

## Correspondence.

## Steam Boiler Explosions.

To the Editor of the Scientific American:

SIR: In your issue of December 17, 1881, there occurs the following:

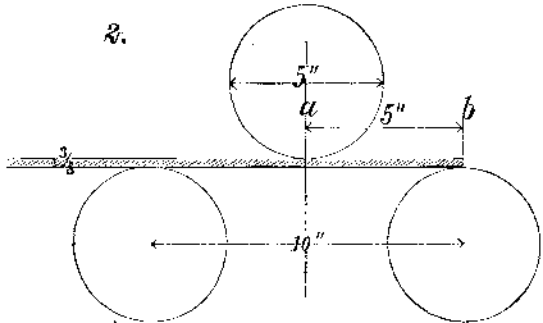
"The owners of these new and apparently well made and thoroughly equipped boilers ought not to be told that it is impossible to determine the cause of the explosion. They, in common with most thinking men, no doubt believe that there was a sufficient cause, which somebody ought to be able to explain."

Forty years' experience as a boilermaker may plead my excuse for meddling with the explosion at the Dayton Wheel Works, Ohio, as reported in your issues of December 17 and January 7. In the last I am happy to see that the bath or wash to which you caused the fractured piece of plate to be subjected has at once and forever put an end to the white-washing of boiler explosions, and revealed what has long been suspected by all intelligent boilermakers of my acquaintance. That suspicion is now seen to be a reality, and the cause of the primary rupture is at once traceable to the bending rollers and the prevailing method of setting the ends of boiler plates for cylinder boilers. In a word, the present system involves the end of the plate first entering the rollers in such a set of circumstances as to insure its destruction.

"The SCIENTIFIC AMERICAN has made a careful examination of the exploded boiler of Messrs. Pinneo & Daniels, and finds that the explosion was due to the bad quality of the iron at the line A B; that the plate at this point was brittle; that this brittle iron was subjected to slight hinge-bending motions caused by variations of pressure on the flattened portion of the boiler at the broad seam; that these motions tended to crack the poor iron; that the plate at the line A B showed the existence of a crack of older date than the explosion; that the steam pressure indicated by the engine-room gauge was sufficient to cause the explosion, in view of the cracked and impoverished nature of the iron."

In this quotation one sentence tells the story; it is the following: "The flattened portion of the boiler at the broad seam." This sentence tells a fearful tale with respect to the bending of the plates, for the exploded boiler and the picture of the piece submitted to the bath, shown in the issue of January 7, proves that although the damage done the plate in the process of setting was not visible to the unaided eye, yet it existed, and to such an extent as to render the plate far from being trustworthy. Every blow of the hammer used in the attempt to bend the portion left unbent by the roller is registered on the plate in unmistakable fractures of the material.

While preparing this article for your consideration I have been engaged through the day in the construction of a boiler 6 feet in diameter, plate three eighths of an inch thick, and of the usual quality that is put in shells of mill boilers. Our rollers are 5 3/4 inches diameter, and the bottom rollers are 10 inches from center to center. Now, as the three rollers are alike in diameter, it follows that when the top roller is three-eighths of an inch above the others, and the plate shoved in, its position will be thus:



You see that from the center of the top roller, *a*, to the end of the plate, *b*, is five inches. This portion of the plate will be unbent and remain so until set by the hammer, which is often done before any further progress is made in the further bending of the plate. The result of this hammering is sometimes the complete destruction of the plate, as in the case of the plate of which I have forwarded you a piece, which has a tongue to tell its own tale. At other times the injury may not be so visible as in the case of the exploded boiler, but nevertheless it is there awaiting the time when it will show itself in the destruction of life and property.

Now, sir, I repeat that the primary cause of the explosion was the damage sustained by the plate in bending, and that all the evils of a wrong system seem to have gathered about that particular flattened broad seam, which was, to say the least of it, acknowledged by the engineer to be defective; and inasmuch as it had been calked during the week previous to the explosion it shows plainly that it had never been close.

Now, sir, I blame no man for the explosion. I blame the system which the careful examination, made by the SCIENTIFIC AMERICAN, has brought to light, and enabled me, however imperfectly, to bear witness to the assertion that there was a cause; and from henceforth let it not be said of boilermakers, when they complain of the rollers, that it is their ignorance and prejudice that cause them to do so. But let there be a careful revision of the whole system, in the interest of truth, justice, and public safety, and manufacturers of boilers and users will all be benefited by the result.

ROBERT PARKER.

DECISIONS RELATING TO PATENTS, TRADE MARKS ETC.  
Supreme Court of the United States.

STOW vs. THE CITY OF CHICAGO.—PATENT PAVEMENT.

1. PATENTEE ENTITLED TO ALL USES OF INVENTION.—A patentee who is the first to make an invention is entitled to his claim for all the uses and advantages which belong to it, and it is immaterial whether he perceived and stated such advantages in his patent.

2. REISSUE No. 3,274.—STREET PAVEMENTS.—ANTICIPATING.—So the wood pavement described in Reissue Patent No. 3,274, *Held* to be anticipated by the patent of Stead, which does not in terms say that the purpose of driving the wedge-shaped block or pile through the space left by the octagonal blocks is to pack the earth or sand foundation, it appearing that such a result must follow from the construction described.

3. LETTERS PATENT No. 134,404.—WANT OF INFRINGEMENT.—When every other part of the invention described in Letters Patent No. 134,404 was shown to be old, doubted whether it can be called invention to have the ground in the spaces between the blocks more compactly rammed, so as to drive it below the under surface of the pavement into the earth foundation; but the evidence failing to show that the defendant used this feature of the invention the bill is dismissed.

Appeal from the Circuit Court of the United States for the Northern District of Illinois.

The first patent relied on is the Reissue No. 3,274, dated January 19, 1869, of an original patent granted to him, numbered 72,110, and dated December 10, 1867.

The invention covered by the reissued patent is thus generally described in the specification:

The nature of my invention consists in putting down a pavement of wood or other suitable material upon a foundation bed of sand or loose earth, and packing the sand or earth by means of wedge blocks driven down into the same and forming a part or whole of the pavement.

The pavement described in this reissued patent consisted essentially of blocks of wood or other material set up on end in rows across the street, with spaces between the rows, in which were driven narrow and probably wedge-shaped blocks, which, when driven down, extended a considerable distance below the under surface of the blocks first named into the foundation bed of sand on which they rested.

No particular form of block is described in the claims, except that some of the blocks used have their lower ends made wedge-shaped. All, therefore, that there is left for the invention described in the first and third claims to cover is the making of the lower ends of a portion of the blocks of which the pavement is composed in wedge shape and the driving of these wedge-shaped blocks below the general under surface of the pavement into the sand or earth bed on which it rests, so as to pack it and render it solid and unyielding.

When thus reduced to what it really is the invention of the appellant is clearly and distinctly anticipated by the English patent issued to David Stead, dated April 23, 1839, which is set out in full in the record.

One of the drawings which accompanies Stead's specifications shows a pavement laid with contiguous rows of octagonal blocks, so placed as to leave rows of square unfilled spaces. In these square spaces were placed square blocks, longer than the octagonal blocks and wedge-shaped at the lower end, and these were driven down into the earth foundation, upon which the octagonal blocks rested.

It is true this specification does not in terms say that the purpose of driving the wedge-shaped block or pile through the space left by the octagonal blocks is to pack the earth or sand foundation, but that it does so as effectually as the use of similar blocks in a similar way under the patent of appellant is too clear for argument.

A patentee who is the first to make an invention is entitled to his claim for all the uses and advantages which belong to it. (*Woodman vs. Stimpson*, 3 Fish., 98.)

It is shown that Stead invented this device. Whether he perceived and stated all its advantages is immaterial. (*Tucker vs. Spaulding*, 13 Wall., 453; *Mr. Justice Clifford in Graham vs. Mason*, 5 Fish., 1.)

Stead's specifications, it is clear, cover (to use the language of Stow's reissued patent), "a pavement composed of wood laid on a foundation-bed of sand or loose earth," and having "a portion of the blocks of which it is composed driven down into said foundation-bed."

Everything, therefore, in the first and third claims of appellant's reissued patent which he sets up as new was anticipated nearly thirty years by Stead's English patent. Appellant's patent, therefore, so far as it covers these claims, is void, and cannot be the foundation of any relief against the appellee.

The other patent which appellant insists that the appellee has infringed is No. 134,404, dated December 31, 1872, issued to appellant as the original inventor.

The invention covered by this patent is described in the claim as follows: "A pavement composed of blocks laid in rows directly upon the sand foundation, with spaces between the rows filled with sand or gravel, which is swaged or driven into sand foundation, substantially as and for the purpose specified."

The use of wood for street pavements, the laying of blocks directly upon a sand foundation, the placing of the blocks in rows, leaving spaces between the rows, are all old devices. As already shown, they are all to be found substantially in the English patent of Stead, issued April 23, 1839, and they

are found in the English patent to Lillie, dated October 13, 1860, and the American patent to Richard H. Willett, No. 114,895, and dated May 16, 1871, all of which are put in evidence by the appellee.

The evidence is distinct and clear that the invention thus defined was anticipated by the pavement laid by J. K. Thompson, City Superintendent, in the year 1864, at the intersection of North State and Kinzie streets, in the city of Chicago. This piece of pavement was made of wooden blocks, six inches square, set in rows on an earth foundation, with spaces between the rows, and the spaces filled with fine gravel and the gravel rammed. This pavement was put down by Thompson as an experiment. It proved successful. It was in use until the great fire in Chicago in 1871.

Without noticing the other defenses, we declare our opinion to be that the appellant is not entitled to any relief against the appellee upon either of the patents on which his demand for relief is now based. His case, as presented here, has no ground to stand on. The decree of the Circuit Court dismissing his bill must therefore be affirmed.

Mr. Justice Woods delivered the opinion of the court.

## United States Circuit Court—Southern District of New York.

HART vs. THAYER.—PATENT NECKTIE.

Blatchford, J.:

The improvement in neckties set forth in reissued letters patent No. 7,909, which consists in securing a straight pin to the shield by means of metallic fastenings—*i. e.*, metallic rivets either separate from or struck out from the body of the pin, which pass through the shield and are clinched or headed on the opposite side—is not infringed by a mode of securing pins to the shield, which dispenses with separate fastenings, and which consist in forming two bends in the length of the pin, so that by passing through suitable holes in the shield the pin may fasten itself.

This suit is brought on reissue letters patent No. 7,909, granted to the plaintiff, William H. Hart, Jr., October 9, 1877, for an improvement in neckties, the original patent, No. 159,921, having been granted to him February 16, 1875.

## By the Commissioner of Patents.

EX-PARTE FAIRCHILD.

TRADE MARK.—PROPER NAME OF APPLICANT.

The mere name of a person does not form a proper subject for trade mark registration, although it appears that such name, by long association with a certain line of goods, has come to be applied as a name or title to such goods.

MARBLE, Commissioner:

Appeal is taken in this case from the decision of the Examiner of Trade Marks, who refused to register the word "Fairchild" as a trade mark, because it was "merely the name of the applicant."

Applicant alleges that the Examiner erred in refusing to register his alleged trade mark, first, because the word "Fairchild" has been used as a trade mark in connection with his manufacture and sale of pens and pencils for twenty years and upward, and is well known to the commercial world as the trade mark of the applicant; second, because said word was registered as a trade mark in this office under the act of July 8, 1870, which act contained similar prohibitions to the act of March 3, 1881.

By the third section of the act of March 3, 1881, it is provided that:

But no alleged trade mark shall be registered unless the same appear to be lawfully used as such by the applicant in foreign commerce or commerce with Indian tribes, as above mentioned, or is within the provision of a treaty, convention, or declaration with a foreign power, nor which is merely the name of the applicant.

HELD BY THE COMMISSIONER.

While it may be true that the name of the applicant in his trade is of great value, it cannot receive registration in this office as such in violation of the prohibition of the statute. The prohibition of the statute was intended to prevent any person from using his name in any trade as a trade mark to the exclusion of other persons of the same name in the same or any other avenues of trade. This intention of Congress would not be carried out if registration was permitted of the name of any person as a trade mark, however long it may have been used.

The decision of the Examiner of Trade Marks is affirmed.

## A Smuggling Locomotive.

The London *Times* states that a singular adaptation of the locomotive has just been made in Russia. Information having been given to the authorities at Alexandrovo, on the Polish frontier, that the locomotive of the express leaving that station for Warsaw had been ingeniously converted into a receptacle for smuggled goods, it was carefully examined during its sojourn at the station. Though nothing was found wrong, it was deemed advisable that a custom-house official should accompany the train to its destination, where the engine furnace and boiler were emptied and deliberately taken to pieces. In the interior was discovered a secret compartment containing 123 lb. of foreign cigars and several parcels of valuable silk. Several arrests were made, including that of the driver, but his astonishment at finding the engine to which he had so long been accustomed converted into a hardened offender against the laws was so genuine that he was released and allowed to return to his duties.