

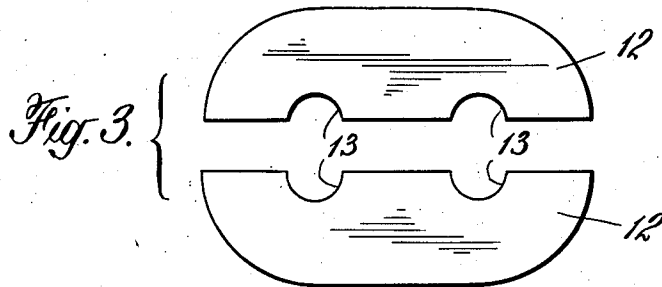
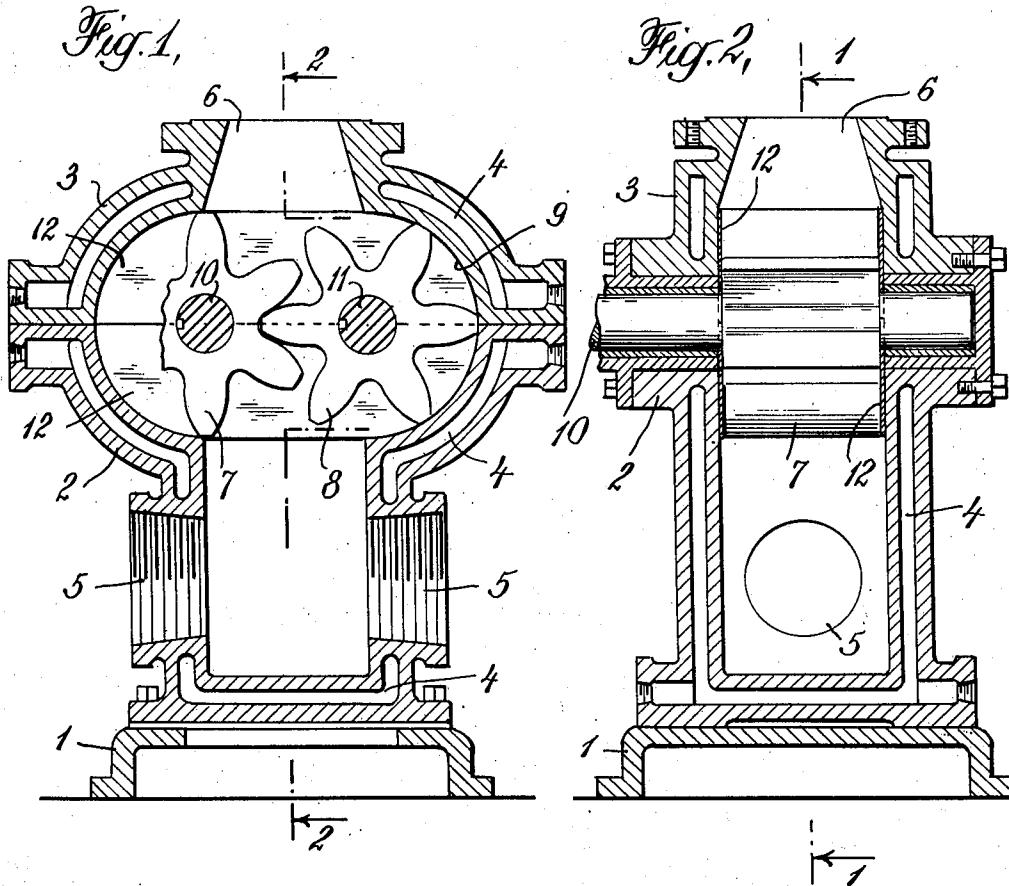
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E. T. STREET

PUMP

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## PUMP.

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This invention relates to improvements in pumps of the type having reversely rotating impellers, which type of pump is commonly used in pumping asphalts and like viscous substances.

When pumps of that type are employed in this difficult work, the surface or lining of the impeller-chamber tends to wear out rapidly due to the fact that such substances usually contain impurities of a gritty nature that have an abrasive action thereon.

The objects of this invention is to improve the efficiency and serviceability of such pumps by providing a construction having an easily replaceable lining for the impeller-chamber, large induction ports, and a tapered eduction port.

I attain these objects, as well as others not specifically stated, by means of the construction and arrangement of parts hereinafter described and illustrated in the accompanying drawings, in which:

Figure 1 is a vertical section on the line 1—1 of Fig. 2, showing the impeller-chamber lining plates partly broken away.

Fig. 2 is a vertical section on the line 2—2 of Fig. 1, and,

Fig. 3 is a detail view of a set of lining plates for the impeller-chamber.

It is to be understood that modifications in the details herein disclosed may be made within the scope of the invention.

Referring now to the drawings, 1 is the base to which is bolted or secured the lower half 2 of the pump casing. The upper half 3 of the casing is detachably secured to the lower half by means of bolts or other suitable fastenings. Both halves of the casing are formed with double, spaced, walls that provide a steam jacket 4 about the casing. The steam jacket is so formed as not to afford any water pockets, and it is provided with suitable pipe connections and ports for circulating steam therethrough.

Oppositely disposed induction ports 5 are

formed in the lower half of the casing, and a central tapered eduction port 6 in the upper half.

A pair of impellers 7—8, preferably made of tool steel, are mounted in the impeller-chamber 9 of the pump casing. One of the impellers, which have intermeshing teeth, is mounted on a driving shaft 10 and the other on a driven shaft 11 so as to rotate in opposite or reverse directions.

Lining plates 12, preferably made of tool steel, are inserted in the pump casing at both sides of the impeller-chamber 9. The plates, one set of which is shown in detail in Fig. 3, are made in halves provided with openings 13 to accommodate the impeller shafts, and are shaped to conform to the sides of the chamber 9. In assembling the pump the lower halves of the two sets of plates 12 are placed in the lower part 2 of the casing and the upper halves in the upper part 3 thereof, the two parts of the casing are then bolted or fastened together. When the linings wear they can be easily removed and replaced with new ones at a relatively slight cost.

What I claim is:—

In a pump of the impeller type, a casing composed of an upper and a lower part detachably secured together to form an impeller chamber, a pair of impellers having intermeshing teeth in the chamber, shafts on which the impellers are mounted, and a pair of relatively separable and replaceable lining plates in each side of the chamber, each plate having a pair of semi-circular openings to receive the shafts, said openings of the respective plates being in register, the plates having their inner side edges meeting along lines passing through the centers of the shafts, whereby to allow the plates to be applied and removed by lifting removal of the upper part of the casing and of the impellers and their shafts.

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