CERTIFICATE OF APPROVAL No 6/10B/19

This is to certify that the pattern and variants of the

Hawke (Fairbanks Morse) Combination Weighing Instrument

submitted by Hawke & Co. Pty Ltd,
South Terrace,
Kapunda, South Australia, 5373,

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

Date of Approval: 13 August 1974.

The pattern and variants are described in Technical Schedule No 6/10B/19, 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 6/10B/19".

Signed

Executive Officer

13/8/74

NATIONAL STANDARDS COMMISSION

TECHNICAL SCHEDULE No 6/10B/19

Pattern: Hawke (Fairbanks Morse) Combination Weighing Instrument

Submittor: Hawke & Co. Pty Ltd,
South Terrace,
Kapunda, South Australia, 5373

Date of Approval: 13 August 1974

All instruments conforming to this approval shall be marked "NSC No 6/10B/19".

Description:

The pattern (see Figures 1 and 2) is of a self-indicating combination weighbridge with a Fairbanks Morse headwork, Hawke platform combining unit, and two seven-lever baseworks. The two baseworks each have a maximum capacity of 200 tonnes and may be coupled to the headwork either independently or together.

The headwork comprises:

1. A dial housing containing a double-pendulum resistant mechanism, a dial on each side of the headwork with up to 1,75 graduations per degree (600 graduations), a flash dial and a printer, as described in Certificate No 6/10A/7 (see Figures 1 to 4).

2. A lever intermediate between the main headwork lever and the resistant mechanism, a main headwork lever, locking mechanism and unit weights which are manually operated, as described in Certificate No 6/10A/7 (see Figures 4 and 5).

The platform combining unit contains two balancing levers each with a balance adjustment, a common intermediate lever and two balancing weights (see Figures 1, 2 and 6). The pullrod from the transfer lever of each basework is coupled to a balancing lever. The balancing levers

are in turn coupled to a common intermediate lever and by a pullrod to the main headwork lever. Balance weights are deposited on the pullrod when the control levers, which select each platform, are in the locked position, that is, the platforms are not engaged.

The following instructions for balancing are located on the front of the cabinet:

> "With both control levers in the locked position, adjust indicator to zero by means of the zero adjustment. Independently balance each platform in turn by means of the adjustment on each balance lever.
>
> Balance lever adjustment is on left-hand end of lower cabinet."

The basework comprises two seven-lever baseworks as described in Certificate No 6/10A/4. Figure 7 illustrates one of the seven-lever baseworks.

The approval includes:

1. Capacities up to 200 tonnes.

2. A pair of three, five, seven or nine-lever baseworks as described in Certificate No 6/10A/4.

3. Additional transfer levers.

4. Automatically operated unit weights, or without unit weights as described in Certificate No 6/10A/7.

5. One dial, in which case tare bars may be fitted on the same side as the dial. The tare bars are described in Certificate No 6/10A/7 (see Figure 8). The tare bars may be graduated or ungraduated.

6. Ticket printer and motion detector as described in Certificate No 6/10A/7 (see Figures 9 and 10). The mechanical motion detector prevents the printer from operating until the weight indication is steady and comprises contacts, a lever arm and dashpot in conjunction with a time delay.

The motion detector may be adjusted so that it is sensitive enough to detect a small disturbance of the weighing mechanism, in which case

only a short time delay is needed; however if only large disturbances are detected the time delay must be lengthened to allow the instrument time to return to balance before printing (refer Special Tests — Motion Detector). A light illuminates when a disturbance of the weighing mechanism is sufficiently large to be detected by the motion detector and thus prevent the printer from printing. The motion-detector light may be switched off when not in use for testing purposes.

The motion-detector sensitivity adjustments, that is, the contact spacing and the dashpot adjustment and the time-delay adjustment, are sealed (see Figures 11 and 12).

Special Tests — Motion Detector:

1. Determine the smallest load which when removed from the platform causes the motion-detector light to come on; that is, determine the threshold sensitivity of the motion detector. If this is one graduation or less only carry out test 4; if greater than one graduation do tests 2 and 3.

2. Remove the load determined in 1 and at the same time press the print button; the motion-detector light will come on and the printer should print the value of the load remaining on the platform.

3. Decrease the value of the load removed by the equivalent of one graduation. Repeat test 2. The motion-detector light should not come on and the printer should print the value of the load remaining on the platform. If the light does come on, recheck the threshold sensitivity of the motion detector.

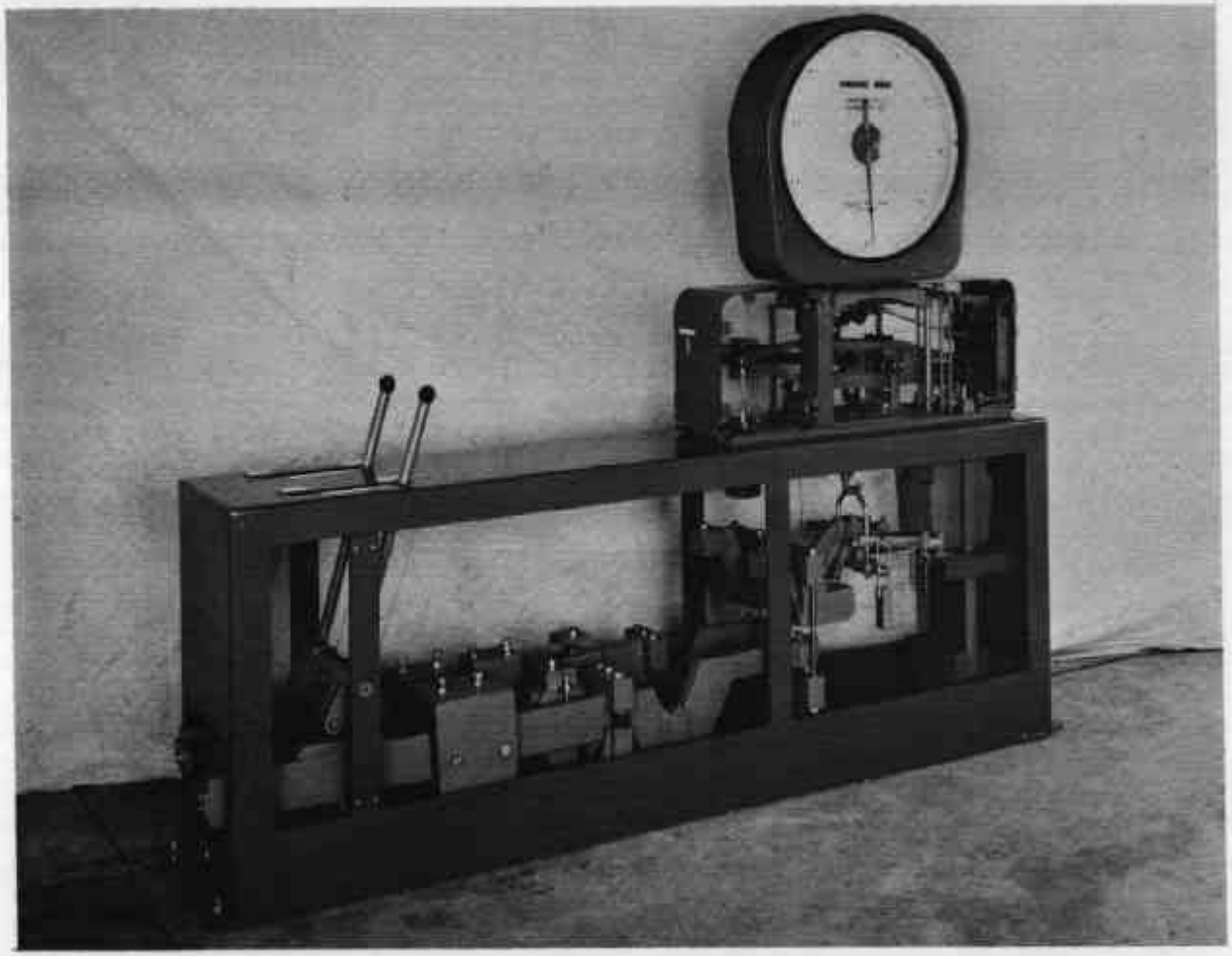
   The time delay is correctly adjusted in relation to the motion-detector threshold sensitivity if the correct weights are printed and the light operates as specified.

4. When the threshold sensitivity determined in 1 is one graduation or less, remove a load equal to 1,5 graduations from the platform and at the same time press the print button. In this case the time delay is correctly adjusted in relation to the motion-detector threshold sensitivity if the light comes on and the printer prints the value of the load remaining on the platform.

FIGURE 6/10B/19 - 1

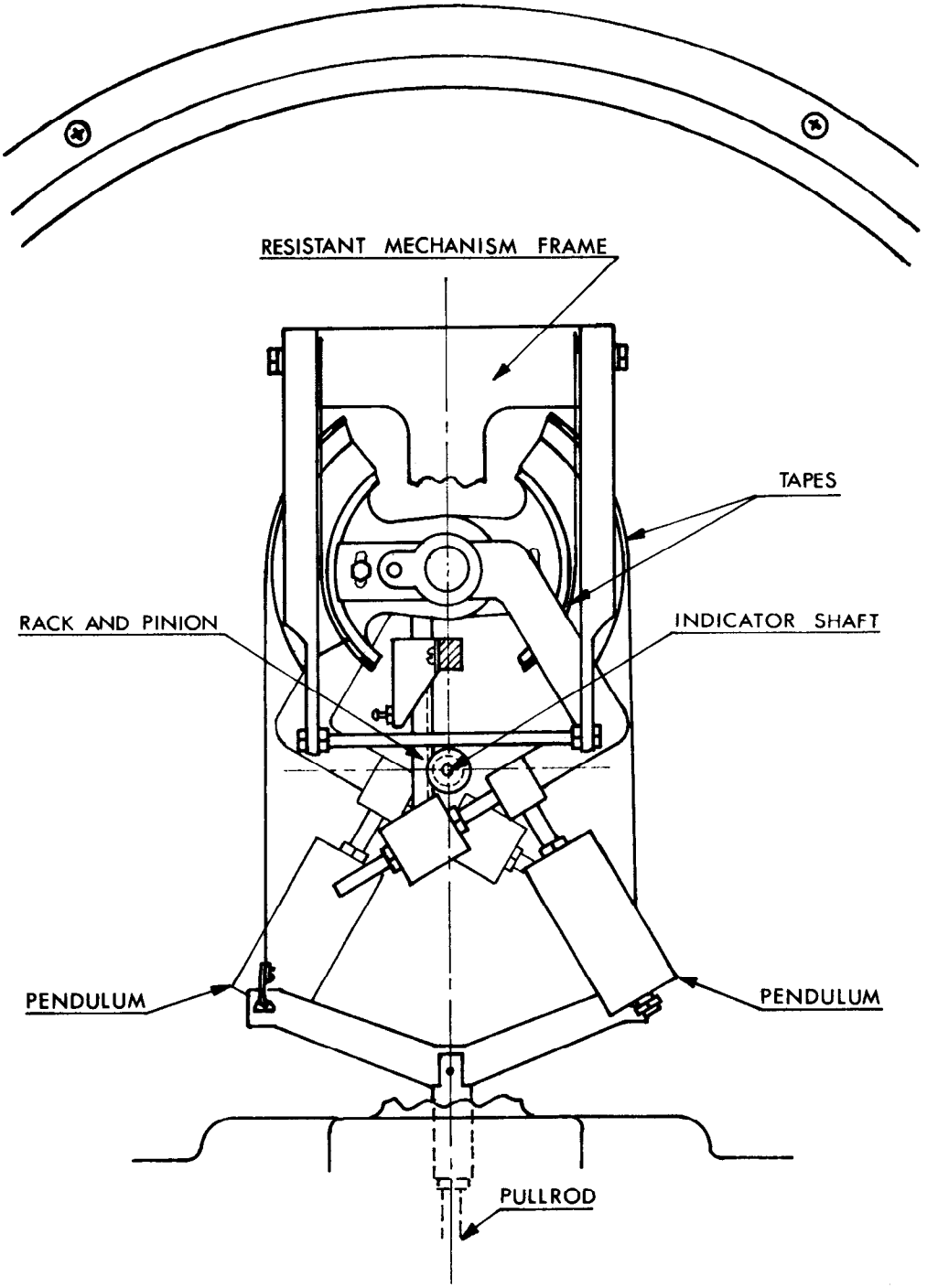
Hawke (Fairbanks Morse) Headwork and Platform Combining Unit

FIGURE 6/10B/19 - 2



Hawke (Fairbanks Morse) Headwork and Platform Combining Unit

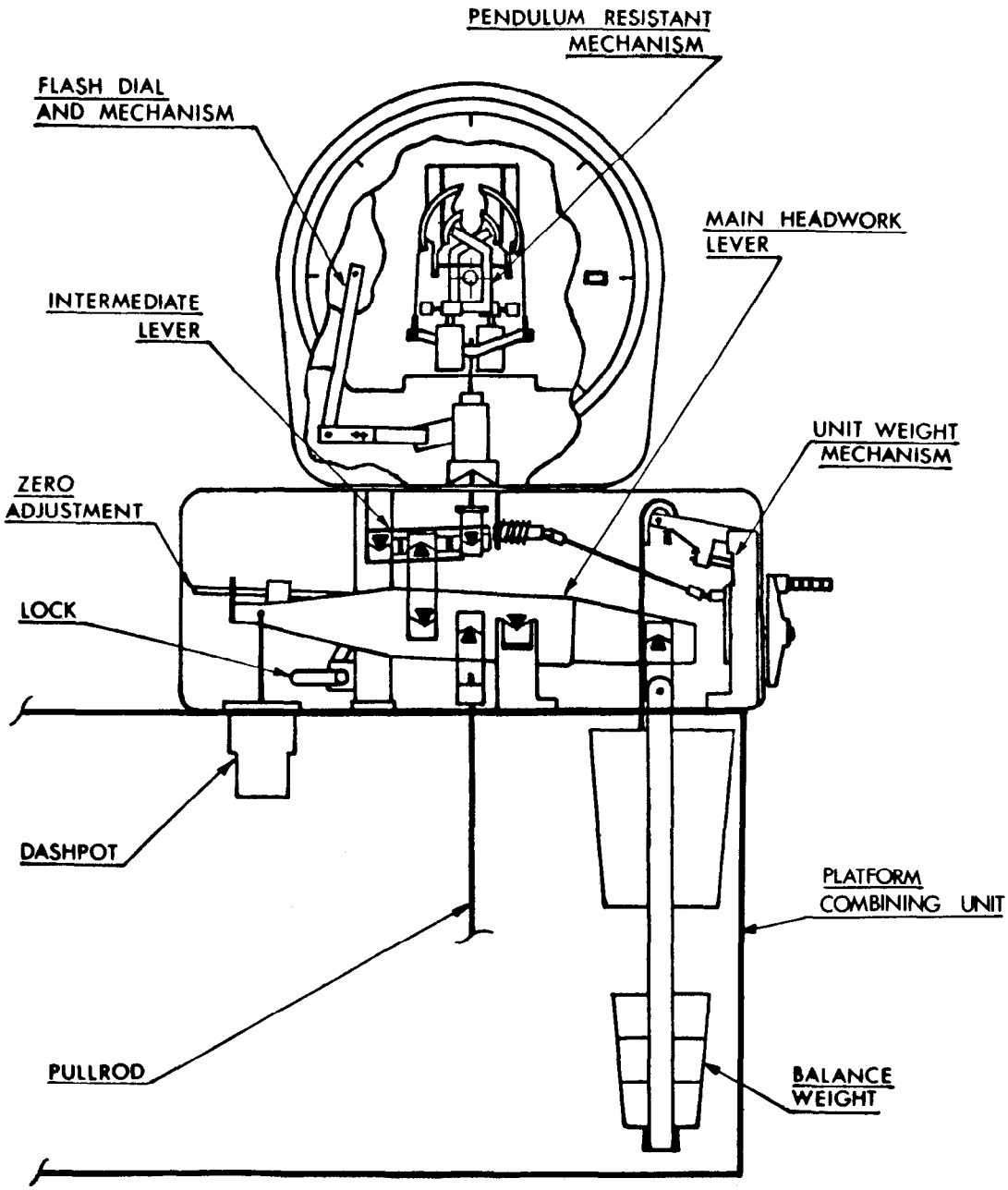
FIGURE 6/10B/19 - 3



Resistant Mechanism

16/9/74

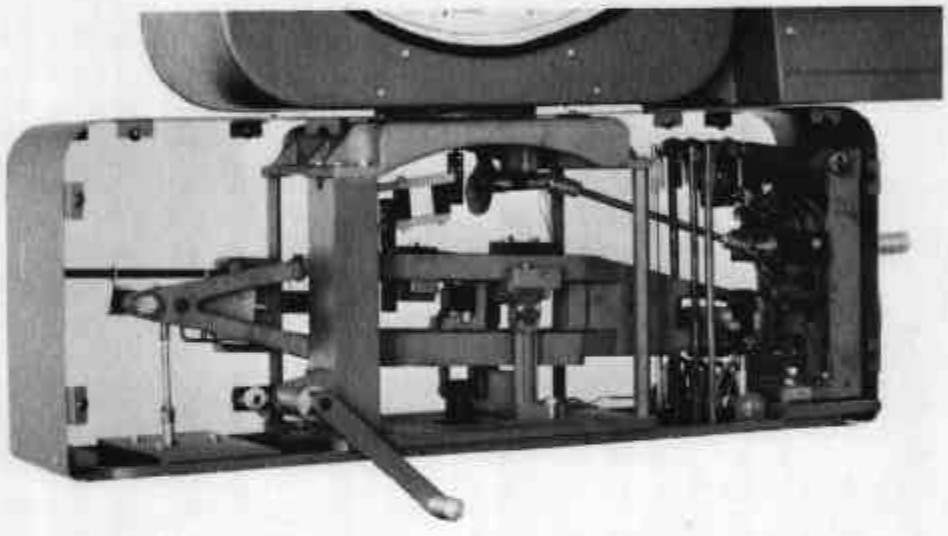
FIGURE 6/10B/19 - 4



Hawke (Fairbanks Morse) Headwork — Schematic Drawing

16/9/74

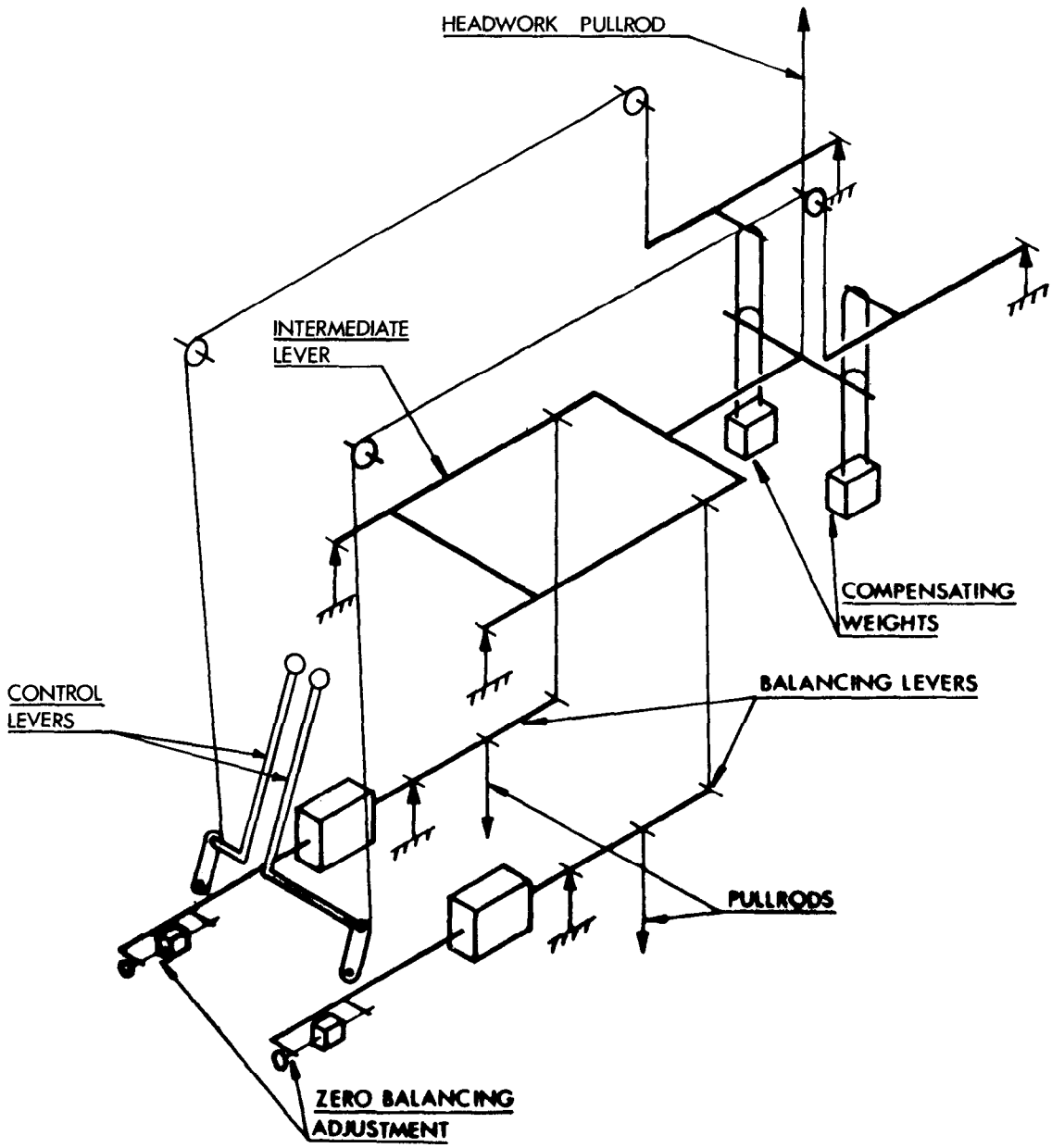
FIGURE 6/10B/19 - 5



Intermediate Lever, Main Headwork Lever, and
Mechanical Unit-weight Assembly

16/9/74

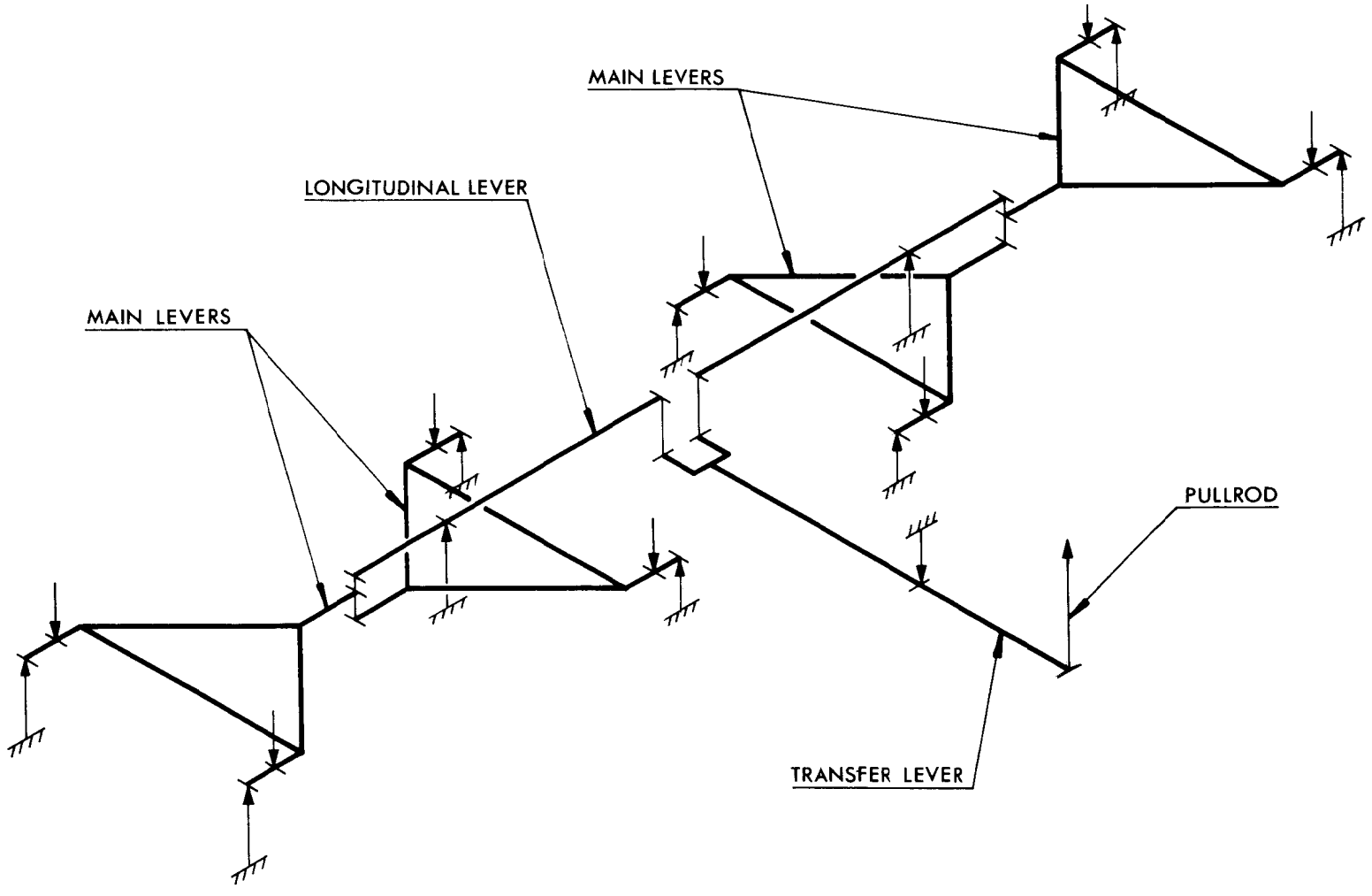
FIGURE 6/10B/19 - 6



Platform Combining Unit — Schematic Diagram

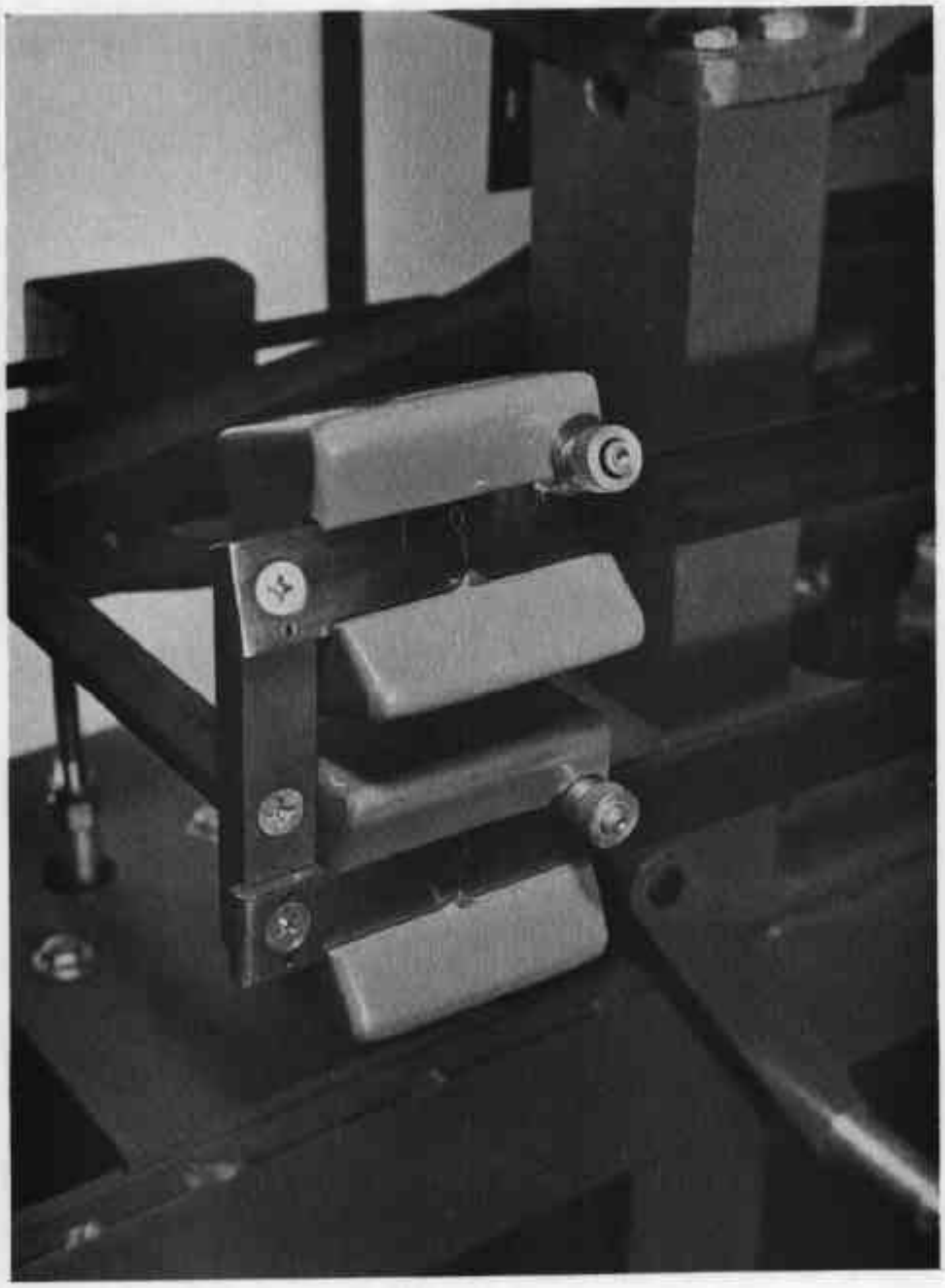
16/9/74

FIGURE 6/10B/19 - 7



Seven-lever Basework

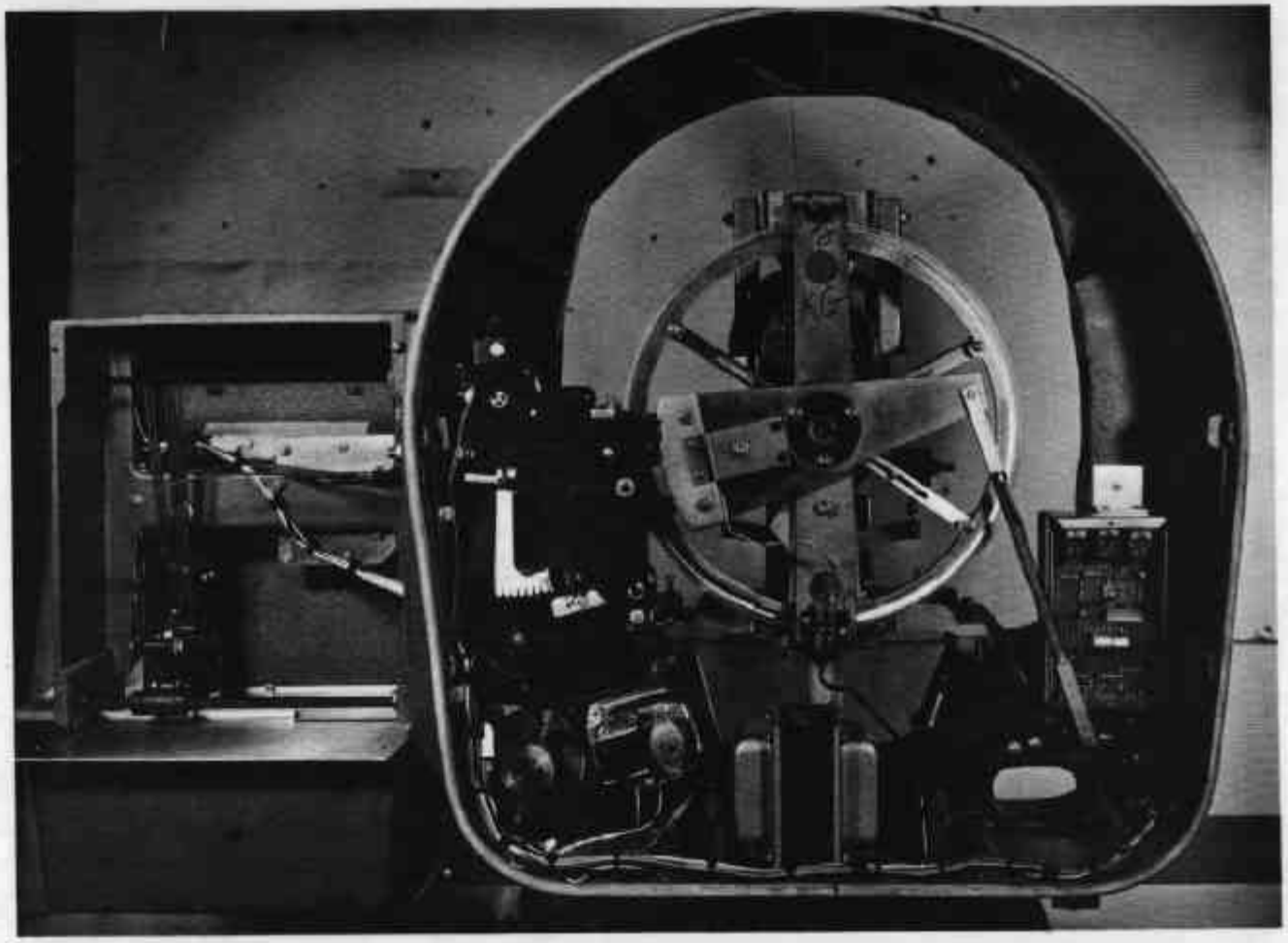
FIGURE 6/10B/19 - 8



Tare Bars

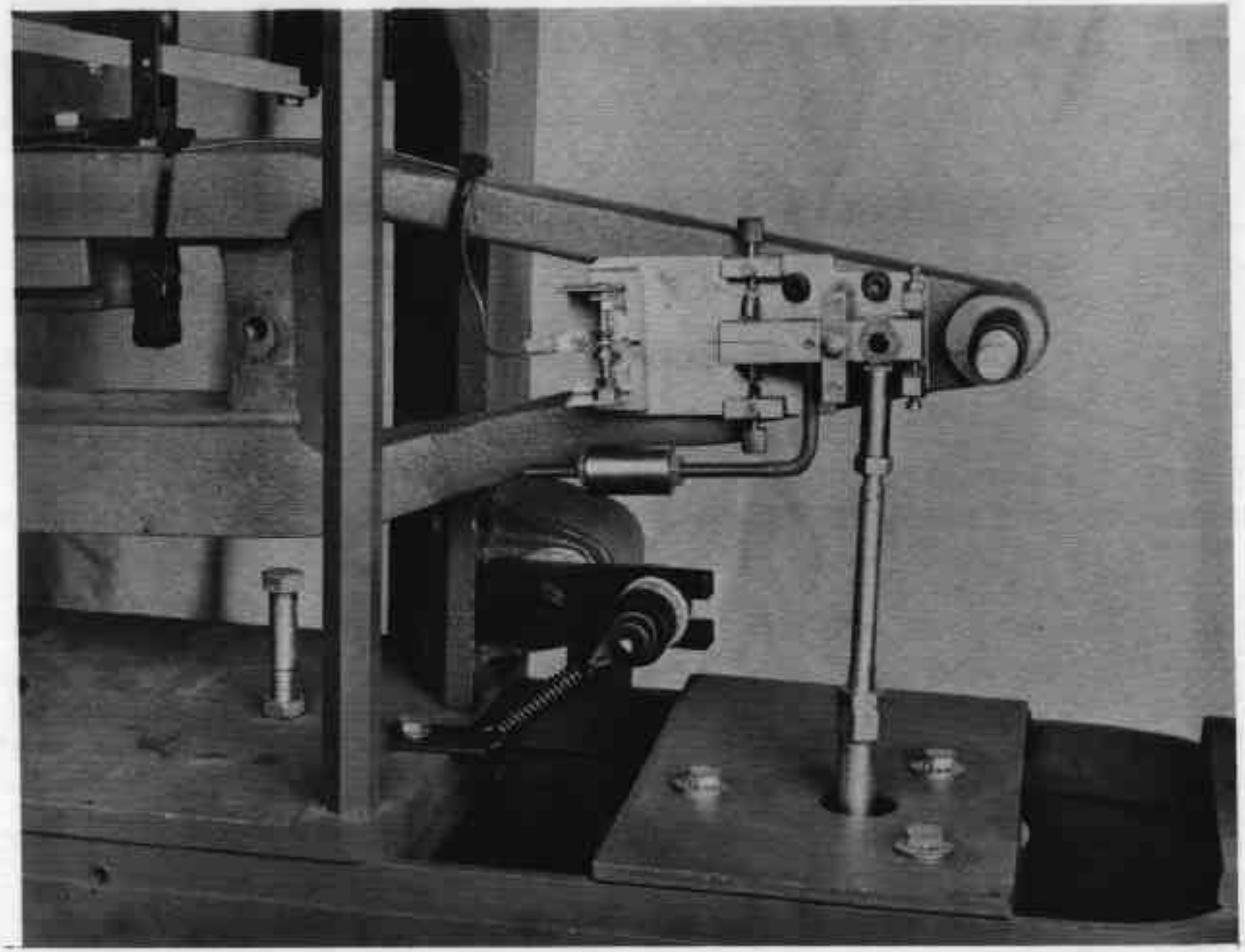
16/9/74

FIGURE 6/10B/19 - 9



Ticket Printer — Covers Removed

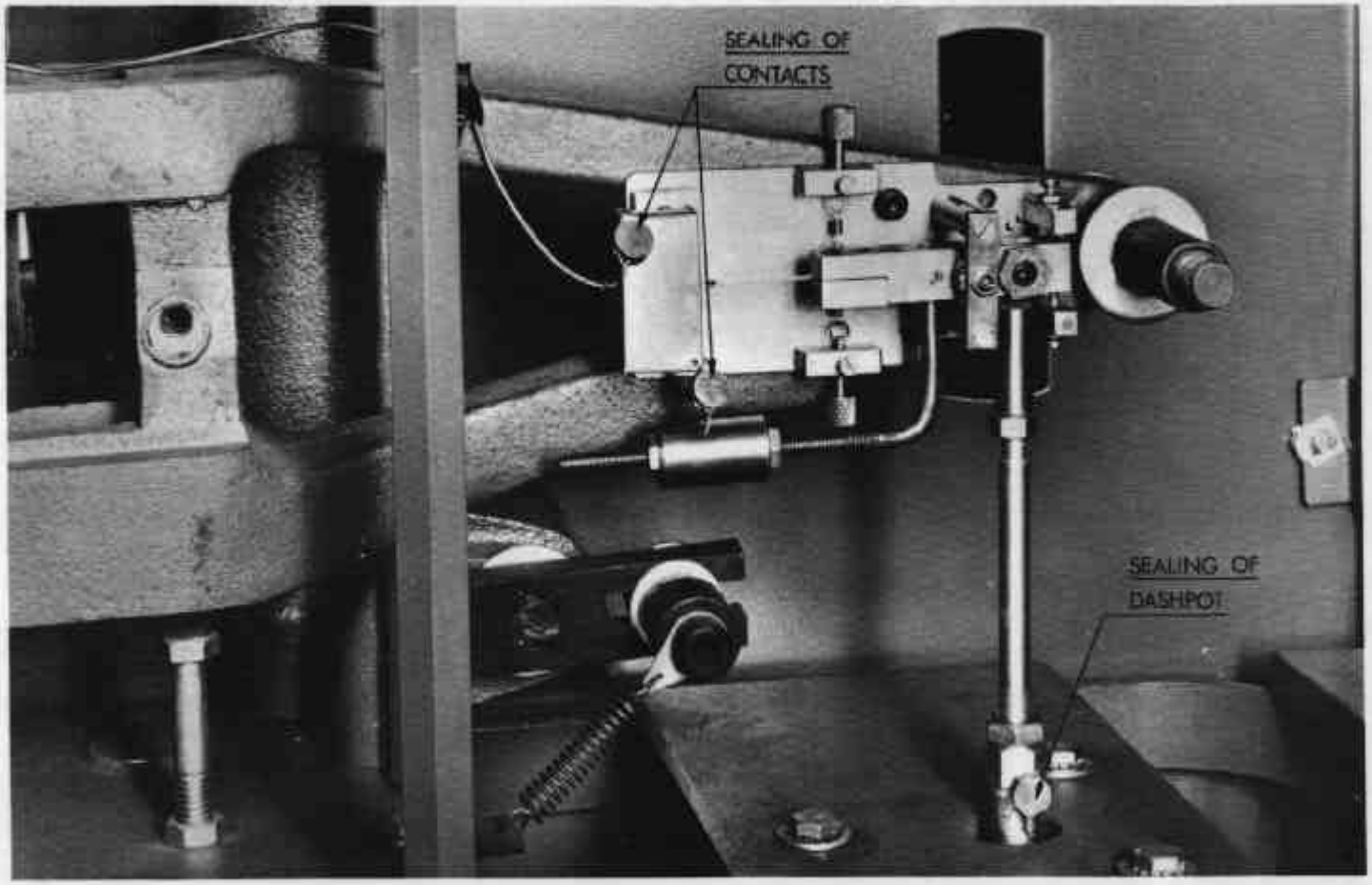
FIGURE 6/10B/19 - 10



Motion Detector

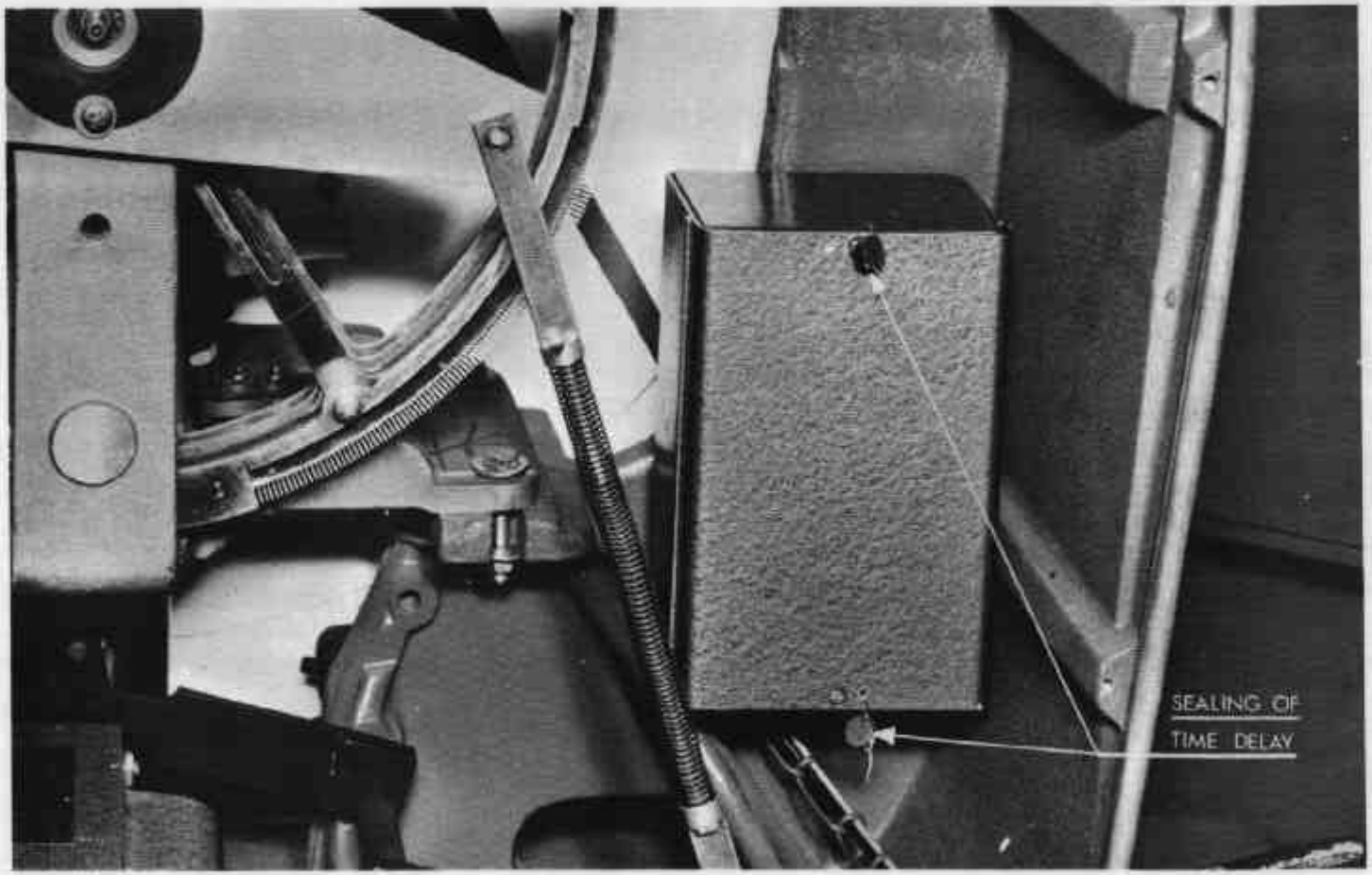
FIGURE 6/10B/19 - 11

16/9/74



Sealing of Motion-detector Contacts and Dashpot Adjustment

FIGURE 6/10B/19 - 12



Sealing of Time-delay Adjustments