



6/9C/24A
21/9/87

NATIONAL STANDARDS COMMISSION

NATIONAL MEASUREMENT (PATTERNS OF INSTRUMENTS) REGULATIONS

REGULATION 9

CERTIFICATE OF APPROVAL No 6/9C/24A

This is to certify that an approval for use for trade has been granted in respect of the pattern and variants of the

Toledo Model 2503 Platform Weighing Instrument

submitted by Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne Vic 3207.

CONDITIONS OF APPROVAL

This approval is subject to review on or after 1/9/89.
This approval expires in respect of new instruments on 1/9/90.

Instruments purporting to comply with this approval shall be marked NSC No 6/9C/24A.

This approval may be withdrawn if instruments are constructed other than in accordance with the drawings and specifications lodged with the Commission.

The maximum number of scale intervals applicable to the instrument shall be no greater than the number of verification scale intervals approved for the base-work, or the load cell, or the indicator, whichever is the smallest.

Auxiliary devices used with this instrument shall comply with the requirements of General Supplementary Certificates Nos S1/0 and/or S2/0, as appropriate.

The load cells shall be subject to regular certification by the Commission.

Signed

Executive Director

Descriptive Advice

Pattern: approved 16/8/84

- A self-indicating platform weighing instrument of up to 21 t capacity.

Variants: approved 16/8/84

1. With a Commission-approved load cell and digital indicator.
2. With two or more baseworks.
3. With an elliptical spring and oil dashpot fitted to the headwork lever.

Technical Schedule No 6/9C/24A describes the pattern and variants 1 to 3.

Variant: approved 27/5/87

4. With an alternative lever system.

Technical Schedule No 6/9C/24A Variation No 1 describes variant 4.

Filing Advice

Certificate of Approval No 6/9C/24A dated 4/9/84 is superseded by this Certificate and may be destroyed.

The documentation for this approval now comprises:

Certificate of Approval No 6/9C/24A dated 21/9/87
Technical Schedule No 6/9C/24A dated 4/9/84
Technical Schedule No 6/9C/24A Variation No 1 dated 21/9/87
Test Procedure No 6/9C/42A dated 4/9/84
Figures 1 to 6 dated 4/9/84
Figure 7 dated 21/9/87



NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/9C/24A

Pattern: Toledo Model 2503 Platform Weighing Instrument

Submitter: Toledo Scale (Australia) Limited
525 Graham Street
Port Melbourne Victoria 3207

1. Description of Pattern

1.1 Basework

A model 2503 three-lever system of up to 21 t capacity (Figures 1 and 2) with the main and transfer levers supported in self-aligning bearings fitted to floor or pit mounted fulcrum stands. The instrument may also have capacities of 12 t (model 2273) or 6 t (model 2173).

The load receptor is supported on the knife-edges of the main levers by double ball-bearing supports (Figure 3) or on parallel link supports (Figure 4) which allow free lateral movement of the receptor.

The basework may be fitted with transverse or longitudinal stays.

1.2 Headwork

The headwork comprises the cabinet, pendulum resistant mechanism, and/or tare bars, unit weights and the locking mechanism as described in the documentation of NSC approval No 6/9C/2A.

1.3 Markings

Instruments are marked with the following data, together in one location:

Manufacturer's name or mark	
Serial number of instrument	
NSC approval number	NSC No 6/9C/24A
Accuracy class	III
Maximum capacity in the form	Max*
Minimum capacity in the form	Min*
Verification scale interval in the form	e = d =*
Maximum additive tare in the form	T = +*

* These should be repeated adjacent to all reading faces.

1.4 Verification Provision

Provision is made for a verification mark to be applied.

2. Description of Variants

2.1 Variant 1

With a Commission-approved load cell and digital indicator either replacing or in conjunction with the mechanical headwork. Such instruments may have different model numbers. A typical load cell mounting assembly is shown in Figure 5.

2.2 Variant 2

The outputs from two or more baseworks may be summed electrically, or may be connected together by transfer levers to a single pullrod to provide mass information to the digital indicator. A single or two separate load receptors may be used. The capacity of each basework in this combination is the same as if it were used singly and the total capacity is the numeric sum of each basework capacity.

2.3 Variant 3

With an elliptical spring and oil dashpot fitted to the headwork lever (Figure 6).

TEST PROCEDURE 6/9C/24A

Instruments incorporating a digital indicator should be tested in accordance with any test procedure set out in its approval documentation.

The maximum permissible errors are:

- $\pm 0.5e$ for loads between 0 and 500e;
- $\pm 1.0e$ for loads between 501e and 2000e; and
- $\pm 1.5e$ for loads above 2000e.

1. Zero Range

Check that the range of the zero adjustment is not more than 4% of the maximum capacity ($\pm 2\%$ approximately).

2. Test Loads

Test loads are to be applied to the complete weighing instrument increasing in not less than 5 approximately equal steps to maximum capacity, followed by decreasing loads in not less than 5 approximately equal steps to zero load.

3. Multiple Indicating System

Where more than one indicating system is used, the variation between indications or printings for the same load shall not be greater than the absolute value of the maximum permissible error for that load registered on the device with the largest verification scale interval.



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TECHNICAL SCHEDULE No 6/9C/24A

VARIATION No 1

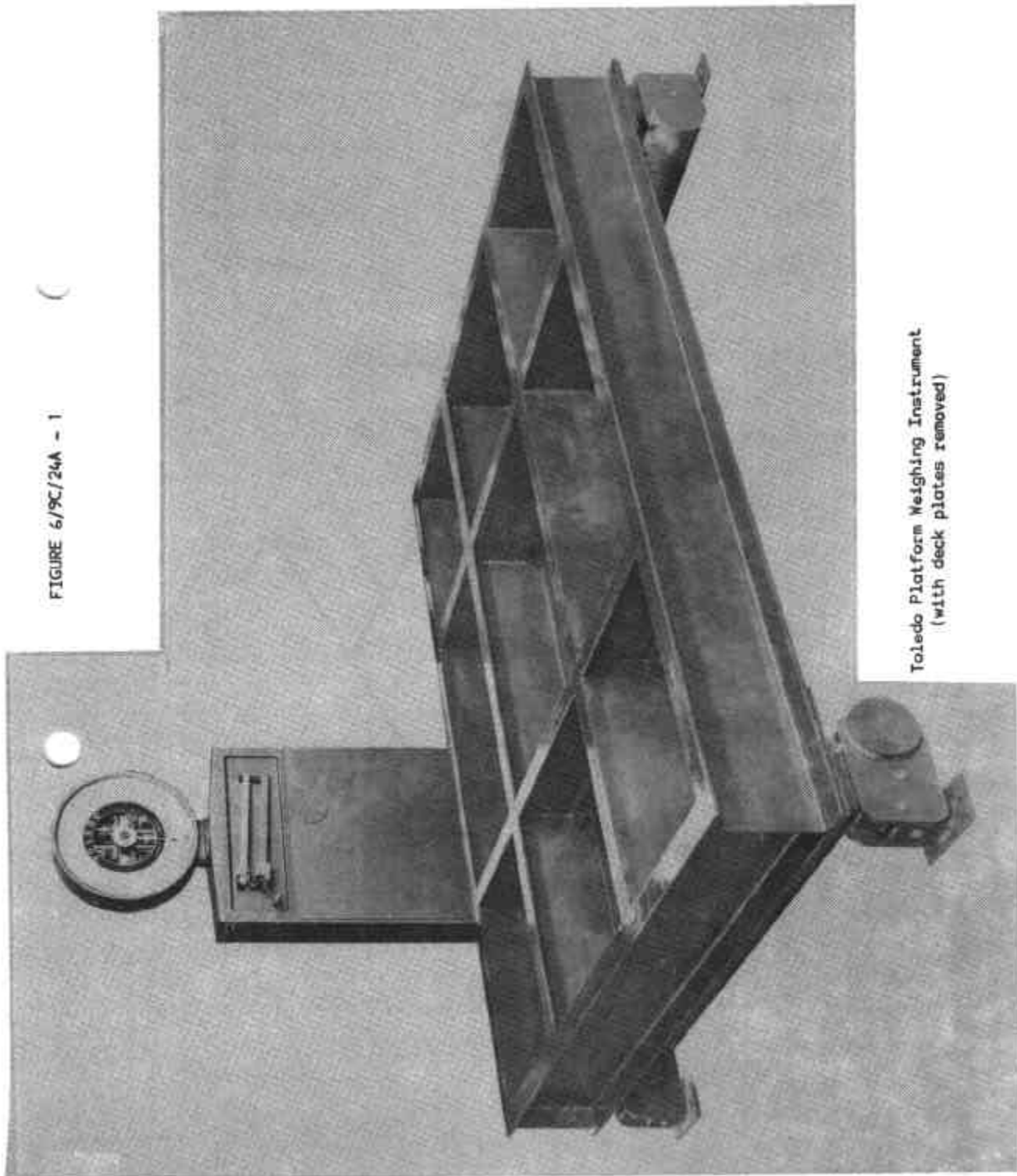
Pattern: Toledo Model 2503 Platform Weighing Instrument

Submittor: Toledo Scale (Australia) Ltd
525 Graham Street
Port Melbourne Vic 3207.

1. Description of Variant 4

With an alternative lever system as shown in Figure 7 and using a Commission-approved load cell and digital indicator.

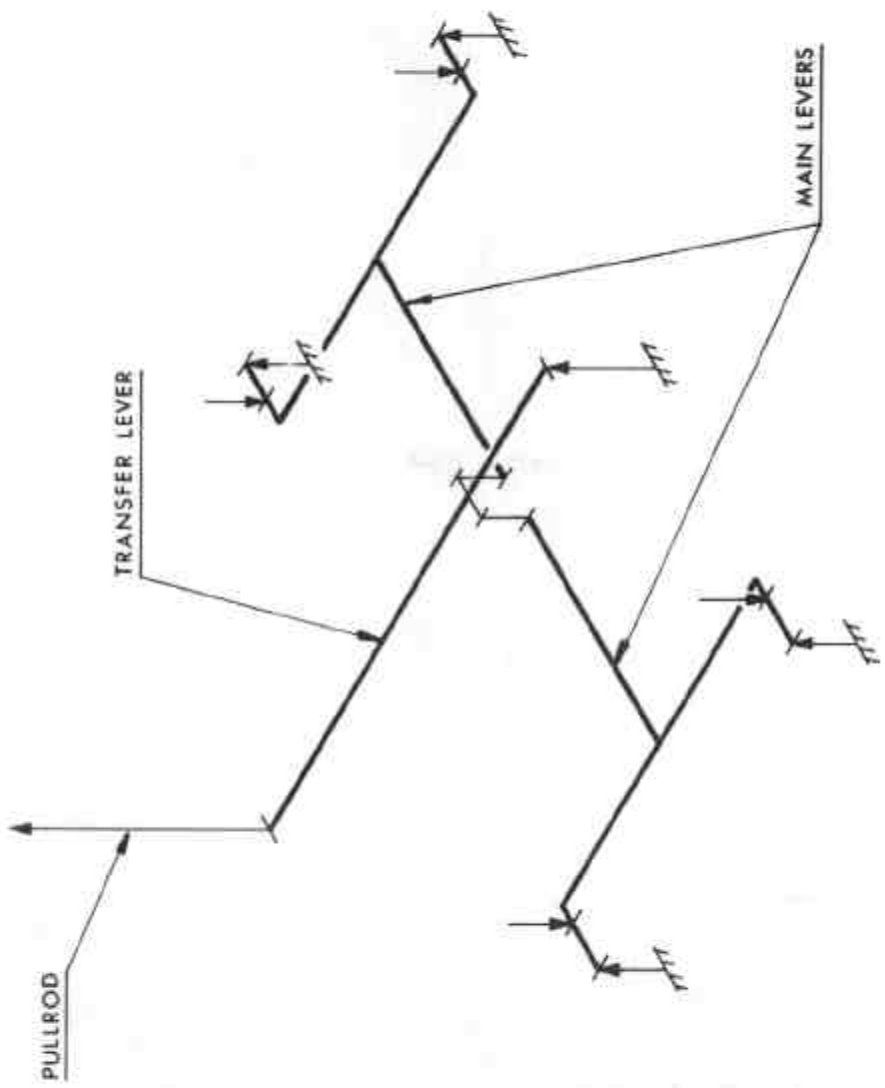
FIGURE 6/9C/24A - 1



Toledo Platform Weighing Instrument
(with deck plates removed)

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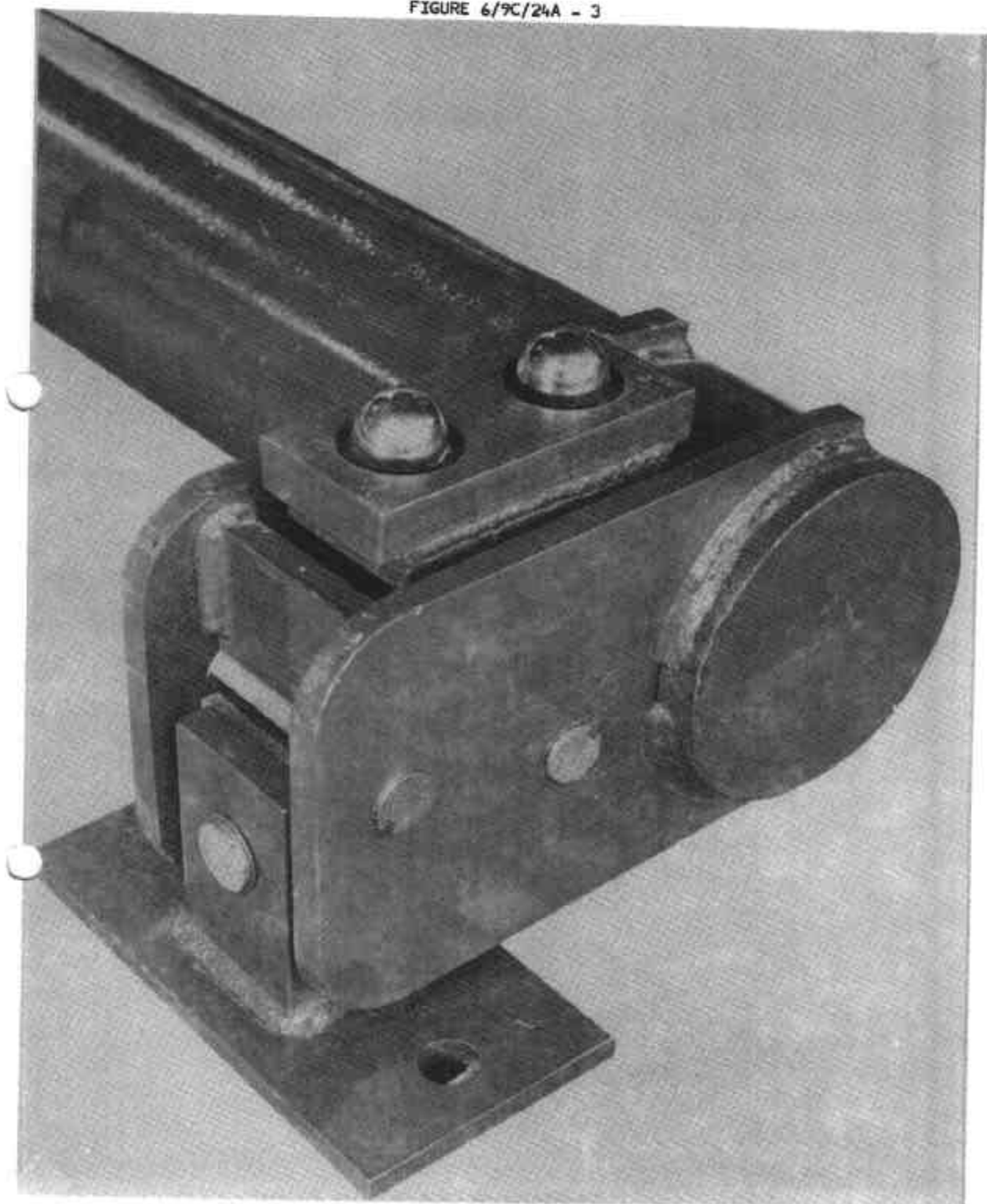
FIGURE 6/9C/24A - 2



Three-level System - Schematic Diagram

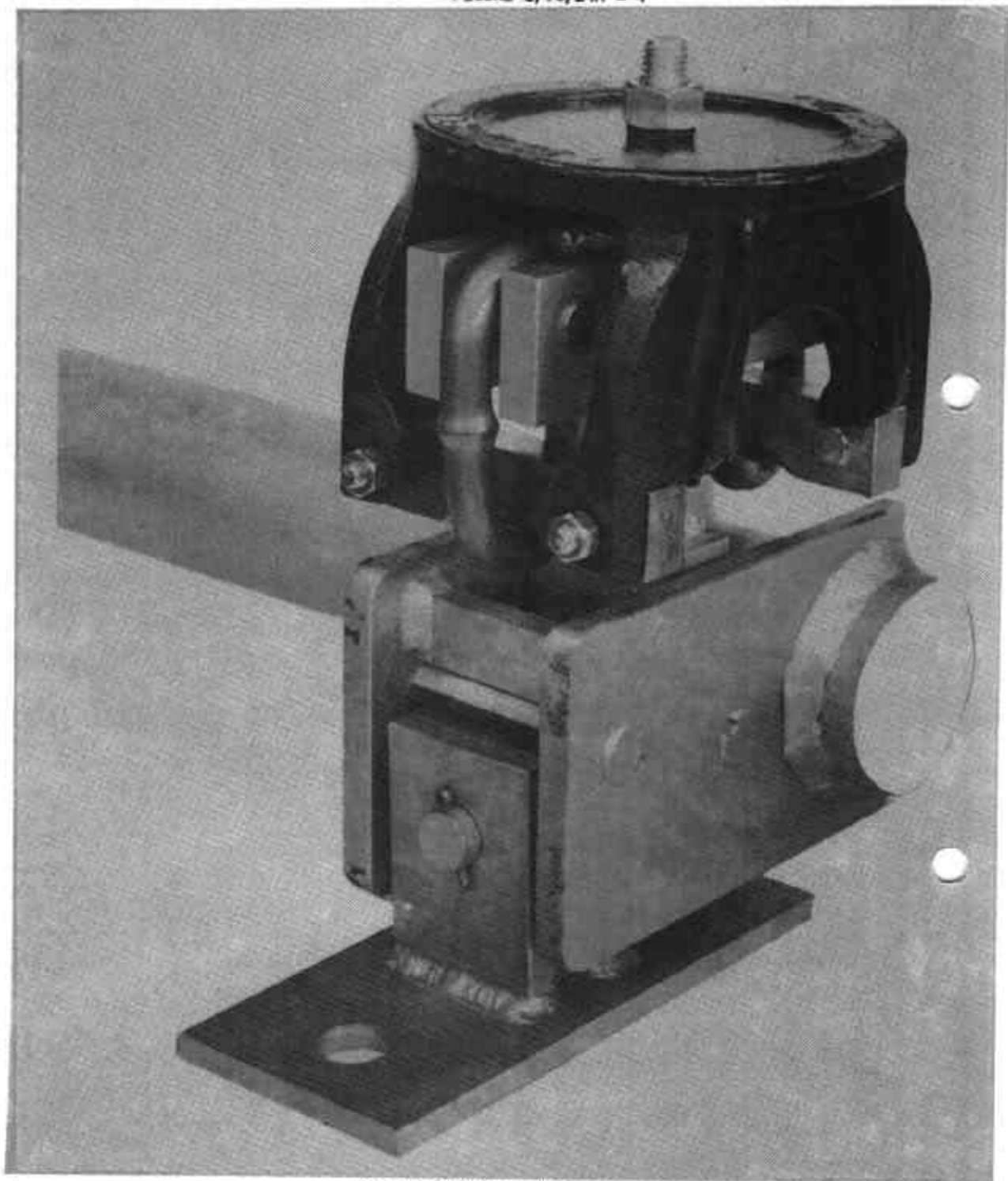
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FIGURE 6/9C/24A - 3



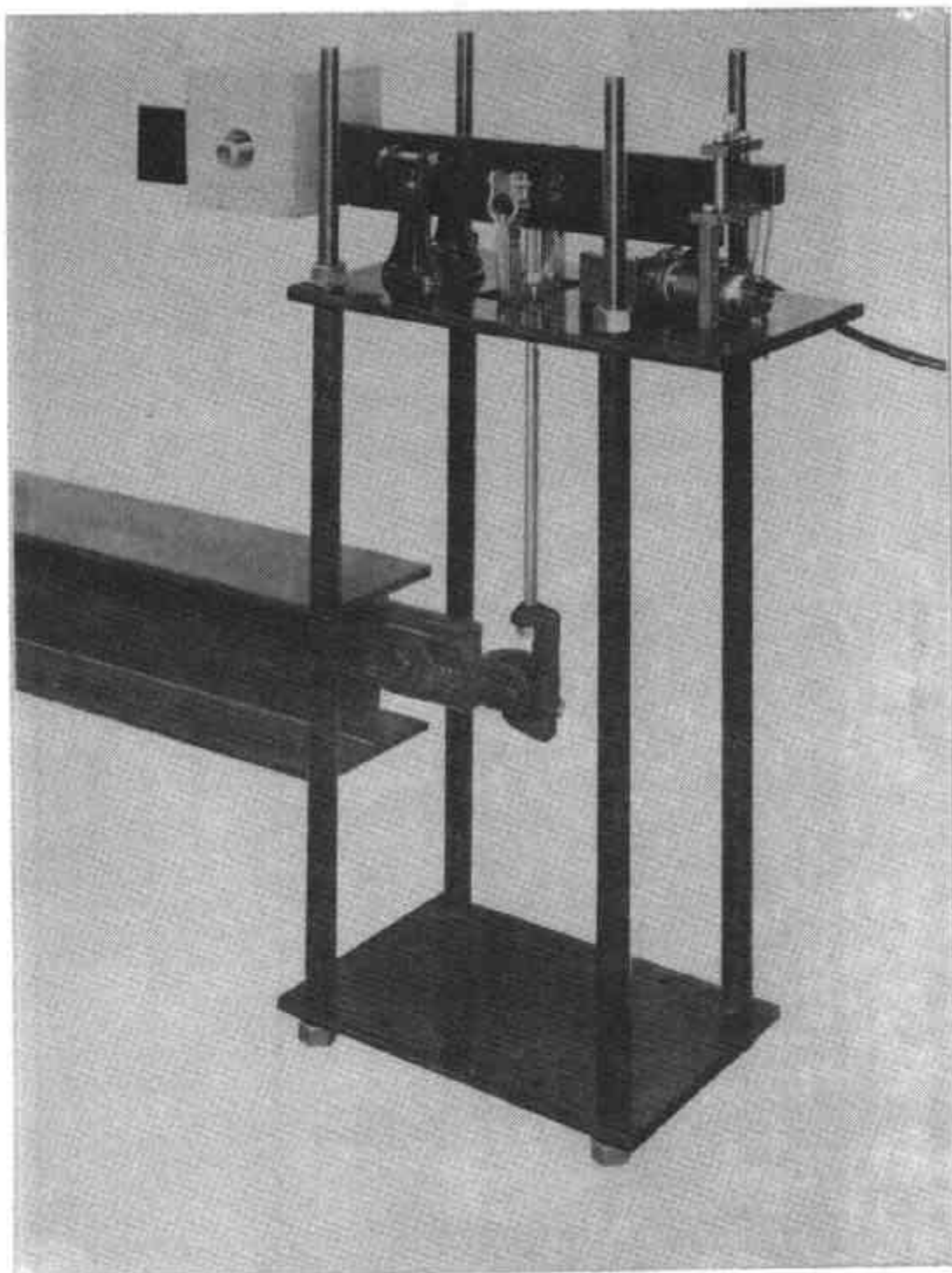
Ball-bearing Load Receptor Support

FIGURE 6/9C/24A - 4



Parallel-link Load Receptor Support

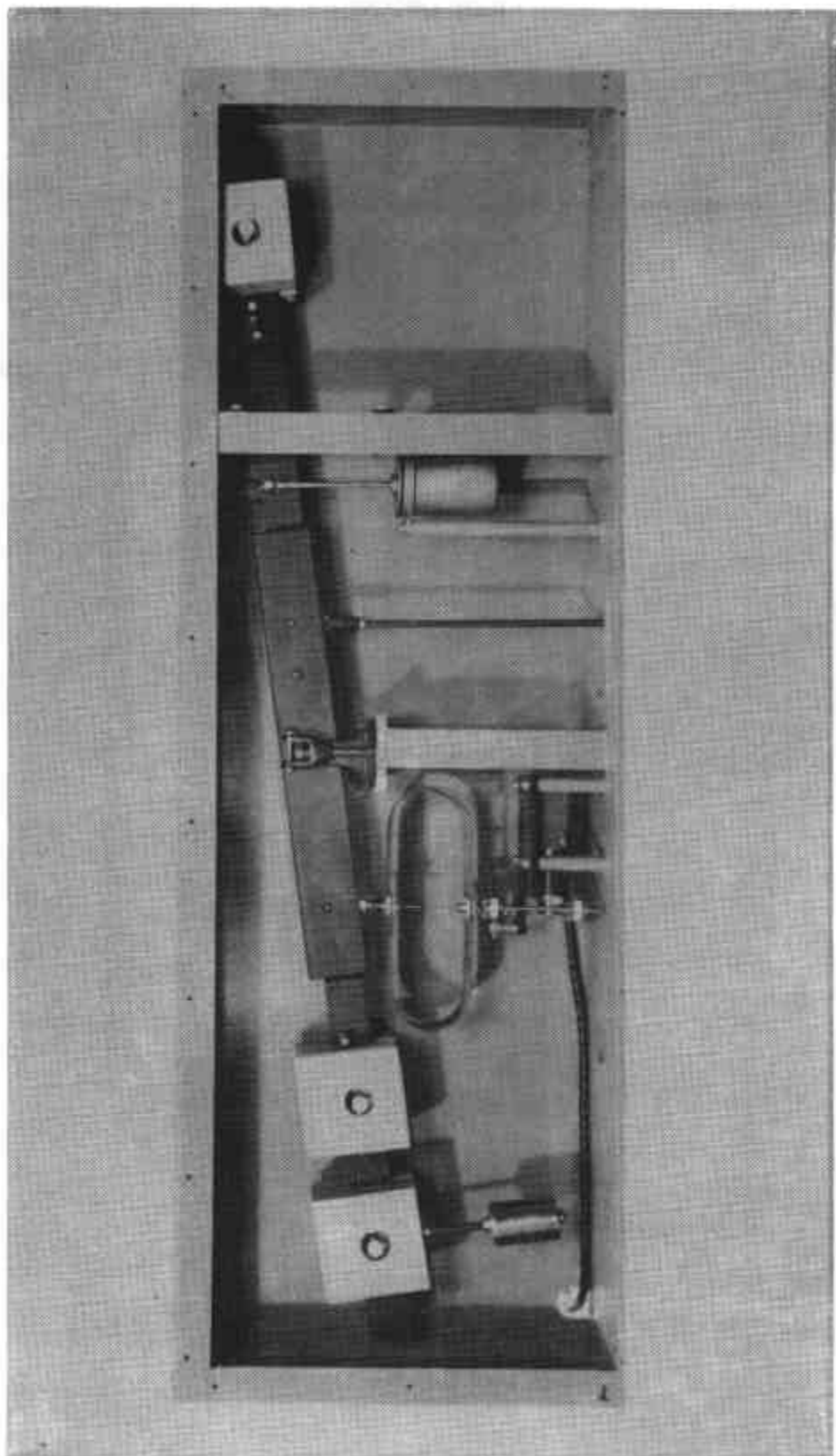
FIGURE 6/9C/24A - 5



Typical Load Cell Mounting Assembly

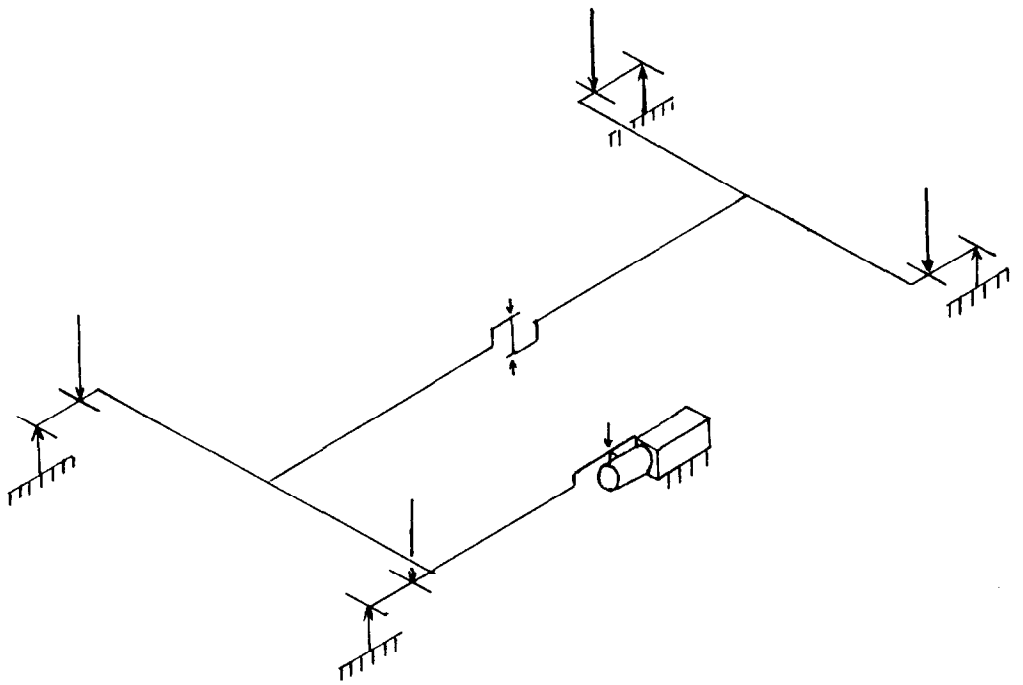
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FIGURE 6/9C/24A - 6



Headwork Lever with Elliptical Spring

FIGURE 6/9C/24A - 7



Alternative Lever System