

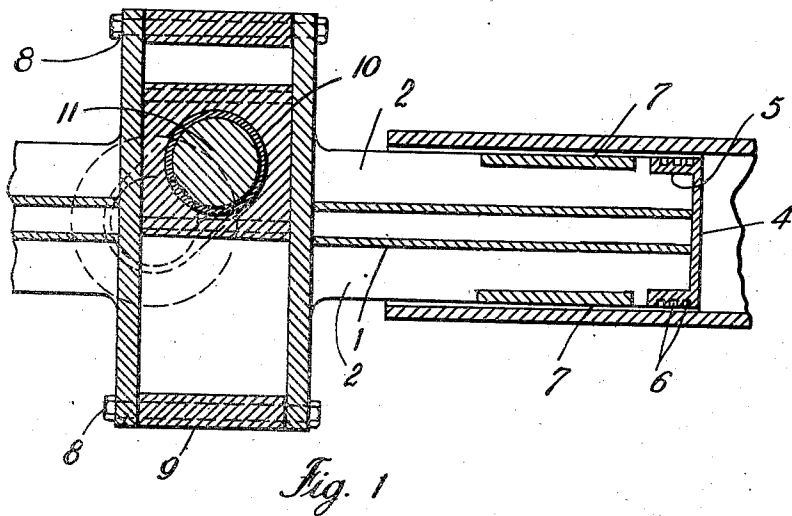
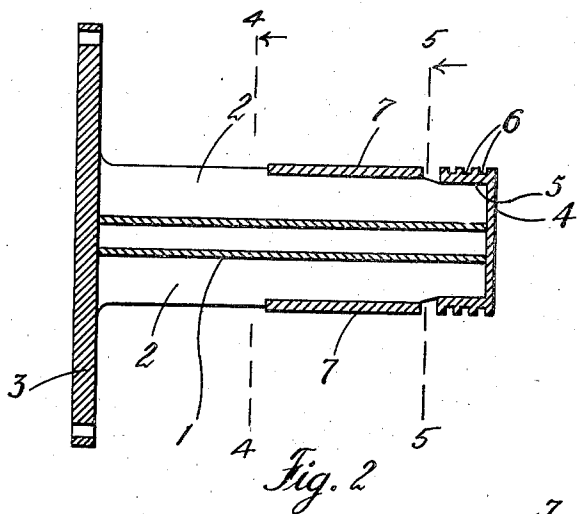
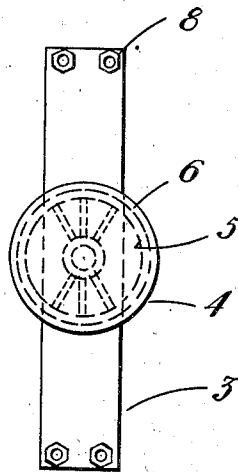
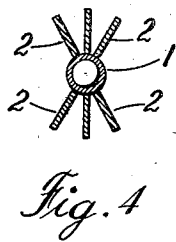
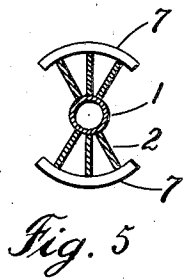
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PISTON

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PISTON

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7 Claims. (Cl. 309-4)

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This invention relates to pistons for reciprocating engines and more particularly to pistons for internal combustion engines having oppositely arranged cylinders with the pistons therein fixedly connected and it is an object of this invention to provide a piston of an improved construction which can be readily and cheaply manufactured and it is a further object of this invention to provide a piston of improved construction which can be readily assembled with its opposing piston in an engine and which co-operates with the connected piston in maintaining the pistons properly aligned.

In the drawing in which a preferred embodiment of this invention is shown

Fig. 1 is a fragmentary sectional view of an engine equipped with pistons in accordance with this invention;

Fig. 2 is a vertical sectional view of the piston shown in Fig. 1, the piston being shown detached from the engine;

Fig. 3 is a view in end elevation of the piston shown in Fig. 2; and

Figs. 4 and 5 are vertical sectional views taken as on lines 4-4 and 5-5 respectively of Fig. 2.

As shown in the drawing, a piston in accordance with this invention comprises a central tubular member 1 and a plurality of radially arranged webs 2 secured to the tubular member 1 throughout their length. At their inner ends, the tubular member 1 and webs 2 are secured to a base or guide member 3 and at their outer ends they are secured to a piston head 4 having a ring section 5 grooved, as at 6, to receive the usual piston rings (not shown). Intermediate the ends of the webs 2, their edges are joined, on opposite sides of the tubular member 1, by arcuate skirt portions 7 which extend through arcs of approximately 90 degrees. The outer edges of skirt portions 7 are spaced a short distance from the inner edge of the ring section 5 while their inner edges are spaced a relatively greater distance from the guide member 3. The length of the arcuate skirt portions 7 is sufficient for them to co-operate with the head 4 in suitably reinforcing and stiffening the webs 2. The openings between the skirt portions 7 and at their ends permit of an air circulation which greatly assists radiation and serve to maintain the pistons relatively cool in service.

When placed in an engine, two of the guides

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3 are joined by bolts 8 which pass through spacing members 9, the guide and spacing members forming a Scotch-yoke in which is guided a guide block 10 having the engine crank shaft 11 journaled therein.

While shown as formed as an integral casting it is to be understood a piston in accordance with this invention can be formed of a plurality of separately formed members suitably welded or otherwise joined together.

What is claimed is:

1. A piston comprising a central tubular member, radially arranged webs attached to and projecting outwardly from said tubular member throughout the length thereof and a piston head directly attached to said webs and tubular member.

2. A piston comprising a plurality of radially arranged webs, a base member forming portion of a Scotch yoke rigidly secured to said webs and a piston head directly attached to said webs.

3. A piston comprising a plurality of radially arranged webs, a base member forming portion of a Scotch yoke rigidly secured to said webs, means spaced from said member securing said webs together and a piston head directly attached to said webs.

4. A piston comprising a central tubular member, radially arranged webs attached to said tubular member, a piston head carried by said tubular member and webs and means spaced from said piston head connecting outer edges of said webs.

5. A piston comprising a plurality of radially arranged webs, arcuate skirt sections connecting said webs and a piston head carried by said webs.

6. A piston comprising a tubular member, a plurality of webs radiating from said tubular member, arcuate skirt sections joining the outer edges of group of said webs and a piston head carried by said tubular member and webs.

7. A piston comprising a tubular member, a plurality of webs radiating from said tubular member, a base member attached at one end of said tubular member and webs, a piston head carried by said tubular member and webs at the opposite end thereof and arcuate skirt sections spaced from said base member and piston head and joining the outer edges of groups of said webs.

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