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BOREHAM WOOD
HERTS.

Research Objective No.

DEPARTMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH AND FIRE OFFICES' COMMITTEE  $\,$  JOINT FIRE RESEARCH ORGANIZATION

END BLANKING PLUG FOR TESTING SMOOTH BORE,

HIGH BURSTING PRESSURE FIRE HOSE

by

J. A. Gordon

#### Summary

With the introduction of smooth-bore fire hose made from synthetic fibres, it was found that the existing plugs used for hose testing were inadequate to retain a sufficiently high pressure without blowing out.

In this note is described a plug which was designed to contain the pressure up to the bursting point of this type of hose.

May 1959.

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Fire Research Station, Boreham Wood, HERTS.

#### END BLANKING PLUG FOR TESTING SMOOTH BORE.

#### HIGH BURSTING PRESSURE FIRE HOSE

by

## J. A. Gordon

## Introduction

The hose blanking plug, used by the Joint Fire Research Organization for testing the bursting pressure of unlined canvas fire hose has been fully described elsewhere (1) (2). It consisted of an expanding rubber plug and a steel collar, between which the wall of the fire hose was trapped. It was found in practice that there was sufficient friction to prevent the blanking plug from blowing off under the highest pressures required.

With the introduction of hose manufactured from synthetic fibres with smooth plastic or rubber interior linings, the existing plug was not capable of containing the higher bursting pressures required without blowing off.

A blanking plug was, therefore, designed, capable of use with synthetic hose.

### Description

The redesigned blanking plug illustrated in Figures 1 and 2 Plates 1 and 2, was basically the same as that described in Fire and Fire Protection, April 1952, but in order to increase the frictional area of the plug against the wall of the hose, the following modifications were made.

- 1. The length of the plug was increased by 50 per cent.
- 2. The compression flange of the plug was increased in diameter and a mating flange was provided on one end of the steel outer collar. The two flanges were bolted together by three set screws after the plug had been connected to the hose. This further increased the frictional resistance of the plug which was now integral with the collar.
- 3. A shallow coarse-pitch screw thread was cut in the bore of the steel collar which further increased the frictional area of the collar.

# Conclúsions

The plug has been tested to a pressure of 650 lb/sq.in. without failure and it is considered that the redesigned blanking plug will be capable of withstanding, without blowing out, all pressures it is likely to be subjected to when used for testing smooth bore hose such as that manufactured from synthetic fibres.

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## Reference

- 1. Fire, April 1952.
- 2. Fire Protection, April 1952.

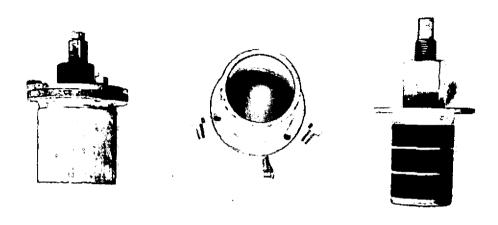


PLATE 1. END BLANKING PLUGS FOR TESTING HIGH BURSTING PRESSURE HOSE

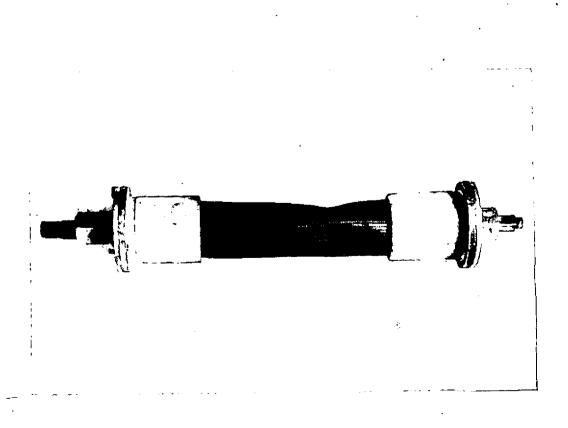
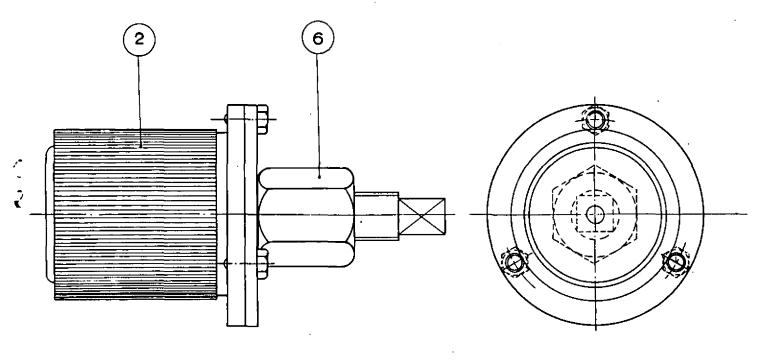
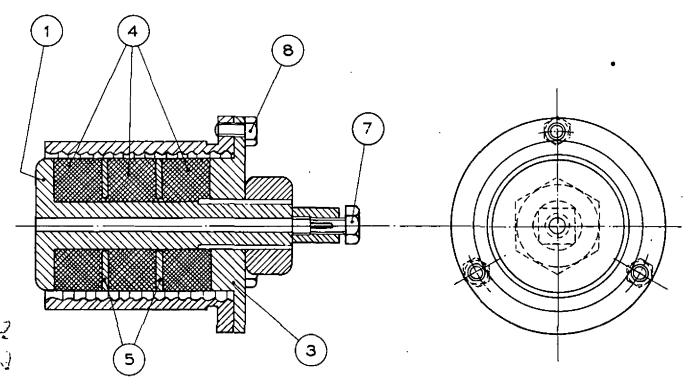


PLATE 2. END BLANKING PLUGS ASSEMBLED TO HOSE



PLUG A



PLUG B

BLANKING PLUGS FOR 23/4" HIGH BURSTING PRESSURE HOSE

FIG.I.

E-1

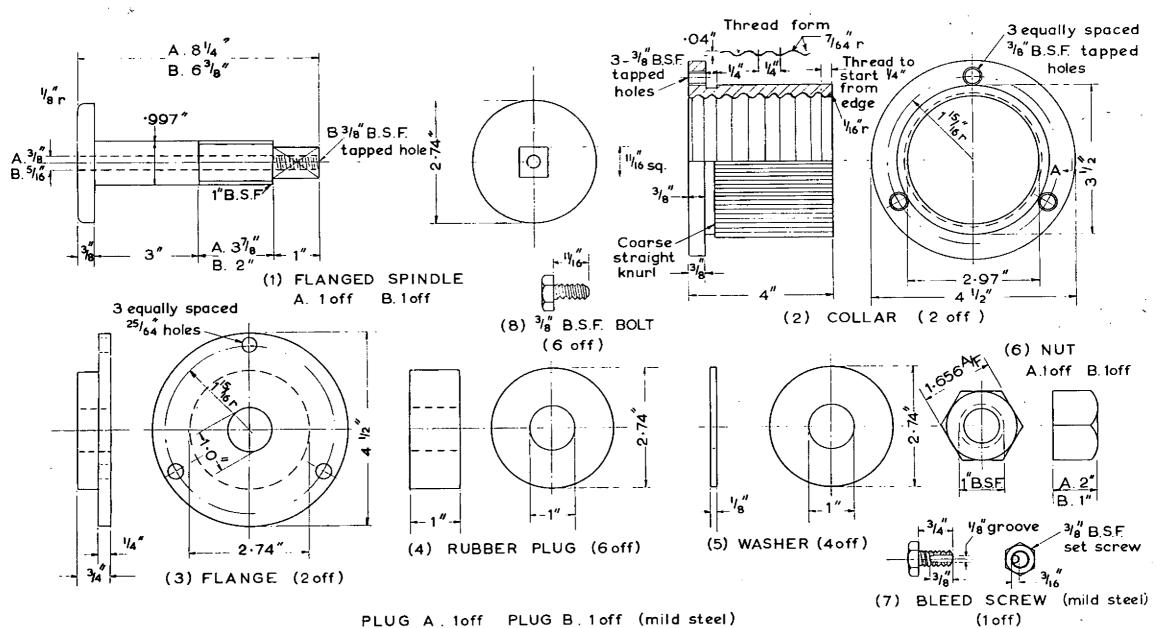


FIG.2. BLANKING PLUGS FOR 23/4 IN. HIGH BURSTING PRESSURE HOSE