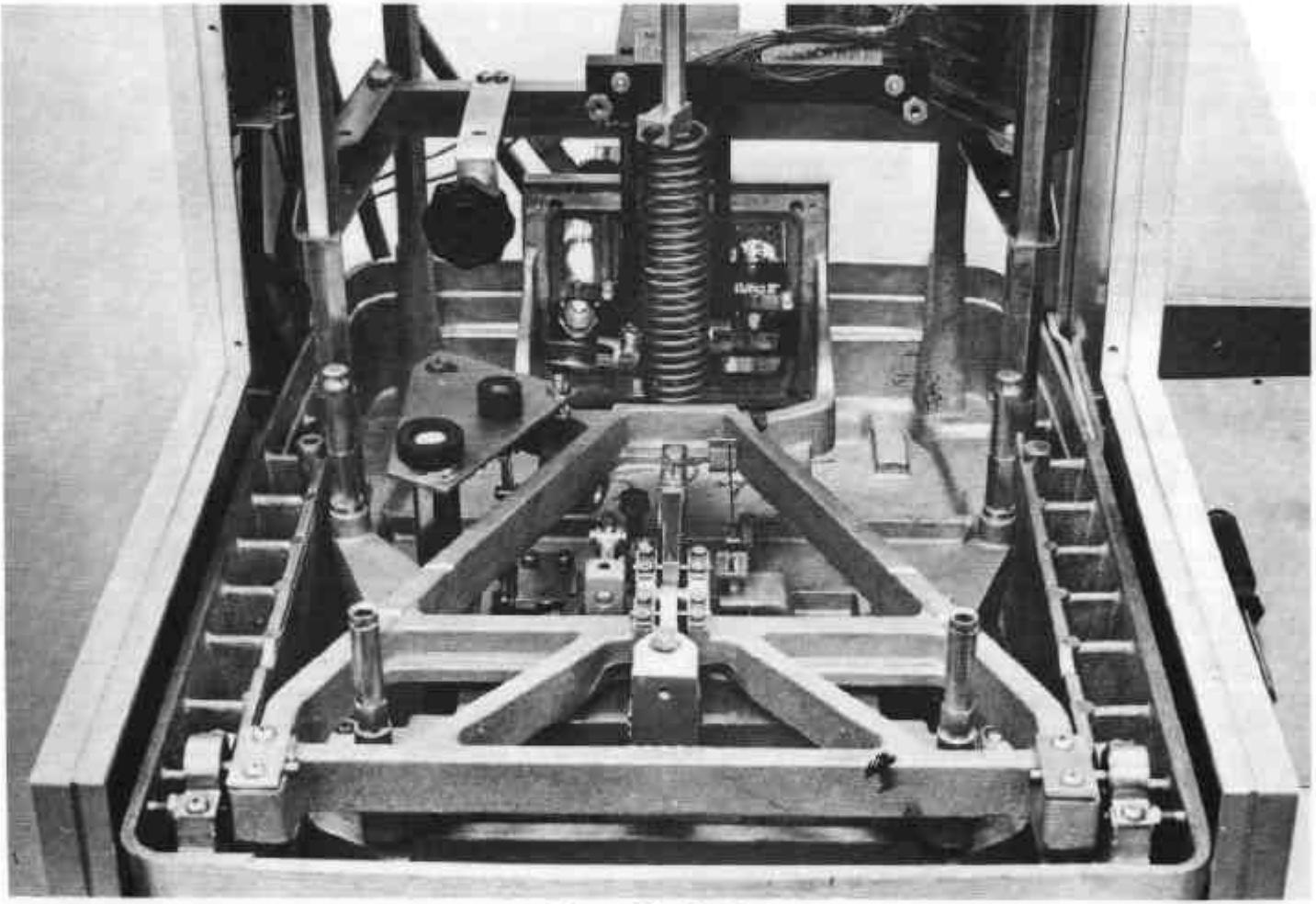
FIGURE 6/4D/1 - 3



Lever Diagram

FIGURE 6/4D/1 - 4



Lever Mechanism

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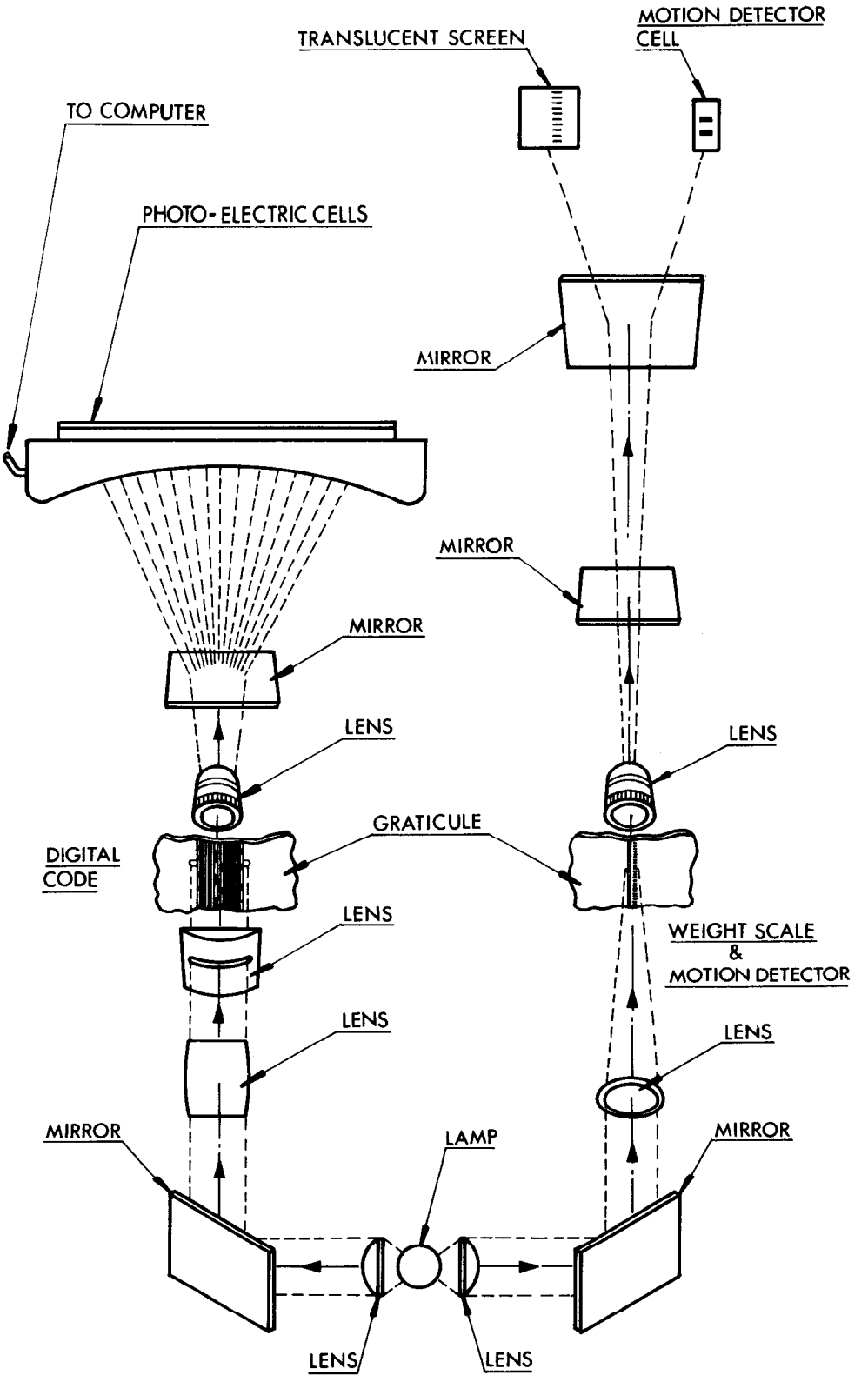
FIGURE 6/4D/1 - 5



Optical Projection System

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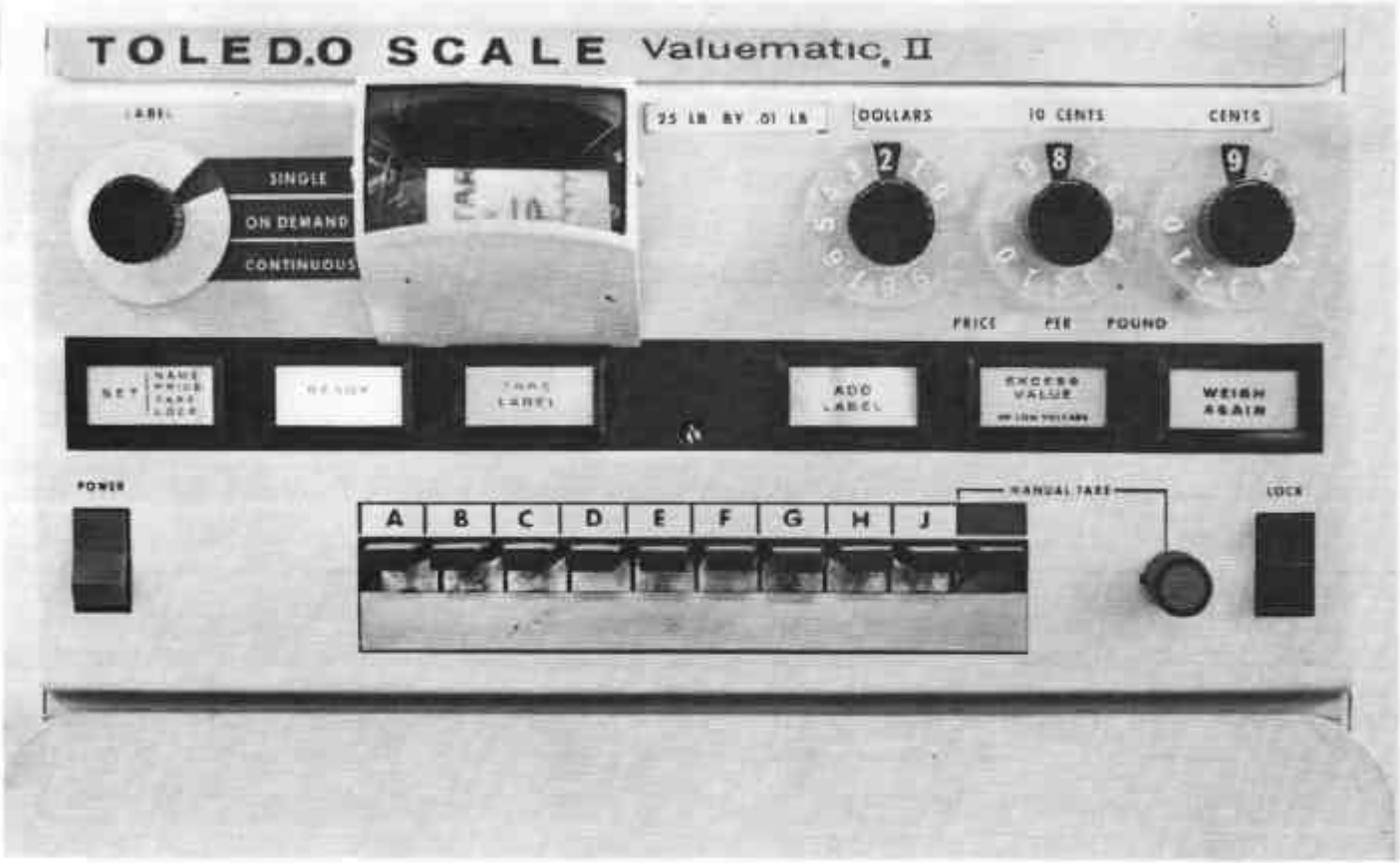
FIGURE 6/4D/1 - 6



Control Panel

FIGURE 6/4D/1 - 7

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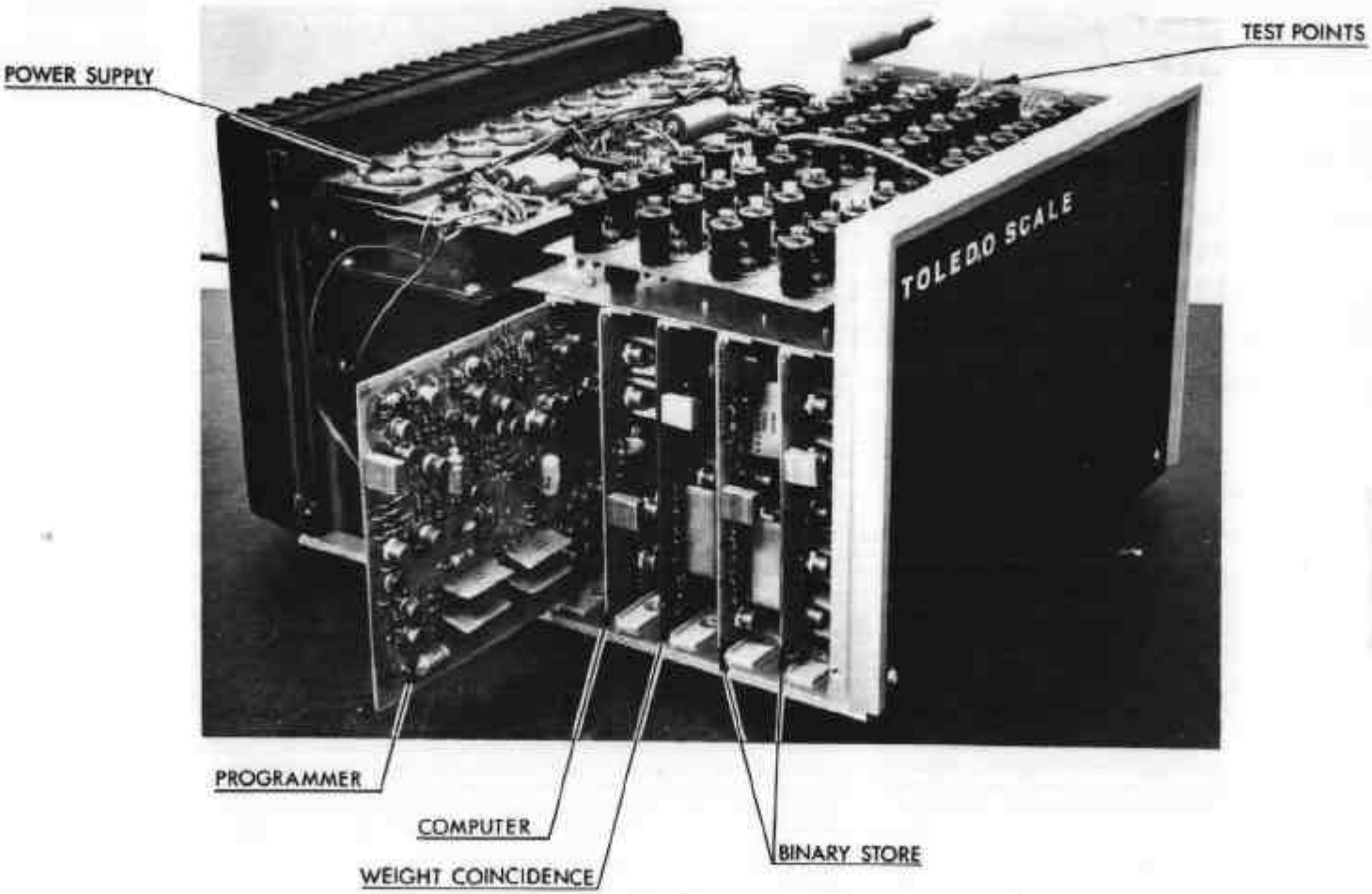
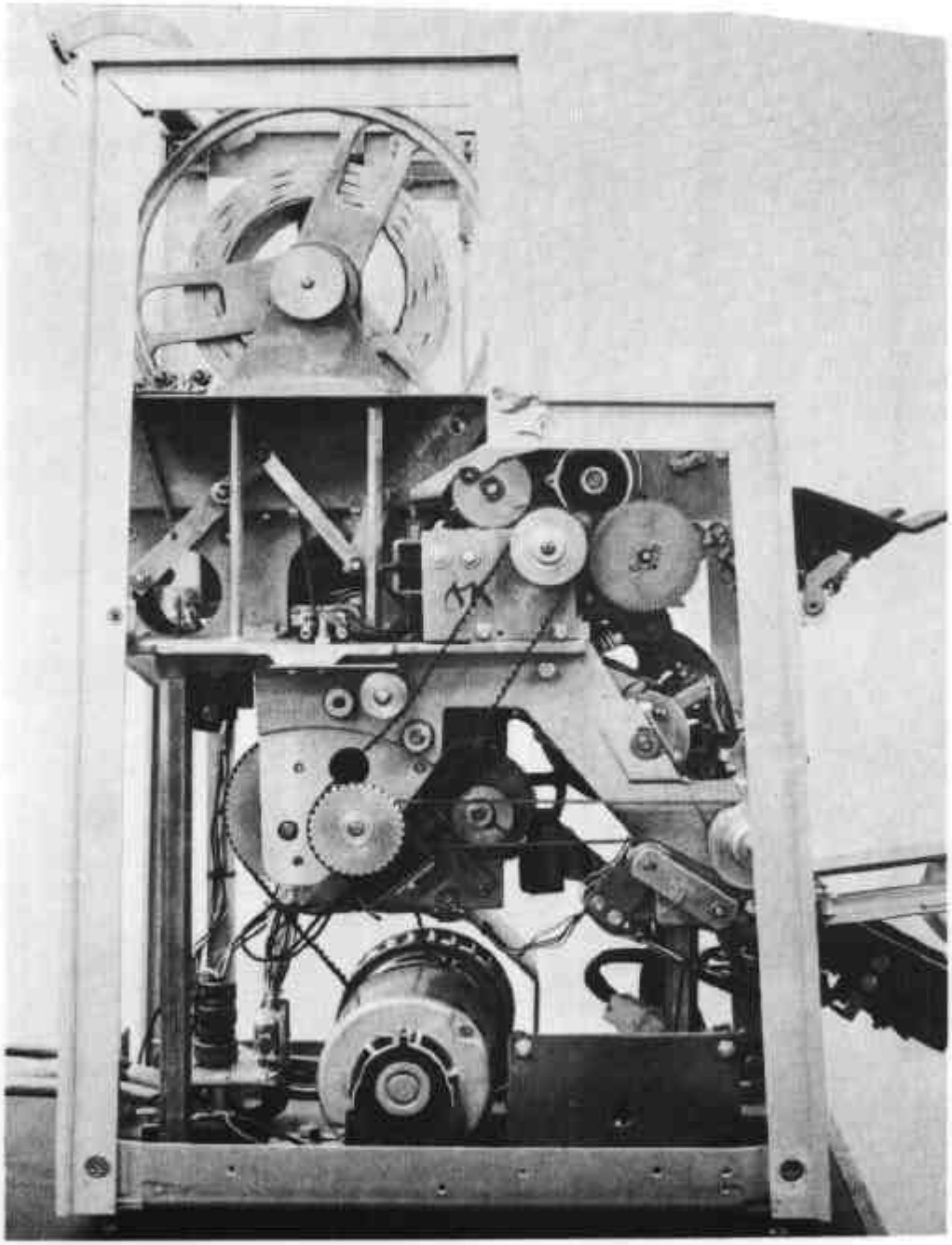


Electronic Computer Unit

FIGURE 6/4D/1 - 8



Printer Unit

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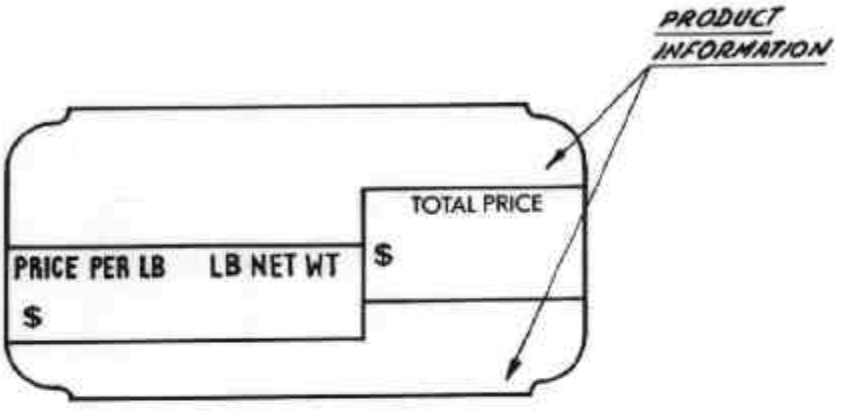
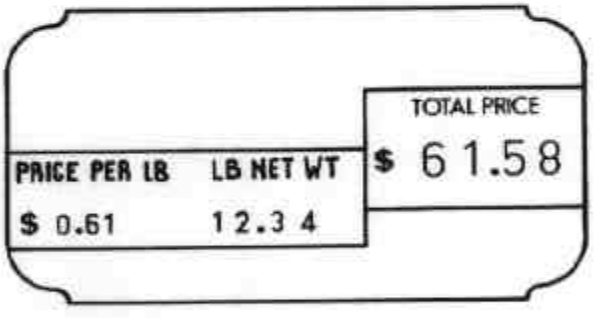
FIGURE 6/4D/1 - 9



(a) BEFORE PRINTING



(b) AFTER PRINTING

Sample Ticket (actual size)

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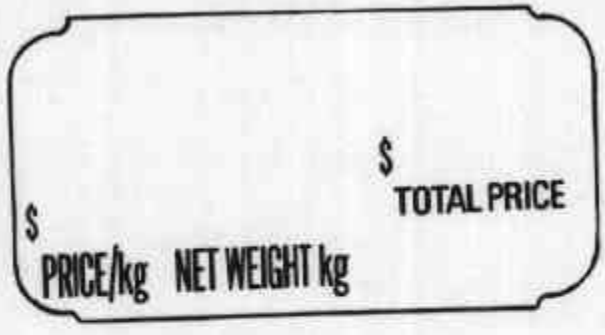
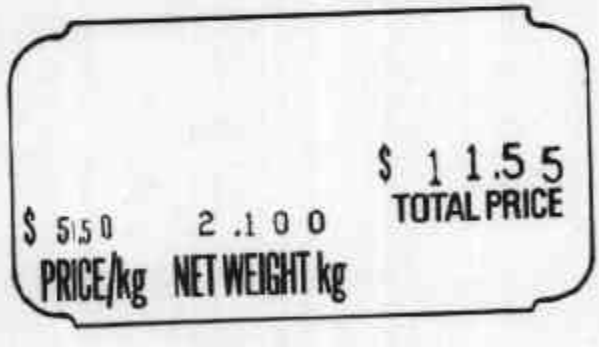
FIGURE 6/4D/1 - 10

Control Panel

FIGURE 6/4D/1 - 11



Before Printing



After Printing

Sample Ticket (actual size)

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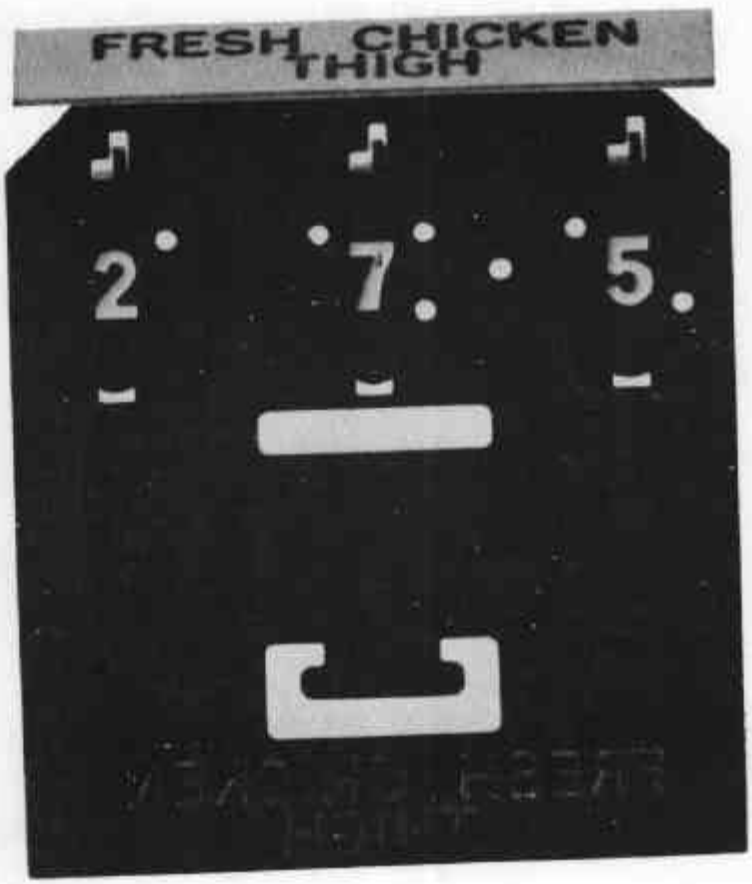
FIGURE 6/4D/1 - 12



"Price Rite" Commodity Plate

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