

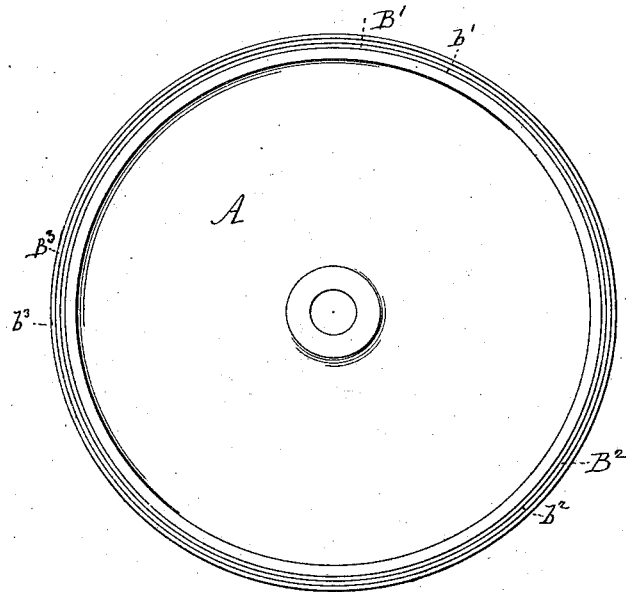
# R. W. BETTS & W. HOWIE.

Pulley.

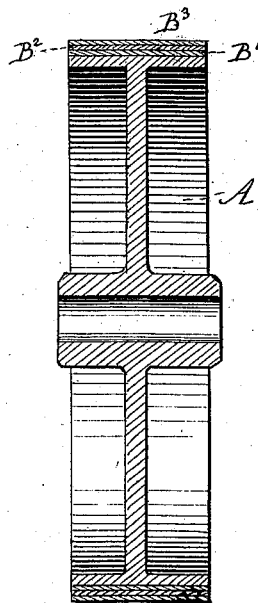
No. 168,708.

Patented Oct. 11, 1875.

*Fig. 1.*



*Fig. 2.*



*Witnesses*  
*John Becker*  
*Paul Holmes*

*R. W. Betts*  
*Wm Howie*  
*by their Attorneys*  
*Brown & Allen*

# UNITED STATES PATENT OFFICE

ROBERT W. BETTS AND WILLIAM HOWIE, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN PULLEYS.

Specification forming part of Letters Patent No. 168,708, dated October 11, 1875; application filed September 15, 1875.

*To all whom it may concern:*

Be it known that we, ROBERT W. BETTS, and WILLIAM HOWIE, both of Brooklyn, in the county of Kings and State of New York, have invented an Improvement in Pulleys; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of a pulley constructed according to our invention; and Fig. 2 is a central transverse section of the same.

This invention relates to certain improvements in metallic pulleys; and the present invention consists of a metallic pulley, faced with a strip or strips of paper, which is wrapped or bent around the periphery of the pulley, the object of which will be fully hereinafter described.

The invention further consists in a novel mode of preparing and applying the paper, whereby many advantages are obtained.

In carrying out our invention the face of the pulley is first coated with a mixture of white lead, borax, and oil, and then allowed to dry. This preparation facilitates the adhesion of the paper when applied to the face of the pulley.

The paper may be of any suitable description, and of any desired thickness, and may be applied in one or more layers. When more than one layer is applied, the layers are arranged to break joints. We prefer to use common straw board or paper, of ordinary thickness, and to apply two or more layers.

In carrying out our invention the paper is usually prepared by saturating it in a solution of sal-ammoniac, and then allowing it to dry, after which it is cut into a strip, the length of which is equal to the circumference of the pulley. One side of this strip is then coated with glue, or other adhesive substance, and it is applied to the face of the pulley by wrapping it around the same until the ends of the strip meet each other. If another layer of paper is desired another strip is prepared and

applied in the same manner, and arranged to break joints with the previous one.

One mode of carrying out our invention is illustrated in the accompanying drawing, in which A represents a pulley of ordinary construction; and B<sup>1</sup> B<sup>2</sup> B<sup>3</sup> represent three layers of paper, prepared and applied as above described, the joints being shown at b<sup>1</sup> b<sup>2</sup> b<sup>3</sup>.

By the use of our invention several advantages are obtained. The paper may be applied to pulleys already constructed, or it may be applied as soon as the pulley is made. It may be applied to a cast-iron pulley directly from the sand, and thus save dressing of the face. The saturation with the solution of sal-ammoniac enables the paper to preserve a moist condition, and thereby increase the friction of the belt, and prevent it from slipping. The paper facing decreases the wear of the belt, and prevents injury thereto from any rust which may be formed on a metal pulley.

By the use of this invention a belt need not be strained so tight as on an ordinary pulley, and its durability will be correspondingly increased.

In some cases the saturation with sal-ammoniac may be omitted, in which case the paper facing will possess advantages over the plain-faced pulley; but we prefer to saturate it, as described, for the reasons stated.

What we claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture a metallic pulley, faced with a strip or strips of paper wrapped or bent around the periphery of the pulley, and secured thereto, substantially as and for the object set forth.

2. The combination, with a pulley, of a facing of paper, prepared and applied substantially as herein described.

ROBERT W. BETTS.  
WILLIAM HOWIE.

Witnesses:

E. R. BROWN,  
FRED. HAYNES.