heat-resisting varnish to form a protection in particular where a closed water circuit is being sealed.

Embodiments of the invention will be described with reference to the accompanying drawings, in which:

Figure 1 is a plan of a gasket,

Figure 2 is a fragmentary enlarged plan of the gasket,

Figures 3 and 4 are diagrammatic cross-sections showing corrugations being formed, to a scale approximately fifty times that of Figure 2,

Figure 5 is a fragmentary plan of another gasket, showing a pattern of corrugations,

Figure 6 is a fragmentary plan of yet another gasket, showing another pattern of corrugations,

Figure 7 is a fragmentary plan of a gasket having parallel contiguous corrugations,

Figure 8 is a diagrammatic cross-section, greatly enlarged, on the line VIII—VIII, Figure 7,

Figure 9 is a fragmentary plan of another gasket having parallel contiguous corrugations, and

Figure 10 is a diagrammatic cross-section, greatly enlarged, on the line X—X, Figure 9.

Referring to Figures 1 and 2, there is shown a gasket for an aircraft jet engine combustion cannister. The gasket 11 is of sheet steel and has a central aperture 12 surrounded by a corrugation 13. The distance of the corrugation 13 from the inner margin 14 of the gasket is determined by design factors. Holes 15 for holding down bolts are provided with non-continuous corrugations 16.

In Figures 3 and 4 there are shown diagrammatic cross-sections of corrugations during formation. The Figures differ only in the dimensions. In each case the gasket 17 lies on a die 18 having a groove 19 formed with its upper edges rounded off, as at 20, and .080 in. wide, as indicated at *a*. A punch 21 .028 in. wide, as indicated at *b*, forced downwardly into the groove 19 causes the material to be deformed into a corrugation 22, the shape being determined by the vertical travel of the punch 21. The corrugation 22 does not bottom in the groove 19.

Figure 3 shows a shallow corrugation .020 in. high, as indicated at *c*, while Figure 4 shows a deeper corrugation .028 in. high, as indicated at *d*, the thickness of the gasket being .015 in. in both cases as indicated at *e*. In each case, also, the cross-section of the corrugation is arcuate, the arc comprising approximately one-third of the circumference of a circle.

In Figure 5 there is shown a cylinder head gasket 23 for an internal combustion engine. Each cylinder aperture 24 is surrounded by a corrugation 25, and in addition apertures 26, 27, 28 for the passage *e,g*, of water or oil are surrounded by corrugations 29, 30. It will be seen that the corrugation 30 constitutes a branched loop from the corrugation 25. The pattern is, of course, dictated by design considerations, and if it is desired to seal a single aperture such as 31 by a branched loop corrugation such as 32, this may be done.

The gasket is formed of steel .015 in. in thickness and of 150 V.P.N. Each corrugation 25 has a width at its base of 0.75 in. and a total height (including the thickness of the gasket) of .043 in. These dimensions are selected to give the requisite seal at a loading of 65 lbs./ft.

For the other apertures requiring seals to withstand lower pressures, (push-rods, oil pressure feed and drain connections, and water passages), the total height of the corrugation, including the thickness of the gasket, is .030 in.

It will be understood that the above dimensions are by way of example only.

In addition (referring now to Figure 6) between each pair of bore apertures 33, 34, there may be anti-distortion corrugations 35, 36 and at each end of the gasket, there may be an anti-distortion corrugation 37 located transversely and being slightly less in length than the diameter of the bores. The total height of these corrugations, including the thickness, is .030 in. These anti-distortion corrugations ensure that with uniform loading on the cylinder head studs the head itself is not distorted.

Referring to Figures 7 and 8, it may be that in certain locations it is advantageous, and spacious enough, to have double corrugations. These may take the form of an inner corrugation 38 and an outer corrugation 39, located parallel and contiguously around the cylinder bore aperture. These corrugations have their crests pointing in the same sense. They are shown in combination with a subsidiary corrugation 40, of lesser height, required for sealing another passage.

Instead of such parallel corrugations being crest-by-crest, they may be crest-by-trough, as shown in Figures 9 and 10, illustrating a gasket for a diesel engine. Here, owing to the greater space available, the inner corrugations 41 are spaced appreciably from the outer corrugations 42.

It has been found that with gaskets according to the invention the corrugations maintain a resilience after fitting, thus promoting an efficient seal.

It is to be understood that the size, number, contours, dimensions and other characteristics of the gasket and its corrugations are dependent on the design of the cylinder head or other assembly to be sealed.

WHAT WE CLAIM IS:—

1. 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, comprising a major flat area fro mwhich projects a corrugation surrounding the aperture, the cross-section of the