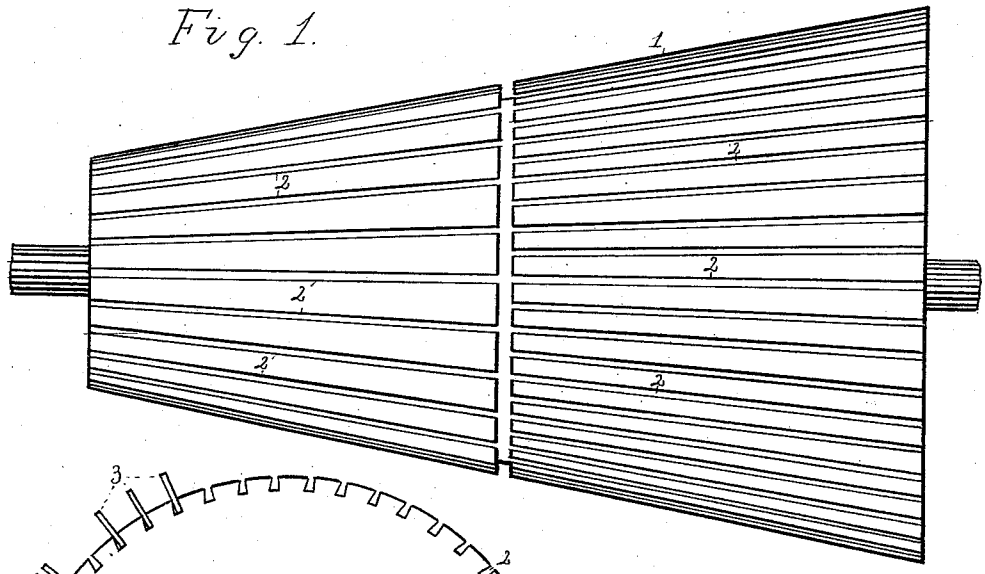
(No Model.)

C. ANDERSON.

BAR OR BLADE FOR THE ROLLS OF PAPER PULP ENGINES.

No. 349,332. Patented Sept. 21, 1886.

Fig. 1.



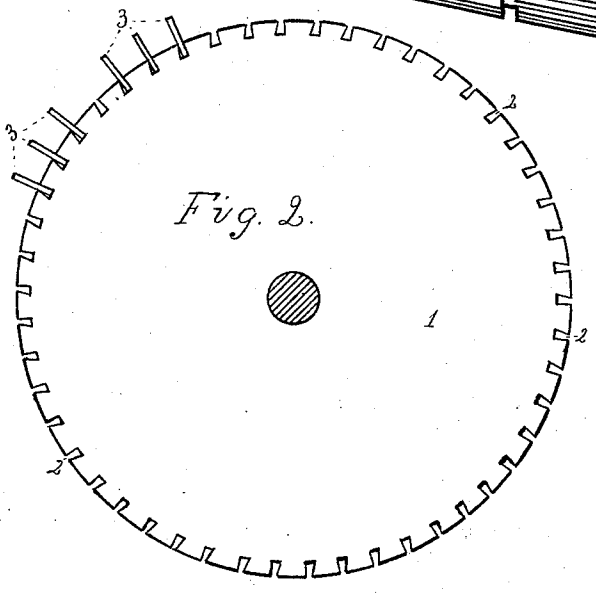


Fig. 2.

Fig. 4.

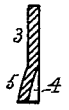
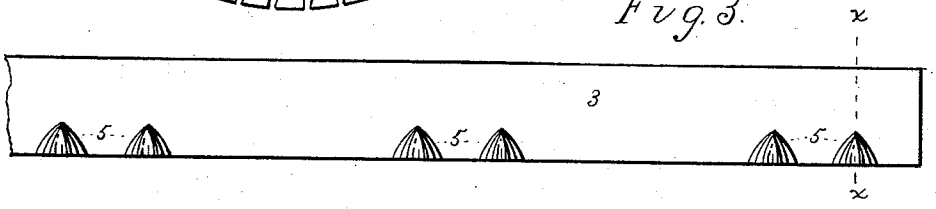


Fig. 3.



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By his Attorney,
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N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CHRISTIAN ANDERSON, OF APPLETON, WISCONSIN.

BAR OR BLADE FOR THE ROLLS OF PAPER-PULP ENGINES.

SPECIFICATION forming part of Letters Patent No. 349,332, dated September 21, 1886.

Application filed June 21, 1886. Serial No. 205,769. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN ANDERSON, a citizen of the United States, residing at Appleton, in the county of Outagamie and State of Wisconsin, have invented a new and useful Improvement in Bars or Blades for the Rolls of Paper-Pulp Engines, of which the following is a specification.

My invention relates to an improvement in the bars, the form in which they are manufactured, and manner of their attachment to the roll, whereby a roll may be filled or refilled, when required, with new blades or bars, in a much shorter time than by the use of the blades as heretofore made, and without removing the roll to a machine-shop for the purpose, and thereby diminishing the cost of the completed roll, and also its repair when such is required. I attain these objects in the manner as illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a roll, showing the grooves therein in which the blades are to be inserted. Fig. 2 is an elevation of the larger end of the roll and showing the form of the aforesaid grooves, some of the grooves having the improved blades inserted therein. Fig. 3 is a vertical elevation of a portion of one of the blades upon an enlarged scale, and Fig. 4 is a vertical section of the same, taken upon the line *x x* of Fig. 3.

Similar figures of reference indicate like parts in the several views.

The roll 1 is such as is used in a paper-pulp engine, generally known as a "Jordan engine," and has formed in its surface a series of dovetailed grooves, 2. These grooves may all extend the entire length of the roll or only a portion of them, the remaining ones terminating at any point in its length which is desirable. The blades 3 to be inserted in the aforesaid grooves are formed of a flat bar of steel, uniform in width and thickness. Upon one side of it, along one of its edges, are formed indentations 4, they producing upon its opposite side a series of protuberances, 5. These protuberances are of uniform size and form, and should be of such proportions and of such number to each blade as will retain it firmly in the roll, when the blade is inserted therein, by entering one end of it in the groove 2 and driving it longitudinally to the desired point. Whenever the blades become so worn that new ones are desirable, they are quickly removed by being driven longitudinally until removed therefrom at the extremity of the grooves. The compression produced by the sides and bottom of the groove 2 upon the protuberances 5 and the opposite flat surface and bottom of the blade holds it securely in its position in the roll 1. In the formation of the indentations 4 and the protuberances 5 a curved form of their surface is desirable.

In order to make available the elasticity of the steel for the retention of the blades within the grooves 2, it is preferable that the surface of the protuberances 5 be hyperboliform, although a slight deviation from it is permissible. Rolls for this purpose have heretofore been made of various styles, their blades requiring to have a portion removed by a planer that they may be entered into and secured in the grooves of the rolls. This method is expensive, requiring the removal of the roll to a machine-shop, the employment of expensive labor, the stoppage of the engine, and consequently a diminished product.

This improved blade is inexpensive to manufacture, it requiring no manipulation after leaving the rolling-mill but the formation of the protuberances and cutting into lengths required, which operations require neither expensive machinery nor high-priced labor. When a renewal of the blades becomes necessary, the ordinary workmen of a paper-mill are competent, and but a limited stoppage is required.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a blade for a roll for paper-pulp engines, formed of a flat bar of steel of uniform thickness, said bar having formed upon one of its sides near one edge thereof indentations, they producing upon its opposite side a series of protuberances of uniform size, and adapted to enter and fill the dovetail portion of a groove of uniform width in the roll aforesaid, and to be retained therein by the compression of the sides and bottom of said grooves upon the protuberances, the opposite plain surface and bottom of the blade, substantially as described.

2. As a new article of manufacture, a blade

for a roll for paper-pulp engines, formed of a flat bar of steel, uniform in thickness, said bar having formed upon one of its sides near one edge thereof indentations, they producing upon its opposite side a series of protuberances of uniform size, said indentations and protuberances having their surfaces hyperboliform and adapting the blades for entering a longitudinal dovetailed groove in the surface of the roll, and be retained therein by the compression of the sides and bottom of said groove upon the protuberances, the opposite plain surface and bottom of the blade, substantially as set forth.

3. The combination, with a roll for paper-pulp engines, having a series of longitudinal dovetail grooves formed in its surface, of a blade therefor, formed of a flat bar of steel of uniform thickness, said blade having formed upon one of its sides near one edge thereof indentations, these producing upon its opposite side a series of protuberances of uniform size, and adapting the blade to enter the aforesaid groove and be retained therein by the compression of the sides and bottom of said groove upon the protuberances, the opposite plain surface and the bottom of the blade, substantially as set forth.

CHRISTIAN ANDERSON.

Witnesses:
JOHN MCNAUGHTON,
C. G. LUTTNER.