J. A. Evarts,

Casting Pulley Wheels.

No. 25,998. Patented Nov. 1, 1859.

Fig. 4.

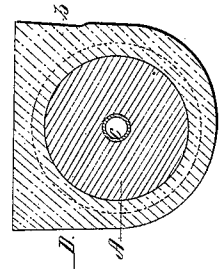


Fig. 6.

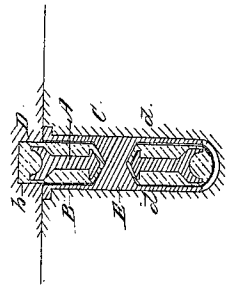


Fig. 3.

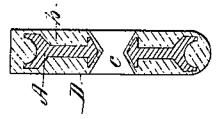


Fig. 2.

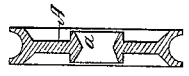


Fig. 1.

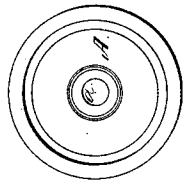
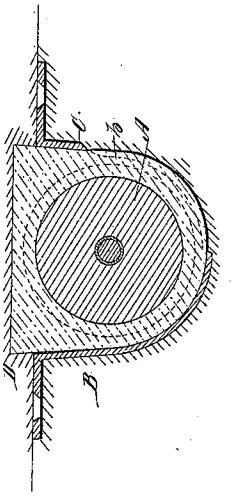


Fig. 5.



N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JNO. A. EVARTS, OF WEST MERIDEN, CONNECTICUT, ASSIGNOR TO HOMER CURTIS, OF SAME PLACE.

IMPROVED CAST-METAL PULLEY.

Specification forming part of Letters Patent No. **25,998**, dated November 1, 1859.

To all whom it may concern:

Be it known that I, JOHN A. EVARTS, of West Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Mode or Process of Manufacturing Cast-Metal Pulleys; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a detached side view of a wheel or roller of an ordinary sheave or pulley. Fig. 2 is a central section of the same, taken longitudinally with its axis. Fig. 3 is the same view as Fig. 2, with the sand packed around it so as to form a core. Fig. 4 is a side sectional view of core. Fig. 5 is a side sectional view of the mold for the shell or block with the core fitted within it. Fig. 6 is a central section of the same, taken longitudinally with the axis of the core.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to facilitate and expedite the manufacture of cast-metal sheaves or pulleys, such as are used for window-sash ropes and similar purposes, by casting the pintle or axis of the wheel or roller simultaneously with the casting of the shell, so as to avoid the usual manipulation or labor attending the fitting of the wheel or roller within the shell after the latter is cast.

The invention consists in having the wheel or roller inclosed within the core of the shell, and having the eye of the wheel open, so that in casting the shell the melted metal will pass through the eye and form the pintle or axis of the wheel, which is allowed to turn freely thereon when the sand portion of the core is removed.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a wheel or roller, which is cast separately, and is provided with a central eye or opening, *a*, to receive its axis on which the wheel or roller is to rotate freely, the former being stationary.

B, Figs. 5 and 6, represents the shell or case in which the wheel or roller A is fitted. This shell or case is of the usual form, and is cast in a sand mold, C, constructed or arranged in the usual way. The wheel A is covered with sand *b*, which is so placed around the wheel as to form a core, D, for the shell B, the wheel being at the center of the core. (See Figs. 3, 4, 5, and 6.) A hole, *c*, is made through the core, the hole coinciding with the eye *a* of the wheel, as shown clearly in Fig. 3. The mold C for the shell B is formed in sand in the usual way. (See Figs. 5 and 6.) The core D is fitted within the mold and the metal poured therein, and, owing to the hole *c* in the core, the metal will pass through it, and the two cheeks *d d* of the shell will be connected by a cross-pin, E. When the shell is withdrawn from the mold, the sand *b* is removed from the wheel A, which will be fitted loosely within the shell on the pin E, which is its axis, the sand *b* being placed sufficiently thick on the wheel to allow, when removed, sufficient space between the wheel and shell to permit of the free rotation of the same, and also affording space for the rope or cord to pass around the wheel between it and the shell.

By this improvement the manufacture of pulleys is much facilitated and expedited. The usual labor of fitting the wheel in the shell and adjusting the pintle or axis through it is dispensed with, and the pulley is equally as durable as the kinds hitherto used, one of which has the pintle passing through the shell and the other has the shell cast in two parts, so that the axis of the wheel may be fitted in the cheeks of the shell, and the two parts then secured together.

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

Forming the core D of the shell B by covering the wheel A with the sand *b*, and having the hole *c* made through the core, so that in casting the shell the pintle or axis E of the wheel will be cast simultaneously with the shell, and the wheel, when the sand *b* is removed, be properly adjusted within the shell, substantially as described.

JOHN A. EVARTS.

Witnesses:
G. H. WILSON,
ORVILLE H. PLATT.