

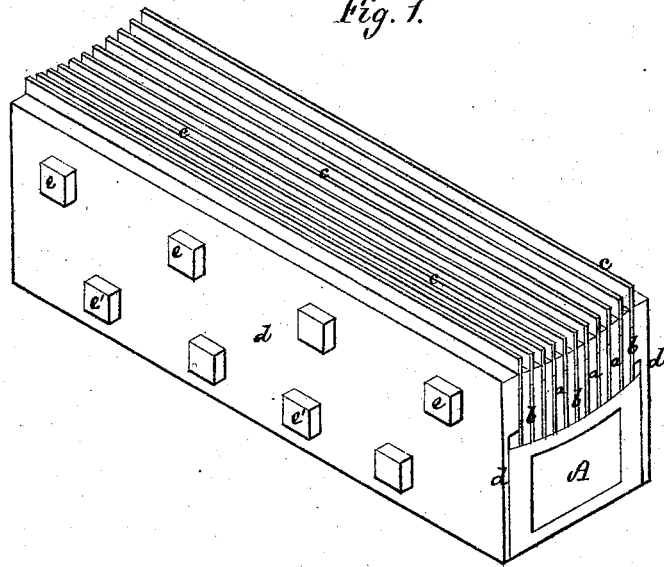
P. FROST.

Bed Plates for Paper Pulp Engines.

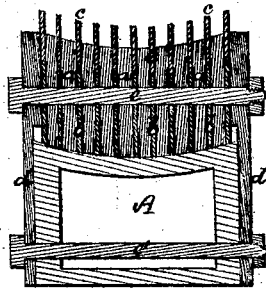
No. 116,045.

Patented June 20, 1871.

*Fig. 1.*



*Fig. 2.*



Witnesses.

Charles H. Mills

T. Stanton Hubbard

Phineas Frost.

by his Attorney.

Frederick Curtis

# UNITED STATES PATENT OFFICE.

PHINEAS FROST, OF MEDFIELD, MASSACHUSETTS.

## IMPROVEMENT IN BED-PLATES FOR PAPER-PULP ENGINES.

Specification forming part of Letters Patent No. 116,045, dated June 20, 1871.

*To all whom it may concern:*

Be it known that I, PHINEAS FROST, of Medfield, in the county of Norfolk and State of Massachusetts, have made an invention of a new and useful Bed-Plate for Paper-Rag Engines; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawing making part of this specification, and in which—

Figure 1 is a perspective view, and Fig. 2 a transverse and vertical section of my invention.

The principal object I have had in view in originating this improvement has been to simplify the construction and reduce the cost of bed-plates for rag-engines of paper machinery. To carry out my purpose I produce a box of cast-iron of the requisite size to contain the reducing-plates or knives; according to the width of the engine in which they are to be placed, and upon the top surface or bed of this box, which is concave, I deposit the said plates, with a bar between each to separate them, a clamp-bar being applied to the opposite sides of the box and overlapping the plates, by which the latter are held firmly in position, and the whole device strengthened and stiffened.

The accompanying drawing represents at A a cast-iron rectangular box, the top surface of which is concave transversely, the radius of this arc of a circle being equal to that of the outer circumference of the series of knives in the roll which revolves above it. Upon the upper surface of the box A, and longitudinally thereof, I deposit a range of vertical bars, *a a*, &c., of uniform length, and of equal length with the box, while between each plate I deposit an intervening strip, *b*, of metal, which separates the upper portion of each bar from that of its neighbor. Within the space intervening between each bar *a* I deposit a plate or reducing-knife, *c*, which is simply a narrow plate of steel of uniform width and of thickness equal to the intermediate strips *b b*, &c., upon which they rest, the upper edges of each

plate or knife rising a short distance above the bars *a a*, &c., and forming a concave reducing-surface. *d* represents a clamp-bar of iron, of a width considerably greater than the bars *a a*, and as applied one to each side of the bar A, and so as to cover such side as well as a greater part of the outermost bar *a*, such clamp-bars being retained securely in place by means of two ranges of bolts, *e e*, &c., the lowermost of which presses through them and the box A, while the upper range of bolts passes through the upper part of the entire series of intermediate bars *a a*, &c., and below the reducing knives or plates *c c*, &c., the said bolt serving to confine the various parts securely and tightly together. In order that the outermost bar *a*, when the bolts are loosened, may not be misplaced by falling into the crack between the clamp-bar and the side of the box, I construct each clamp-bar with a lateral re-enforce, *f*, which slightly laps over the bed of the box, as shown in the drawing, and performs a very useful office.

As fast as the grinding or reducing-knives become worn down to close proximity to the upper edges of the bars *a a* they are removed and new ones substituted. As the concavity of the box A is adjusted to the circumference of the reducing-roll, so called, of the engine, the upper and reducing surface of the combined knives will naturally assume the proper character, as the knives *c c*, &c., are of uniform width; and thus I economize the time and labor which would otherwise be entailed.

### *Claim.*

I claim—

A bed-plate for paper-engines, composed of the cast-metal box A having its upper surface concave transversely, the series of bars *a a*, &c., strips *b b*, knives *c c*, and the re-enforced clamp-bars *d d*, the whole being united by the bolts *e e*, and producing results herein stated.

PHINEAS FROST.

Witnesses:

FRED. CURTIS,  
E. GRIFFITH.