PO/CL 494
SUPERSEDES PO/CL 465

INFORMATION

JUSTIFICATION:- SAFETY

Director of Mechanical and Electrical Engineering
British Railways Board
14 Melbury Terrace
London

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IDENTIFICATION AND REMOVAL OF OLEO BUFFERS FROM FREIGHT VEHICLES

1. IDENTIFICATION OF OLEO PNEUMATIC 'TYPE 3' AND 'TYPE 4' BUFFERS

1.1 The Oleo Pneumatic 'Type 3' Buffer can be identified as follows:-

The back of the 'Type 3' Buffer head is flat to the plunger (see Figs. 1 and 3) (24.1/2" (620 mm) projection only).

1.1.1 Dimension A on Fig. 1 i.e. the length of cylinder projecting from the front of the mounting bracket, must be 10.1/2 inches.

1.2 The Oleo Pneumatic 'Type 4' Buffer can be identified as follows:-

The 'Type 4' Buffer head is swaged to the plunger as shown in Fig. 5.

2. REASONS FOR FAILURE AND RECOGNITION OF DEFECTIVE BUFFERS

2.1 Defective Oleo Pneumatic Buffers, may fail to extend fully when the buffer is not under load.

On 'Type 3' Buffers the head may move away from the end of the plunger if damage sustained has affected the interference fit between the head and the plunger. (See Figs. 2, 3 and 4).

This feature does not occur on other types of Oleo Buffer where the head is swaged to the plunger. i.e. 'Type 4' (see Fig. 5).

2.2 Buffers with incorrect extension must be removed.

The extension can be ascertained by measuring the distance between the end of the cylinder and the nearest point on the buffer head. (See Fig. 6).

The actual extension of the buffer must be within the limits specified below:-

Nominal Stroke	Extension
3.1/4" (83 mm)	3.1/4" ± 1/8" (83 mm ± 3 mm)
4.1/2" (114 mm)	4.1/2" ± 1/8" (114 mm ± 3 mm)
105 mm	105 ± 3 mm

The nominal extension be checked by measuring a satisfactory buffer on the same vehicle.

2.3 There are obvious signs of oil leakage from the buffer.

2.3.1 Oil leakage is apparent as excessive oil on the plunger adjacent to the cylinder.

2.3.2 A thin film of oil on the plunger is normal.

2.4 The date of the last overhaul, or date of manufacture, (stamped on buffer or overhaul plate) is more than 9 years previous.

2.5 The wear on the buffer head is outside specified limits.

2.6 Unless precautions are taken when removing partially compressed 'Type 3' Buffers from the vehicles, the head and plunger could move suddenly into the fully extended position and the head could be ejected from the cylinder.

2.7 In order to prevent the possibility of such movement and to safeguard staff engaged upon the removal of the buffer, it is recommended that a clamp to BR Cat No. 39/7938 be fitted prior to removal of the buffer. (Fig. 7).

Details of the recommended procedure are given in Section 4.

3. REMOVAL PROCEDURE
'TYPE 4' BUFFERS

3.1 If the buffer is fully extended it may be removed from the vehicle in the normal way.

3.2 If the buffer is partially compressed, the air pressure must be released in accordance with paragraph 5 before the buffer is removed from the vehicle.

3.2.1 After the removal of the buffer follow the procedure in section 6.1 to 6.5.

4. REMOVAL PROCEDURE
'TYPE 3' BUFFERS

4.1 General Precautions

4.1.1 Persons must not be allowed in front of the defective buffer until the clamp has been fitted.

4.1.2 There must be a space of at least 3000 mm (10'0") between the buffer face and any obstructions.

4.1.3 The vehicle brakes must be applied whilst carrying out any work on the buffers.

4.1.4 Thermo cutting devices must not be used on these buffers.

4.1.5 Under no circumstances should the buffer head be struck.

4.2 Clamp Fitting Procedure

4.2.1 Loosen securing bolt A sufficiently to pass the jaw of the clamp over the buffer cylinder. (See Fig. 7).

4.2.2 Pass the hook over buffer head, moving clamp longitudinally along cylinder to obtain correct engagement (See Fig. 7).

4.2.3 Press the clamp firmly onto the cylinder and lightly tighten the securing bolt A, using a hand spanner.

4.2.4 The purpose of the securing bolt is to retain the clamp on the cylinder only. Should the plunger/head suddenly release whilst the clamp is in position the forward force exerted on the bracket via the hook will cause the hardened steel teeth in the upper and lower faces of the clamp to bite into the cylinder preventing the clamp form sliding along the cylinder.

5. RELEASE OF AIR PRESSURE

5.1 Equipment Required

5.1.1 Screwdriver with 1/2" wide blade.

5.1.2 Box spanner to fit 3/8" square plug.

The o/d to be reduced to 0.62" to permit the spanner to enter the air plug recess.

5.1.3 Eye protection to BS 2092 : 1967.

5.1.4 White marker.

5.2 When the clamp has been fitted the air pressure can be released, through the air plug in the centre of the buffer face, using the following procedure.

5.2.1 Using the screwdriver, remove the dust cap and retain.

5.2.2 Using the box spanner, open the air plug half a turn and release the air pressure.

Eye protectors should be worn whilst carrying out this operation.

5.2.3 When the air pressure is exhausted tighten the air plug and reinsert dust cap and secure.

6. REMOVAL AND REPLACEMENT OF BUFFER

6.1 When the air pressure has been released the clamp can be removed and the buffer removed from the vehicle in the normal way.

6.2 Buffers which have been deflated shall be clearly marked on the body of the buffer with the legend D/F in approx 50 mm (2") high characters using the white marker.

6.3 Replace defective buffers with satisfactory buffers of the same or approved alternative types.

6.4 Defective buffers removed from vehicles must be returned to the Repairers Works for repair or attention.

6.5 Buffers received at the Repairers Works which are not fully extended and do not bear the legend D/F must be assumed to contain air pressure. Appropriate precautions must be taken when dealing with these buffers.

for M V Casey

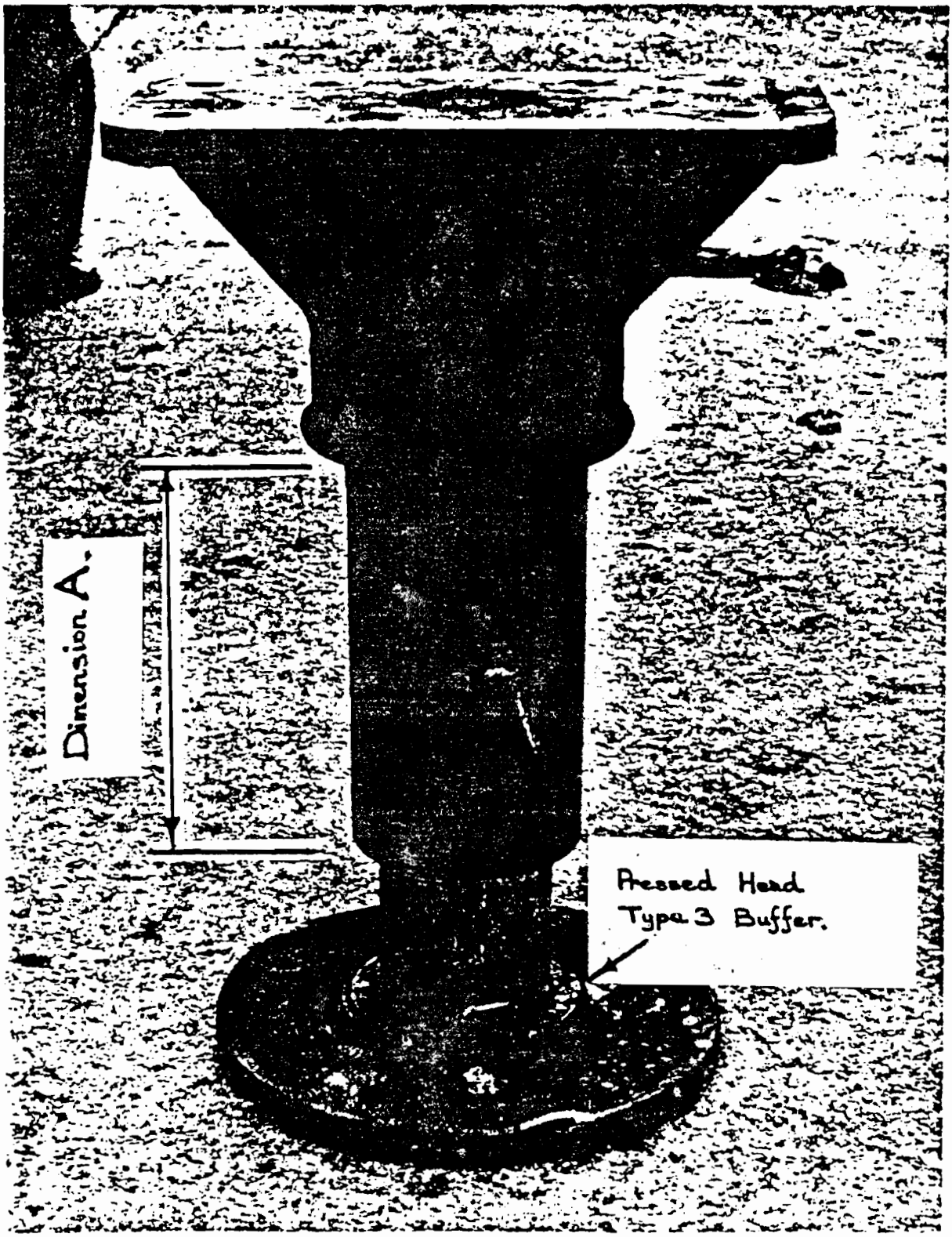

Fig 1.

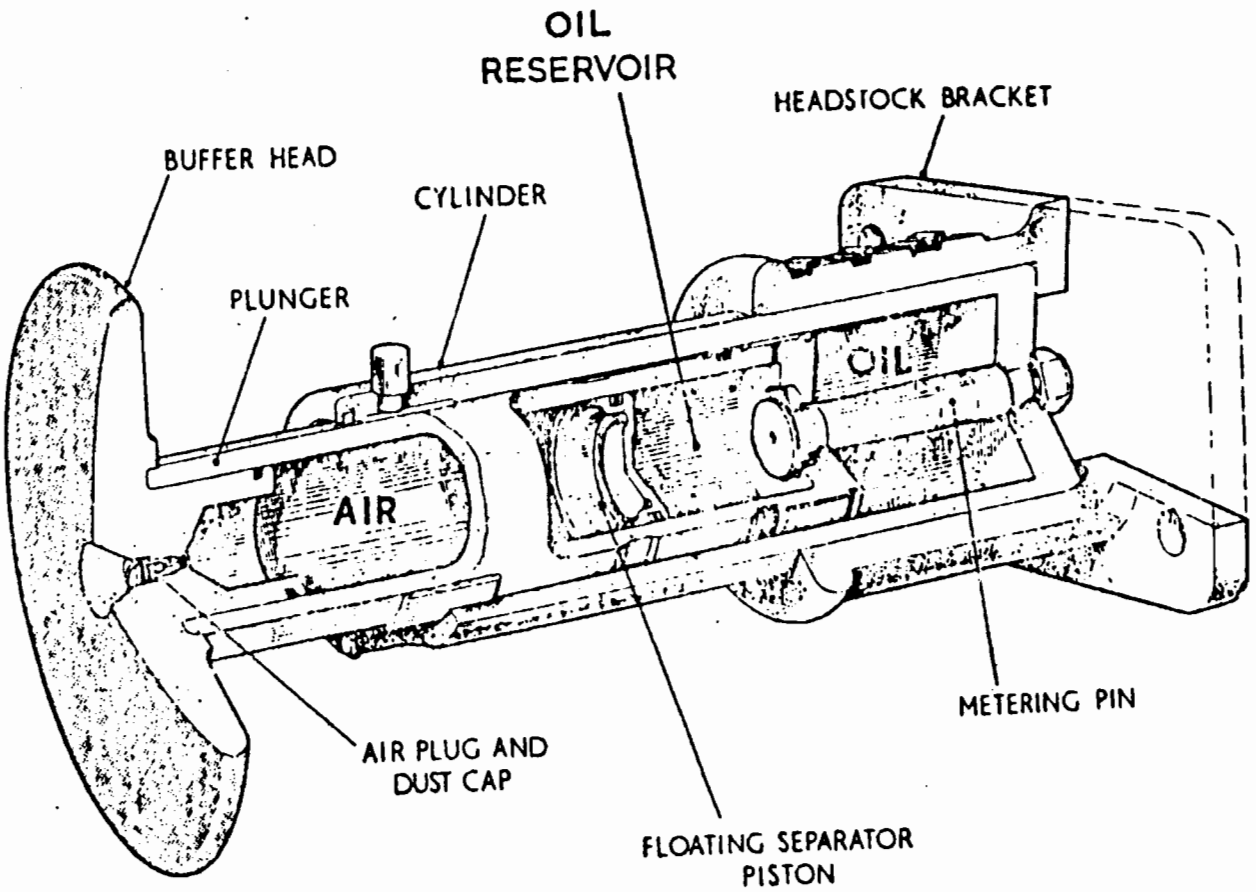

Fig. 2.
Assembly of Operational Buffer, Type 3
(Non-Swaged Head)

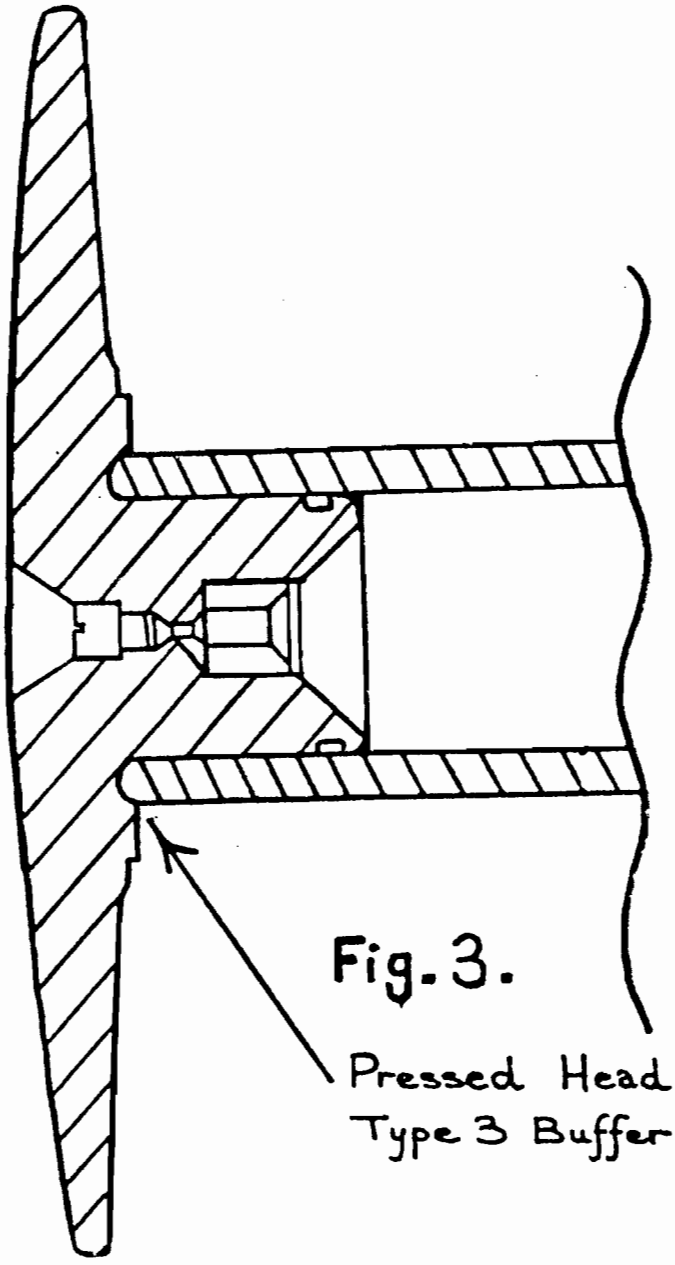

Fig. 3.

Pressed Head
Type 3 Buffer.

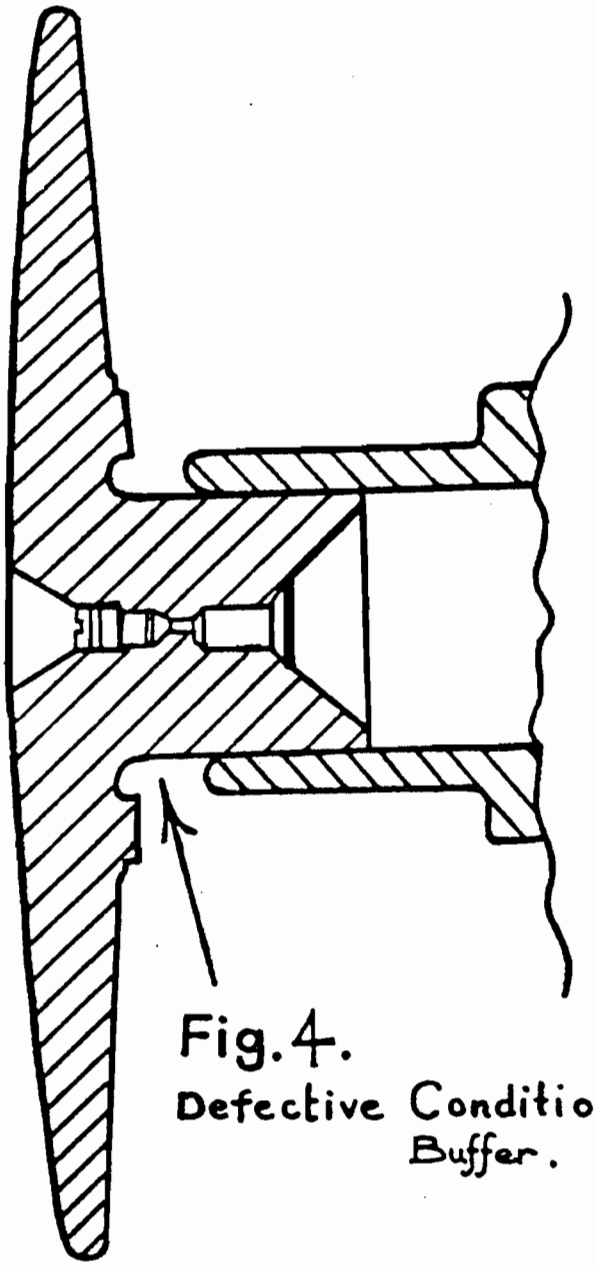

Fig. 4.
Defective Condition, Type 3.
Buffer.

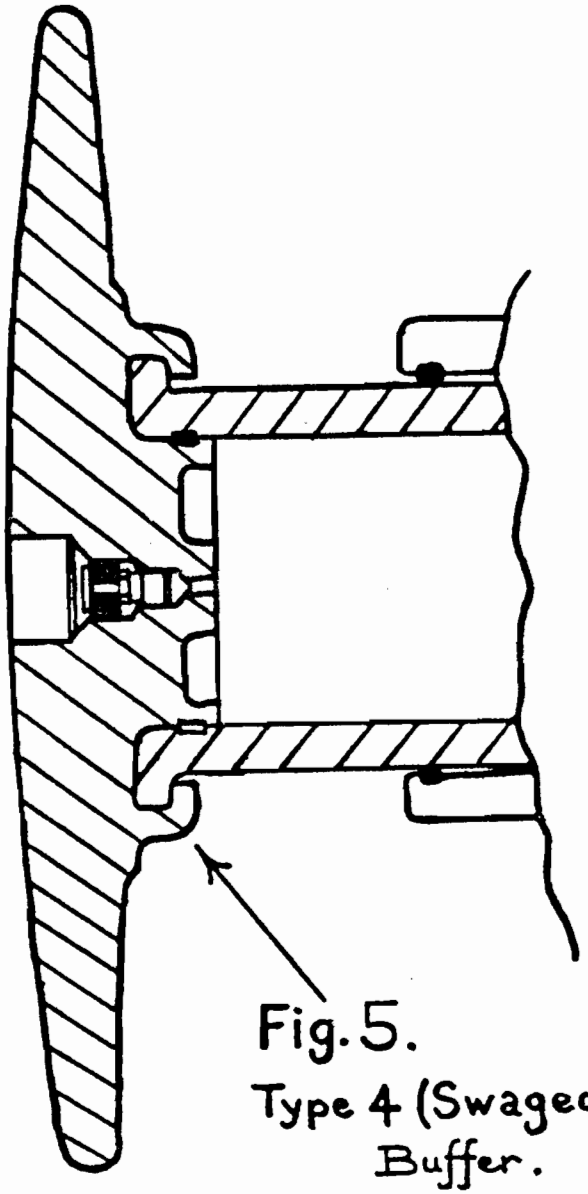

Fig. 5.
Type 4 (Swaged Head)
Buffer.

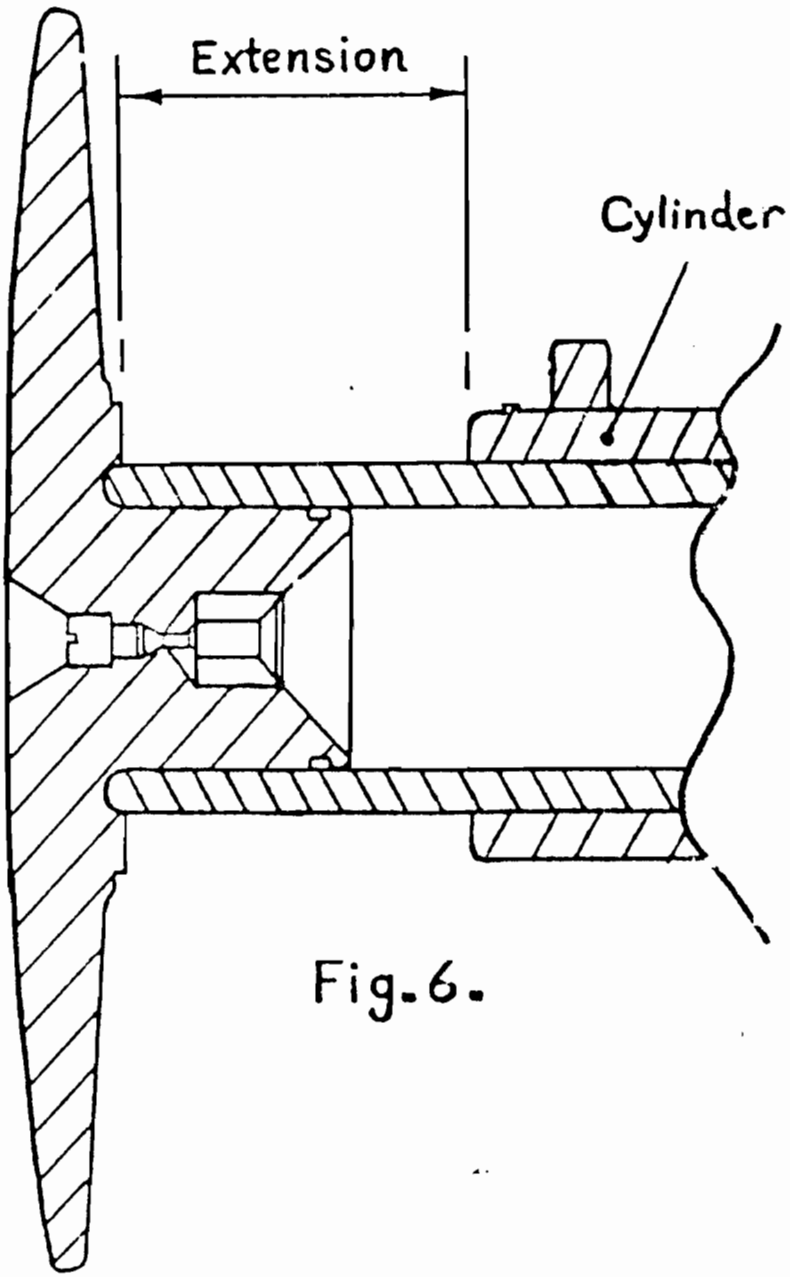

Fig.6.

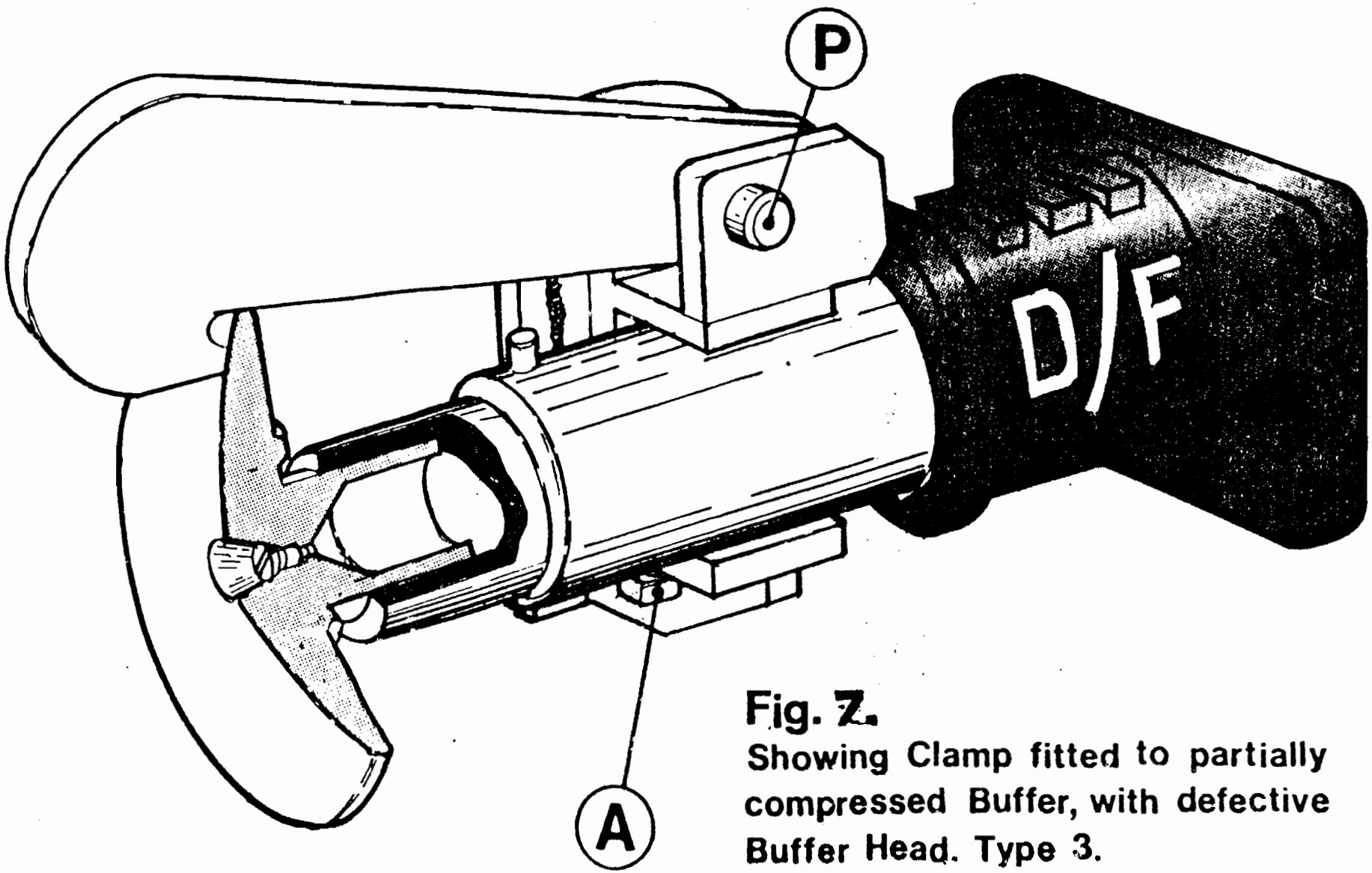

Fig. 7.
Showing Clamp fitted to partially compressed Buffer, with defective Buffer Head. Type 3.