Oct. 4, 1938. E. B. GRAHAM 2,131,948

SPRING RING OR CIRCLET

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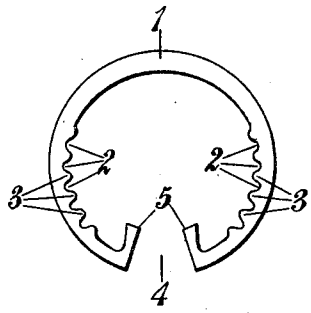


Fig. 1.

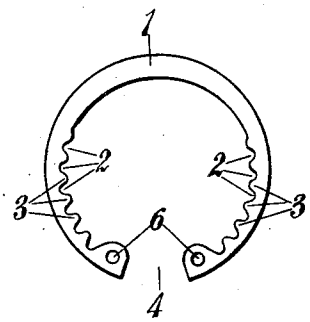


Fig. 2.

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SPRING RING OR CIRCLET

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2 Claims. (Cl. 85—8)

This invention relates to spring rings or circlets adapted for use as securing means or retaining devices by the engagement thereof in an annular groove or channel as, for instance, in securing or retaining gudgeon pins and the like against axial displacement.

A well-known construction of spring ring or circlet for the purpose in question is formed in such manner that the cross-section of the ring is reduced continuously from the middle of the circumference of the ring towards its two ends where it is provided with a gap enabling it to be contracted and with projecting eyes for engagement by a pair of pin pliers or other suitable tool in contracting it in order that it may be engaged in position in an annular groove provided, in cases where it is used for securing the gudgeon pin in position, in the walls of the piston.

The object of the present invention is to provide a form of spring ring or circlet which shall give a greater or more uniform area of support to the end of the gudgeon pin or the like with which it is associated than is obtainable when the material of the cross-section of the ring is reduced continuously in the manner above indicated, while at the same time ensuring a substantially uniform bearing of the peripheral surface of the ring or circlet on the base of the annular groove or recess designed to receive it.

The invention consists, broadly, in a spring ring or circlet in the inner peripheral surface of which is provided a plurality of recesses the said recesses being localized at positions adjacent to the gap the greater or at least a considerable portion of the internal peripheral surface of the ring being unprovided with recesses.

The depth of the recesses in the inner peripheral surface of the ring may decrease progressively from points immediately adjacent to each of the two sides of the gap to points more remote therefrom.

Alternatively, or in addition, the width or spacing of the recesses may be varied to a like end, the depth of the recesses being maintained uniform or being varied.

To permit the spring ring or circlet to be contracted in engaging it in position, in the vicinity of the gap lugs adapted to be engaged by pliers may be provided and these lugs may be merely portions of the material of the ring extending inward towards the center of the ring or circlet or they may be provided with eyes adapted to be engaged by pin pliers or the like.

The invention will be described further in detail and by way of example with reference to the accompanying drawing, in which:

Figure 1 illustrates one construction, and

Figure 2 illustrates an alternative construction.

In the drawing, 1 represents the body of the ring or circlet in a proportion of the peripheral surface of which there are provided a plurality of recesses 2, with intervening elevated portions 3 the depth of the recesses decreasing progressively from points immediately adjacent to the two sides of the gap 4 to points more remote therefrom.

In the construction illustrated in Figure 1, the ring in the vicinity of the gap is provided with lugs 5 adapted to be engaged by pliers, the lugs extending inward towards the centre of the ring, while in the construction illustrated in Figure 2, the lugs are provided with eyes 6 adapted to be engaged by pin pliers or the like in contracting the ring.

From the drawing it will be seen that the width of the ring at the position of the elevations between the recesses is substantially the same as the width of the ring at that portion which is not provided with recesses and is opposite to the gap, and that the width of the ring taken at the intervals between the elevations decreases in a stepwise manner and not, as in a prior construction, continuously from a point opposite to the gap and in a direction towards the gap.

By this means a more extended area of support to the end of the gudgeon pin or the like is secured throughout its periphery than is possible if the width of the ring decreased progressively in the manner referred to.

I claim:

1. A spring ring adapted for use as means for securing gudgeon pins and the like against axial displacement in the form of a substantially annular member provided with a gap extending in a generally radial direction from its outer to its inner periphery and means on either side of the gap for engagement by a tool in effecting reduction in its effective diameter in order to engage it in position, the internal peripheral surface of the ring having a plurality of spaced recesses adjacent to the gap, the portion of the internal periphery of the ring remote from the gap presenting a continuous arcuate surface.

2. A split spring ring or circlet, the ends of which on either side of the split are spaced apart to provide a gap permitting the ring to be contracted and said ends are furnished with means adapted to be engaged by a tool in effecting such contraction, having in its inner periphery localized at positions adjacent to said means a plurality of recesses with intervening portions of substantially the width of the material of the ring remote from the gap, the inner peripheral surface of which portion is continuous and is substantially the arc of a circle.

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