

Brown Vs. District of Columbia

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Brown v. District of Columbia

No. 137

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130 U.S. 87

APPEAL FROM THE SUPREME COURT

OF THE DISTRICT OF COLUMBIA

SYLLABUS

In view of the state of the art at the time of their issue, letters patent No. 101,590, granted to Turner Cowing, April 5, 1870, for

"a wood pavement

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composed of blocks, each side having a single plain surface and one or more of the sides being inclined, and the blocks being so laid on their larger ends as to form wedge-shaped grooves or spaces to receive concrete or other suitable filling, substantially as set forth,"

are void for want of novelty.

The substitution of blocks of wood of a given shape for blocks of stone of the same shape in the construction of a pavement neither involves a new mode of construction nor develops anything substantially new in the resulting pavement, and is therefore not patentable as an invention.

Letters patent No. 94,062 to William W. Ballard and Buren B. Waddell, dated April 24, 1869, for improvements in street pavements, were granted for novelty in the method of making the blocks, and not for novelty in the blocks themselves or in a wooden pavement constructed of them, and it required no invention, but only mechanical skill, to produce this method so far as it varies from other methods for a like purpose previously known.

Letters patent No. 94,063 to William W. Ballard and Buren B. Waddell for "an improved mode of cutting blocks for street pavements" are void because the thing patented required only mechanical skill, and involved no invention, and was not patentable.

The case, as stated by the court in its opinion, was as follows:

Tallmadge E. Brown filed his bill in the Supreme Court of the District of Columbia on the 14th day of April, 1880, counting upon three patents alleged to have been infringed by the respondent, namely: Patent No. 101,590, issued to Turner Cowing, April 5, 1870, for "a new mode of constructing wood pavements for streets." The specification and claim are as follows:

"The nature of my invention consists in providing and arranging blocks of a peculiar shape in manner to form wedge-shaped crevices for the reception of earth or gravel, and wherein such earth or gravel will be retained to act as a key to bind and confine the blocks in their place."

"Figure 1 represents a section of road paved with the blocks, complete. Figure 2 represents the straight side of a block, with the inclined side at E. Fig. 3 represents the top of a block, and also the section of the base, D. Fig. 4 represents the straight side of a block which is set next to the inclined side of the adjoining block.
"

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"In Fig. 1, letter A represents the top of the block, B the side, and E the crevice and gravel. The blocks should, of course, be placed so that the gravel spaces may extend lengthwise across the direction of the street or road, so that, besides wedging and holding the blocks securely, they may furnish a better foothold for animals drawing heavy loads."

"In the drawing the front edge of the pavement, as shown, represents the side next the curb or a section parallel to the curb."

"It is obvious that the wedge-shaped crevices may also be formed by setting the above-described blocks so that two vertical sides and two inclined sides come together alternately, as shown in Fig. 5, and it is equally obvious that two blocks having their vertical sides together may be replaced by a single block having two inclined faces, as shown in Fig. 6, without any material change of plan, and with a considerable saving of labor and expense in the construction."

"To construct my pavement, prepare the roadway by grading it to the proper form and ramming solid; then set the blocks as shown in Fig. 1, confining them permanently between the curbs of walks; then fill and ram the crevices with earth and gravel."

"I do not claim a wood pavement composed of wedge-shaped blocks, when the blocks are laid alternately on larger and smaller ends, so as to form a continuous surface of wood, but what I do claim, and desire to secure by letters patent of the United States, is:"

"A wood pavement composed of blocks, each side having a single plain surface, and one or more of the sides being inclined, and the blocks being so laid on their larger ends as to form wedge-shaped grooves or spaces to receive concrete or other suitable filling, substantially as set forth."

Patent No. 94,062, issued to William W. Ballard and Buren B. Waddell, August 24, 1869, for "improvements in street pavements," of which the following are the specification and claims:

"Figure 1 is a perspective view of a section of pavement embracing our improvement. Fig. 2 is a perspective view of

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a piece of timber from which the block is cut, and showing the cuts made by the saw, and Fig. 3 is a perspective view of two of the blocks laid alongside of each other."

"To more clearly illustrate our invention, we will proceed to describe the construction, etc., referring by letters to the drawings."

"A represents the bed of the street, which is made slightly arched, the ends of the arch resting against the curbs, B B. Strips, C, are laid upon said arch at right angles to the curb and at convenient distances apart. Upon said strips is laid a flooring composed of boards of any desired dimensions, and the blocks are then laid on this flooring in rows and so as to break joints. These blocks are of a wedge

shape, and are so laid as that their bases shall touch, forming a continuous arch across the street and leaving V-shaped spaces between the rows. These spaces are filled with concrete or its equivalent, and the whole surface tarred over if thought necessary. The gutters are formed by inclining the bed slightly up ward at the curb and splitting the ends of the blocks off to fit against the curb and the last one of the street blocks."

"The peculiarity of the blocks used in this pavement is that they are wedge-shaped, and having both sides at acute angles with the base, and the grain running parallel with one and oblique to the other of these sides."

"A more perfect description of these blocks, and the manner of producing them, is given in another pending application, now on file in the United States Patent Office, entitled 'A method of cutting blocks for street pavements,' prepared and executed by us on the 29th day of September, 1868."

"The advantages of blocks having both sides beveled, with the grain running as described, over the ordinary wedge-shaped block are, first and most important, that only one corner of the base is at all likely to become broken off by transportation and rough handling, whereas in the ordinary block both corners are liable to such accidents. Another advantage of the relation of grain to the sides of the block is that the V-shaped spaces have one perfectly smooth side, and consequently less opportunity is afforded to the gravel in the

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filling to jam and leave the lower portion of the space loosely or entirely unfilled. This is believed to be a difficulty in pavements constructed of wedge-shaped blocks having the grain running vertically, and thereby exposing the fiber on both the beveled sides of the blocks."

"A pavement constructed of our improved blocks can be laid at a less cost than any other wedge-shaped pavement, owing to the cheapness of the blocks."

"It has always been desirable to build pavements of wedge-shaped blocks, as they make a stronger and more durable pavement and are more easily laid, but so far it has been impracticable owing to the expense of producing the blocks cause by the waste in material and extra sawing."

"Having described the construction and advantage of our improved pavement, what we claim as new and desire to secure by letters patent is:"

"1. As an article of manufacture, wedge-shaped blocks having the grain running parallel to one and oblique to the other of their beveled sides, and produced substantially in the manner referred to."

"2. A wooden street pavement, constructed substantially as hereinbefore described, of wedge-shaped blocks, with the grain running and produced in the manner and for the purpose set forth."

Patent No. 94,063, issued to said Ballard and Waddell, August 24, 1869, for "an improved mode of cutting blocks for street pavement," of which the specification and claim are as follows:

"Figure 1 represents the lumber, as the blocks are being cut off in order to give the ends of the blocks the proper angle or bevel."

"Fig. 2 represents the blocks after being cut off as above described, before splitting."

"Fig. 3 represents the blocks in the act of being split on a saw-table, showing the rest or guide necessary to cut them in the proper direction."

"Fig. 4 represents the blocks finished and placed in the pavement."

"Our invention consists in a novel method of cutting and splitting blocks for wood pavement in such a manner that two

cuts, or rather one cut and one splitting, will produce two finished blocks with level top and bottom and two sides beveled, one being with the grain and the other slightly oblique to the grain, without more waste of timber than is occasioned by the saws."

"We take a piece of lumber four and a half feet long, twelve inches wide, and seven inches thick. This is placed under the saws, as shown in Fig. 1, in an inclined position, so that the first cut will produce blocks with two sides inclined, the top and bottom level or in parallel planes. The first cut produces nine blocks, such as shown in Fig. 2, out of a piece of lumber as described above. Each such block will then be twelve inches long, six inches high with the fiber, and seven inches wide across the fiber. These blocks are then split, as indicated in dotted lines, Fig. 2, slightly oblique to the fiber, as seen also in Fig. 3, being brought toward the splitting-saw in an inclined position, inclined in contradistinction to a position level at top and bottom, in such a manner that the line of the cut will form the other two beveled sides of two blocks, each of which has the top and bottom level, or in parallel planes, and the sides beveled as shown in Fig. 4, and, moreover, has the grain running in the direction of one of the beveled sides, as clearly shown in Figs. 2 and 3. These blocks will then be twelve inches long, six inches high, three inches wide at top, and four inches wide at the base."

"The figures of feet and inches we have, of course, used only as an illustration, as different dimensions of lumber may be used, but those given will do for an ordinary street block."

"The two great advantages of this method are economy of lumber and of labor and time, the only loss of lumber being the small pieces cut off at each end to start the bevel. Each two cuts, or rather one cut and one splitting, produces two complete blocks ready for use."

"Having thus described our invention, what we desire to secure by letters patent is --"

"The herein-described method of cutting blocks for wooden pavement, so as to form by two cuts, or one cut and one splitting, two finished blocks with top and bottom level, or in

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parallel planes, and the sides beveled, one side being inclined with the fiber, and without waste of material, substantially as set forth."

The defendant pleaded the statute of limitations, whereupon the complainant amended, and the defendant subsequently demurred, and, the demurrer being overruled, the defendant, after interposing another plea of want of notice, answered, denying that it had in any way violated the rights of the complainant, and, among other things, averring that all the substantial claims of complainant's alleged patents were covered by previous patents granted to Nicholson, De Golver, Miller & Mason Stone, Cranford, and others, and that wooden pavements, in all substantial particulars identical with those claimed by complainant, had been laid and used for more than two years before the patents were applied for, in Chicago, New York, Boston, etc., and that the alleged patents are null and void because the alleged invention is neither new nor useful.

Replication was filed and proofs taken. It appeared that patent No. 101,590 was originally granted to Cowing, whose first application was made in November, 1865, and rejected December 27th of that year, whereupon it was amended and renewed in 1869, but the decision was that the application had been abandoned. It was afterwards entertained, and was twice amended in 1870, and the patent was finally issued April 5, 1870. In the original application, Cowing said, as in the patent as issued:

"The nature of my invention consists in providing and arranging blocks of a peculiar shape in manner to form wedge-shaped crevices for the reception of earth or gravel, and wherein such earth or gravel will be retained to act as a key to bind and confine the blocks in their place."

The amended claim of May, 1869, was:

"The above-described wood pavement, constructed of rectangular blocks, having each a wedge-shaped piece cut from one of its four vertical sides to form a corresponding space for filling, and placed and filled in, substantially as set forth."

The amended claims of February 22, 1870, were:

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"1st. A wood pavement consisting of blocks having one or more inclined sides, forming between them wedge-shaped spaces or crevices, which are filled with earth, gravel, or other suitable material, substantially as herein described. 2d. In wood pavement, wedge-shaped spaces or crevices for the reception of earth, gravel, or other filling to act as a key to bind and confine the blocks in their places, substantially as described. 3d. A wood pavement block having one or more oblique or inclined sides, so as to form, when set, wedge-shaped spaces or crevices to receive earth, gravel, or other filling, substantially as set forth. 4. In wood pavement, in combination with wedge-shaped crevices above, formed by the peculiar shape of the blocks, for receiving gravel or other filling, a continuous base beneath, formed by the complete fitting together of the same blocks at the bottom, substantially as specified."

On the 31st of March, 1868, a patent was issued to Miller & Mason of Chicago, Illinois, for "certain new and useful improvements in wood pavements," in which the claim is:

"A pavement constructed of wedge-shaped blocks, A, when laid so as to break joints with those of the opposite rows, in combination with a concrete filing, and in further combination with a continuous wood foundation, and so laid as to form continuous rows across the street."

It is said in the specification of that patent:

"The blocks, A, are to be cut from plank, and are of the usual size, having the fiber vertical. The blocks of our pavement, however, differ from all other blocks in use for pavements in having both sides beveled from top to bottom, as shown by the

end view of the blocks in the drawings. The blocks thus prepared are placed on the board or plank foundation, B, in transverse rows. Each block may be secured to the foundation by a nail or spike, as shown at a . It will be observed that in consequence of the peculiar shape of the blocks, those in the several rows touch each other at the bottom, but are some distance apart at the top, forming between the rows wedge-shaped channels. These channels are to be filled with concrete, or gravel and coal-tar, or other suitable substance, furnishing the necessary foothold for horses. "

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" * * * *"

"The blocks can be cut with less waste of material by cutting them from timber and splitting the timber blocks with the proper bevel. This makes a strong pavement, and as the blocks have a broad base they will not cut or break the foundation when very heavily loaded teams are driven over it."

August 20, 1867, letters patent were reissued to Samuel Nicholson, of Boston, for "a new and useful improved wooden pavement," the original letters having been issued August 8, 1854, and new letters issued dated December 1, 1863. The claims of the second reissue are:

"1. Placing a continuous foundation or support, as above described, directly upon the roadway, then arranging thereon a series of blocks having parallel sides endwise in rows, so as to leave a continuous narrow groove or channel-way between each row, and then filling said grooves or channel-ways with broken stone, gravel and tar, or other like materials. 2. The formation of a pavement by laying a foundation directly upon the roadway, substantially as described, and then employing two sets of blocks, one, a principal set of blocks that shall form the wooden surface of the pavement when completed, and an auxiliary set of blocks or strips of board which shall form no part of the surface of the pavement, but determine the width of the groove between the principal blocks, and also the filling of said groove, when so formed, between the principal blocks, with broken stone,

gravel and tar, or other like material. 3. Placing a continuous foundation or support, as above described, directly upon the roadway, and then arranging thereon a series of blocks having parallel sides endwise in a checkered manner, so as to leave a series of checkered spaces or cavities between said blocks, and then filling said checkered cavities with broken stone, gravel and tar, or other like material. 4. The formation of a pavement by laying a foundation directly upon the roadway, substantially as above described, and then employing two sets of blocks, viz., one a principal set of blocks that shall form the wooden surface of the pavement, and an auxiliary set of blocks that shall form no part of the wooden surface of the pavement, but determine the dimensions

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of the tessellated cavities between the principal blocks, and then filling said tessellated cavities with broken stone, gravel and tar, or other light material."

February 28, 1824, English letters patent were granted to A. H. Chambers for "improvements in preparing and paving horse and carriage ways," in which the nature of the invention is said to

"Consist in an arrangement of conical formed stones, or other hard mineral or silicious substances of the said form, placed on their natural bases, cemented together at their lower extremities and having their remaining interstices filled with loose materials insoluble in water."

He describes pyramidal stones, "cut in the form represented in the drawing, and placed with their large end or natural base downward," to be grouted at their bases by a good strong cement; the upper part of the interstices that will then be left vacant to be filled "with finely broken flints, patent English pozzolana powdered, or any other similar substance, not soluble in water."

"Fig. 3 represents the stones in that form which I consider the best calculated to effect the required resistance to downward pressure, the size of which should be eight inches square at the apex, twelve inches square at the base, and ten inches high."

He explains that while stones of the shape described are the best adapted for the purpose of the pavement or carriageway, yet to save expense use may be made for all ordinary pavements of stones as usually prepared for paviers, but taking care

"always to lay their natural bases or largest ends downwards, which is the exact reverse of the mode adopted by paviers, . . . the upper part of the intermediate spaces or interstices aforesaid filled with powdered or finely broken matter, not soluble in water, as aforesaid."

June 14, 1825, English letters patent were granted to John Lindsay for

"certain improvements in the construction or formation of the horse and carriage ways of streets, turnpike, and other roads, and an improvement or addition to wheels to be used thereon. "

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He says, referring to a pavement "with the common or usual sized paving stones," that

"The method of arranging or laying them is as follows: instead of laying them with their broadest ends upwards, I lay them with the broadest ends downwards, and, as each stone is made of a wedge form, this leaves a considerable space open between the stones. These I close with smaller stones of a wedge form, which, being carefully placed and well rammed down, after a sufficient quantity of fine gravel or grout has been worked between them, will make a pavement nearly as substantial as a solid sheet of granite."

In 1839, English letters patent were issued to Richard Hodgson for "improvements in the forms or shapes of materials and substances used for building and paving, and in their combinations for such purposes," in which he describes an invention consisting in forming and shaping materials and substances according to a new section of the cube obtained by dividing the cube into eight equal prisms or parts, etc., the shapes and forms described, with their combinations, being "applicable

generally to materials and substances employed in building and paving, whether of stone, iron, bricks, or wood." The shapes in the case of stone, marble, etc., are

"to be formed by sawing or cutting the same out of the full size of the cube, and leaving them entire in their relative dimensions, so as to be ready to be placed together either horizontally, vertically, or obliquely, as the case may require,"

while for "wood paving a peculiar disposition of the materials or blocks thus shaped, and, if necessary, pegged or doweled, will be required," etc. The blocks may be packed up together in the workshop in masses, so as to be laid down more speedily on the ground, where they must be fastened together with pegs or with any bituminous compound usually employed for similar purposes. They must be placed nearly vertically, as the tree grows, and according to the traffic the depth or substance of the wood pavement must be increased or diminished. They may in most cases be laid across the street from side to side, but, when necessary, in a diagonal line.

Defendant introduced various letters patent to-wit: for improvement

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in "the machine for resawing boards and other timber" (issued to Crosby, 1841); for "improvements in sawmills, for curved and bevel sawing, but which may also be used for rectilinear sawing" (issued to Normand, 1854); for "a new and improved mode of sawing stone or marble into tapering and other forms" (issued to McBird, 1856); for "an adjustable table for reciprocating saws," "whereby the proper bevel may be imparted to the ribs of vessels and other objects with accuracy and facility" (issued to Hinchman, 1863); for "improvement in the manufacture of siding" (issued to Millengar, 1864); for "an improved saw-mill, . . . so as to cut ship-timbers and other irregular forms" (issued to Wright and Molyneux, 1865); and also extracts from a volume entitles "Turning and Mechanical Manipulation," by Charles Holtzapffel, London, 1847.

These extracts treat of cutting, by means of guides, rectangular pieces from the end of a long bar, and rhomboidal pieces of any angle and magnitude; the sawing

of small pieces into regular and irregular polygons of any particular angles and numbers of sides; the cutting of mitres, etc.; the sawing beveled edges and oblique prisms, or those in which the angular variations are in the vertical plane, rhomboids, or squares.

"When the pieces are parallel in one direction and beveled in the other, they may be cut out without any waste beyond that arising from the passage of the saw."

Fig. 743 shows a method of cutting blocks at one cut for each piece into rhombuses, which are shown separately at *a*, which blocks can be afterwards divided into two, so as to make triangular shaped blocks, such as are shown at *c*.

At the hearing in special term, the bill was dismissed, and, the decree being affirmed in general term, the complainant has prosecuted his appeal to this Court.

The opinion of Judge Cox at special term was adopted by the court in general term (Cartter, C.J., Hagner and James, JJ.), and from it it appears that it was held that no case of actionable infringement was made out as to No. 94,063, and that Nos. 94,062 and 101,590 were void for want of patentable novelty. *Brown v. District of Columbia*, 3 Mackey 502.

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MR. CHIEF JUSTICE FULLER, after stating the facts as above, delivered the opinion of the Court.

Was a wood pavement

"composed of blocks, each side having a single plain surface, and one or more of the sides being inclined, and the blocks being so laid on their larger ends as to form wedge-shaped grooves or spaces to receive concrete or other suitable filling,"

patentable April 5, 1870 in view of the state of the art?

Chambers had, in 1824, described a pavement of pyramidal stones, twelve inches square at the base, eight inches square at the apex, and ten inches high, placed with their larger end downwards, and the interstices filled with loose materials insoluble in water.

Lindsay's invention, in 1825, comprised stones made of a wedge-shaped form, laid with their broadest ends down wards, leaving a considerable space between them to be closed with smaller wedge-formed stones, with fine gravel or grout worked between them.

Nicholson's pavement was composed of blocks of wood laid in rows across the street, with spaces obtained by interposing narrow wooden strips between the blocks, to be filled with concrete or other suitable filling.

Cowing disclaimed

"a wood pavement composed of wedge-shaped blocks, when the blocks are laid alternately on larger and smaller ends, so as to form a continuous surface of wood,"

but claimed the arrangement of the blocks so as to leave wedge-shaped spaces to receive filling to act as a key to bind the blocks together. But reference to these prior patents clearly shows that the formation of wedge-shaped spaces to receive concrete or other filling by laying blocks with one or more inclined sides with their larger ends downwards, the filling acting as a key, and the use of wooden blocks in that way, were well known at the time of the alleged invention under consideration.

The blocks of the Lindsay patent are of the same shape as those of Cowing, but are of stone, while the latter are of

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wood; but this was nothing more than the substitution of one material for another, without involving a new mode of construction or developing anything substantially new in the resulting pavement. [Hotchkiss v. Greenwood](#), 11 How. 248; [Hicks v.](#)

[*Kelsey*, 18 Wall. 670](#); *Smith v. Goodyear Dental Vulcanite Co.*, [93 U. S. 486](#) ; *Phillips v. Detroit*, [111 U. S. 604](#) .

The filling under Lindsay's patent was with small stones, fine gravel, or grout, while Cowing names a filling of earth, gravel, or some other similar substance, but Nicholson used broken stone, gravel and tar, or other like material, being the same filling for the same purpose and with substantially the same result, while the material of the Nicholson block was the same as that of Cowing.

It is argued that gravel and similar substances cannot be forced into the stone blocks of the Chambers and Lindsay patents, and that in ramming gravel between wooden blocks, it of necessity indents the blocks, and the filling must adhere much more firmly than would be the case if they were stone. There is nothing said about this by Cowing in his specification, but he is entitled, if this is an advantage directly following from the alleged invention as described, to the benefit of it, whether he perceived it or not. *Stow v. Chicago*, [104 U. S. 547](#) , [104 U. S. 550](#) . The same effect, however, would be obtained in ramming filling between the blocks of any wooden pavement, and the same liability of the filling "to extend laterally into the fiber of the wood and seat itself therein" is found in the Nicholson pavement.

In the Chambers patent, the blocks had four inclined sides, which would make the filled space run lengthwise as well as crosswise. In the Cowing patent, the crevices run lengthwise "across the direction of the street or road."

As Cowing's combination simply embraces blocks of the same shape and material and similar filling applied in substantially the same way and producing substantially the same results as in the prior patents referred to, it cannot be regarded as possessing patentable novelty.

The first claim of patent No. 94,062 covers, as an article of manufacture,

"wedge-shaped blocks having the grain running

parallel to one and oblique to the other of their beveled sides, and produced substantially in the manner referred to."

The second is

"a wooden street pavement, constructed substantially as hereinbefore described, of wedge-shaped blocks, with the grain running and produced in the manner and for the purposes set forth."

The original application of Ballard was filed June 15, 1869, and rejected by Examiner Spear upon the ground that the claim was essentially the same as that in No. 94,063, which was for a mode of cutting blocks. It was then amended and again rejected, the examiner saying:

"It is admitted that there is no difference between the blocks of applicant and those of Miller and Mason in configuration, nor is any difference claimed of functions. These blocks, and those of the patent referred to, once laid, would be indistinguishable, serving, under the same conditions, precisely the same purposes and wearing equally as long. The difference lies in the mode of cutting, by which not a different block is produced, but the same block is cut with a minimum of waste of material."

From this decision an appeal was taken to the examiners in chief, who affirmed the ruling, holding that

"the trouble with the present application appears to be that the specification and claim merely set forth and embrace a paving block and the use thereof, having a certain form, and being so cut that the grain will run in certain angles with the sides, or parallel thereto, and without any reference to the mode and manner of manufacturing. Blocks having all the peculiarities set forth may be manufactured without resorting to the method by which it seems the ones described in the application were made, and it does not follow, therefore, that the block described and claimed is the new article of manufacture produced by the new invention, nor is it at all material whether the grain runs as set forth or the blocks have the precise form described. Therefore, these peculiarities are not the patentable

features of the invention; they merely result from the invention."

The application was then renewed by Ballard and Waddell, with the result before us, but it is plain that the patent was granted for novelty in the method of making the block, and

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not in the block itself, nor in a wooden street pavement so constructed. It is not denied that the Ballard block is identical in shape with those set forth in the Cowing, Chambers, Lindsay, and Miller and Mason patents, but it is claimed that a difference exists between it and that of Miller and Mason in the arrangement of the grain, namely, running parallel with one and oblique to the other of its beveled sides.

We can discover nothing materially different in the practical result of having the grain run in this way, and no material difference is disclosed by the evidence.

The specification asserts that the gravel in the filling is not so liable to jam and leave the lower portion of the space loosely or entirely unfilled, where the blocks have one perfectly smooth side, and that

"only one corner of the base is at all likely to become broken off by transportation and rough handling, whereas in the ordinary block both corners are liable to such accidents,"

but, as appears from the evidence,

"if the blocks are cut with the grain in the manner described in said patent, although one side is not so likely to break off as the other, yet the side that has the grain oblique to it is twice as likely to be broken off as the blocks made in the ordinary way, that is, with the grain vertical,"

and

"the effect of the smooth side of one block, if there were such an alleged advantage in said side, would be fully recompensed by the additional roughness of the other side,"

and it would seem that the durability of the block is less where the grain is inclined than where it is vertical. It is fully shown in an elaborate report upon wood paving, quoted from in the evidence, and which, it is testified, agrees with general experience, that vertical fiber blocks have far greater power of resistance than blocks with fibers horizontal, and with fibers at various degrees of inclination.

The manner of laying the blocks is substantially the same as in prior pavements.

The process of making the block is given in patent 94,063, the claim of which is

"the herein-described method of cutting blocks for wooden pavements so as to form by two cuts, or one cut and one splitting, two finished blocks, with top and bottom level, or in parallel planes, and the sides beveled, one side being

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inclined with the fiber, and without waste of material, substantially as set forth."

From what we have said, it will be perceived that this claim and the first claim of patent No. 94,062 must be considered together. The manner of producing these blocks is described as cutting them from lumber by means of guides so as to cut the blocks of certain bevels, by which a block is produced having two of its sides inclined, and with the grain running parallel to one and oblique to the other of the beveled sides; but the essential features of the apparatus described in this patent appear in many of the defendant's exhibits. Instead of having a table parallel with the shaft of the saw or at right angles with the saw itself, the patent in question uses a rest or guide in presenting the material to the saws, but the use of such guides is shown in Holtzapffel's "Turning and Mechanical Manipulation" and Crosby's patent and others.

The prior existence of the method of cutting blocks without waste by severing a large block by a cross-cut from a long stick, and then dividing that block into two

similar blocks by a splitting cut, is satisfactorily established, as also the same result reached in the same way in the treatment of stone. In the case of the Ballard block, the splitting cut is made in a direction parallel with the grain, but that is because the object of having the grain run in a particular way controls the action of the mechanic, who makes the cut as he desires the fiber to run.

Complainant's expert admits that the patentee in the McBird patent, by the first cut he makes, produces a block of rhomboidal form, and, by a second oblique cut, divides his block into two equal wedge-shaped blocks, produced without waste of material, and the difference he points out between that and the Ballard and Waddell patent is, so far as the cutting operation is concerned, that in the former the cut which divides the rhomboid into two wedge-shaped blocks is made across the grain, while in the latter it is made in the general direction of the grain.

To cut the block so as to get the grain in a particular way, and so as to avoid waste, requires simple mechanical skill, without involving invention.

The result is that none of these claims can be sustained, and the decree of the court below is

Affirmed.