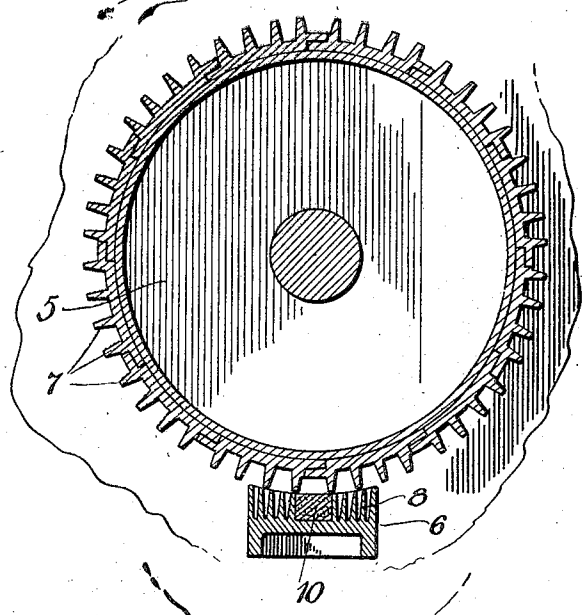
Feb. 20, 1923. 1,446,282.

L. W. VAN BUSKIRK.

HOLLANDER ENGINE.

FILED FEB. 4, 1922.

Fig. 1.



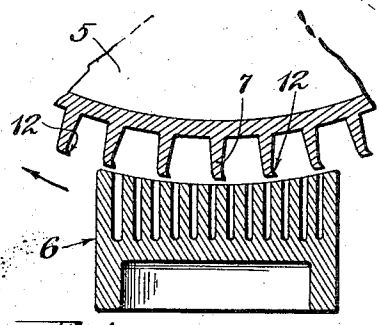


Fig. 2.

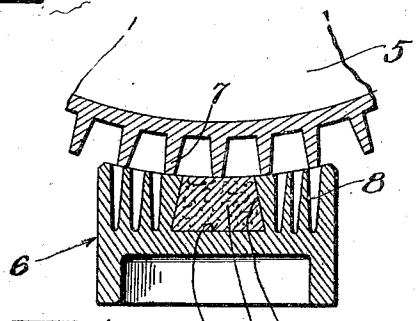


Fig. 3.

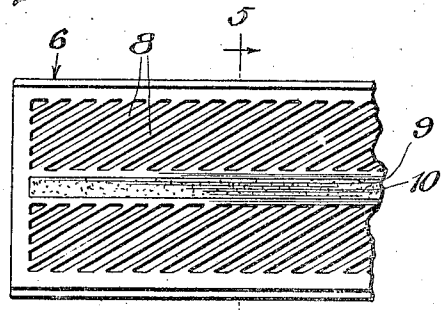


Fig. 4.

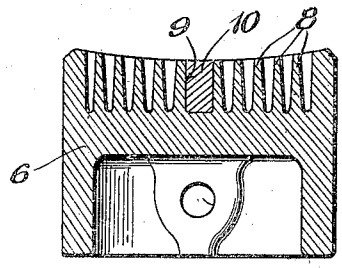


Fig. 5.

Inventor

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By Jas. A. Richmond

Attorney

Patented Feb. 20, 1923. 1,446,282

UNITED STATES PATENT OFFICE.

LESHER W. VAN BUSKIRK, OF HIGH BRIDGE, NEW JERSEY, ASSIGNOR TO TAYLOR-WHARTON IRON AND STEEL COMPANY, OF HIGH BRIDGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

HOLLANDER ENGINE.

Application filed February 4, 1922. Serial No. 534,125.

To all whom it may concern:

Be it known that I, LESHER W. VAN BUSKIRK, a citizen of the United States, residing at High Bridge, in the county of Hunterdon and State of New Jersey, have invented certain new and useful Improvements in Hollander Engines, of which the following is a specification.

The knives of beater rolls of the Hollander type are now generally constructed of alloy steel, such as manganese steel, because of its demonstrated infinite superiority over other materials as regards wearing ability, resistance to breakage, and the peculiar, yet desirable combing action it has upon the fibers. Moreover, since the knife plates are constructed and assembled in the form of segments, the wood and other fillings, which, under the old practice, were required to lock the knives to place, are dispensed with.

While manganese steel has exceptional wearing ability, its inclination to peen or flow, when under frictional stress, makes it desirable, if not imperative, to provide efficient means for correcting the effect of peening and for restoring the knives to their normal sharpened state, without the necessity of dismantling the beater roll.

In achieving this object I provide a bed-plate, which preferably is also constructed of manganese steel, and which carries an abrading element designed to co-operate with the beater knives for maintaining the latter in serviceable condition, as will be hereinafter more fully described and finally claimed, reference being had to the accompanying drawings, forming a part hereof, wherein,—

Figure 1 is a sectional view of a beater roll and bed-plate embodying my invention.

Fig. 2 is a sectional detail view showing the effect of long service and peening in the use of the ordinary bed-plate.

Fig. 3 is a sectional detail view showing the arrangement for correcting this condition.

Fig. 4 is a plan view of my improved bed-plate; and

Fig. 5 is a section on line 5—5 of Fig. 4.

A beater roll with integral knives constructed of manganese steel is shown at 5; and 6 represents its complemental bed-plate, which preferably is likewise constructed of manganese steel. The integral knives 7, in the rotation of the roll, co-operate with dual grid formations of the bed-plate, the bars 8 of which are preferably diagonally disposed, although they may be otherwise arranged. Between the grids, and ranging longitudinally of the bed-plate is a slot or pocket 9 for the reception of abrasive material 10. The latter is preferably baked in place, and its surface conforms with the radius of the working face of the bed-plate. To insure this result and the positive retention of the abrasive in the pocket, the walls of the latter may be undercut as at 11.

Under protracted service conditions with the ordinary bed-plate and with the roll rotating in the direction indicated by the arrow in Fig. 2, the knives will eventually wear to, or under peening will assume, the malformation shown at 12. With a bed-plate constructed in accordance with my invention, such malformation cannot occur, and the knives will always present a sharp and effective beating face due to their intermittent contact with the abrasive. Should, however, there be any evidence of peening, it may be corrected and the knives restored to normalcy by reversing for a brief period the direction of rotation of the beater roll.

The beater roll is adjustable with respect to the bed-plate, as is usual, to compensate for wear and other conditions.

While I do not desire to restrict myself to the precise form of bed-plate shown and described, it is important to note that the diagonally disposed grids, in combination with the abrasive, have given remarkable results in service.

Having described my invention, I claim:—

1. The combination in a beating engine of the type recited, of a bed-plate, a beater roll co-operating therewith, and whereof the shell is formed of segments with integral knives constructed of alloy steel, said bed-

plate having a dual grid and having means located therebetween for maintaining the knives in serviceable condition.

2. A bed-plate of dual grid construction with an intervening gap or pocket ranging the effective length of the bed-plate, and an abrading element lodged in said pocket.

3. A bed-plate of dual grid construction with an intervening gap or pocket ranging the effective length of the bed-plate, and an abrading element lodged in said pocket, and having its surface conforming to the radius of the bed-plate.

In testimony whereof I affix my signature.

LESHER W. VAN BUSKIRK.