

## AMENDED SPECIFICATION

Reprinted as amended in accordance with the Decision of the Assistant Comptroller acting for the Comptroller-General dated the second day of March, 1959, under Section 14, of the Patents Act, 1949.

## PATENT SPECIFICATION

*Inventor:* CYRIL COBHAM GRIFFITH

**697,854**

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**Index at acceptance:—Classes 83(iii), A117; 83(iv), Q2a2; and 122(iii), B11(e:h).**

By a direction given under Section 17(1) of the Patents Act 1949 this application proceeded in the name of ENGINEERING COMPONENTS LIMITED, a British company, of 14 Liverpool Road, Slough, Buckinghamshire.

### COMPLETE SPECIFICATION

#### Improvements in or relating to Gaskets and like Sealing means

We, COOPERS MECHANICAL JOINTS LIMITED, a British company, of 14 Liverpool Road, Slough, in the County of Bucks., do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to gaskets and like sealing means, and has especial, but not exclusive reference to cylinder head gaskets for internal combustion engines, in connection with which it will mainly be described.

It is known to produce stamped steel cylinder head gaskets having embossed ridges or crimps surrounding the bores and oil and water passages, and such gaskets are considered to be highly successful and an advance on the previous copper-asbestos and suchlike deformable gaskets. We have found, however that there are various critical or highly important factors involved, and that it is not sufficient merely to evolve a crimp pattern for any particular gasket and then produce a stamping or pressing in accordance with that pattern. These factors include varying pressures on different parts of the cylinder head, and consequently the different sealing requirements, the thickness and hardness of the gasket, and the shape and dimensions of the crimp.

The present invention comprises a gasket or like sealing means apertured for at least one passage and formed of a ferrous or non-ferrous metal or alloy within the half-hardness range, that is, within the approximate range 130 to 170 V.P.N. or Brinell, comprising a major flat area from which projects a corrugation

surrounding the aperture, the cross-section of the corrugation being substantially arcuate and substantially one-third of the circumference of a circle, and the height of the corrugation projecting from the major flat area being not less than the approximate thickness of said major flat area, and not more than approximately twice said thickness. Preferred materials are steel, phosphor-bronze, or aluminium-bronze alloy, or those alloys known under the Registered Trade Marks "NIMONIC" and "INCONEL."

Preferably the metal is approximately 150 V.P.N. (Vickers Pyramid Number) in hardness.

When the gasket or like sealing means is apertured for a plurality of passages and has corrugations surrounding the apertures, the thicknesses and heights of the corrugations may be dependent on the loadings and pressures required to be sealed off in the different passages.

The gasket or like sealing means may have at least one aperture surrounded by two parallel contiguous corrugations. If desired, such corrugations may be arranged in opposite senses, the trough of one facing in the same sense as the crest of the other.

In addition, a gasket or like sealing means may have at least one corrugation not surrounding and independent of any aperture, and located so as to counteract distortion in either of the members between which the gasket is to be used.

Gaskets or like sealing means in accordance with the invention may with advantage have an anti-corrosion treatment and be coated with a

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