A. F. & O. B. BAHR.

SHELL LINING FOR PAPER PULP GRINDING MILLS.

APPLICATION FILED AUG. 5, 1913. RENEWED FEB. 5, 1915.

1,152,690. Patented Sept. 7, 1915.

Fig. 1.

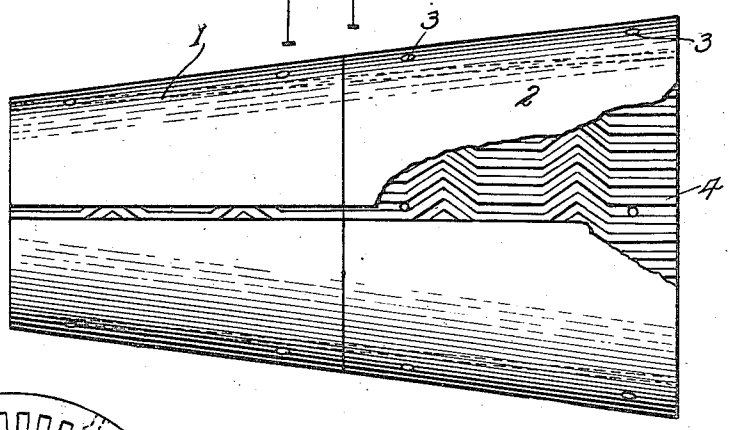


Fig. 2.

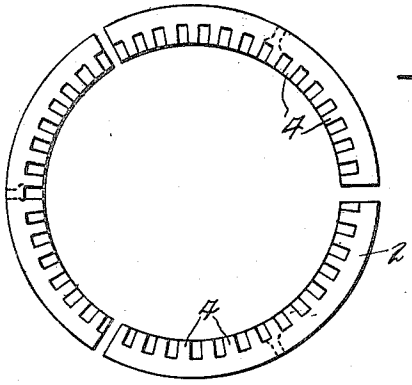
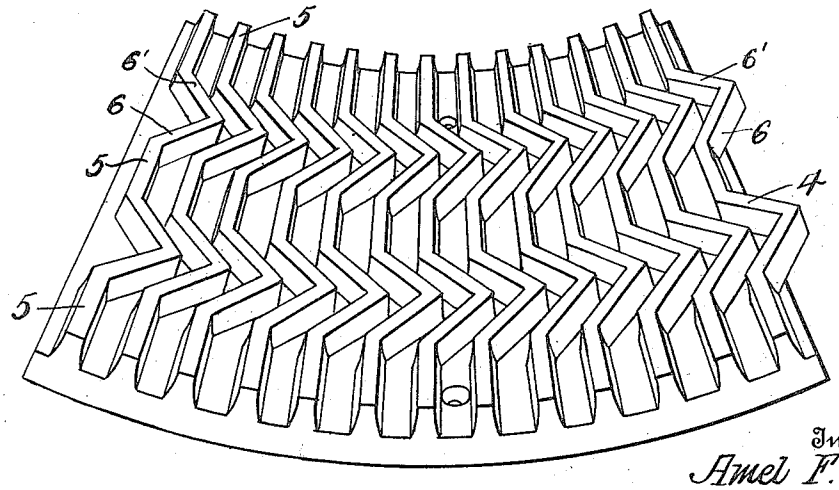


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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SHELL-LINING FOR PAPER-PULP-GRINDING MILLS.

1,152,690. Specification of Letters Patent. Patented Sept. 7, 1915.

Application filed August 5, 1913, Serial No. 783,219. Renewed February 5, 1915. Serial No. 6,397.

To all whom it may concern:

Be it known that we, AMEL F. BAHR and OTTO B. BAHR, citizens of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Shell-Linings for Paper-Pulp-Grinding Mills, of which the following is a specification.

This invention relates particularly to improvements in shell linings for paper pulp grinding mills adapted for use with such apparatus as disclosed in our previous Patent No. 946,752, granted January 18th, 1910.

The particular object of our present device is to provide these shell linings with a novel arrangement of blades or knives whereby to retard the flow of the pulp through the machine while, at the same time, permit of the passage of nails or other foreign substances therethrough which might otherwise lodge against lugs usually employed for this retarding function.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawing, wherein—

Figure 1 is a side elevation of a shell lining, a portion being broken away to show our arrangement of blades. Fig. 2 is an end elevation of the lining. Fig. 3 is a perspective view of an enlarged section of the lining.

Throughout the following detail description, and on the several figures of the drawings, similar parts are referred to by like reference characters.

Referring to the drawings a lining shell comprehended by our invention is preferably of metallic material and consists in shape of a hollow truncated cone. The cone is formed with any desirable number of frusto-conical sections, such as designated by the numerals 1 and 2 and each of these sections may also consist of longitudinal sections, the lining being provided with openings 3 by means of which it may be secured to the outer casing of the pulp mill, not shown in the present case. The lining is formed with a plurality of internal knives or blades 4 adapted to perform the usual grinding function. Each of these blades consists of spaced alined longitudinal sections 5 between which are located the retarding sections. The latter retarding sections consist of angular or laterally extending webs 6 and 6′, these webs being joined together at one end and connected at their other ends to the longitudinal sections 5, hereinbefore mentioned. Furthermore, the blades or knives 4 are arranged in parallel relation to each other throughout their length and including the angular webs 6 and 6′.

From the foregoing, it will be understood that the pulp in passing through the machine will be forced to flow in a zigzag or serpentine path between the blades, the flow being properly retarded by the angular webs 6 and 6′ so as to insure proper disintegration before the pulp issues from the mill. Heretofore, it has been customary to employ lugs which are interposed between the blades for the purpose of performing the retarding function, but such devices prevent foreign substances such as nails and the like from passing through. To those skilled in the art, it will be clear that the lodgment of these foreign substances creates sometimes considerable damage to the linings and, therefore, the formation of the plates as described in the foregoing greatly facilitates the proper disintegration of the pulp as well as eliminates this danger of injury to the lining.

It will be understood that changes may be made in the exact division of the lining into sections to permit of its positioning in the casing of the pulp mill without departing in any way from the spirit of our invention and within the scope of the claims hereto appended.

Having thus described the invention, what we claim as new is:

1. A shell lining for paper pulp grinding mills comprising a hollow body having internal blades, each formed with alined axial sections connected by off-standing retarding sections.

2. A shell lining for paper pulp grinding mills comprising a hollow truncated conical section having a plurality of internal blades, each blade consisting of spaced longitudinal sections and intermediate retarding sections, the latter comprising laterally extending webs connected together at one end and at their other ends to the longitudinal sections.

3. A shell lining for paper pulp grinding mills comprising a hollow truncated conical section having a plurality of internal blades, each blade consisting of spaced alined longitudinal sections and intermediate V-shaped retarding sections, the longitudinal and retarding sections of the blades being arranged in parallel relation to each other.

In testimony whereof we affix our signatures in presence of two witnesses.

AMEL F. BAHR.
OTTO B. BAHR.

Witnesses:
CORA SAUMENIG,
VICTOR OLLIVER.