

2FED.CAS.—10

Case No. 625.

ATLANTIC GIANT POWDER CO. v. PARKER.

{16 Blatchf. 281; 4 Ban. & A. 292; 16 O. G. 495; Merw. Pat. Inv. 175.}¹

Circuit Court, S. D. New York.

May 5, 1879.

PATENTS FOR INVENTIONS—WHAT CONSTITUTES INFRINGEMENT—PRIOR PATENT—CLAIM.

1. The reissued letters patent No. 5,799, granted to the Giant Powder Company, March 17th, 1874, for an “improved explosive compound,” (the original patent having been granted to Julius Bandmann, as assignee of Alfred Nobel, the inventor, as No. 78,317, May 26th, 1868,) are valid.

{Cited in Atlantic Giant Powder Co. v. Dittmar Powder Manuf'g Co., 1 Fed. 328.} {See note at end of case.}

2. The decision in Atlantic Giant Powder Co. v. Rand, [Case No. 626,] confirmed.

3. The claim of that patent is infringed by a powder called “Neptune Powder,” composed of 56 parts of nitrate of soda, 14 parts of charcoal, and 30 parts of nitro-glycerine.

{See note at end of case.}

4. A description in a prior patent, to invalidate a subsequent patent, must be such as to show that the article described in the subsequent

ATLANTIC GIANT POWDER CO. v. PARKER.

patent can be certainly arrived at by following the prior description.

[In equity. Bill by the Atlantic Giant Powder Company against Andrew J. Parker and others for an injunction restraining the infringement of reissue No. 5,799 of patent No. 78,317. Preliminary injunction granted.]

George Gifford and Causten Browne, for plaintiff.

Charles F. Blake, for defendants.

BLATCHFORD, Circuit Judge. This is an application for a preliminary injunction founded on reissued letters patent No. 5,799, granted to the Giant Powder Company, March 17th, 1874, the original patent having been granted to Julius Bandmann, as assignee of Alfred Nobel, the inventor, as No. 78,317, May 26th, 1868, being the same reissue considered in the case of the same plaintiff against Jasper R. Rand and others, [Case No. 626,] decided herewith. The powder of the defendants in the present case is known as Neptune powder, and is composed of 56 parts of nitrate of soda, 14 parts of charcoal, and 30 parts of nitro-glycerine. It is the same powder which was held by this court, in May, 1878, in the case of the same plaintiff against the Neptune Powder Company, to be an infringement of No. 5,799. Many views now urged in defence in this case have been considered at length and overruled in the decision in the case against Rand. Those views were, to some extent, presented and passed upon in the case against the Neptune Powder Company, but no written decision was given in that case, [nowhere reported.] There are, however, some points taken in the present case which are not discussed in the decision in the Rand case, and those points are also urged as grounds for dissolving the injunction granted in the case against the Neptune Powder Company.

Stress is laid on the fact that a compound made of 30 per cent, of nitro-glycerine and 70 per cent, of infusorial earth, will not explode, while the defendants' compound will explode, although it has but 30 per cent, of nitro-glycerine, and its gunpowder ingredients will not absorb a greater amount of nitro-glycerine. But, it is a plain direction of the patent, that an absorbent must be used which will absorb and retain sufficient nitro-glycerine to make the compound explodable by detonation, at the place of designed use. The less the absorbing and holding capacity of the absorbent, the less the explosive force of the nitro-glycerine absorbed, because the less the quantity of nitro-glycerine absorbed. There is nothing in the patent which admits of the use of an absorbent which will not, with the nitro-glycerine, make a compound explodable by detonation, or of the use, with an absorbent which will absorb and hold sufficient nitro-glycerine to make a compound explodable by detonation, of an insufficient quantity of nitroglycerine for such purpose. It is, therefore, of no consequence that a particular proportion of nitro-glycerine with a particular absorbent will not make a compound explodable by detonation, such compound being outside of the patent.

On the question of novelty, a book published in Germany, in the German language, is introduced, called Dingler's Polytechnic Journal, volume 171, 1864, page 443, cviii. The particular article is headed: "On Nobel's blasting powder, improved by addition of nitro-glycerine. By B. Turly, mining engineer." The translation of the text is as follows: "W. Nobel, an engineer of Stockholm, has taken out a patent in different countries for an improved blasting and shooting powder. His improvement consists in making the ordinary powder considerably stronger by an addition of nitro-glycerine. As is known, nitro-glycerine is a very clear oleaginous liquid, is ignited at about 170° C, without exploding, but burns slowly away with a crackling and snapping noise. If this oil is poured on a solid foundation and struck heavily with an iron hammer, it explodes with a violent detonation, but only on the spot where the hammer touches the liquid, while all the rest of the mass of oil remains unchanged, that is, unexploded. The combustion of the liquid follows without the development of any gas perceptible by the odor. From this relation this much appears, that this mass, in and of itself, is quite harmless, and requires a strong concussion or blow to make it partially explode; that Its employment has, at least, no greater danger than that of common powder. But, in combination with common powder, nitro-glycerine develops a very considerable strength, and this new nitro-glycerine powder is at least three to five times stronger than ordinary powder or blasting powder. In the fortress of Carlborg, on the Wetten Lake, Mr. Nobel has made experiments with his powder in the presence of a commission. Bomb shells with ordinary and the improved powder were bursted, and the effect of the latter is said to have been five to seven times that of the ordinary powder. The experiments of blasting rocks, performed in my presence, have, however, in general, shown only a three times greater development of strength, but always the result that merits the greatest attention. Besides, it is not to be left out of the consideration, that a bore hole can only be quite generally compared with a grenade or bomb; that, while these missiles consist of homogeneous cast iron, In which the strength must show itself proportionally much greater—in a bore hole in a rock, in most cases, a certain part of the force is uselessly lost, so that, consequently the effect will be proportionally a smaller one than in the former case. Nevertheless, this new powder is an essential improvement

ATLANTIC GIANT POWDER CO. v. PARKER.

on the old, and, when it passes a wholesale test, of which there is no present reason to doubt, it will find the greatest recognition and most extended employment by the mining public. The blasting experiments were performed as follows: The powder employed is distinguished from the blasting powder here in use by being much finer and not round but oblong and angular. Mr. Nobel shows this powder for common Swedish cannon powder, which has the same price as the mining powder of Nora. The improved powder was used in cartridge shells of sheet zinc, 18 millimetres in width, and in length of from 75 to 100 and 200 millimetres. These zinc shells, which are open at one end, are filled with the ordinary cannon powder, and, when the filling is completed, as much nitro-glycerine is poured upon it as can find room in the interstices of the powder. The powder, moistened with the oil, has a 40 per cent. (?) greater weight. After the cartridge is filled with powder and oil, it is tightly closed with a stopper of cork 20 millimetres long. It will be better to solder the cartridge. The charging of the hole is performed as follows: The bore hole, which, at its lower end, must have a width 4 to 6 millimetres greater than the thickness of the cartridge, is, of course, made dry. The cartridge is so inserted in it that the cork comes towards the bottom, that is, touching the solid rock. The space between the cartridge and the wall of the bore hole is now filled up with cannon powder, so that the latter surrounds the cartridge as completely as possible, (according to Mr. Nobel, the soldering should offer no difficulties—perhaps it suffices to pour sulphur on the cartridge) being, also, 15 to 30 millimetres over the cartridge. This powder serves only for the ignition of the charge, for the bursting of the cartridge. The fuse is then stuck into the touch-hole, and the hole is not filled quite as usual, only care must be taken not to injure the cartridge with the tamper, on which account the first tamping is only made very loosely. If the hole is sufficiently wide, the fuse may be fastened to the cartridge with a piece of thread, and then it is not necessary to take so much igniting powder. It seems better, however, not to be sparing with the latter, in order to insure the explosion of the blast. On the explosion of the blast it is found that the detonation is a much weaker one than with common mining powder. A few examples of the effect of this powder will here be sufficient: 1. A hole 18 inches deep was discharged three times with a 9-inch mining cartridge, without showing the slightest effect; the same hole was charged with a 6-inch glycerine cartridge, and was well and completely broken up. 2. Several holes mining cartridges 9 to 12 inches long, were well blasted with glycerine cartridges 3 inches in length. 3. Holes of 30 inches depth, that are otherwise charged with mining cartridges 18 inches long, broke with glycerine cartridges 6 inches long. From these experiments I have already deduced the conviction, that the degree of effect of this improved powder in blasting is at least three times that of the ordinary mining powder. The great advantage which will probably be obtained with this new powder will consist in this—that greater masses can be obtained at a time; that, consequently, the cost of production will be diminished. The

charge of a single blast might be rather dear, but a workman will, perhaps, accomplish twice as much in the same time. First of all, will this powder be particularly valuable in building above ground and stone quarries—in general, in ample spaces where a great deal can be given to a single blast. Experiments still to be made must decide as to its utility in small spaces, confined quarters and works. Cartridges 18 inches in length might seem astonishingly large for German use. Here, the same (containing 180 grains powder) are often employed in working above ground, but each blast throws at least cubic foot of solid mass. I consider it my duty not to withhold these preliminary remarks on a subject which possesses so great an importance for mining, and I can only add the wish that the mining public will accept this thing as far as possible, and will test and employ the new powder. Ammeberg, January 1, 1864.” The number of the Journal in which the foregoing article appeared was published March 6th, 1864.

Professor Henry Morton, in an affidavit on the part of the defendants, says, that he finds in said article the following description of experiments: “The blasting experiments were conducted as follows: The powder used differs from the blasting powder ordinarily in use here, in being much finer and not round, but longish and angular. Nobel states that this powder is common Swedish gunpowder, which has the same price as (Nora blasting powder?). The improved powder was used in zinc cartridge cases, 18 millimetres in width, and in length varying from 75 to 150 and 200 millimetres. These zinc cases, which are open at one end, are filled with the ordinary gunpowder, after which so much nitro-glycerine is poured in as can find room in the interstices of the powder. The powder soaked with the oil has an increased weight of 40 per cent?” He further says, that, in order to repeat the experiment so described, he took “a quantity of common blasting powder, such as is sold throughout the country, and, having first removed from it all dust by means of a fine sieve, passed it through a coarse sieve, so as to secure only the moderately fine grains;” that “the powder so obtained corresponded, in all respects,” as he believes, “to that described in the above extract as being much finer than that ordinarily in use, and not round but angular;” that he “then selected

ATLANTIC GIANT POWDER CO. v. PARKER.

a glass test tube about inch in diameter, and 4 inches long, this corresponding to the dimensions of the cartridge cases given in the extract, namely, 18 millimetres in width and 75 to 150 millimetres long;" that into this glass tube he "then poured 15 grammes of the fine grain blasting powder above described, and upon it poured 6 grammes of nitro-glycerine, these being the proportions of powder to nitro-glycerine mentioned in the above extract;" and that "the nitro-glycerine was rapidly absorbed by the powder, and produced an essentially dry powder, which could evidently be handled and transported with as much safety as is attainable with any similar mixture." He further says, that he "mixed together 14 parts, by weight, of charcoal, and 56 parts of nitrate of soda, both in fine powder, and to these added 30 parts, by weight, of nitroglycerine; and that the mixture, when made, constituted an essentially dry powder, evidently capable of being handled and transported with as much safety as is attainable with any such mixture." He further says, that the proportion of nitro-glycerine to gunpowder in said two experiments is 28 5-10 per cent of the whole mixture in experiment one and 30 per cent in experiment two; that these do not, in his opinion, differ to any practical extent; and that, in his opinion, "nothing further is required, beyond the description given by Turly, above quoted, to enable any one familiar with the manufacture of ordinary gunpowder, to make such mixtures of gunpowder and nitro-glycerine as are described in experiment two, which is the powder of the defendants."

Mr. Robert J. Howe, one of the defendants, says, in an affidavit: "It is a well-known fact, that gunpowder is more effective when exploded by percussion caps than by simple fuse. Some consumers (contractors) always use percussion caps for that purpose. For the same reason, caps are better to explode the improved blasting powder, but the improved gunpowder is largely used by some parties and exploded (without cap) by fuse alone. In such use, the gunpowder of the mixture explodes the nitroglycerine of the mixture."

Mr. Thomas Varney, an expert for the plaintiff, testifies as follows, in an affidavit, in regard to the foregoing affidavits of Professor Morton and Mr. Howe: "I have read the affidavits of Professor Henry Morton and Robert J. Howe. I understand how Professor Morton made his mixture of nitroglycerine and gunpowder, in imitation of that described in the report of Mr. Turly, in Dingler's Journal of 1864. I have made and further tested Dr. Morton's mixture, to ascertain whether his opinion was correct, that this mixture was a safety one—as safe as the powder made by the defendants. I find it is not. I experimented with two kinds of gunpowder. In one case I used common blasting powder. In the other I used the Laflin & Rand Orange Ducking Powder—a powder closely resembling that used by Professor Morton both in structure and size of grain. The proportions of nitro-glycerine and gunpowder were the same in each case, and the same as Professor Morton's, to wit, 28 1/2 parts, by weight, of nitro-glycerine to 71 1/2 of gunpowder. I placed these mixtures upon several thicknesses of paper and allowed them to remain in

a room having a temperature of 75° Fahrenheit for 45 hours, and then weighed them. I found they had lost almost two-thirds of their nitro-glycerine, the same having drained out of the mixture and became absorbed into the paper, going through ten thicknesses thereof. * * * This mixture is not a safety one, nor is it dynamite,” (meaning, the compound of No. 5,799,) “or the same thing as that made by the defendants. It is leaky. If it should be packed in paper cartridges, and these cartridges be packed in wooden cases, and be carried in cars, as is done with the powder made by the defendants, nitro-glycerine would drain from it and run into the springs, journals and other machinery beneath and upon the wheels and rails, as was the case with the leaky dualin at Worcester, Massachusetts, and the result would be the same as in that case—the entire cargo of powder would be exploded; whereas, the powder made by the defendants is thus packed and transported without the slightest danger, of explosion from this source, because it is not leaky. The mixture in the Turly experiment was not made according to the rules of the dynamite patent,” (meaning No. 5,799,) “but the defendant’s powder is, to wit, so much nitro-glycerine is put in as will make the mixture an efficient explosive, and be retained without leakage, and no more. The leading rule for making the old mixture, as stated by Turly, is, that so much nitro-glycerine was poured in as could find room in the interstices of the powder. I tried this also, and found the mixture much more wet and leaky than the others above described. The reason why the old mixture was put into zinc cases instead of paper ones or directly into the bore hole, was because it was leaky and had to be treated like liquid nitro-glycerine. I have, carefully studied the French patent of 1863, the English one of 1864, and the memoranda filed in the American patent office in 1865,” (the last is a part of the contents of the file wrapper in the matter of the patent granted to Nobel, No. 50,617, October 24th, 1865, for “substitute for gunpowder,” and being the original of reissues, Nos. 4,818, division D, and 4,819, division E, both dated March 19th, 1872,) “being all the evidence, except the Turly report, referred to by the defendants herein as either anticipating the dynamite invention or tending otherwise to invalidate it My views as to the old mixtures, and some of the grounds for them, are as follows: I regard them as really merely

ATLANTIC GIANT POWDER CO. v. PARKER.

experimental, because, In the first place, as practical things, they amounted to nothing. They did not go into practice at all. They were tried and abandoned. At this time, we are able to understand them and their value fully, and, we know they were quite worthless, except as links in the chain of experiments which led to the exploding of nitroglycerine by detonation. If, at this day, any one should do, in all respects, what was described in the documents referred to, or what was actually done, as shown by Turly's report, he would be guilty of a great folly, but he would not infringe the dynamite patent. Nobody has ever been guilty of this folly, or ever will, except from sheer ignorance or some ulterior design. He will never adopt the old process, as an economic mode of blasting. We presume this old process aided Nobel in reaching the detonating mode of exploding nitro-glycerine; but, however this may be, it has never been used except experimentally, so far as I know. Let any one be ever so deeply skilled as an expert, or ever so experienced in the practice of all that is shown by these old documents, yet he could not make the defendants powder, that is, gunpowder dynamite. Furthermore, even if, by accident, in making the old mixtures, the ingredients may have been used in dynamite proportions, yet there is no evidence that the mixture was ever applied to the purposes and uses peculiar to dynamite. The leading purposes of dynamite are safety in transport and freedom from leakage at the bore hole. There is no account, as far as I know, either of the transport of the old mixtures, or of their use naked in the bore hole, or in mere paper cartridges. In the documents referred to, it appears that the old mixtures were designed for two purposes—firearms and blasting. If it was dynamite, or such powder as the defendants make, and was used as theirs is, to wit, detonated in a gun or cannon, the gun and cannon were blown to pieces in every instance. The defendants powder never has been used, and never can be used, in ordnance or firearms. We must, therefore, conclude, that the old mixture designed for firearms was not dynamite, or that it was never used in fire-arms, was, therefore, never transported, and was, therefore, never put to dynamite use. As to the old blasting mixture, Turly, the only reporter on the subject, gives his account in such manner as to lead one to conclude that the mixture was made at the mine. The narrative of the process shows, that the shell of zinc was filled with gunpowder—then the nitroglycerine poured in—then corked—then turned cork downwards and put into the bore hole, &c—as if each step immediately followed the preceding one. The old mixtures were never used as dynamites, that is to say, the leading functions of dynamite were never involved, applied or enjoyed. Not a single life or limb, or a single dollar's worth of property, was ever saved by their use, whereas, undoubtedly, many lives and much property have been saved by the use of the defendants' powder, instead of using the nitroglycerine contained in it in its pure state, or in the form of the old mining mixture. Mr. Howe says his powder is largely used by some parties and exploded (without caps) by; fuse alone. If it be inferred from this statement, or from his calling his powder an improved gunpowder, that It is more readily

explodable by fire than infusorial dynamite, or any other dynamite, such inference would be erroneous; in this respect, it is precisely like all others. The original dynamite patent," (meaning, No. 78,317,) "fully explains this subject."

In reply to the foregoing affidavit of Mr. Varney, the defendants produced the affidavit of Charles Leibshner, to show that the Swedish gunpowder mentioned by Turly must have been an uncompressed, unglazed, saltpetre powder, and that the gunpowder used by Mr. Varney, in his experiments, was a compressed and glazed powder, so that the former would be a better absorbent than the latter. The defendant howe also makes an affidavit to the effect that unpresseed powder is hard, compact and non-absorbent; and that he believes the Swedish gunpowder of the Turly article was uncompressed, unglazed gunpowder. Professor Morton also makes an affidavit, in reply to that of Mr. Varney. He says: "I have examined what I understand to be the powders named by Mr. Varney. namely, the common blasting powder used in this vicinity at present, and the Laflin & Rand Orange Ducking Powder," and find them to differ in a very essential respect from the powder used by me in the experiment mentioned by me in my said previous affidavit, and from the powder which I believe to have been used in the experiments recited in the Turly extract. That is to say, these powders, used by Mr. Varney, are extremely hard and compact, and not porous, or capable of absorbing a fluid, and are, moreover, contrary, the powder which I employed in my experiment, and which I believe to be that described in the Turly extract, was a manner in general use long ago, and, consequently, light, porous and eminently absorbent. I repeated the experiments with these powders as described by Mr. Varney, and found that, when they were mixed with nitro-glycerine in the proportions named, they produced by no means dry powders, but, on the contrary, refusing to absorb the nitro-glycerine, the grains of powder were simply drenched on the outside with nitro-glycerine, which ran from them into the vessel in which they were mixed, or drained from them into the paper on which I spread a

ATLANTIC GIANT POWDER CO. v. PARKER.

portion. This was true of both the common blasting powder and of the orange ducking powder." He further makes statements to show that a powder made and sold by the plaintiff, and called "giant powder, No. 2," permitted nitro-glycerine to leak from it "in a very marked manner, equal in degree to the leakage of the nitro-glycerine from the Turly mixture" made by him, though "not nearly so much as the leakage of nitro-glycerine from the mixtures described in the Varney affidavit," and made up by him "in accordance with the directions of the same;" that a mixture of nitro-glycerine and the best English rotten stone, pulverized to a very fine powder like flour, in the proportions of 40 per cent, of rotten stone to 60 per cent of nitro-glycerine, produced a semifluid paste; and that a mixture of 78 per cent, of nitroglycerine with 22 per cent, of infusorial earth, of low specific gravity and great absorbent capacity, furnished to him by the plaintiff, as a specimen of the best absorbent substance of that character, produced a pasty mixture, which drained to a greater extent than did the Turly mixture; and that samples of the two powders used by Mr. Varney in his experiments, showed both of them to be compressed, hard and non-absorbent, and glazed with black lead, and corresponded, in all those respects, with the powders with which he made his said repetitions of Mr. Varney's experiments.

To those affidavits the plaintiff replies by several affidavits. There is an affidavit of T. P. Shaffner, setting forth, that, during the year 1864, he was engaged by the Swedish government, at Stockholm, in experimenting with explosives, and was well acquainted with the powder mentioned in the Turly article as being used in the experiments of Nobel, and knows that that powder was compressed and was very hard; that, although he has been acquainted with different kinds of powder, both in this country and in foreign countries, from long before 1864 down to the present time, the powder referred to in said article as having been used in the experiments of Nobel was the hardest powder he ever handled, and was, also, a highly glazed powder; that it was much harder than any blasting powder he has ever known; that Turly, in said article, says: "After the cartridge is filled with powder and oil, it is tightly, closed with a stopper of cork, twenty millimetres long. It will, be better to solder the cartridge;" and that it is perfectly clear to his mind, that the use of the cork stopper ("tightly closed") and of the solder, was to keep the nitro-glycerine from leaking out, for, the article says, that "as much nitroglycerine is poured upon it as can find room in the interstices of the powder." There is also an affidavit of John Schrader, to the effect, that he poured upon some medium sized grains of the powder in a vial, as much nitro-glycerine, at about 70° Fahrenheit, as could find room in the interstices of the powder; that the powder became saturated in about three minutes; that the powder was represented as the kind used many years ago, being made in stamp mills, and not either pressed or glazed; and that it is very soft and absorbent, but, like all absorbents, when saturated with nitro-glycerine in the manner above described, the mixture is leaky, and is substantially as dangerous for handling and transport as pure nitro-glycerine. There is also

an affidavit of Alfred Mordecai, the author of "Report of Experiments made at Washington Arsenal, in 1843 and 1844," published in 1845. He states, that the experiments described in that Report were made, and the Report was printed, under his immediate superintendence; that the powder therein mentioned as Swedish musket powder was part of a sample of gunpowder brought from Sweden in 1840, by a commission of officers of the ordnance department of the United States, of whom he was one; that the powder is mentioned in the report of the commission as "a sample of gunpowder from the royal manufactory;" that it was contained in a sealed glass bottle; and that it is correctly described in said "Report of Experiments" as "musket powder, glazed, grain very hard, fracture slaty." It is also shown, by various European books, that powder is described, in 1842, as being pressed in a hydraulic or screw press, and smoothed or polished, to make it dense, and to take off its rough surface, splintering edges and corners, and to make angular powder round; that powder is described, in 1850, as being submitted to a pressure of about 75 tons to a superficial foot, and made hard, and then glazed, with the result of giving an equal degree of density to the grains, and a polish to their surface, and rendering the powder less susceptible of absorbing moisture; and that it is described, from 1807 to 1861, as being pressed and glazed.

To such affidavits the defendants reply. Carll Dittmar says, that the powder generally used for all purposes, on the continent of Europe, In 1864 and 1865, was loose, porous and absorbent in character, capable of absorbing 30 per cent of nitro-glycerine, more or less; that, as a general thing, no hydraulic or screw presses were used in the manufacture of gunpowder, on the continent of Europe, prior to 1865, nor up to 1869; that the structure of the powders made in this country, at the present day, which have been subjected to the pressure of powerful hydraulic or screw; presses, is essentially different from that made with the stamp mills and without pressure, the former being hard, compact, and slow of absorption, and the latter light, porous, and readily absorbent; and that he has no doubt that the powder alluded to in the Turly article as "common Swedish gunpowder" was a loose, porous, absorbent powder, uncompressed, and that the nitro-glycerine, used in the proportions cited by Turly, was all taken up by the powder

ATLANTIC GIANT POWDER CO. v. PARKER.

and was held by the same, and that the resulting compound was a dry powder, safe to be handled, transported and used. Carl W. Volney says, that all Swedish and German powders that were commonly used in those countries prior to and during 1864, and for some years afterwards, were what is known as stamp mill powder, unglazed and impressed. The defendant Parker states, that hard grained impressed powder absorbs and retains, as a comparatively dry powder, safe to transport, handle and use, 30 per cent of nitro-glycerine.

The Turly article starts out with stating, that what Nobel had invented and patented before January 1st, 1864, was an improvement which made ordinary powder, for blasting and shooting, considerably stronger by adding to it nitro-glycerine. This evidently refers to Nobel's specifications of September, 1863, in the English and French patents to Nobel, referred to in the Rand case; and the article of Turly alludes to no other feature of the compound made of nitro-glycerine and gunpowder, except that it is stronger in its effects, when exploded, than ordinary powder. The only place in the Turly article where any suggestion is made as to the percentage, in weight, of the added nitro-glycerine, is in the account of the blasting experiments. The description manifestly is narrating an experiment where the cartridge is filled with the two substances at the bore hole and then immediately used. There is no suggestion of a resulting dry powder, capable of transportation, or of any thing but a wet mixture, in a vessel which is to be tightly corked, because it would otherwise allow the nitro-glycerine to leak out, when it is turned with the cork downward, in which position it is inserted in the bore hole. The cartridge is then imbedded in gunpowder in the bore hole, and the gunpowder is fired by a fuse. The description is entirely insufficient as an anticipation of Noble's invention. All the speculation indulged in as to what the Swedish cannon powder was, and all the experiments to show that a powder which is assumed to be what that was, will, with the addition of the indicated proportion of nitroglycerine, make a dry compound, amount to nothing, in the face of the fact, that the article does not suggest that the blasting compound was a dry powder, or a safety powder, or such a compound as the patent sued on describes. The prior description, to invalidate the patent, must be such as to show that the article described in the patent can be certainly arrived at by following the prior description; and it is not enough to show, that, by the lucky accident of taking gunpowder of the proper quality, a compound may be obtained which is unlike that indicated by such description. By the light of what Nobel has taught in the patent sued on, much can now be asserted to be seen in what was published before, which no one ever, in fact, saw in it before the original of the patent sued on was taken out. There is no evidence that any one, from the Turly article, or by any method supposed to be described in it made, before the invention in question, as patented by Nobel, in the original of the patent sued on, was made by him, the safety powder which constitutes that invention. So far from this, the Turly article starts out with

the assertion, that a mass of liquid nitro-glycerine is quite harmless in and of itself, and that its employment has no greater danger than that of common powder. The memoranda referred to by Mr. Varney, in his affidavit, show, in common with the English and French patents to which he refers, nothing more than attempts by Nobel to mix gunpowder with nitro-glycerine, and then to burn the nitro-glycerine by igniting the gunpowder. After that, he discovered that nitro-glycerine could be exploded in a mass, under given conditions, by detonation, and then its liability to accidental explosion in mass by concussion in handling and transportation was observed, and then followed the invention we are considering.

In every view the case for the plaintiff is such as to warrant the granting of a preliminary injunction, in this case, and the denial of the motion to vacate the injunction against the Neptune Powder Company.

{NOTE. See note to Atlantic Giant Powder Co. v. Mowbray, Case No. 624.}

¹ [Reported by Hon. Samuel Blatchford, Circuit Judge, reprinted in 4 Ban. & A 292, and here republished by permission. Merw. Pat. Inv. 175, contains partial report only.]