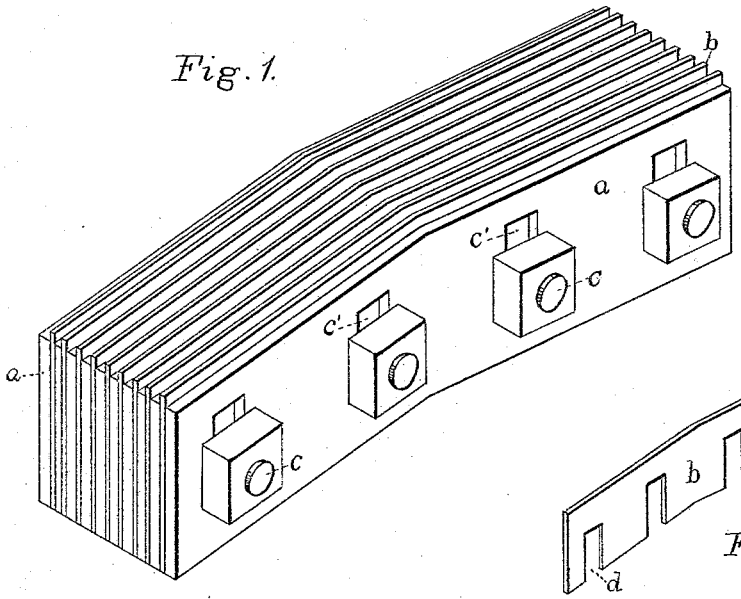
J. H. HORNE.

Bed-Plate for Paper-Pulp Engine.

No. 210,937. Patented Dec. 17, 1878.

Fig. 1.



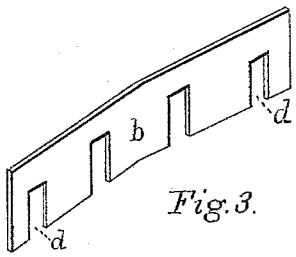
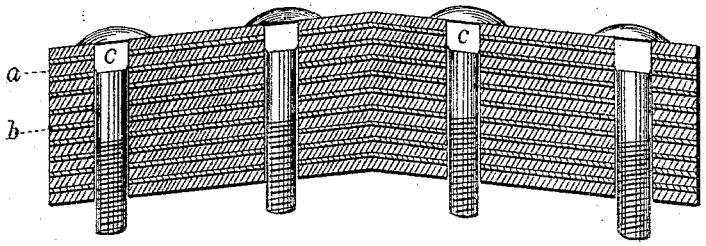


Fig. 3.

Fig. 2.



Witnesses.

Jas. R. Creighton

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UNITED STATES PATENT OFFICE.

JOHN H. HORNE, OF LAWRENCE, MASSACHUSETTS.

IMPROVEMENT IN BED-PLATES FOR PAPER-PULP ENGINES.

Specification forming part of Letters Patent No. **210,937**, dated December 17, 1878; application filed November 27, 1878.

To all whom it may concern:

Be it known that I, JOHN H. HORNE, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain Improvements in Bed-Plates for Paper-Pulp Engines, of which the following is a specification:

The drawings accompanying this specification represent, in Figure 1, a perspective view, and in Fig. 2 a horizontal section, of a bed-plate embodying my improvements, while Fig. 3 is a perspective view of one of the grinding knives or blades.

In the above-named drawings, *a a*, &c., represent the series of upright division-bars or "clamp-bars," as they are termed, of a bed-plate employed in paper-pulp engines to operate with the roll to reduce rags or other material to pulp, these clamp-bars being employed to separate the grinding-blades, and their upper edges being in the aggregate disposed transversely in the arc of a circle of a diameter equal to the circumference of the said roll.

Between the clamp-bars *a a*, &c.—that is, between each pair of clamp-bars—I dispose a thin steel plate or blade, *b*, the upper edges of these plates presenting, in common, an arc of a circle of a diameter equal to the outer edges of the knives with which the roll is studded, and with which they operate, the said blades *b b*, &c., extending a short distance above the upper edges of the clamp-bars to produce a grinding-surface, and being, when the bed-plate is new, of a width somewhat greater than the entire width of said bars.

The entire series of clamp-bars and grinding-blades are securely bolted together by horizontal bolts *c c c c*, which pass through them, as shown in the drawings; and as the blades become worn down to, or near to, the upper edges of the bars, the bolts are loosened and the entire set of blades raised bodily together, by and with the bolts, to the desired distance above the division-bars, these division-bars being formed with vertical slots *c'*, &c., to receive the bolts and permit of their elevation with the blades, which they support, while the bolts are loosened.

With each elevation of the knives *b b* a key or "shim," as it is termed, of a suitable width, is placed below each bolt, and between it and the bottom of each slot *c'*, to provide a solid foundation for each blade *b* and maintain them at the proper altitude.

The slots *c'* extend nearly up to the top of the clamp-bars *a*, and as the blades *b* wear away such blades are raised between the bars until the bolts reach the upper boundaries of said slots.

In order to greatly economize the use of the material of which the blades are composed, as well as lessen the labor of introducing new ones, and to effect this by such a construction of the bed-plate as will enable me to continue to raise the blades after the bolts have reached the upper termini of the slots *c'*, I create in the lower edge of each blade a notch, *d*, which forms a continuation of the bolt-hole and permits the blades to be raised a considerable distance above the point to which the slots in the clamp-bars will permit.

Heretofore, in the construction of bed-plates for paper-pulp engines, the clamp-bars have been separated at bottom by thin plates or strips of a thickness equal to that of the grinding-blades, and as the blades wear and are raised up they recede from these strips. As a consequence the blades are comparatively narrow, and as they diminish in width by wear and approach the upper surfaces or edges of the clamp-bars the hold of the latter upon them weakens, and they become loose and clatter, and more or less deficient in action.

By my method, in which the blades, when new, extend in one entire piece to the bottom of the clamp-bars, I obviate the above objections, and secure a rigid and firm hold upon them until worn out, and for the same reason I obtain a much greater amount of material in a given blade.

I claim—

1. A bed-plate for paper-pulp engines composed of a series of clamp-bars and reducing-blades, under the construction substantially as herein shown, whereby the said blades constitute in themselves the only divisions between the bars.

2. The construction of each blade as containing the notches in its lower part, whereby the series of blades may be raised some distance after the bolts have reached their highest point in the clamp-bars.

JOHN H. HORNE.

Witnesses:
H. E. LODGE,
F. CURTIS.