



CHARLES E. WILSON, OF NEW YORK, N. Y.

Letters Patent No. 88,532, dated March 30, 1869.

IMPROVEMENT IN RENEWING ROLLS FOR PRINTING, CALENDERING, AND LIKE PURPOSES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, CHARLES E. WILSON, of New York city, county, and State, have invented a new and useful Process for the Preservation and Utilization of Metallic Rollers and Mandrels; and do hereby declare that the following is a full, clear, and exact description of the same.

My invention consists in a novel mode of enlarging rollers and mandrels, and in the process of utilizing the same, as will be more fully set forth.

In large factories, where rollers are used, in time they become worn, and cast aside as old metal. For instance, in large factories where large rollers are used for printing fabrics such as calico, the rollers are first provided with a pattern, and, after printing a number of yards, are then turned down, by a lathe or other device, so that, after repeated turnings, the roller becomes so thin as to be inoperative for the purpose. So, in mandrels or rollers of any description, that become uneven, or are worn by use, it is necessary to throw the roller or mandrel away, and dispose of it as old metal, or utilize it by some process.

My invention combines the use of the old roller with an additional device, formed by a novel process, and applied in a novel way.

After the roller or mandrel has been rendered useless, by cutting or otherwise, I take the same, and, after placing in a lathe or other device, round it, and taper it slightly in a longitudinal manner, from one end to the other.

I then form a longitudinal groove, in a square form, on its surface, which extends from one end of the roller to the other.

After thus altering the old roller, I cast a shell, by placing a core in a vertical manner, and pour in metal until I form a comparatively thick shell of metal, which is smooth on its exterior and its interior.

I then place this shell in a metal-planing machine, and cut out the interior on each side, so that a square flange is formed, which projects inward, to correspond with and fit into the square longitudinal groove in the old roller.

The interior circumference of the shell will be tapering, to correspond with the taper of the roller, and the

size of the inner and square projecting flange will be of a size to snugly and neatly fit into the groove on the old roller.

After I have thus made the old roller and the shell, I take the latter and plug up the bottom and top, leaving a small orifice in the top, within which I insert a steam-pipe, which will inject steam steadily into the shell for several minutes.

After the shell has thus been expanded, I take the old roller, in a cold state, and put it immediately into the steam-heated shell.

After inserting the roller in the shell as far as can be, by hand, I place the two parts in a hydraulic press, and force them together until their ends are flush with each other. The utilized roller is then left to cool, and, as it does, will contract, and cement the two parts closely together.

After thus completed, the roller is as good as before, and can be used the same as a new roller, without casting the old one away as old metal, as is now the case.

Figures for printing can be cut into the shell, or other uses can be made of the thus utilized roller or mandrel by my process.

Having thus described my invention fully,

What I claim, and desire to secure by Letters Patent, is—

1. The within-described process for the preservation and utilization of metallic rollers, substantially as herein set forth.

2. Utilizing the old roller, by turning the same round, and tapering it from end to end, with a square groove on its outer surface, and covering said roller with an interior-tapering shell, with an interior projection, for fitting into said groove and connecting the parts together, substantially in the manner described.

3. Casting the shell with a core, and planing the same out on its inner side, with a taper and square projection, substantially as specified.

In testimony that I claim the foregoing, I have hereunto set my hand, this 16th day of March, 1869.

CHAS. E. WILSON.

Witnesses:

J. M. MASON,

JOHN M. STOOPS.