J. BIRD.

CAST IRON CHAIN PULLEY.

No. 60,329. Patented Dec. 11, 1866.

Fig. 1.

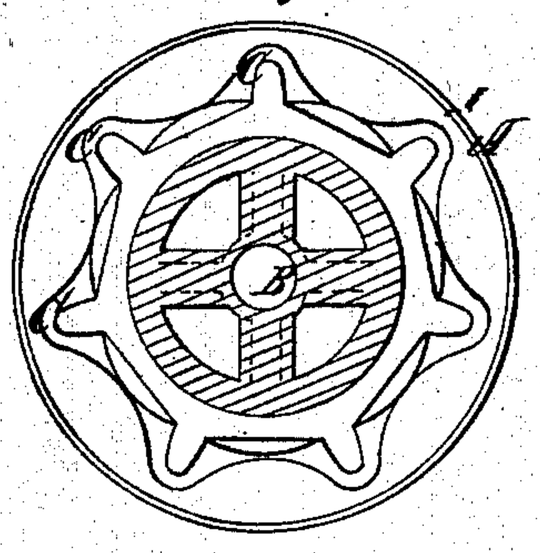
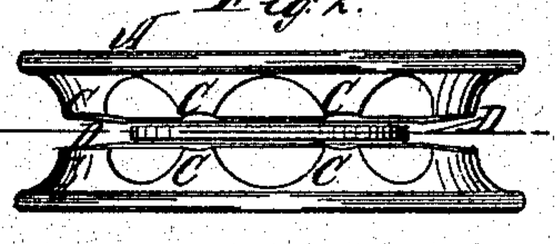


Fig. 2.



Witnesses:

E. B. Covington

Wm. Treworn

Inventor:

James Bird

per Munn & Co

Attorneys

United States Patent Office.

IMPROVEMNENT IN CAST IRON CHAIN PULLLEYS.

JAMES BIRD, OF NEW YORK, N. Y.

Letters Patent No. 60,329, *dated December* 11, 1866; *antedated December* 2, 1866.

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, JAMES BIRD, of the city, county, and State of New York, have invented a new and useful Improvement in Cast Iron Chain Pulleys; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others, skilled in the art, to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a sectional side view of a pulley made after my invention

Figure 2 is a peripherical view.

Similar letters of reference indicate like parts.

The object of this invention is to construct chain pulleys in such a way that they will be more enduring and better able to resist the wear to which they are subjected. The invention consists in casting the projections on the sides of the grooves of the pulleys between which the flat links of the chain rest, and which hold the chain from slipping, so as to put a "chill" on them, whereby they are made harder and more able to resist the wear of the chain.

The letter A designates a chain pulley with only one groove. Its centre has a bore, B, to receive a shaft, and it may have cogs on its sides, as pulleys are sometimes made for hoisting apparatus, or it may be left plain, as in this example. Its face is grooved, and on each side of the groove, at opposite points, are projections, C, which are placed at such distances apart on the circumference of the pulley as will suit the length of the links which are to be received between them. The bottom of the groove in the face of the pulley is depressed, as at D, such depression being carried coutinuously all around it, and being of such a width as easily to receive those links of the chain which are presented vertically to the axis of the pulley, and of a depth equal to about half the shortest diameter of such links, so as to let the horizontal links rest on the grooved face of the pulley, each of such horizontal links falling easily and accurately between two adjacent projections, and each of said projections being separated by the said depression.

I am aware that cast iron pulleys have long been made in this form, and I do not claim broadly the construction of a chain pulley, but my invention consists in casting each of the said projections, C, with a "chill,' such chill being made of cast iron or steel, and of any suitable and convenient shape. One method which I have pursued in chilling said projections, is to imbed in the mould made for the pulley a series of "chills" of a suitable size to form said projections, (the size of the chills being varied for projections of different dimensions,) each "chill" being separate from another, so that the workmen can adjust them in the flask with ease and accuracy. But the "chills" may be made in a series, their handles, or the parts thereof which come beyond the flasks being connected to each other, or they may be made in any other convenient way. It is desirable, however, for the perfection of the casting that the "chills" be distinct and separate from each other within the flask, so that they do not come in contact with each other, the spaces between them being filled in with sand in the usual way, and the "chills" for these projections which are separated from each other by the depression, D, being likewise separate and distinct. It is not necessary to explain the process of making the mould for a pulley of this character, nor to show how to construct a "chill" and apply it in a mould, since these operations belong to the art of moulding, and are familiar to all who are skilled in that art.

My invention is applicable to all chain pulleys with projections to hold the links of a chain, and to pulleys with one or more grooves, being especially useful in such chain pulleys as are used in lifting heavy weights, such, for, instance, as are connected with hoisting machines; but it is also applicable to pulleys used in chain pumps for wells, and in general for all pulleys which are used with chains going over their faces.

In hoisting machines for lifting great weights, it is not unusual that the projections on the pulleys as commonly made are worn down so far in a few days as to make the pulleys useless, thereby causing much loss and delay; but when chain pulleys are made according to my improvement, the projections are able to resist the wear of the chain and to retain their original shape, and the pulley is thereby kept unimpaired for a great length of time; and besides this advantage, heavier loads can be carried by the chain with safety, because of the diminished liability it has to slip on the pulley.

I claim as new, and desire to secure by Letters Patent—

In cast metal chain-pulleys making their projections, which hold the links of the chain, with a "chill," substantially as and for the purpose above described.

JAMES BIRD.

Witnesses:

M. M. LIVINGSTON,

ALEX. F. ROBERTS.