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LIABILITY FOR INJURIES CAUSED BY BLASTING, OR BY ACCIDENTAL EXPLOSIONS OF DYNAMITE OR GUNPOWDER.. WHEN DEPENDENT UPON NEGLIGENCE. USE BY INDEPENDENT CONTRACTORS.—*Fitzsimons & Connell Co.* v. *Braun et al.*, Supreme Court of Illinois, October 25, 1902. Appeal from Appellate Court (94 Ill. App. 533), affirming a judgment for plaintiffs.

This was an action for injuries to a building of the plaintiff, caused by the use of dynamite by the defendant, a contractor, in excavating a tunnel for the city of Chicago. The tunnel was intended for the use of the city in supplying the inhabitants thereof with water. The tunnel passed within a few feet of the corner of the plaintiff's building, about eighty feet beneath the surface of the ground. The evidence showed that the injury was caused by the concussion of the earth, upon which the plaintiff's building stood, and of the air, causing it to shake and vibrate, and

causing its walls to crack. The contract between the city and the contractor forbade the use of explosives except where the excavation was in rock, but the evidence showed that the excavation at the time of the explosions in question was not in rock, but in indurated clay, with some gravel and bowlders embedded in it. It was also shown that the excavation through the clay and gravel might have been effected without the use of explosives, though it could be more cheaply done with the aid of dynamite. Thus the defendants' use of dynamite at the time of the explosion in question was unnecessary and unlawful, being done in excess of the terms of the contract under which they were working. It can hardly be doubted that had the court allowed the liability of the defendant to be decided on the question of negligence, there was ample proof to have established the liability on that ground. But the court took a firm stand, refusing to allow it to be decided on that ground, and instructed the jury in substance, that one who makes use of an explosive in the ground near the property of another, when the natural and probable, though not the inevitable, result of the explosion is injury to such property of the other, is liable for the resulting injury, however high a degree of care or skill may have been exercised in making use of the explosive. This ruling was affirmed by the Supreme Court.

The ground of this decision is that the work of excavating the tunnel underneath the buildings of a populous city with dynamite was intrinsically dangerous, no matter how carefully and skillfully the explosions were conducted and that the intrinsic danger of the use of dynamite being a matter of common knowledge, the courts will take judicial notice of it. In other words, they put it on the ground of a nuisance and hold the perpetrator thereof absolutely liable for injuries resulting from it.

They comment on the distinctions made in some courts in cases where injuries have resulted from the use of explosives in the execution of public works and of works authorized by law; where there has been no physical invasion of the property of the plaintiff, and the injury has occurred merely by the concussion of the earth or air. They say, however, there are no such distinctions recognized in Illinois.

The principal authorities on which the principal case is decided are *Joliet* v. *Harwood,* 86 Ill. 110, 1877, 29 Am. Rep. 17, and *Bradford Glycerine Co.* v. *St. Marys Woolen Mfg. Co.,* 60 Ohio St. 580, 1900. In the former case it appeared that it was necessary, in the construction of a public work, that blasting of rocks should be done in a public street of the city. The contractor used all due care, skill and caution in performing the work of blasting. A stone was thrown by the blast against a building of the plaintiff and injury was thereby caused. Judgment for the plaintiff. The latter case of *Bradford Glycerine*

Co. v. *St. Marys Woolen Mfg. Co.* (*supra*), the Court in the principle case cites as authority for the view that liability in such cases is not restricted to an actual invasion of the property, but damages for injury resulting from concussion or vibration caused by an explosive (*i. e.*, consequential injury), may be recovered. In this case, an explosion of nitro-glycerine, stored in the defendant's magazine, which occurred in spite of the exercise of due care, injured the plaintiff's building, distant more than a mile. The plaintiff was allowed to recover. In taking these two cases together as authority for the principal case, the court puts the keeping of dangerous explosives and the intentional explosions, *i. e.*, blasting, when they result in injury, on the same basis.

One other Illinois case is in point:—*Laflin and Rand Powder Company* v. *Tearney,* 131 Ill. 322, 1890. This was an action for damage resulting from an explosion of a powder magazine upon the premises of the defendant. Held, that the keeping of the magazine upon defendant's own premises, so situated with reference to the dwelling house of the plaintiff that it was liable to inflict serious injury upon her person or her property in case of an explosion, was a private nuisance. Therefore the defendant was liable whether the powder was carefully kept or not.

Cases of injuries resulting from explosions of dangerous substances may be divided into two classes: first, those which occur through negligence of the user, and second, those which occur without negligence of the user. In the first class, the right of the person injured to recover is, in general, absolute. In the second class, the decisions are not uniform, some states allowing recovery without reference to negligence and others allowing certain causes to defeat recovery.

The following causes have, in some states, prevented recovery:

1. That the injury occurred in the lawful execution of a work authorized by law. This authorization may be equivalent to a command, as where a municipal corporation is by act of legislature required to lay out a street or construct a sewer; or it may be merely a privilege, as where a railroad is authorized to construct its roadbed.

2. That the use of the explosives was not, under all the surroundings and circumstances obviously dangerous, *i. e.*, not a nuisance.

3. That the injury was the result of the concussion of the earth or air, and not the result of throwing a substance onto the person or premises of the plaintiff, *i. e.*, not a physical invasion or trespass.

The following are the principal decisions on these points arranged by states:

ALABAMA. *Kinney* v. *Koopman & Gerdes,* 116 Ala. 310, 1896, and *Rudder* v. *Koopman & Gerdes,* 116 Ala. 332, 1896. Held,

that storing gunpowder or dynamite in large quantities near the dwelling houses of citizens in a thickly settled portion of a town and near a public street, is not a nuisance *per se*, and negligence must be shown. But storing them in a wooden building within the limits of a town, in a thickly settled portion of it, and in proximity to many buildings, constitutes a nuisance, rendering the owner liable for injuries from an explosion without proof of negligence: *Collins* v. *Alabama Great Southern Ry. Co.*, 104 Ala. 390, 1893.

CALIFORNIA. *Colton* v. *Onderdonk*, 68 Cal. 155, 1886. Held, that where the owner of a lot situated in a large city and contiguous to the dwelling house of another, uses gunpowder to blast out rocks on his lot, he is liable for damage done to the house of an adjoining owner, whether caused by rocks thrown against the house or by a concussion of the air.

Judson v. *Giant Powder Co.*, 107 Cal. 549, 1895. Defendant was engaged in the manufacture of dynamite. Held, that in the ordinary course of things an explosion does not occur in such manufacture, if proper care is used. But proof of the explosion raises *prima facie* a presumption of negligence, and places the burden upon defendant to overcome it: *Munro* v. *P. C. D. & R. Co.*, 84 Cal. 515, 1890.

CONNECTICUT. *Norwalk Gaslight Co.* v. *Borough of Norwalk*, 63 Conn. 495, 1893. Action to recover damages to plaintiff's gas pipes, caused by blasting on the part of the defendant municipal corporation, in the construction of a sewer in its streets. The construction was done by contractors under contract with the defendant. It was held that the defendant's liability was dependent upon the negligent performance of the work, since a duty was imposed upon it to open streets and lay and maintain sewers therein. The liability or the exemption from liability of a municipal corporation is the same whether the particular work is constructed under a special privilege granted at the request of the corporation, or in the performance of a public and governmental duty, the question being whether or not there was negligence in the manner of performing the work. The adoption of a general public sewer system, etc., by a municipal corporation are considered as judicial acts.

DELAWARE. *Mills* v. *Railway Co.*, 1 Marv. 269, 1894. Action for damages for personal injuries to plaintiff while traveling upon the public highway, caused by a rock hurled against him from blasting done by the defendant company. The defendant was lawfully engaged in blasting for the purpose of improving the road under the authority of its charter. Held, that blasting on a public highway is in itself dangerous and great care must be used. But the defendant is not liable unless the injury was caused by its negligence, and the burden is upon the plaintiff to prove negligence.

ILLINOIS. *Joliet* v. *Harwood,* 86 Ill. 110, 1877 (*supra*); *Fitzsimons & Connell Co.* v. *Braun et al.,* 65 N. E. Rep. 249, 1902 (*supra*); *Laflin & Rand Powder Co.* v. *Tearney,* 131 Ill. 322, 1890 (*supra*).

INDIANA. *Wright et al.* v. *Compton,* 53 Ind. 337, 1876. Defendant was held liable, without regard to negligence, for injuries to plaintiff caused by a blast of gunpowder in defendant's quarry by which fragments were thrown against plaintiff on the highway.

MASSACHUSETTS. *Dodge* v. *County Commissioners of Essex,* 3 Met. 380, 1841. Plaintiffs were owners of a lot and house situated near a railroad, which railroad was near a ledge of rock. The company, by the necessary operation of blasting said ledge of rock for the purpose of grading their railroad, greatly damaged and nearly destroyed the petitioner's house. By statute it was provided that, "every railroad corporation shall be liable to pay all damages, that shall be occasioned by laying out, and making and maintaining their road, or by taking any land or materials, etc." Held, that under this statute the plaintiff was entitled to have damages assessed; but that an action of tort would not lie unless damages were occasioned by carelessness or negligence in executing the work. An authority to construct any public work carries with it an authority to use the appropriate means; and, if due precautions are taken to prevent unnecessary damage, blasting is a justifiable and appropriate means. Necessary damage occasioned thereby to a dwelling house is one of the natural consequences of executing the work and within the statute.

Murphy v. *Lowell,* 128 Mass. 396, 1880. Action for personal injuries occasioned to the plaintiff by a stone which was thrown against her from a blast exploded in the construction of a sewer by the defendant municipal corporation. Held, that a city having the legal right to construct sewers in its streets, is not liable in tort for all damages that may be caused by the blasting of rocks, necessary in such construction; but only for such damages as are occasioned by the carelessness or unskillfulness of its agents in doing the work: *Brown* v. *P. W. & B. R. R. Co.,* 5 Gray 35, 1855; *Murphy* v. *Lowell,* 124 Mass. 564, 1876; *Howard* v. *Worcester,* 153 Mass. 426, 1891; *Deane* v. *Randolph,* 132 Mass. 475, 1882; *White* v. *Medford,* 163 Mass. 164, 1895.

NEW JERSEY. *McAndrews* v. *Collerd,* 42 N. J. L. 189, 1880. The D. L. & W. Railroad Company having legislative authority to construct a tunnel, contracted with M., the defendant (plaintiff in error) to do the work. Plaintiff's houses were injured by the explosion of a powder magazine constructed by defendant within the limits of Jersey City, and 1,200 feet from the houses. Held, that, as the keeping of explosives in large quantities in the

vicinity of a dwelling house is a nuisance *per se,* being contrary to statute, the defendant is liable, though no negligence in executing the work is proved and even though it is proved that the work has been done in the most careful manner. That the proposition of the defendant that, inasmuch as the explosive materials were necessary to the work and the work was done pursuant to legislative authority, in such legislative authority to do the work was included the authority to store with impunity in a convenient place, so much explosive as might be necessary for the convenient prosecution of the work, could not be sustained. That the charge of the court to the jury that nothing but the most imperious and absolute necessity would justify such a conclusion, was, to say the least, quite as favorable to the defendant as it ought to have been. That the distinction must be drawn, between the non-liability of public agents, in the construction, within their limitations, of public works and the liability of private corporations authorized by the legislature to construct and operate works for their own emolument, though for public advantage.

Simon et al. v. *Henry et al.,* 41 Atl. Rep. 692, 1898. The defendants, having contracted with municipal authorities to construct a public sewer in a street, used dynamite to blast out trap rock in making the necessary trench. Held, that if the defendants exercised reasonable care and skill in the use of the explosive, they were not responsible for damage done to plaintiff's buildings on the side of the street caused by the concussion resulting from the blasts. The court distinguished this case from *McAndrews* v. *Collerd* (*supra*), in that, in that case there was a nuisance, while in this there was none. The nuisance in *McAndrews* v. *Collerd* consisted, not in the use of explosives, but in the maintenance of a magazine where a large quantity was stored. The court, in this case, said that blasting of rock by dynamite in the construction of a public sewer through a highway could not be *per se* a nuisance. That it was the only practicable mode of removing the rock, that it was often used in such work, and that the skillful use of these explosives involves no more danger than the use of various other forces which science has discovered, and which, in their general effect, promote the convenience and progress of society and are therefore recognized as lawful agencies: *Tinsman* v. *B. D. R. R. Co.,* 2 Dutcher 148, 1859; *Cuff* v. *N. & N. Y. R. R. Co.,* 6 Vroom, 17 1870.

Myers v. *Malcolm,* 6 Hill 292, 1844. Held, that keeping a large quantity of powder in an insufficiently secured wooden building is a public nuisance, and the owner is liable for injuries from an explosion though he is not negligent.

Intentional Explosions. a. Where the injury results from something being thrown against person or property, *i. e.,* direct injury.

NEW YORK. *Unintentional Explosions. Heeg* v. *Licht,* 80 N. Y. 579, 1880. Defendant constructed a powder magazine upon his premises, with the usual safeguards, in which he kept a quantity of powder; this, without any apparent cause, exploded, injuring plaintiff's house upon adjoining premises. Held, that the fact that the explosion took place under the circumstances, tended to establish that damage was liable to be caused in the vicinity, although guarded with care. This itself in some localities would render it a private nuisance and it was a question for the jury to determine whether from its dangerous character, its proximity to other buildings, etc., it was in fact a nuisance. If so, the defendant is liable for injuries whether negligent or not. In accordance with *Heeg* v. *Licht,* with practically the same facts, is *Lounsbury* v. *Foss,* 80 Hun 296, 1894.

Hays v. *The Cohoes Co.,* 2 N. Y. 159, 1849. Defendants, a corporation, dug a canal upon their own land for purposes authorized by their charter. In so doing it was necessary to blast rocks with gunpowder, and the fragments were thrown against and injured plaintiff's dwelling upon lands adjoining. Held, defendants were liable though no negligence was shown: *Tremain* v. *Cohoes Co.,* 2 N. Y. 163, 1849.

St. Peter v. *Denison,* 58 N. Y. 416, 1874. The facts in this case were similar to *Hays* v. *Cohoes* (*supra*), except that the defendant was a contractor with the state, and the injury was to plaintiff's person. The blasting which caused the injury was necessary and the work was done without negligence. The defendant was held liable on the ground that throwing earth upon plaintiff's land and person was a trespass.

Sullivan v. *Dunham,* 161 N. Y. 290, 1900. In this case the same principle of liability regardless of negligence, was applied, where the plaintiff was hit by a piece of wood from a blast while traveling on the public highway.

Intentional Explosions. b. Where the injury results from a concussion, *i. e.,* consequential injury.

Benner v. *Atlantic Dredging Co.,* 134 N. Y. 156, 1892. Defendant, while engaged under contract with the United States government, in the work of removing rocks in New York harbor, in blasting, injured plaintiff's house, 3,000 feet away. The blasting was necessary to carry out the contract. The injury was caused by the concussion of the earth and air. The defendants were held not liable on the ground that they had the authority to do what must necessarily result in the injury.

Booth v. *The Rome, Watertown & Ogdensburg Terminal Railroad Co.,* 140 N. Y. 267, 1893. The defendant corporation was obliged to resort to blasting in order to make excavations on its land. It was authorized by legislature to put its land into proper shape to fit it for its business. In the absence of negligence in the manner of doing the work, the defendant

was held not liable for injuries to a house on adjoining land, where that injury was caused by the concussion of the ground and air. This decision was on the ground that the work was lawful and the injury consequential. There was no technical trespass to found an action upon: *French* v. *Vix,* 143 N. Y. 90, 1894.

Holland House Co. v. *Baird,* 169 N. Y. 136, 1901. Defendant was engaged in excavating a trench in the street in front of plaintiff's building under a municipal contract. Plaintiff's building was injured by the concussion of the earth from blasting which the defendant did, without negligence, in accordance with the contract and in conformity with the city ordinances. Held, that the defendant was not liable. The court said, "The rule of law must be considered as well settled in this court that negligence is essential to be proved in such a case as this of consequential injury, in order to create any liability in the defendant. . . . That a vibration of the earth, or of the atmosphere, is the invariable accompaniment of an explosion, is a fact of universal observation, or knowledge, and to make that a source of liability, which may be an ordinary result of a lawful work, requires that it shall be made to appear that the explosion was unnecessarily violent and carelessly prepared for, having regard to the place and surroundings."

North Carolina. *Blackwell* v. *Railroad,* 111 N. C. 151, 1892. Contractors were engaged in construction of the roadbed of defendant company. While blasting in a cut 200 yards from the residence of plaintiff's intestate, a stone was thrown against intestate, who was engaged in some of his ordinary occupations in the yard close to his dwelling and killed him. The railroad company had acquired a right of way for its roadbed from intestate, but it did not embrace the land where the killing occurred. Held, that if damage resulted from the careless method in which the work was done, or if the material adopted as an explosive was unnecessarily powerful, the defendant was liable; that it was properly left to the jury to determine the fact of negligence.

Ohio. *Bradford Glycerine Co.* v. *St. Marys Woolen Mfg. Co.,* 60 Ohio St. 560 (*supra*), 1900; *Tiflin* v. *McCormack et al.,* 34 Ohio St. 638, 1878.

Pennsylvania. The cases in Pennsylvania on this subject are nearly all cases in equity for injunction to restrain defendants from keeping and using explosives on the ground of nuisance. In those cases where the keeping and using of explosives have been held to be nuisances and restrained in equity, we may assume that, had they resulted in injury to the person or property of the plaintiffs, the defendants would have been held liable at law.

Sayen v. *Johnson & Bro.,* 4 Pa. C. C. 360, 1885. An in-

junction was granted to restrain a defendant from so operating a stone quarry by blasting, etc., that pieces of rock were constantly thrown into the public road and upon the premises of the plaintiff, to the great danger of the plaintiff and his family.

Payne v. *McGranor,* 49 Pitts. L. J. 96, 1901; *McDonough* v. *Roat,* 8 Kulp, 433, 1897. Held, the business of storing and handling of dynamite, does or does not constitute a nuisance, according to the locality and surroundings in which it is carried on. It was restrained in this case as a nuisance, it being kept in a hardware store, located in a thickly settled portion of a borough, when neither public necessity nor the defendant's business exigencies required that such material should be there kept: *Wier's Appeal,* 74 Pa. 230, 1873; *Dilworth's Appeal,* 91 Pa. 247, 1879; *Daw* v. *Enterprise Powder Mfg. Co.,* 160 Pa. 479, 1894.

Action for Damages at Law. Tuckachinsky v. *Lehigh & Wilkesbarre Coal Co.,* 199 Pa. 515, 1901. This was a suit to recover for personal injuries resulting from a concussion of air caused by an explosion of dynamite, which was stored in small quantities to meet current needs, in a small wooden building, in an open space near the shaft of defendant's mine. When originally located, the magazine was not in the vicinity of a residence district, but population had since then settled near it. There was no negligence on defendant's part and the explosion was caused by lightning. Binding instructions were given for the defendant. Held, no error, since negligence was not proved. In justification of this ruling the court said, "Such materials are always dangerous, but as their use is essential to the work of mining, it is impossible to protect, absolutely, persons or property in the immediate vicinity."

TENNESSEE. *Cheatham* v. *Shearon,* 1 Swan 213, 1851. A powder house, located in a populous part of a city, and containing stored therein large quantities of gunpowder, is *per se* a nuisance. The owner was held liable for injuries to plaintiff's building, caused by an explosion resulting from a stroke of lightning.

UNITED STATES. *Hazard Powder Co.* v. *Volger,* 58 Fed. Rep. 152, 1893. The maintenance of a magazine containing a large quantity of powder within the city limits, in violation of a city ordinance, is a nuisance, which will render the owner liable for any injury caused to strangers by an explosion from whatever cause, including lightning.

VERMONT. *Sabin* v. *Vermont Central R. R. Co.,* 25 Vt. 363, 1853. Held, that the damages occasioned by laying out and making a railroad, which commissioners are bound to estimate, include injuries which are done by railroad corporations to land adjoining the line of their road, by blasting, in a proper manner, a ledge of rocks, through which the railroad passes.

WASHINGTON. *Klepsch* v. *Donald,* 4 Wash. 436, 1892. Where blasting in a certain locality is not unlawful, *i. e.,* not so near to other buildings as to obviously put them in danger and hence to become a nuisance, the fact that a man was killed by a rock thrown by the blast 940 feet in a horizontal direction, constitutes only *prima facie* proof of negligence, which may be rebutted by showing due care on the part of those discharging the blast, and the question of negligence under such circumstances cannot be taken from the jury.

On re-trial, a second appeal was taken on this point and decided in accordance with the first decision. 8 Wash. 162, 1894. Also decided that such presumption of negligence is not rebutted by proof that the employes managing the blasting were competent and careful men, and had received strict instructions to be careful.

WEST VIRGINIA. *Wilson* v. *Phoenix Powder Mfg. Co.,* 40 W. Va. 413, 1895. Held, a mill manufacturing powder and other explosives, and storing the same on the premises, situate on the bank of the Ohio River and near two railroads and a public road, is a public nuisance, and anyone injured in property by explosion of powder stored there may recover damages without proof of negligence in its operation. If the mill were located in a secluded place, being in itself a lawful business, it would not be a public nuisance and to recover injury from an explosion plaintiff must show negligence on defendant's part: *Hunt* v. *Phoenix Powder Mfg. Co.,* 40 W. Va. 711, 1895; *Watts* v. *Norfolk & W. Ry. Co.,* 39 W. Va. 196, 1894.

Independent Contractors.—When blasting is done by an independent contractor, and the right of a person to recover for injuries sustained thereby has been determined, it often becomes a question whether or not *"respondeat superior"* applies. Where the work has been let to an independent contractor who has entire control over the manner of its performance, the owner of the premises on which the work requiring blasting is being performed is not liable for injuries caused by the negligence of those employed in the work, unless such injuries would necessarily result from the character of the work: *Berg* v. *Parsons,* 156 N. Y. 109, 1898; *Roemer* v. *Striker,* 142 N. Y. 134, 1894; *French* v. *Vix,* 143 N. Y. 90, 1894; *Pack* v. *New York,* 8 N. Y. 222, 1853; *Kelly* v. *New York,* 11 N. Y. 432, 1854; *Herrington* v. *Lansingburgh,* 110 N. Y. 145, 1888; *McCafferty* v. *Spuyton Duyvil, etc., R. Co.,* 61 N. Y. 178, 1874; *Edmundson* v. *Pittsburgh, etc., R. Co.,* 111 Pa. 316, 1885.

But if the contract specifies that the blasting shall be done in a way in itself negligent, *i. e.,* if the blasting under the circumstances amounts to a nuisance and it is done in accordance with the contract, or if the principal contracts with the knowledge that the work will be done in a negligent manner or will amount

to a nuisance, then the principal will be liable for injuries resulting therefrom even though he retains no control over the work: *Brannock* v. *Elmore,* 114 Mo. 55, 1892; *Buddin* v. *Fortunato,* 16 Daly, N. Y. 195, 1890; *Carman* v. *Steubenville, etc., Ry. Co.,* 4 Ohio St. 399, 1854.

The Illinois courts have decided, in *Joliet* v. *Harwood* (*supra*), that blasting being intrinsically dangerous, it is in itself negligent to contract to have it done in the street; and the city was held liable for injuries resulting from blasting operations conducted by an independent contractor, even though there was no carelessness or unskillfulness in the manner of performing the work: *Norwalk Gaslight Co.* v. *Borough of Norwalk,* 63 Conn. 495, 1893.

See also *Howard* v. *City of Worcester,* 153 Mass. 426, 1893, where an exception was made as to the principal's liability, where the work contracted for required blasting under dangerous circumstances. . The city was engaged in constructing a public school-house. The plaintiff was injured by a blast while walking on the public highway. The court said that even if under the contract the contractor was its servant in such a sense that ordinarily it might be responsible for his acts, still, from the nature of the work, the contractor was on the same footing as an independent contractor. The reason given was that the service in which the city was engaged was purely for the benefit of the public, and, even though the contract required work in itself dangerous to the public, the city was exempt for the contractor's negligence: *Deane* v. *Randolph,* 132 Mass. 475, 1882; *Cuff* v. *Newark & New York R. R. Co. et al.,* 6 Vroom, N. J. 17, 1870.

H. W. L.