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Patentability of Processes

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PATENTABILITY OF PROCESSES.

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THESIS PRESENTED FOR THE
DEGREE OF BACHELOR OF LAWS

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---OOO---

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1896.
This branch of Patent Law has been confused through an inaccurate idea of the meaning of the terms peculiar to the subject. There are but comparatively few cases bearing upon the questions of patentability of processes and in most of these the statements in the opinions of the court are in the nature of dicta.

The word process as applied to Patent Law is a mode of treatment of certain materials to produce a certain result. Certain processes are patentable while others are not, but there is no line drawn by the courts to enable one to tell with certainty whether a particular process is or is not patentable, the highest court apparently reversed its own decision. In considering this question of patentability it is advisable to classify processes according to the operations involved and consider the weight of decisions in regard to the patentability of each class separately.

Let us then classify them as follows:

I. Operations which are not mechanical as chemistry, hydraulics, electricity, pneumatics etc.

II. Operations which are mechanical, being either machines or functions of machines.

III. Operations which are mechanical but which may be per-
formed by hand or by several different machines.

Before taking up this classification, a clearer meaning of the term process may be gained by considering the remarks of the court in the case of Tilghman v Proctor, 102 U.S. 707. The court says, "Whosoever discovers that a certain useful result will be produced in any art by the use of certain means is entitled to a patent for it, provided he states the means.......A machine is a thing. A process is a mode of acting. The one visible to the eye and the other a conception of the mind."

Then taking up the classes in order we have,

I. Operations which are not mechanical, as chemistry, hydraulics, electricity etc. That this class of operations is patentable is almost unquestioned. One of the leading cases supporting this view and one very often cited is Cochran v Deener, 95 U.S. 787 (1876). The case was one of damages for infringement. The defense was that the subject matter of Cochran's invention was not patentable. The invention consisted in the method of removing the impurities from grain by force of an air blast acting from beneath upon the grain, the latter being supported by a screen. It appeared that the previous method consisted in applying the air blast from above, the grain being supported by bolting cloth. This method forced the impurities down through the cloth, while
the other blow them up and out. The court says that the action of an air blast is not strictly speaking a mechanical operation but an operation utilizing the properties of pneumatics and therefore is a proper subject for a patent. Therefore the validity of Cochran's patent was sustained and damages recovered.

Another leading case is that of Tilghman v Proctor, 102 U.S. 728 (1880). The plaintiff Tilghman claimed damages for the infringement of a patent granted him which consisted of "the manufacturing of fat acids and glycerines from fatty substances by the action of water at a high temperature and under pressure". The apparatus for operating the method consisted in a furnace within which were spiral tubes. The fatty substances, together with water, was placed in these spiral tubes and simultaneously subjected to the action of heat and pressure. The apparatus used by defendants consisted of an ordinary furnace and boiler, the spiral tubes being replaced by the boiler. In this latter method the fatty substances were likewise subjected simultaneously to the action of heat and pressure. The court held that the latter process was an infringement of the former and as there could be no infringement without the former was originally valid, the court impliedly said that this patent was for a process and not a mechanical operation merely. Chemical processes are therefore
patentable as we have seen pneumatic processes to be.

It would be a waste of time to consider in detail other cases in support of a doctrine which is practically unquestioned but a brief statement of the holdings of a few other cases might be of use.

The case of Fermentation Co. v Mause, 122 U.S. 413 (1887), held valid a method by which pressure was automatically sustained upon beer, fermenting at the desired degree by well known principles of pneumatics. Lawther v Hamilton, 124 U.S. 1 (1868) also supports this doctrine. Poillon v Schmidt, 3 Fisher 467 (1869) declared the validity of the method of packing pistons by use of escape steam, being merely the use of pneumatic principles which had been similarly applied in the air pumps. Roberts v Dickey, 4 Fisher 532 (1871) allows the validity of a process consisting in the increasing of the capacity of oil wells that have become clogged, by the cracking of rocks and soil by means of explosives. Wood v Cleveland Rolling Mills Co., 4 Fisher 550 (1871) upholds the validity of a process of manufacturing bolts by stamping them after being subjected to heat, the application of heat being the principle which removes this case from the second class of purely mechanical operations. Cellaloid M'f'g. Co. v Zylonite Co., 31 Fed. Rep. 904 (1887) declared an infringement to an "improvement
in the manufacture of celluloid and other plastic substances". The invention consisted "in piling a number of rough sheets of celluloid upon a grooved plate, in a chase or mould, and subjecting the celluloid to heat and great pressure, by which it is solidified into a single, compact, rectangular slab, portions of which are forced into the grooves: then cooling it, so that it shrinks and those portions operate as clutches to hold the slab firmly in place". This is another application of temperature and pressure which makes a process patentable which without it, might be held invalid. Adee v Thomas, 41 Fed Rep. 340 (1890 held a process valid which consisted in placing in the mould and "around the core a piece of wrought lead pipe, with the end portions thereof tinned, and casting into the mould and around the cores the metal that forms the body of the trap and the outlet pipe, so that the melted metal unites with the end of the wrought pipe, and then removing the respective cores." Boyd v Cherry, 50 Fed. Rep. 279, (1883) In this case the Cooley patent was held valid. The invention consisted in a method of raising cream from milk by water sealing milk within the vessel containing it and also submerging such vessel in water. The case of Uhlman v Brewing Co., 53 Fed. Rep. 491 (1893) also upholds this doctrine.

In all the cases discussed under this class the machinery or
mechanisms employed are but the instruments by which the principles involved are made of practicable value. We will now pass to the second class and consider some of the cases which bear upon it.

II. Operations which are mechanical being either machines or functions of machines. The law is quite as settled upon the non-patentability of this class as it is upon the patentability of operations of the first class. That a function of a machine can not be patented as a process is stated by the court in the case of Corning v Burden, 15 How. 267 (1853). The Court said, ".....But it is well settled that a man cannot have a patent for a function or abstract effect of a machine but only for the machine which produces it........It is for the discovery or invention of some practicable method or means of producing a beneficial result or effect that a patent is granted and not for the effect itself."

A machine is patentable when the method of treating if purely mechanical is not, and, that is due to the fact that when a patent is granted for a process it prohibits thereby the free use of such method by any means whatever. In the case of Risdon Locomotive Works v Medart, 158 U.S. (1895) the court says, "The operation or function of such machine is not patentable as a process." In Fuller v Yeutzer, 94 U.S. 288 the court says, "Patents for a machine will not be sustained if the claim is for a result....."
The above discussion shows that in general there cannot be a patent for a mechanical method or result and that a patent for a machine will never be so construed as to cover the effect, result or method of the machine. Another case which coincides with those given is that of Bonsack Machine Co. v Elliot, 63 Fed. Rep. 837 (1894).

In considering the priority of certain patents in the above case the court was compelled to determine the force of a claim in the patent of one Hookes. The subject was an improvement in the manufacture of cigaretts. The wording of the claim in question was as follows, "The method herein described of forming cigarette cylinders consisting of drawing the ribbon through a tube-forming die, and simultaneously feeding the tobacco upon the ribbon and the same being previously gummed and finally pasted, as herein described." The court in considering the claim said, "The first claim of Hookes is sought to be upheld as for a process. It mentions an operation as a method, but the operation so mentioned is of mechanical parts, producing only mechanical changes in the form and relations of the tobacco and paper operated upon, resulting in nothing new." In the same opinion Judge Wheeler says, "This claim as for the process appears to be without foundation and invalid."

But the great difficulty comes in considering the third class
which is next in order.

III. Operations which are mechanical but which may be performed by hand or by several different machines. In Uhlman v. Brewing Co., 53 Fed Rep. 491 (1893), the point of difficulty is clearly explained and a test offered which is calculated to enable one to judge which processes of this class are patentable and which are not. The court says, "A process is something quite distinct both from a machine and a function of a machine. It is a patentable art and the first and original inventor of a new and useful process is entitled to protection under the patent law, without regard to any machine, or to the function of any machine which he may employ in conducting the process. To constitute a patentable process, however, the desired result must be accomplished by a mode of treatment of the material to be effected and not due merely to the particular mechanism employed or to be the product simply of its operation......Where a machine is requisite to the practice of a process, both are necessarily in operation at the same time and the machine contributes to the attainment of the desired result; but wherever it is discerned that there is a new method of treatment and that the machine (whether new or old) is an instrument for the reduction of that mode to practice, the existence of a patentable process is established no matter how
greatly the machine may contribute to its performance. That is, where the invention lies in the method rather than in the machine or mechanism by which it is carried out, such a process would be patentable, no matter how greatly the machine may contribute to its performance. The method must be primary and the machine secondary from the standing of invention. It is not competent to consider the respective values of the process and instrument, as commercial values in a new invention would merely be speculative. What the courts try to prevent is in the giving of a monopoly of a process where the only discovery or true invention is displayed in the means or instrumentality.

In order to more clearly appreciate the effect of the cases, it is advisable to subdivide this third class into three sections as follows:-

1. Where decisions intimate the validity of patents of the third class by declaring patents of this class valid on other grounds.

2. Where decisions intimate the invalidity of patents of the third class but declare their invalidity upon other grounds.

3. Where decisions declare patents to be void as belonging to the second class, where such classification is doubtful.

Then taking up these sections in order for discussion we have,
I. Where decisions intimate the validity of patents of the third class by declaring patents of this class valid on other grounds.

The first case of importance, Tilghman v. Morse, 5 Fisher 324 (1872), was a case in which the plaintiff, Tilghman, claimed that a patent issued to Morse, described as "improvement in the ornamentation and dressing of the surfaces of glass and other substances" was an infringement upon the claim in his patent for the "cutting, boring, grinding, dressing and engraving and pulverizing substances by sand used as a projectile, where the requisite velocity has been artificially given to it by any suitable means." The defendant claimed that Tilghman's invention had been anticipated. The court held that this was not so and that the existence of infringement which impliedly says that the patent claimed by Tilghman is valid although it is a patent for a process consisting of a mechanical manipulation. This case certainly comes within the rule as stated, the invention being in this manner of cutting glass by using sand as a projectile. The way in which the sand is put into motion and directed against the glass being but a natural and subsequent idea. The invention here clearly lies in the process and not the means and although the operation is mechanical, is nevertheless patentable.
The next case of Miller v Androscoggin Pulp Co., 5 Fisher 340 (1872) also intimates the patentability of a purely mechanical operation. The court here says in substance that a patent for an improvement in reducing wood to paper pulp, consisting in defibring wood by acting upon a block by a grinding surface and which is substantially across the fibres, and in the same plane with them is not anticipated by a patent for grinding wood upon the ends of the fibres or by another for grinding wood by a stone moving diagonally across the fibres, and therefore such patent is valid. Such operation is entirely mechanical and yet its validity in that respect passes unquestioned.

Likewise in the case of Lorillard v Dohan, 9 Fed. Rep. 509 (1881), the court allows the validity of a mechanical operation consisting of the stamping out by machinery of tin tags for plug tobacco, the case turning upon the question of priority of a patent.

Also, in Ballard v City of Pittsburgh, 12 Fed. Rep. 783 (1882) it was held that there was an infringement on a patent for an improvement in wood pavement which consisted in turning out "wooden blocks with inclined sides, so laid on their larger end as to form wedge shapes crevices or grooves for the reception of concrete or other suitable filling."
In the case of The Standard Paper Bag Co, 30 Fed. Rep. 63 (1887), the process consisted solely in the making of a paper bag by a machine. The court considered this a process and says, "That a process may be patentable irrespective of the particular form cannot be disputed." This statement is certainly misleading because taken literally would allow the patentability of cases of the second class for it amounts to saying that all processes may be patentable. There is a distinction drawn between cases in which the means is by use of chemistry or heat and those by simply mechanical movements. The holding of this case, however, is according to the rule laid down, the invention being in the process rather than the machine.

The next case is that of the Union Paper Bag Machine Co. v Waterbury, 39 Fed. Rep. 392 (1889). This controversy was over the validity of the Deering patent. The claim reads in part, "The herein described process or method of forming paper bags...." The defendant argued that the invention being not of a kind which employed hydraulics, electricity, pneumatics etc., was of a purely mechanical process and tried to locate the invention under the second of our classes instead of the first class. The complainants showed to the satisfaction of the court that there were some inventions which were entirely mechanical and still patentable.
The court decided upon another question that the patent was valid.

In the case of Travers v Cordage Co., 64 Fed. Rep. 771 (1894), the Rood patent, which was questioned, consisted in a method of making the ends of hammocks, attaching the converging strands to a completed hammock body. The court holds this patent valid and distinguishing this patent from others says that by former methods of weaving hammocks two trips were made by the shuttle where by this method but one was needed. The operation here consisted in laying a strand straight across from frame to frame and weaving that strand into the hammock body. The operation here was farther manual than mechanical, yet it was held to be valid by the court for other reasons.

In the case of Edison v Hardie, 68 Fed. Rep. 488 (1895), the claim of Edison is for, "The method herein specified of preparing stensil sheets for printing, consisting of pressing the sheets, in lines to be printed, against the numerous fine perforating points of a slab, by means of a blunt stylus, that is passed over the sheets at the lines to be perforated, and forces such sheets upon the points, substantially as set forth." The infringers used a sharp stylus instead of a blunt one, the stylus passing between the points of the metal sheets and accomplished a similar result. The court by declaring infringement acknowledged the
patentability of Edison's invention, though it is mechanical and manual, which decision is according to the rule allowing the validity of patents in which the invention or discovery is in the method rather than the instrument by which the process is put into a practical application.

We will now consider the second section which seems to be a uniform holding in just the opposite direction.

II. Where decisions intimate the invalidity of patents of the third class but declare the non-patentability upon other grounds.

In Downton v Yeager Milling Co., 108 U.S. 466 (1883), the letters patent on which the controversy was based were issued "for an improvement of the process of manufacturing middlings flour." In a certain part of this process it is necessary to crush the grain. This had been done by a large grindstone and the improvement consisted in the substituting of rollers, at that stage, for the grindstone. This patent was held invalid by the court upon the prior publication of the same process. The court does not consider this a patentable process, as it consists purely of a mechanical contrivance "which might be substituted by labor." The court errs, it seems, in this last statement for it would make no difference according to the rule whether the means consisted of
one machine or more or whether it would be possible to substitute manual labor, but the distinction being whether or no the primary invention consisted in the process or the means. But the patent would be invalid because the process consisted in crushing the grain, not in that particular way by the use of rollers. The invention was, therefore, of a machine and accordingly the inventor could not claim a patent for the process.

The next case of importance is Western Electric Co. v Ansonia Co., 114 U.S. 447 (1885). The appellant was the assignee of one Olmstead, the patentee for the process of covering electric wire. Olmstead's claim states "In my improved method, after the wire has received its coating, I dip it into paraffine or wax, after which instead of scraping off the surplus coating I pass the whole through a suitable machine which compresses the coating or covering and forces the paraffine or wax into the pores and secures perfect insulation. By so compressing the covering the paraffine or wax is forced into the pores and the surface becomes and appears polished." The court says that the invention is not for the insulating of wire or the braiding of the texture over the wire but simply and solely a contrivance or machine for compressing and polishing the wire after it has been covered by the texture and waxed. But it was anticipated by a patent to one Dundonald and
and therefore was invalid.

Another case supporting the same doctrine is that of Miller v Force, 116 U.S. 22 (1885). In this case the patent was held invalid on grounds of lack of novelty.

Passing now to the third section,

III. Where decisions declare patents to be void as belonging to the second class, where such classification is doubtful.

In understanding the bearing of the cases under this section the rule as laid down by the court in 53 Fed. Rep. 382, which is, to repeat, "where a machine is requisite to the practice of a process both are, necessarily in operation at the same time, and the machine contributes to the attainment of the desired result; but wherever it is discerned that there is a new method of treatment and that the machine (whether new or old) is an instrument for the reduction of that mode to practice the existence of a patentable process is established no matter how greatly the machine may contribute to its performance."

A case of interest and one often cited in this connection is that of Risdon Locomotive Works v Medart, 158 U.S. 68 (1895). The patent considered in this case was issued for an improvement in the process of manufacturing a certain kind of belt pulley. The process on which the patent is claimed is described in the specifi-
cation as consisting of six stops; "1. Centering the pulley center or spider. 2. Grinding the ends of the arms concentrically with the axis of the pulley. 3. Boring the center. 4. Securing the rim to the spider. 5. Grinding the surface of the rim concentric with the axis of the pulley. 6. Grinding or squaring the edges of the rim." Each and every part of this process is mechanical and the whole is mechanical and the invention here does not lie in a process but in a perfected manipulation. The court also errs here in saying in regard to the patentability of processes, "while those which consist solely in the operation of a machine are not." There is no invention displayed in this claim but simply an improvement which might naturally result from expert workmanship or skill and certainly that would not be patentable. While there is some doubt, yet, it seems as though this should come within the second class.

The case of Appelton M'f'g. Co. v Starr M'f'g. Co., 60 Fed. 411 (1894) rested upon the supposed validity of a patent for an "improvement in the method of reducing corn in the stalk and separating the kernels, consisting of a cutter with feed rollers in front, a beater or thresher, a revolving screen or a separator, and a shaking screen under it, all mounted in one frame and so geared that the parts are driven by a single band wheel, are held
void for want of invention." The court says, "It being as we suppose well settled that a patent for a machine covers its use for all purposes, whether anticipated by the patentee or not, and that the functions or methods of operation of mechanical devises may not be patented, it would seem to follow that processes which are to be affected wholly by mechanical means in order to be patentable must be capable of being distinguished from the method of operation or mere function of the mechanism necessary for this accomplishment." The court considers this patent invalid as being a patent for a machine. This decision seems in harmony with the rule as the invention here consists in the means rather then the process.

Wells Glass Co. v Henderson, 67 Fed. Rep. 930 (1895) declared the invalidity of a patent for an improvement in the manufacture of window sashes and analagous structures.

In all cases the court must determine whether the inventive faculty has been exerted with greater effort in detormining the process or means. This rule seems fair to all and particularly to the inventor for whose protection the patent laws were estab- lished. Then to say that processes of the third class are patent- able would be as incorrect as to say that they are. The court must decide upon the particular facts which are peculiar to each
case.

We have seen that cases either hold or indicate that a process is patentable if it involves the application of some principle of chemistry, pneumatics, heat, etc. Also, that a process is patentable when it is carried out by machines or mechanisms if the invention displayed lies in the method rather than in the instrumentality. Also, that when an operation is purely mechanical, as a single machine or mechanical movement, it is not a process as defined by patent law and is not patentable. A study of the cases cited shows the uncertainty of courts in handling these questions and that such a discussion as this must be at best but speculative.
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