

No. 648,420.

Patented May 1, 1900.

A. MARTIN.
DYER'S SHELL.

(Application filed Feb. 14, 1900.)

(No Model.)

Fig. 2.

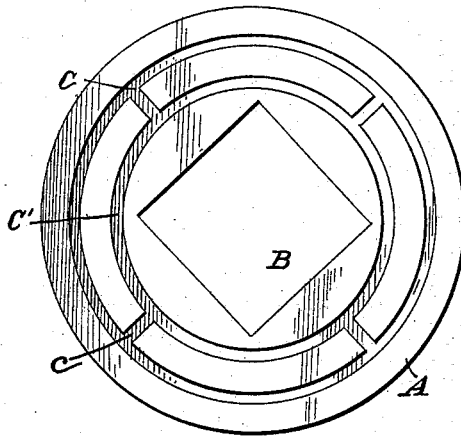


Fig. 1.

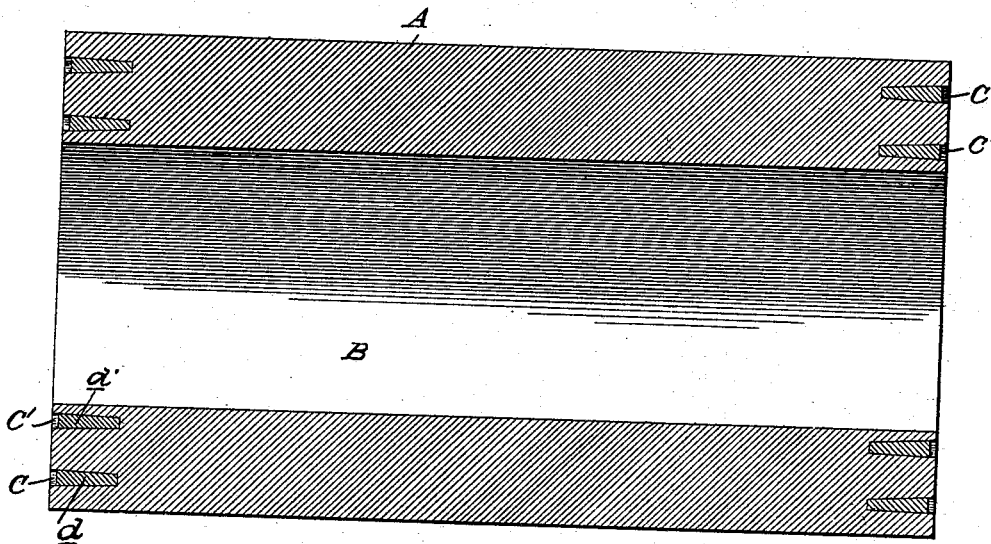
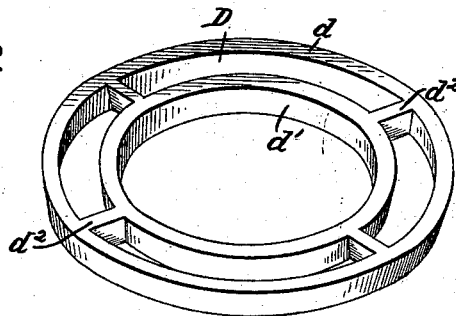


Fig. 3.



Witnesses

H. S. Austin.
J. J. Sullivan

Inventor

Adolph Martin
R. L. Bacon
Attorney

UNITED STATES PATENT OFFICE.

ADOLPH MARTIN, OF PASSAIC, NEW JERSEY.

DYER'S SHELL.

SPECIFICATION forming part of Letters Patent No. 648,420, dated May 1, 1900.

Application filed February 14, 1900. Serial No. 5,170. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH MARTIN, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have invented certain new and useful improvements in shells for printers, bleachers, dyers, paper, rubber, and silk manufacturers, and machine-shop use; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an improvement in shells intended largely for use in connection with bleaching, dyeing, &c., and it is embodied in the construction and arrangement presently to be described.

The invention relates more particularly to that class of shells shown and described in United States Letters Patent issued to Robert Bell and dated April 24, 1883, numbered 276,340. In the Bell patent a construction of solid shell is shown having a metallic ring fitted in recesses in the ends of the shell. In the said patent a construction is shown whereby the end of the wooden shell is strengthened by a single band of metal. It has been found after years of practice that in the use of such a shell the outside as well as the inside portions of the wood adjacent the reinforcing-rings soon become battered and damaged to such an extent as to render the shell seriously objectionable on account of handling. My invention is designed to overcome this objection and to provide a reinforce which will largely avoid crushing down the wood at the ends, at least to an extent which would impair the utility of the shell, and which will also protect the ends of the shell.

In the use of these shells a removable squared shaft or square bar is generally inserted and afterward removed, and in the act of inserting the shafts it very frequently occurs that the operator will strike the wood of the shell with the end of the shaft, thus battering it down and chipping it off. My present improvement is designed to prevent this battering down by using too frequently to an extent that would materially injure the shell.

In the accompanying drawings I have shown a form of reinforce which has been found eminently satisfactory; but I desire it

understood that various changes in the particular form can be made without departing from the nature and principle of the invention.

In the drawings, Figure 1 represents a shell, conveniently of the solid type, shown in longitudinal section. Fig. 2 is an end view, and Fig. 3 is a detail view, of the reinforce.

In the drawings, A designates the body or wooden shell proper, which is usually made with a square or polygonal bore B. In the opposite ends of the shell are formed recesses C and C' concentric one with the other and located some distance apart. These recesses are connected by radial channels c.

D represents a reinforcing member which consists of two concentric metallic rings d and d' , each being slightly tapered to have a wedging action, the thickness of the outer portion being slightly greater than the width of the channels cut in the shell, more or less, according to the size. These rings are connected by radial ribs or webs d^2 , there being four shown, arranged at an equal distance apart. This arrangement, however, is immaterial, as any number of ribs may be used and their positions may be varied. In each case, however, the position of the webs or ribs should correspond with the position of the connecting-channels in the ends of the shell. The width of the rings is conveniently slightly less than the depth of the grooves cut in the shell.

In practice the reinforcing member is forced into the grooves or channels which are made by a machine in the ends of the shell, and by virtue of their wedge shape and size will closely bind in the channels and be there retained to protect the ends from wearing. Owing to the fact that the width of the rings is less than the depth of the channels the rings are permitted to be forced inward until their outer edges are below the plane of the end of the shell. By this means the repeated battering, to which the ends of the shells are subjected, would have a tendency to force the wood over the edges of the rings, which serves largely to maintain the rings in their positions irrespective of the condition of the shell. This particular construction and means of countersinking the reinforce is important in view of the fact that the shells are subject to

the action of liquids in the process of bleaching and dyeing, &c., as well as to the action of heat when used in connection with heating and drying apparatus, which necessarily causes the shells to expand or contract.

It will be noticed that the advantages gained by the construction shown in the aforesaid patent are retained in the present structure and the additional advantage of having the shell more completely secured against splitting and warping as well as that of preserving or preventing the undue destruction of the outer portion of the shell at the end, and in this connection it will be observed that should the outer portion of the wood be wholly battered off the connection between the rings will serve to retain the outer ring in place.

While the above advantage of countersinking the reinforce is material and important, there is still the advantage that the metal of the reinforce is carried inward to a point where the ends are less liable to come in contact with acids.

Other advantages of the construction will be apparent to those skilled in the art.

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

1. A shell for the purposes specified having a suitable bore for a shaft or spindle, and a metal reinforcing member inserted in the end of the shell consisting of concentric rings and connections between the rings, substantially as described.

2. A wooden shell for the purposes specified having a central bore, and a reinforcing member inserted in the end of the shell consisting of inner and outer tapered rings, and connections between the rings, substantially as described.

3. A shell for the purposes specified having concentric channels cut in its end, and tapered reinforcing-rings of a width less than the depth of the channels and connections between the rings, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ADOLPH MARTIN.

Witnesses:

ABIGAIL S. MARTIN,
WILLIAM R. RYAN.