W. H. RANKIN & C. P. DEDERICK.

BEATER ROLL FOR PAPER MAKING MACHINES.

APPLICATION FILED JULY 3, 1909.

942,746. Patented Dec. 7, 1909.

Fig. 1.

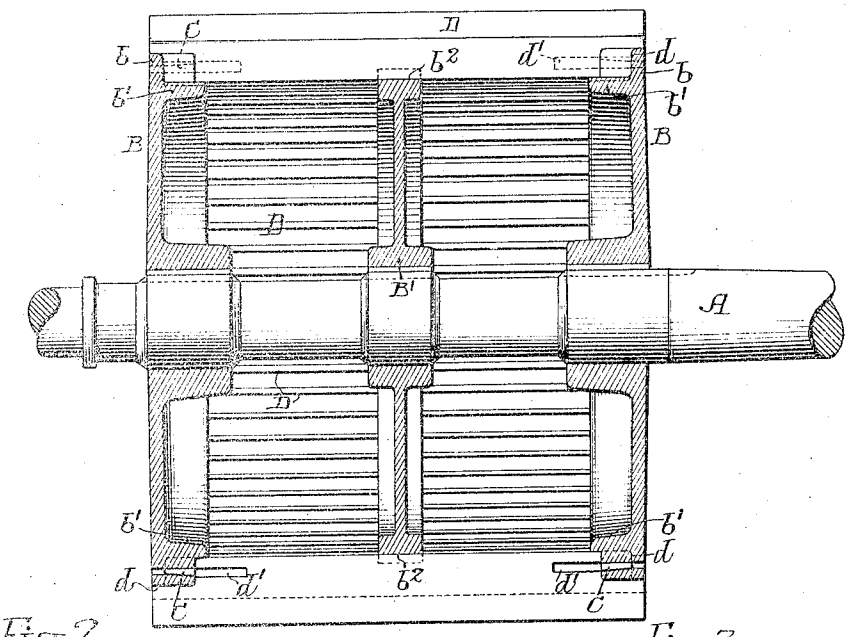


Fig. 2

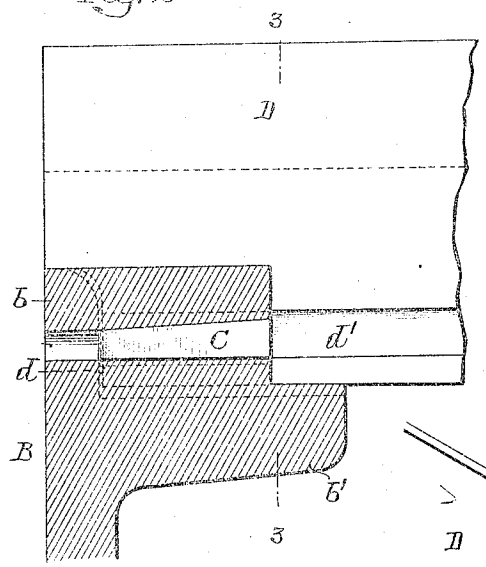


Fig. 3.

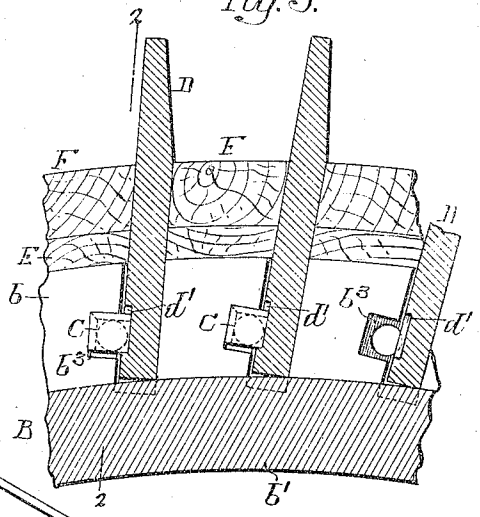
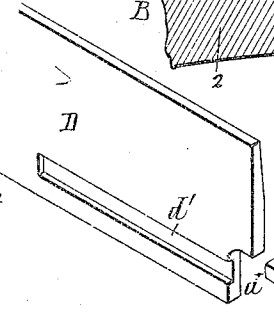


Fig. 4.



Witnesses:
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William H. Rood.

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UNITED STATES PATENT OFFICE.

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BEATER-ROLL FOR PAPER-MAKING MACHINES.

942,746. Specification of Letters Patent. Patented Dec. 7, 1909.

Application filed July 3, 1909. Serial No. 505,810.

To all whom it may concern:

Be it known that we, WILLIAM H. RANKIN and CHARLES P. DEDERICK, citizens of the United States, residing in Elizabeth, New Jersey, have invented certain Improvements in Beater-Rolls for Paper-Making Machines, of which the following is a specification.

Our invention relates to certain improvements in the rolls of beating machines used to reduce paper and other stock to a pulp.

The object of our invention is to so construct the beater roll that the blades will be firmly secured in position and yet can be readily removed when desired.

In the accompanying drawing: Figure 1, is a longitudinal sectional view of a beater roll illustrating our invention; Fig. 2, is an enlarged view of one end of the roll illustrated, taken on the line 2—2—Fig. 3; Fig. 3, is a sectional view on the line 3—3, Fig. 2; Fig. 4, is a perspective view of one of the blades, and Fig. 5, is a perspective view of one of the wedges which secure the blades to the roll.

The great difficulty in designing a roll for a beating engine is to provide means for firmly securing the blades to the roll so that they will not become dislodged when under the severe strains to which they are subjected, and also to provide means which can be readily detached when it is desired to remove one or more of the blades from the roll.

A is the shaft on which the beater roll is mounted.

B—B are two heads mounted on the shaft A, and B′ is a center support also mounted on the shaft A.

D are the blades of the beater roll, made as clearly illustrated in Fig. 4, the blades being carried by the two heads B—B and the central support B′. The blades are notched at d, at each end, so as to fit over the flanges b of the heads B, thus holding the blades rigidly against longitudinal movement. The base of each blade rests upon the surface b' of the heads, and the surface b^2 of the central support B′, so that the heads and the central support resist any inward movement of the blades. In order to lock each blade rigidly to the heads, we form a groove d' in one face of the blade at each end, as illustrated in Fig. 4. We also notch the heads B as illustrated in Fig. 2, the outer edge of the notch being beveled. A wedge C is forced into the space formed by the recess d' and the notch b^3 and when this wedge is driven it will draw the blade down on to the surface b', firmly securing it to the head. In order that the wedge may be readily driven out when it is desired to remove the blade, we perforate the end of the head B in line with the wedge so that a pin can be inserted to force the wedge out. When the wedges are forced out the blade can be readily removed and a new one substituted, if desired. After the blades are secured in position we preferably place blocks of wood E, between the blades, and these blocks are notched to fit the heads, and upon these blocks we mount strips F, also of wood, which are driven in between the blades, and when these wooden sections are in the water they swell, making a tight joint between the blades and preventing water gaining access to the interior of the roll. These blocks may be modified if desired and a single block may be used in some instances without departing from our invention.

It will be seen by the above construction that we make a very substantial paper roll which will withstand the severe strains to which paper rolls are subjected and in which the blades will be held rigidly, and the blade can be readily removed should it be desired to replace any one or a series of them.

We claim:

1. The combination in a beater roll, of a shaft, heads on the shaft, each head having a flange, a blade mounted between the flanges, and wedges securing the blade to the heads and forming the interlock between the blade and heads.

2. The combination in a beater roll of heads, each having a flange and a bearing surface, a series of blades, each blade being notched at each end and adapted to fit in between the flanges and rest upon the bearing surface, and having a longitudinal groove near each end, and each head having a groove and a wedge adapted to the grooves in the blade and heads.

3. The combination in a beater roll, of a shaft, two heads, a flange and a bearing surface; on each head, a series of blades, each blade being notched at each end to fit between the flanges and rest upon the bearing surface, each blade being grooved at each end in one face and each head being grooved, with wedges adapted to the two grooves and

acting to force the blades down and on to the bearing surface of each head and filling blocks between the blades.

4. The combination in a beater roll of a shaft, two heads mounted on the shaft and a central support also mounted on the shaft, said support and heads being notched, the heads having flanges formed thereon, the blades having notches at each end adapted to the heads and the central support, each blade being recessed in one face near each end, the heads also being recessed and having one wall tapered with wedges mounted in the recesses tending to force the blades down on the heads, and the central support with a notched filling block of wood mounted between the heads and between the blades and a second wooden strip mounted between the blades.

In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses.

WILLIAM H. RANKIN. [L. S.]
CHARLES P. DEDERICK. [L. S.]

Witnesses:
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