

**ABSTRACTS OF DECISIONS RELATING TO PATENTS.**  
**Supreme Court of the United States.**

**RISDON IRON AND LOCOMOTIVE WORKS V. MEDART et al.**  
 On appeal from the Circuit Court of the United States for the Northern District of California.

This was a suit in equity instituted by Philip and William Medart against the Risdon Iron and Locomotive Works, for the infringement of three letters patent granted to Philip Medart, viz.: Patent No. 248,599, dated October 25, 1881, for the manufacture of belt pulleys; patent No. 248,598, also dated October 25, 1881, for a belt pulley; and patent No. 238,702, granted March 8, 1881, also for a belt pulley.

In the first patent, No. 248,599, the patentee stated in his specification that his invention "relates to that class of belt pulleys formed of a wrought metal rim and a separate center, usually a spider, and usually made of cast metal.

"Heretofore considerable difficulty has been encountered in the manufacture of such pulleys, much time, skilled labor, and large and elaborate machinery have been required, and their production has been correspondingly expensive.

"The object of my invention is to cheapen and simplify their construction, overcome the objections above mentioned, and produce strong and perfect pulleys in a quick and efficient manner.

"My invention therefore consists in an improved process of manufacture, whereby the above results are obtained."

The drawings accompanying the specification represent the machinery for carrying out the invention, and the pulley at various stages of its manufacture. The specification sets forth in detail the manner in which the machinery is operated, and winds up with the following statement:

"Pulleys thus manufactured are perfectly balanced, faultless in shape, strong and durable, and can be produced more rapidly and at less expense than the imperfect pulleys heretofore made.

"The machinery herein shown and referred to has not been described more in detail, as its operation will be clear to those skilled in such matters; and no claim to it is herein made, it being my purpose to secure protection for such apparatus by other applications hereafter to be made."

The claims, which are four in number, are all for the described improvement in the art of manufacturing belt pulleys, which consists in centering the pulley center or spider and then grinding the same concentrically with the axis of the pulley, the several claims stating with more or less detail the principal steps in the manufacture.

In his specification to patent No. 248,598 the patentee states that his "improved pulley belongs to that class of pulleys composed of a separate spider, usually of cast metal, and a wrought metal rim, which is secured to the spider;" and that his invention "consists in a pulley which is perfectly true and accurately balanced, that is, a pulley in which the center of gravity and geometrical center or axis coincide."

In his specification to patent No. 238,702, which was granted about seven months before the other patents, the patentee states that his invention "relates to certain improvements in belt pulleys, and has for its object, first, the production of a cheap, light, and durable pulley; and, secondly, the production of irregular sizes of pulleys without the necessity of a separate pattern for each size of pulley required; and this invention consists, first, in constructing the usual crown or dish on the rim of wrought metal rimmed pulleys by bending said rim transversely during the process of manufacture; secondly, the belt pulley having arms formed of wood, preferably of a cylindrical shape, which at their inner ends rest in sockets cast on the hub, and at their outer ends are provided with bracket lugs, to which the pin is secured by rivets or other equivalent means."

Fig. 1 of the following drawings exhibits a perspective view and Fig. 2 a vertical section of the patented pulley.

The defendant appeared and demurred to the bill upon the ground that the patents did not show invention upon their faces. The demurrer was argued and overruled and leave given to answer, and upon a subsequent hearing upon pleadings and proofs it was adjudged that all of the patents were valid; that the defendant had infringed the first, second, and third claims of patent No. 248,599, the two claims of patent No. 248,598, and the first claim of patent No. 238,702, and defendant was enjoined from further infringing. A final decree was subsequently entered, upon the report of the master, for \$1,811.25, from which decree the defendant appealed to the Supreme Court.

Mr. Justice Brown delivered the opinion of the court.

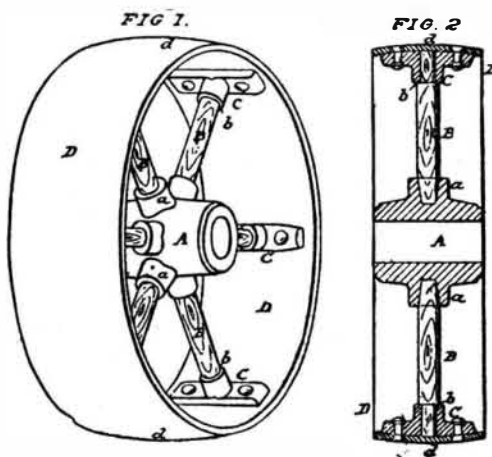
Patent No. 248,599 is for an improved process of manufacturing that class of belt pulleys formed of a wrought metal rim and a separate center, usually a spider, and usually made of cast metal.

It may be said in general that processes of manufacture which involve chemical or other similar elemental

action are patentable, though mechanism may be necessary in the application or carrying out of such process, while those which consist solely in the operation of a machine are not. Most processes which have been held to be patentable require the aid of mechanism in their practical application, but where such mechanism is subsidiary to the chemical action, the fact that the patentee may be entitled to a patent upon his mechanism does not impair his right to a patent for the process; since he would lose the benefit of his real discovery, which might be applied in a dozen different ways, if he were not entitled to such patent. But, if the operation of his device be purely mechanical, no such considerations apply, since the function of the machine is entirely independent of any chemical or other similar action.

The patent in question clearly falls within this category. It is upon its face "for an improved process of manufacture," and mechanism is shown and described simply for the purpose of exhibiting its operation, which is described in detail. The result is a pulley more perfectly balanced, more faultless in shape, stronger and more durable, perhaps, than any before produced; but this was not because the patentee had discovered anything new in the result produced, but because the mechanism was better adapted to produce that result than anything that had before been known. As pulleys of that description had been produced before, doubtless with greater care in the manufacture of them, a pulley as perfect as his might have been made. So that all that he invented in fact was a machine for the more perfect manufacture of such pulleys. The operation or function of such machine, however, is not patentable as a process.

Patent No. 248,598, granted upon the same day, is obviously, though not in so many words, for the product of the mechanical process described in the patent just disposed of—in other words, for a belt pulley



made substantially in the manner detailed in that patent.

After detailing the advantages of having the pulleys perfectly balanced and shaped with absolute accuracy, and setting forth in general terms the manner of securing this by grinding the rim concentrically with the axis, he claims, first, "the improved belt pulley herein described, having the ends of the spider arms ground off concentrically with the axis of the pulley;" and second, the same pulley with the rim and the ends of the spider arm ground off concentrically.

Obviously the patent in question is not for a new device, nor for a new combination of old devices. It contains precisely the elements of every other belt pulley, and operates in substantially the same way. It is in reality a patent for a belt pulley which differs from other belt pulleys only in the fact that the rim and ends of the spider arms are ground off concentrically with the axis. Obviously this is not a patentable feature. The specification states in substance that this belt pulley is superior to every other because it is better made, more perfectly balanced, and is one in which the center of gravity and geometrical center, or axis, coincide. It is said that such perfection of balance can only be obtained by the process described in the prior patent, viz., by grinding off the ends of the spider arms; but it does not follow that some other person may not, by another process, or by greater care or superior skill or deftness in the handling of tools, manufacture a pulley which shall be equal to this. But if this patent be valid, he would be an infringer in so doing, though he employed no mechanism whatever in the manufacture of such pulley, and did the work entirely with his own hands, if only he ground off the ends of the spider arms.

In short, this is a patent only for superior workmanship, and within all the authorities is invalid. This court has repeatedly stated that all improvement is not invention. If a certain device differs from what precedes it only in superiority of finish, or in greater accuracy of detail, it is but the carrying forward of an old idea, and does not amount to invention. Thus, if it had been customary to make an article of unpolished metal, it does not involve invention to polish it. If a telescope had been made with a certain degree of power, it involves no invention to make one which differs from the other only in its having greater power.

If boards had heretofore been planed by hand, a board better planed by machinery would not be patentable, although in all these cases the machinery itself may be patentable.

Patent No. 238,702, also for belt pulley, antedated the other patents by seven months.

The claims are as follows:

"1. A wrought metal rimmed pulley having a crown d, formed on its rim during the process of manufacture, as described, and for the purpose set forth.

"2. A belt pulley provided with wooden arms, B, a cast metal hub, A, having radial sockets a, and bracket lugs C, for the attachment of the rim, D, as described, and for the purpose set forth."

If, as stated in the specification, it had been "usual" heretofore to form the rim with a crown or dish, it makes no difference, so far as the completed article is concerned, whether it be formed during the process of manufacture by bending the rim transversely, or in any other way. Indeed, it is difficult to see how the crown could be made except during the process of manufacture, as it is part of such process. We are dealing with a belt pulley as a new article of manufacture, and the question how the pulley is made, or how the crown is made upon the rim, is entirely immaterial. As the first claim does not describe a pulley which differs at all in its completed state from prior pulleys, it is clearly invalid.

The second claim is for a belt pulley provided with wooden arms and a cast iron hub with sockets and bracket lugs, for the attachment of the rim. But as this claim was not found by the court below to have been infringed, it is not necessary to consider it.

For the reasons above given we think all these patents are invalid, and that the demurrer to the bill should have been sustained, except perhaps so far as the second claim of the last patent is concerned.

Medart may or may not have been entitled to a patent for the machinery employed in the manufacture of the belt pulleys in question; but he certainly was not entitled to a patent for the function of such machine, nor to the completed pulley, which differed from the prior ones only in its superior workmanship.

The decree of the court below must, therefore, be reversed, and the case remanded to the circuit court, with directions to dismiss the bill.

**Specific Gravity and Weight of Wheat.**

Mr. J. U. Lloyd read a paper before the American Pharmaceutical Association, 1894, in which he presents some figures on the grain weight and density. The average weights of wheat from the several principal wheat countries were:

	Grains.
Australia and New Zealand.....	71-895
England.....	71-108
India.....	68-765
South America.....	56-119
United States and Canada.....	51-541
Russia.....	47-795
Total average.....	60-670

Average weight from the heaviest sample of each country:

	Grains.
India.....	84-190
South America.....	77-890
Australia and New Zealand.....	77-878
England.....	77-378
United States and Canada.....	74-490
Russia.....	56-638
Total average.....	74-734

Australian and New Zealand wheats (three specimens) and some Bombay samples combine high weight and large size of grain with high density, ranking first in the list. These are followed by two samples from England, California choice, and last Chile, which has lowest density combined with large size and high weight. Most United States and Canada wheats belong to class of small size and low weight, but high density.

**A New Thermo-Battery.**

A further attempt to make a thermo-chemical galvanic cell has been described in the Comptes Rendus by M. Desire Korda, who worked with ordinary gas retort carbon. M. Korda finds that, if barium peroxide is heated to redness in contact with a carbon plate, the oxide becomes reduced to baryta, with the attendant phenomenon of a difference of electrical potential of about one volt, the carbon plate being negative. A similar result was obtained with cupric oxide, when a layer of potassium carbonate was placed between the oxide and the carbon; the difference of potential in this case amounting to 1.1 volts. In these experiments, the plate of retort carbon was connected by means of a platinum wire to one terminal of a Richard voltmeter; and a few cubic centimeters of the salt operated upon were placed on the carbon. A platinum wire dipping in the salt served to complete the circuit. The carbon was heated to a dull red in an atmospheric gas flame, when violent effervescence took place; carbonic acid being given off, and the voltmeter showing a deflection. This deflection of the needle remains constant as long as any of the higher oxide is left upon the carbon. The experiment is at any rate a simple one.