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V. W. ELLET

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PISTON HEAD

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Fig. 1.

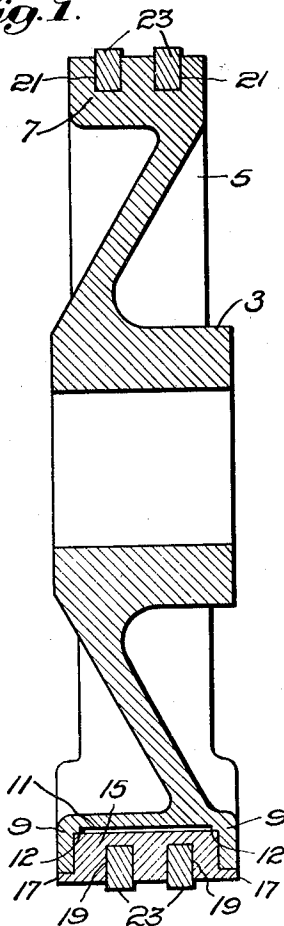
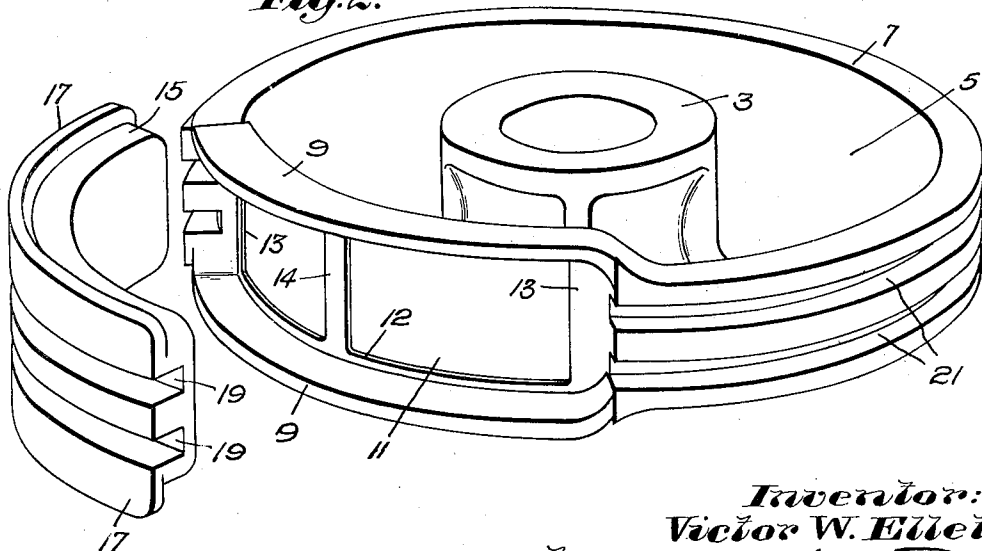


Fig. 2.



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UNITED STATES PATENT OFFICE

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PISTON HEAD

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5 Claims. (Cl. 74-108)

This invention relates to piston heads and the object is to provide a construction permitting a long term of service without expensive renewals or repairs.

My invention will be well understood by reference to the following description of one illustrative embodiment thereof taken in connection with the accompanying drawing, wherein:—

Fig. 1 is a central vertical section through a piston head embodying the invention; and

Fig. 2 is a perspective view with parts separated.

In the drawing I have shown a piston head comprising a body or head proper which may be made of cast steel and here shown as including a hub 3 from which rises the frusto-conical flange or web 5 supporting the overhanging rim 7. As will be apparent, however, the invention is not limited to piston heads of this type.

In many instances in practice, of which the pistons of locomotives are an outstanding example, the wear on a piston head is chiefly in the lower quadrant of its circumference. When the piston head is worn here to such an extent as to be no longer serviceable, it is a great expense to discard the entire head, and the methods of reconditioning or repair hitherto practiced have likewise been expensive and not particularly satisfactory. In accordance with my invention I provide a construction whereby the head by means of a relatively cheap repair part can be quickly and economically brought back to its original state of efficiency.

Referring again to the drawing and as best seen in Fig. 2, the head may be cut away over the lower quadrant and is provided at the sides of this cut-away portion with flanges 9 defining a generally radial pocket 11 preferably of greater width than the face of the remaining portion of the head. The bottom of the pocket may be provided with supporting ribs and I have herein shown circumferentially extending ribs 12 and cross-ribs 13 around the margins of the pocket and a further cross-rib 14 centrally of the pocket. The flanges 9 as shown are preferably of smaller radius than the head as a whole.

The pocket 7 receives a wearing piece 15 which is preferably formed of cast iron because of the well known wearing properties of this material and which is adapted to seat upon the ribs 12, 13 and 14 and preferably has laterally extending flanges 17 overlying the flanges 9 and protecting the latter. The exterior face of the piece 15 is designed to lie in the same circle as the face of the un-cut-away portion of the piston head and

herein I may have in the appended claims expressed this relation by defining the parts as being in circumferential alignment. The member 15 is provided with grooves 19 which, when it is in position in the pocket 11, are in alignment with the grooves 21 of the face of the piston head, the aligned grooves being adapted to receive packing rings 23 of any usual or desired form.

The member 15 receives the bulk of the wear on the piston and protects the larger and more expensive cast steel body. Because of the material of which it is made and/or because of its size, it resists such wear for a long time. When unduly worn, it may be easily replaced and at relatively small expense.

I am aware that the invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive; reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A piston head having a pocket extending over a part of its circumference and bounded by transverse and by lateral circumferential walls, a member seated in said pocket between said walls having an exterior face in circumferential alignment with the face of the rest of the head, said face and the rest of the head having aligning grooves to receive a packing ring.

2. A piston head having a pocket extending over a part of its circumference and of greater width than the face of the rest of the head, a member seated in said pocket having an exterior face in circumferential alignment with the face of the rest of the head, said face and the rest of the head having aligning grooves to receive a packing ring.

3. A piston head recessed inwardly over a portion of its circumference and having flanges of relatively reduced radius bounding the recess, a wearing member received in the recess and flanged to overlie said flanges, the face of said member being presented in circumferential alignment with the face of the unrecessed portion of the head, said face and the rest of the head having aligning grooves to receive a packing ring.

4. A piston head recessed inwardly over a portion of its circumference and having flanges bounding the recess to provide a pocket, the bottom of said pocket presenting supporting ribs, a wearing member received in said pocket and resting on said ribs, the face of said member be-

ing presented in circumferential alignment with the face of the unrecessed portion of the head, said face and the rest of the head having aligning grooves to receive a packing ring.

5 5. A piston head having part of its face cut away and presenting a substantially radial pocket and a member of greater width than the said

face received in said pocket and having its face presented in circumferential alignment with the face of said head, the face of said member and head having aligning grooves to receive a piston ring.

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