

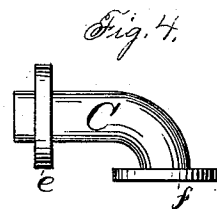
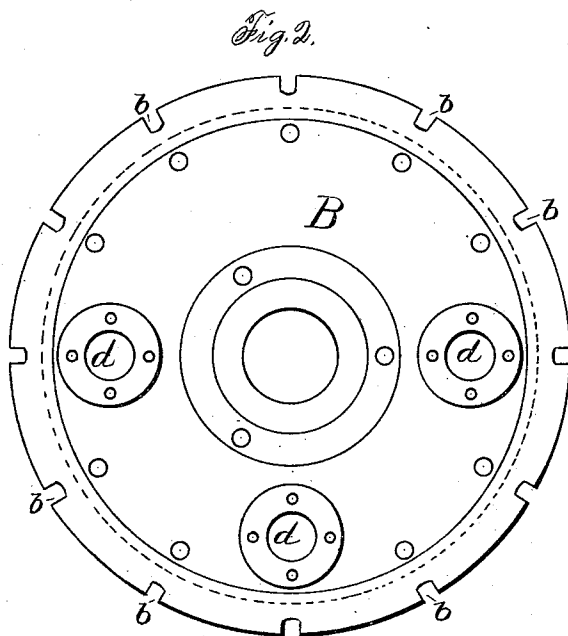
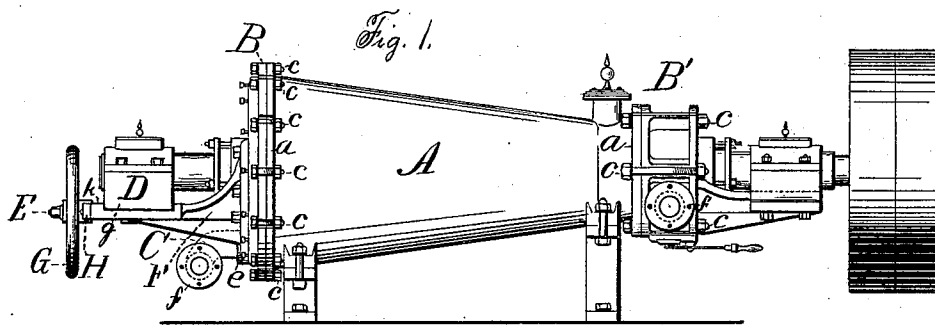
(No Model.)

2 Sheets—Sheet 1.

J. R. ABBE.
PAPER PULP ENGINE.

No. 254,251.

Patented Feb. 28, 1882.



Witnesses.
John Edwards Jr.
H. T. Blake

Inventor.
John R. Abbe.
By James Shepard atty

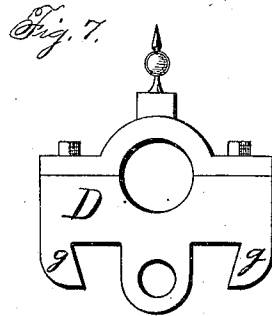
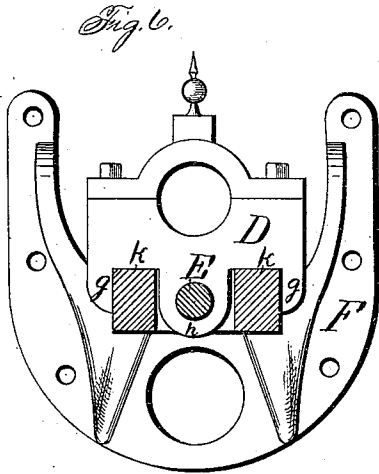
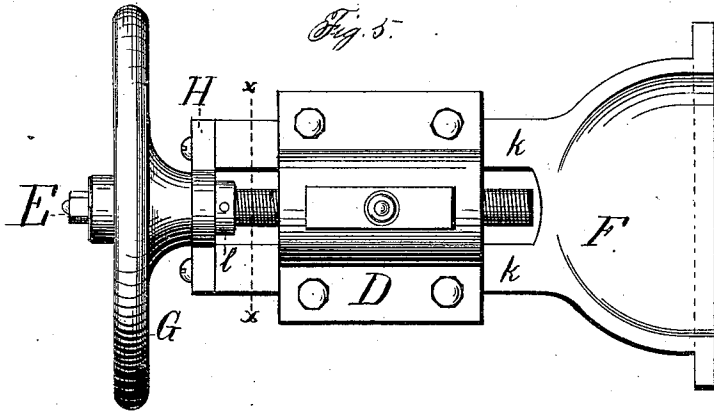
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UNITED STATES PATENT OFFICE.

JOHN R. ABBE, OF SOUTH WINDHAM, CONNECTICUT.

PAPER-PULP ENGINE.

SPECIFICATION forming part of Letters Patent No. 254,251, dated February 28, 1882.

Application filed November 16, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. ABBE, of South Windham, in the county of Windham and State of Connecticut, have invented certain new and useful Improvements in Paper-Pulp Engines, of which the following is a specification.

My invention relates to improvements in paper-pulp engines in which the shell is provided with a slotted flange at each end, and the heads are correspondingly slotted to allow the fastening-bolts to be put in and taken out sidewise and without removing the nuts therefrom; also, in which a double-flanged pipe-connection is employed, and in which there is a peculiar arrangement of the feed-screw and adjacent parts.

In the accompanying drawings, Figure 1 is a front elevation; Fig. 2, a side elevation of the largest head. Figs. 3 and 4 are side elevations of the pipe-connection; Fig. 5, a plan view of the box, feed-screw, and their support; Fig. 6, a sectional view of the same, partly in elevation, the plane of section being indicated by the line *x x*, Fig. 5; and Fig. 7 is an end view of the box, showing lugs of a modified form.

A designates the shell of the ordinary tapering form. At each end there is a flange, *a*, having as many radial slots extending near to the periphery of the shell as it is designed to employ fastening-bolts in securing the respective heads or ends to the shell. These heads *B B'* are made of substantially the same diameter, respectively, as that of the flanges at the large and small ends of the shell, and they are also provided with a corresponding number of radial slots. The large head *B* is shown detached in Fig. 2, in which figure *b* designates the radial slots. Ordinarily in paper-pulp engines the bolts pass through holes in the heads into threaded holes in the ends of the shell. I employ bolts *c*, having a head and square neck at one end and a nut at the other, so that after the heads are placed in proper position the bolts can be inserted by passing them sidewise into the slots and the nuts tightened, as shown in Fig. 1. The flanges may be a little back of the end, and the heads recessed, so as to readily center the heads on the shell. In case one of the heads is to be taken off for any purpose, it is only necessary to loosen the nuts a little

on the bolts *c*, when they can be withdrawn. This manner of securing the heads is not only cheap and efficient, but will be found a great convenience in connection with the practical use of the machine.

In Fig. 2 three pipe-holes, *d d d*, are shown, either one of which may be used and the others plugged up. Instead of connecting the pipe directly to either of these holes, I provide a pipe-connection which consists of a short piece of pipe, *C*, either straight, as shown in Fig. 3, or curved, as shown in Fig. 4. These pieces *C* are of such diameter as to fit into and substantially fill the holes *d*. A short distance from one end I place a flange, *e*, by means of which to bolt the pipe-connection to the head, with the short projecting end resting in one of the holes therein. At the other end of the piece *C* or pipe-connection I provide a second flange, *f*, by which to secure a flanged pipe by bolts passing through the flange *f* and the flange on the pipe. These pipe-connections are designed to be permanently secured for use so long as they are in good condition, and, whenever it is desired to disconnect the pipes from the engine, to take them off without disturbing the pipe-connections. The outer end of these pipe-connections is removed nearly the length of said connections from the shell, thereby bringing said end into a much more convenient place to work, specially in case where the connection is under the box and screw-support, as shown at the left-hand end of Fig. 1.

D designates the box, which is secured to the cone-shaft and cone so as to move longitudinally with it in any ordinary manner. This box is provided with downwardly-depending lugs or ribs *g g*, one on each side, and a middle lug, *h*, having a threaded hole to receive the feed-screw *E*. This box *D* and screw *E* are supported upon a suitable frame, *F*, which is bolted or otherwise secured to the large end of the shell. A portion of this frame is in the form of ways *k k*, over which the box may slide longitudinally with the lugs *g g*, embracing said ways, and with the lug *h* between them, as shown in Fig. 6. The screw *E* is provided with an ordinary hand-wheel, *G*, and passes through a strap or end piece, *H*, which is bolted to the end of the frame *F*. It is also provided with a collar, *l*, rigidly secured thereto, so that the

screw is free to revolve in the strap H, but not to move longitudinally therein. The threaded end of the screw passes through the lug *h*, so that by turning the screw the cone and its shaft may be fed in either direction, as may be desired.

If desired, the lugs *g g* and the corresponding portions of the ways *k k* may be dovetailed, as shown in Fig. 7, and a rack may be placed upon the under side and middle of the box in place of the threaded lug, and a worm in place of the screw-thread, when the operation would be the same as before described.

I am aware that the feed-boxes in paper-pulp engines have heretofore been fitted so as to slide in a recess and forced endwise by a longitudinally-moving screw, and the same is hereby disclaimed.

I claim as my invention—

1. In a paper-pulp engine, the shell having

slotted flanges projecting from the sides thereof, at each end, in combination with the heads of corresponding diameters and correspondingly slotted, substantially as described, and for the purpose specified.

2. In a paper-pulp engine, the pipe-connections consisting of the short piece C and the flanges *e f*, substantially as described, and for the purpose specified.

3. In a paper-pulp engine, the combination of the head B, box-supporting frame F, having ways *k k*, the feed-screw E, box D, connected to said screw, and the cone and its shaft connected to said box, all substantially as described, and for the purpose specified.

JOHN R. ABBE.

Witnesses:

CHAS. JAS. FOX,
CHESTER TILDEN.