

May 6, 1930.

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1,757,016

PISTON

Filed Sept. 11, 1928

FIG. 1.

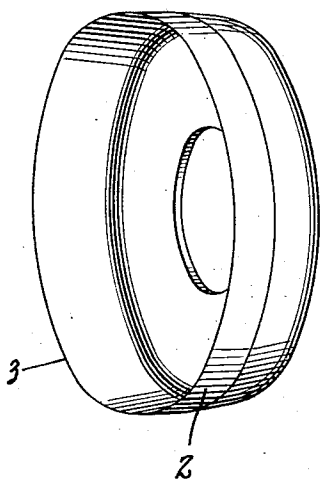


FIG. 2.

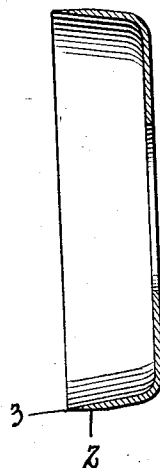


FIG. 3.



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PISTON

Application filed September 11, 1928. Serial No. 305,150.

The invention relates to improvements in pistons, particularly for use in pumps and kindred devices, although the piston may be used in a modified form in some types of engines.

My invention has for its primary object the provision of a novel compressible sheet metal piston member, adapted to expand from pressure and bear against the wall of the cylinder in which said piston is used.

Another object in my invention is to provide a metal piston adapted to prevent the by-passing of pressure between the cylinder wall and piston without the use of piston rings or kindred devices.

Other objects in my invention will appear as the description proceeds, and the piston is illustrated by the drawings, in which,

Fig. 1 is a perspective view of the improved piston.

Fig. 2 is a diametrical section thereof.

Fig. 3 is a greatly enlarged and exaggerated edge view of the rim of the piston, showing the approximate line along which the metal is removed.

The piston is of cup-shape, being pressed from suitable metal and having a flared rim. The compression of the metal of the rim produces minute or microscopic folds, as suggested in Fig. 3, and the outer surface of the rim is machined off on the line 1—1, as indicated in Fig. 3, so as to remove the outer folds. The machined surface 2 is substantially cylindrical to fit the wall of the cylinder, and the rim has a feather edge 3 that bears snugly against the cylinder wall. The metal is pulled across the split portions by the drag of the machining tool, so that the severed edges of the folds of metal are actually interlapped. This not only seals the edge of the piston against leakage, but assists the expansion and contraction to take place more freely at the feather edge 3 caused by the machining of the rim.

In use the piston is compressed into a cylinder of smaller diameter, than the piston member and the folds of the metal at the edge of the rim allow the metal to close together and interlap, as the case may be. The exerting of pressure on the inside of the piston rim, to-

gether with the spring tension of the metal, tend to hold the rim of the piston against the surrounding cylinder wall at all times and take up wear between the cylinder wall and the piston.

Having thus described the invention, what is claimed as new is:

A piston comprising a sheet metal cup having a rim wherein the metal is folded by compression, and said rim being machined off across and lengthwise said folds to produce splits with the split portions adapted to interlap when the piston is compressed into a cylinder.

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