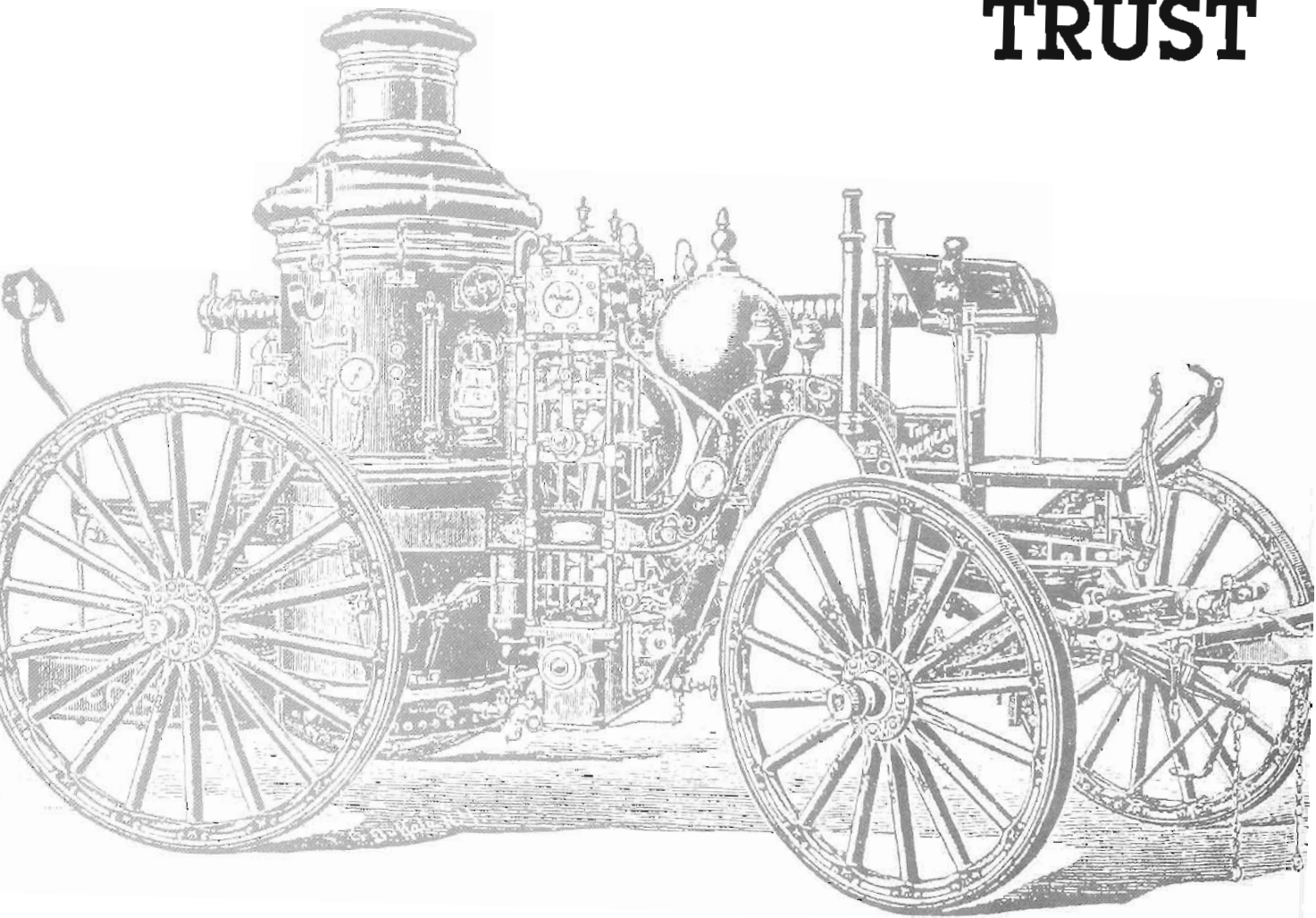


FIGHTING THE FIRE ENGINE TRUST



NEW "AMERICAN" ENGINE.



The Nott Fire Engine Company of Minneapolis

Richard L. Heath

THE HISTORY of monopolistic business combinations in the United States in the late 19th and early 20th centuries is well known. It has been told most often in terms of populist and public efforts to "bust the trusts" by statutes and regulations preventing business practices in restraint of trade. The formation of a trust that attempted to force one Minnesota firm out of business, however, provided a challenge to that company to expand its production and take on the trust in head-to-head competition. The firm was the W. S. Nott Company, which not only succeeded competitively against the massive International Fire Engine Company trust, but also became one of the nation's foremost builders of fire apparatus from 1903 to 1916. Records of this business, although fragmentary, provide a unique insight

¹ Records of the W.S. Nott Company's fire apparatus business were made available to the author for research through the courtesy of Robert W. Morgan (retired chairman) and W.W. Woods (chairman) of the Nott Company and were subsequently donated to the Minnesota Historical Society (MHS), St. Paul. The records are divided into three series of files: general, Luverne Fire Apparatus Co., and Minnesota Fire Equipment Co.; each series contains principally contract folders arranged by purchaser. Unless otherwise noted, references in this article are to the folders in the general series.

² R.I. Holcombe and W.H. Bingham, *Compendium of History and Biography of Minneapolis and Hennepin County, Minnesota* (Chicago: Henry Taylor & Co., 1914), 420.

into the battle between Nott and the trust, as well as a rich source on the competitive world of fire apparatus design, manufacture, and marketing in the first decades of this century. The records also reveal a fascinating connection between the Nott Company and the Minnesota fire apparatus industry of the present day. The story begins, however, well before the turn of the century.¹

The W. S. Nott Company had its origins in the firm of Preston and Nott, established in Minneapolis in 1879 by William S. Nott. Its 26-year-old founder had emigrated with his parents at the age of five from his native Dublin, Ireland, to Chicago. There, after a sketchy education in the public schools, he joined the firm of E. B. Preston and Company, manufacturer and jobber of industrial belting and rubber goods, as well as fire hose and fire equipment. The market for leather power-transmission belts, rather than fire apparatus, drew Nott to the Mill City. An enormous growth of flour and lumber milling there in the 1870s and 1880s provided an unrivaled market for belting to connect water wheels with grindstones and steam engines with saws. Preston and Nott also offered fire equipment, but only as a small adjunct to its industrial supply business.²

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By 1887 Nott had prospered sufficiently to organize his own firm, the W. S. Nott Company. He moved from Preston and Nott's original premises at 203 Nicollet Avenue to the Mutual Building on 2nd Street between Nicollet and 1st (now Marquette) Avenue South. No longer simply a jobber for Preston, Nott began manufacture of his own leather belting. Business proved so good that in 1892 the firm had to move to larger quarters in the remodeled Brackett Building at 1st Avenue South and 2nd Street. In 1899 it acquired and renovated the old Municipal Court Building adjoining the Brackett Block for yet more manufacturing space.¹

Nott continued to market Preston fire apparatus, which had achieved national prominence in 1885 with a newly patented 85-foot wooden aerial ladder. Two years later, Preston brought out a 93-foot metal aerial ladder of advanced design. Although the young cities of the Upper Midwest offered more limited markets for fire apparatus than those in the more urbanized East, Nott sold several Preston ladder trucks to St. Paul in the late 1880s. By the 1890s it had become sales agent for a

WILLIAM S. NOTT, photographed about 1919 by Lee Brothers, Minneapolis



number of other fire apparatus manufacturers and had built up a wide trade among small towns and villages throughout the Midwest.²

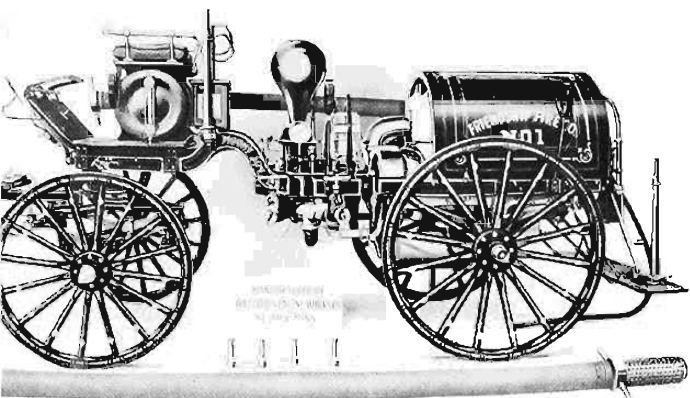
THE 1890s also saw beginning steps toward rationalizing the American fire apparatus industry. Since the 1860s a bewildering variety of firms scattered across the urbanized sections of the country had built apparatus, many of them in small quantities and for only a short time. Less complex pieces like hose wagons and village ladder trucks could be, and often were, built by local wagonmakers. Manufacture of the more technically advanced steam fire engines, aerial ladder trucks, chemical engines, and water towers required equipment and capital that not every builder could supply. Fifteen firms emerged by 1890 as the primary suppliers of major fire apparatus: in New York State Silsby (Seneca Falls), LaFrance (Elmira), Clapp and Jones (Hudson), and Button (Waterford), as well as Ahrens (Cincinnati), Amoskeag (Manchester, New Hampshire), Manning (Cleveland), and Waterous (St. Paul) built steam fire engines. LaFrance, Preston (Chicago), and Gleason and Bailey (New York City) made aerial trucks; Babcock (Chicago), Holloway (Baltimore), Macomber (Philadelphia[?]), Champion (Louisville), and Gleason and Bailey made chemical engines; and Hale (Kansas City, Missouri) built water towers.³

In 1891 the Silsby, Clapp and Jones, Button, and Ahrens firms joined to form the American Fire Engine Company. About the same time, Babcock (officially, the Fire Extinguisher Manufacturing Company since 1880, but popularly known by its original name) absorbed Preston, Champion, and Hale. In both cases, the merging firms retained their separate plants and product lines; the mergers sought primarily to cut losses from competition, reduce litigation over patent rights, and raise added capital. They did not attempt to narrow customer choice of vendors and, in fact, brought out a wider product line by sharing patents. These developments foreshadowed, however, a far more ambi-

¹ M.D. Shutter, ed., *Minneapolis: Gateway to the Northwest* (Chicago-Minneapolis: S.J. Clarke Publishing Co., 1923), 193-194; *Minneapolis Journal*, Aug. 19, 1899.

² *Fireman's Journal* (New York), Nov. 21, 1885, p. 404, 408, May 8, 1886, p. 375, May 22, 1886, p. 415; *Fire and Water* (New York), Jan. 7, 1888, p. 5; Richard L. Heath, "Horse Drawn Apparatus of the St. Paul Fire Department," *Extra Alarmer*, Dec., 1984-Jan., 1985, p. 5; *Minneapolis Journal*, Oct. 3, 1901, p. 7. The truck-mounted, mechanically-raised aerial ladders were up to 20 feet taller than portable, hand-raised ladders.

³ Hugh Walker, "American LaFrance History Parallels Growth of the Fire Service," *Fire Engineering* (New York) 112 (Oct., 1959): 946; William T. King, *History of the American Steam Fire Engine* (Reprint ed., Chicago: Owen Davies, 1960), 21-28, 52-62, 80-91, 105-108, 114-118, 131-135. For an overview of the industry, see *Fire and Water*, 1887-1900.



WATEROUS engine with a pumping capacity of 500-600 gallons, from that firm's 1911 catalog

tious effort to eliminate all competition among fire apparatus manufacturers."

On December 14, 1899, the New York City firm of Alexander and Green incorporated the International Fire Engine Company, with privately held stock valued at nine million dollars. It purchased the assets of no less than 11 fire apparatus manufacturers, including every steam fire engine builder: LaFrance, American, Waterous, Amoskeag, Manning, Babcock, Holloway, Gleason and Bailey, Macomber, S. F. Hayward and Company, and Rumsey and Company. Its major shareholders included the principals of the acquired firms, bent on total control of the fire apparatus business in one marketing entity. Only two experienced firms remained outside what was immediately dubbed the "fire engine trust": the Seagrave Company (Columbus, Ohio) and Peter Pirsch (Kenosha, Wisconsin), both rather modest midwestern builders of ladder trucks and hose wagons.⁷

The trust rapidly moved to concentrate marketing

⁶ *Fire and Water*, Jan. 30, 1892, p. 54, Dec. 16, 1893, p. 268-269; King, *American Steam Fire Engine*, 136-141.

⁷ Hayward (New York City) built chemical engines and ladder trucks; Rumsey (Seneca Falls) built chemical engines and hose wagons for cities and hand engines for village use; Walker, "American LaFrance," 946; *New York Times*, Jan. 8, 1904, p. 9; Ed Hass, *The Dean of Steam: Fire Engine Builders* (Shawnee Mission, Kans.: Kes-Print Inc., 1986), 167, lists nine firms purchased by the International Fire Engine Co. on Aug. 4, 1900. The American Fire Engine Co., although part of the trust, appears to have retained some autonomy; Hayward and Co. may have been purchased at a later date.

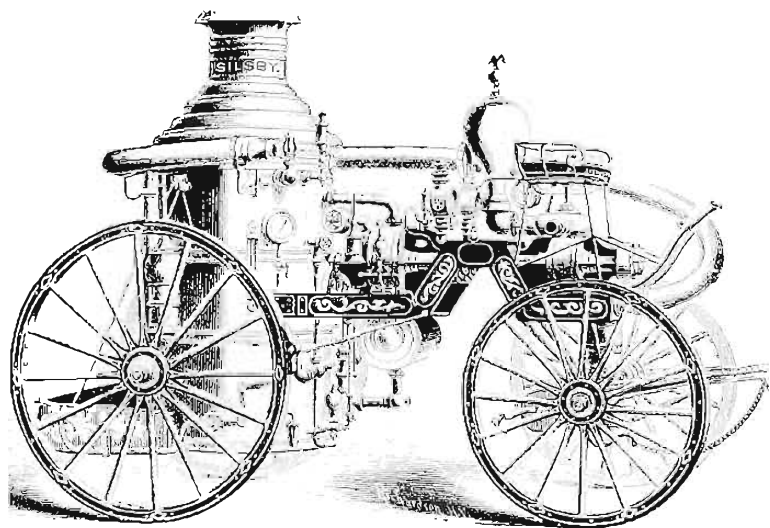
⁸ *Fire and Water Engineering* (New York), Aug. 12, 1905, p. 90; *Minneapolis Journal*, Oct. 3, 1901, p. 7.

⁹ *Minneapolis Journal*, Oct. 3, 1901, p. 7. See also material from 1902 in general files series, Nott Records. Penney appears on annual lists of appointments to the Minneapolis Fire Department as engineer 1st class from 1891 to 1898. He was not reappointed in 1899, perhaps because of a change in fire department administration—the chief engineer appointment that year went to a Republican rather than a Democrat. See *Proceedings of the City Council of the City of Minneapolis*, 1891 to 1899.

in its sole control by eliminating all independent sales agents—including W. S. Nott. Although Nott's primary business remained industrial belting, it had developed a market and sales contacts for fire apparatus in midwestern states that it would not willingly give up. To continue the business, however, required a builder, particularly for steam fire engines and for the hand-drawn chemical engines popular with rural villages. In the fall of 1900, Nott decided to fight the trust by building a full line of its own fire apparatus.⁸

The company made its decision in secrecy. It set up a manufacturing shop in the Brackett Block, moving some of its belt manufacturing to the recently acquired Municipal Court Building. It hired H. E. Penney, former steamer engineer and shop mechanic for the Minneapolis Fire Department, to be its chief of fire apparatus design and shop supervisor. The firm apparently advertised its new line only through its well-developed network of salesmen and municipal contacts. It also quickly approached builders not absorbed by the trust to secure their help in supplying apparatus and in selling Nott Products: besides Seagrave in Ohio and Pirsch in Wisconsin, there were Wayne in Decatur, Illinois (a carriage builder that also built hose wagons and ladder trucks); and the Chicago Fire Apparatus Company (a sales agent that sometimes contracted with local wagonmakers and coppersmiths to build hose wagons and chemical tanks). Not until October, 1901, did any publicity surface for the Nott challenge to the International Fire Engine Company. By that time, Nott had orders from as far away as Oklahoma, New Mexico, Pennsylvania, Montana, and the Philippines.⁹

Although the bulk of orders were for chemical engines and hose wagons, steam fire engines offered the most lucrative as well as the most difficult market, for reasons both of manufacture and sales. No manufac-



SILSBY FIRE ENGINE



THE BRACKETT Block, about 1900, in this photograph by E. R. Shepard of Minneapolis

turer of "steamers" remained outside of the International company other than Nott. Steam fire engine design had been standardized by this date on rigs with vertical boilers that could raise a working head of steam in about four minutes: either rotary or piston pumps delivered water flows and pressures little short of a modern motor pumper, all with minimum problems of operation and maintenance. Manufacture of successful steamers required expert attention to design, machining, and assembly. In battling the trust, Nott would have to enter a new steamer design against a giant firm that could offer a number of proven models, backed by five manufacturing plants with decades of experience.¹⁰

Penney, who had designed and built replacement boilers for Minneapolis Fire Department steamers, turned out an initial design with a submerged-flue boiler and double piston pumps that followed standard practice of the 1890s. His problems lay less in design than manufacture. The shop in the Brackett Building had limited forging and fabricating capacity. Nott appears to have subcontracted boiler manufacture to an outside firm. Engine frames on its first steamers also showed a crudely angular crook to carry the frame over the front wheels, in contrast to the graceful "crane neck" on the International company's designs. The first Nott steamer did not complete its builder's tests until January 1, 1902. But the Nott steamers had one advantage—they were cheap to buy.¹¹

In an April, 1902, steamer sale to Boise City, Idaho, Nott underbid the competition by \$800 and threw in a

five-year guarantee with its \$3,700 sales price. The next month, Nott offered a \$4,500 steamer to Missoula, Montana, for \$3,500 plus that city's old and badly worn LaFrance steamer on trade. The low prices were as much the result of marketing strategy as economy in production. In the Missoula negotiations, E. A. Wilkinson, Nott's sales manager, advised his field representative that "as we are anxious to place an engine in the state of Montana, and they being the first to give us a chance, we are giving [sic] to give them the benefit of all we can on the engine." He added Nott payment of freight on both the old and new engine to the deal.¹²

FIERCE COMPETITION from the International Fire Engine Company greeted Nott's efforts to break into the market. The salesman who won the Boise City contract reported the sale "was the hardest fought battle that I ever got in to, and have been in quite a few since my career on the road. The Combine, did not want us to have an engine in the West to use as reference [sic] and they used every means in their power both honor-

¹⁰ King, *American Steam Fire Engine*, 21-28, 52-62, 80-91, 105-108, 114-118, 131-141.

¹¹ See specifications in Agreement, Aug. 23, 1902, Louisiana Purchase Expo Co. folder; photos in John H. Peckham, *Fighting Fire With Fire: A Pictorial Volume of Steam Fire-Fighting Apparatus and Related Equipment* (Newfoundland, N.J.: Walter R. Haessner & Assoc., 1972), 96, 98; *Fire and Water Engineering*, Aug. 12, 1905, p. 90.

¹² *Idaho Daily Statesman*, April 5, 1902, clipping in Boise City, Idaho, folder: Wilkinson to L.S. Mallory, May 13, 21, 1902, in Missoula, Mont., folder.

able and otherwise to get their steamer in." After a steamer sale to Lima, Ohio, Wilkinson wrote his home office that "I have just been informed the Trust are trying to serve an injunction on Mayor and Cl[er]k not to sine. it wont do any good. had an open Council [meeting] & I had the chance of hearing how the Trust talks. but I made mince meat of them. I was surprised at the cut price."¹³

In addition to cutting prices, International salesmen lost no time in casting aspersions on Nott's competence and reliability. O. G. Marjenhoff, garrulous chief of the Charleston, South Carolina, fire department who was awaiting delivery of an overdue Nott order, wrote Wilkinson in October, 1902, that "my friend Bosh told me . . . 'confidentially' that you hadn't delivered any Engines yet, and seemed to 'know all' as to your ability to deliver any." Wilkinson acknowledged that "We now have the very unpleasant duty of living down reports from the International Company, which were unfounded." After a 1902 sale of three steamers to the Louisiana Purchase Exposition in St. Louis, Wilkinson felt compelled to write to the secretary of the exposition to counter remarks, allegedly made by John P. Ahrens of the International, disparaging the secretary's competence for choosing Nott.¹⁴

Competition among fire apparatus firms in an age of municipal corruption involved more than price wars and whispering campaigns. Nott's salesmen occasionally hinted that they had to pay bribes and kickbacks to land contracts. "You may judge from the price we get for this engine that it is not all 'clean turkey,'" wrote one salesman in September, 1902. "It was a cat and dog fight, and a case of shell out." Another salesman was more specific. On a hose wagon sold for \$1,150, he reported "we had a very hard fight for this wagon. . . . Cannot go into details, but will say that when the

writer landed on top of the heap, with expenses paid there will be about \$950.00 left."¹⁵

Nott's salesmen also had to contend with products that showed their company's inexperience in fire apparatus manufacture. The assistant fire chief at Kalispell, Montana, recipient of a chemical engine that was the third piece of equipment to leave the Nott factory, wrote that "it stands no kind of a test at all and upon careful examination I am satisfied it is an old machine painted over as the tires are loose and bolts are worn smooth so it shakes and rattles." Although Nott telegraphed back "Kalispell engine new from tongue to rear crank handle," its salesman three months later chided the factory for a chemical engine sent to Billings, Montana, that "wasn't fit to send to a dog show." Charleston Chief Marjenhoff wrote Nott in early 1903 that the machinery of its rebuild of a Clapp and Jones steamer "appears to be a first class job," but "The whole nickelling [*sic*] is miserable, the brass showing out on every part, and you should make your nickellers refund you whatever it cost you." A Wayne Company hose wagon that Nott sold in 1902 to Great Falls, Montana, was literally destroyed by that city's rigorous acceptance trials. Only the axles remained intact following what builder W. J. Wayne would thereafter refer to as "the terrible Great Falls test."¹⁶

NOTT'S most serious problems, however, lay neither in competition nor in quality control, but in production capacity. Its sales efforts proved so successful they rapidly outstripped the factory's ability to deliver apparatus on schedule. A request for a contract extension on a steamer delivery to Shreveport, Louisiana, appeared as early as May, 1902. Missoula, Montana, officials got so tired of waiting for a steamer ordered in May that they canceled the purchase in December, 1902, although Nott's salesman advised the steamer would be accepted "later on when we can tell them the truth as to when shipment can be made." He noted that the city's frustration owed to reports (presumably disseminated by agents for the trust) that a Nott engine ordered long after Missoula's by Atlantic City, New Jersey, had already been delivered: "City flooded with Atlantic City newspapers marked with blue pencil."¹⁷

Nott's delivery problems apparently stemmed from the combined effect of unexpected difficulties in production and unexpected success in breaking into the market. H. E. Penney, although a seasoned steamer engineer, had no official supervisory experience in the Minneapolis Fire Department repair shop before joining Nott and may have underestimated the difficulty of quantity production. More seriously, limited facilities in the Brackett Building put him at the mercy of subcontractors, whose delivery schedule he could not control, for essential components. At the same time, al-

¹³ Sig L. Cohn to Mess. W.S. Nott Co., April 5, 1902, in Boise City folder; [Wilkinson] to E.M. G[oldsborough], Oct. 7, 1902, in Lima, Ohio, folder.

¹⁴ Marjenhoff to W.S. Nott Co., Oct. 11, 1902, and Wilkinson to Marjenhoff, Oct. 30, 1902, both in Charleston, S. C., folder; Wilkinson to Isaac S. Taylor, Oct. 30, 1902, in Louisiana Purchase Expo Co. folder.

¹⁵ Thos. N. Burke to W.S. Nott Co., Sept. 2, 1902, attached to contract, Aug. 29, 1902, in City of Gilboa, Ohio, folder; Geo. L. Bourne to W.S. Nott Co., Sept. 1, 1901, attached to contract, Sept. 10, 1901, in Galesburg, Ill., folder.

¹⁶ L.S. Mallory to W.S. Nott Co., and W.S. Nott Co. to Mallory, both Aug. 6, 1902, in Kalispell, Mont., folder; Marjenhoff to W.S. Nott Co., Mar. 10, 1903, and contract, Feb. 21, 1902, in Charleston folder; W.J. Wayne to Mallory, June 4, 1902, in Bozeman, Mont., folder; Mallory to E.M. G[oldsborough], Nov. 18, 1902, in Cody, Wyo., folder.

¹⁷ Wilkinson to James Ford, Mar. 20, 1902, in Shreveport, La., folder; Mallory to W.S. Nott Co., May 13, 1902, Dec. 9, 1902, in Missoula folder.



STAFF of the Minneapolis Fire Department repair shop, including H. E. Penney, back, number 7

though Nott's own sales force does not appear to have been large, the firm made wide contacts in the East, South, and Southwest through the Chicago Fire Apparatus Company. The number of customers eager to find an alternative to the trust caught both Nott and Seagrave off guard. Seagrave reported a heavy backlog of orders in December, 1902.¹⁸

The most disastrous consequence of delayed delivery resulted from the Louisiana Purchase Exposition's order of three Nott steamers to equip the St. Louis World's Fairgrounds. The fair provided an unmatched opportunity for free advertising; E. A. Wilkinson was understandably jubilant when he landed the order. "[T]here was only \$400 difference in our prices," he wrote, after beating off a cut-price bid from the Ahrens representatives of the International company. "[T]he Fire Dep[artment] here thinks there is no engine on earth like the A[h]rens. So I had my troubles but I won so I feel OK."¹⁹

The engines, ordered on July 27, 1902, were to be shipped on January 25, 1903. Isaac S. Taylor, secretary of the exposition, began to have qualms about Nott's ability to make the contract date (in Wilkinson's view, because of influence by Ahrens and the trust). Wilkinson assured Taylor at the end of October that production was on schedule: pumps were being planed, steam cylinders had been bored, planed, and trued, frames had been made, and boilers were to be completed in the next two weeks. Six days later, he wrote Taylor again to say the pumps and steam cylinders were complete, connecting rods were only two days short of fin-

ishing, and the first boiler would be delivered the next day, with the other two to follow in a few days.²⁰

On January 24, 1903, Taylor telegraphed Nott demanding delivery the next day, "otherwise we cancel the contract." Another telegram two days later complained "no answer as yet please answer immediately." Nott replied by letter the same day to say, with admirable if belated frankness, "Being unable to make steamer delivery according to your telegraphic demands of the twenty-fourth will therefore be governed by your directions." Taylor's telegram canceling the contract followed on January 27. Although Nott vice-president F. H. George telegraphed the home office two days later to advise, "We want to save forfeiture St. Louis deal Wilkinson better go there immediately," there is no evidence that the persuasive "Wilk" succeeded.²¹

TO SOLVE its early problems with quality of workmanship and speed of production, Nott chose a traditional if risky entrepreneurial response: it increased investment in both design and production facilities. In December, 1901, before its first steamer had even been tested, the firm approved construction of a new factory building exclusively for the manufacture of fire apparatus. Work started in January, 1902, on a large factory at 1620 Central Avenue on the northeast side of Minneapolis. By November, steamer manufacture had been moved to the new plant. Although the move itself probably set back completion of orders in progress (including the steamers for the St. Louis fair), it greatly expanded future production capacity and freed Nott from dependence on subcontractors. Then, in mid-1902, Penney produced a second boiler design with a combination of submerged flues and water tubes. Chief Marjenhoff, while he might complain about its nickeling, described a boiler of this design on his rebuilt steamer as "fully as good as any we have ever had, and we have every make."²²

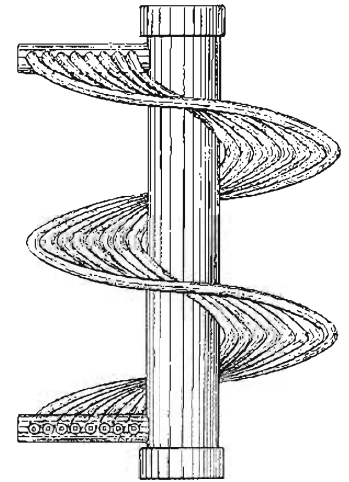
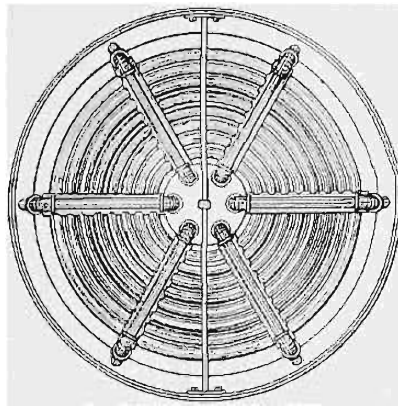
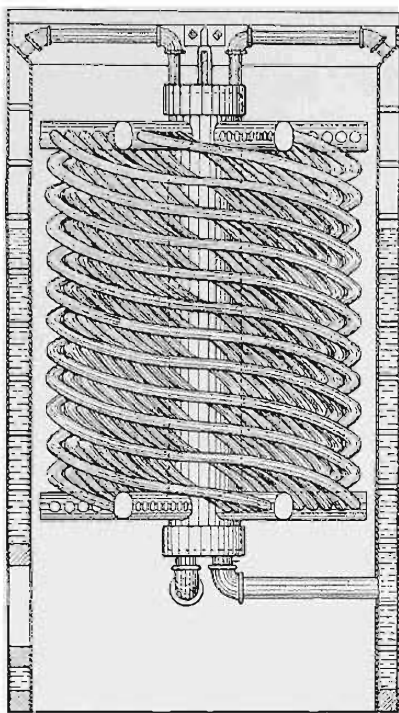
¹⁸ William Fishinger to Mallory, Aug. 20, 1902, in Wallace, Idaho, folder. Although the *Minneapolis Journal*, Oct. 3, 1901, p. 7 described Penney as former assistant master mechanic at the Minneapolis Fire Department, his official position was engineer 1st class. An 1895 photo showing him among fire department repair shop personnel suggests he was permanently detailed to the shop force, where he may have had unofficial supervisory responsibilities.

¹⁹ "Wilk" to W.S. Nott Co., July 23, 1902, in Louisiana Purchase Expo Co. folder.

²⁰ Wilkinson to Taylor, Oct. 30, 1902, Nov. 5, 1902, in Louisiana Purchase Expo Co. folder.

²¹ David R. Francis and Isaac Taylor to W.S. Nott Co., Jan. 24, 26, 27, 1903, W.S. Nott Co. to Francis and Taylor, Jan. 26, 1903, and F.H. George to W.S. Nott Co., Jan. 29, 1903—all in Louisiana Purchase Expo Co. folder.

²² See contract specifications in Proposal, July 31, 1902, in Lima folder; Marjenhoff to W.S. Nott Co., Mar. 10, 1903, in



NOTT FIRE ENGINE COMPANY

Combination Spiral Water Tube Boiler

The move to larger quarters also permitted Penney to redesign the Nott steamer with spectacular results. His third design, in late 1902, retained the pumps and steam cylinders of earlier models, but featured a completely new, patented "spiral tube" boiler. The design placed the boiler water in a narrow space between concentric inner and outer boiler shells. Steam was generated in an elaborate sextuple helix of copper tubes within the enlarged space of an inner shell now used entirely for combustion heat. Water-tube boilers had distinct advantages for steam fire engines, including rapid steaming and greater safety; they eliminated the unstable effect of a mass of water sloshing about on rough roads and the danger that the firebox crown sheet would lose its water cover and overheat to the

point of explosive failure. With its spiral-tube design, Nott produced a boiler superior to the Fox-patent water-tube boilers used by the International Fire Engine Company. The Nott boiler also had the advantage of individual removal of the copper coils for repair and a less complicated circulation and feedwater system than the Fox design.²³

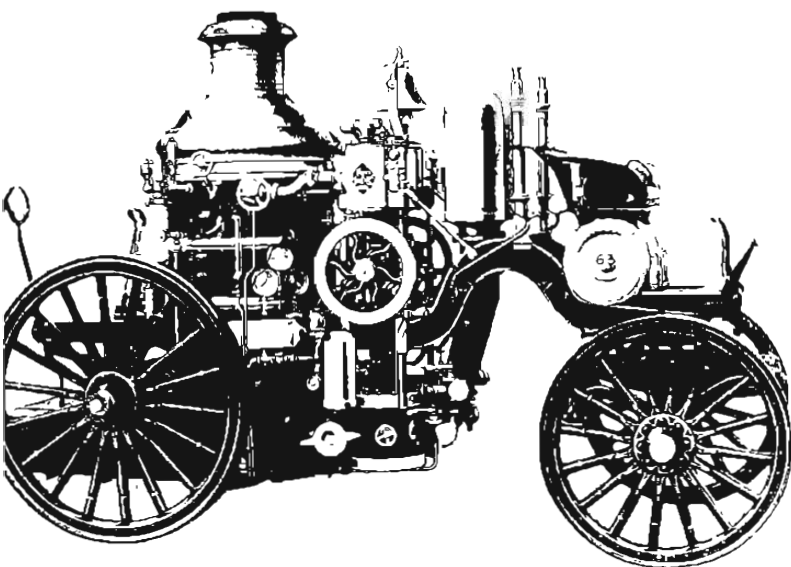
The new plant's forging capacity also enabled Penney to supply the steamers with crane-neck frames and an elegance of finish that included, if the customer chose, a Russian iron, brass, nickel, or German silver boiler jacket. Pumps, which soon offered both piston and slide valve options for the steam cylinders, set a new standard for smooth operation. Careful balancing (and on later engines, dual flywheels) prevented the vibration and "jumping" that typified other reciprocating pumps. Nott produced six sizes of steamers, designated in the nomenclature of the time in relation to a "first-class" standard, with capacities at 120 pounds-per-square-inch pump pressure ranging from 1,300 gallons-per-minute (gpm) for the "double-extra-first" class to 500 gpm for the fourth class. The sizes differed in diameter of the boiler and the steam and pump cylinders, while sharing a common piston stroke.²⁴

WITH ENLARGED PRODUCTION capacity and a highly competitive steamer design, Nott moved to expand and systematize its sales efforts. Records remaining are insufficient for a full reconstruction, but the number of sales agents that can be identified rose from two in 1901 to six in 1902. Nott also used its contacts in the leather power-belt market to promote its fire appa-

Charleston folder; Wilkinson to Taylor, Nov. 5, 1902, in Louisiana Purchase Expo Co. folder; *Minneapolis Journal*, Dec. 21, 1901, p. 6, Jan. 7, 1902, p. 6.

²³ Photo, contract specifications, and patent drawings in Proposal for Rebuilding Engine No. 23, Chicago Fire Dept., Mar. 19, 1904, in Chicago folder.

²⁴ Peckham, *Fighting Fire*, 95; Richard Heath, *Mill City Firefighters: The First Hundred Years, 1879-1979* (Minneapolis: The Extra Alarm Assn. of the Twin Cities, 1981), 78, 80; Nott Fire Engine Co. catalog (Minneapolis, [1906]), 10-11, 21; interviews with Donald C. Heath, April, 1985, notes in author's possession; proposals in the following folders: Lima, July 31, 1902; Louisiana Purchase Expo Co., Aug. 22, 1902; Chicago, Mar. 19, 1904; Atlantic City, N.J., Oct. 31, 1902, and Los Angeles, Mar. 31, 1904, both in Nott History file, in possession of Robert Morgan; John A. Calderone and Jack Lerch, *Wheels of the Bravest: A History of FDNY Fire Apparatus 1865-1982* (Howard Beach, N.Y.: Fire Apparatus Journal Publications, 1984), 46.



NOTT engine with crane-neck frame, about 1905

ratus. More importantly, it secured more firms with regional markets and sales forces as its agents, such as the Winnipeg Rubber Company for Canadian buyers and the respected D. A. Woodhouse Company of New York City, which enabled Nott to penetrate the lucrative markets of the urbanized East Coast. As its own regional salesmen became successful, Nott set up some as subsidiary firms: E. C. Atwater, its West Coast salesman from 1904 on, by 1909 headed the Nott-Atwater Company of Spokane, Washington, and shared his firm's letterhead with the Nott-Davis Company of Portland, Oregon. In the early years, however, E. A. Wilkinson seems to have handled most steamer sales, operating from the Minneapolis office. Emmett P. Browning, who first appears among recorded salesmen in 1904, similarly handled a large territory in the plains states and Canada from a Minneapolis base.²⁵

Although Nott had to fight to capture a market in larger cities for the new steamers, its agents had an easier time selling chemical engines and hose reels to small towns and villages. The urban frontier of the Midwest and Far West had countless towns reaching sufficient size to need fire protection. They typically organized a volunteer fire department that first equipped itself with hand-pumped, hand-drawn engines and ladder trucks in the manner of early 19th-century cities, then ordered hose reels or chemical engines (still hand-drawn), and then as they grew yet larger, graduated to horse-drawn apparatus and, eventually, paid firefighters. Their choice of apparatus depended heavily on whether the town had a municipal water supply. A town without water mains and hydrants often ordered as its first fire equipment a chemical engine carrying one or two 40- or 55-gallon tanks

containing a solution of water and bicarbonate of soda. Sulphuric acid added to the solution created carbon-dioxide gas that pressurized the tank enough to eject a stream of water through an attached hose. The same chemistry that created the soda fountain provided a useful firefighting tool in the later 19th and early 20th centuries.²⁶

By February, 1903, Nott had sold chemical engines to more than 30 communities in Minnesota, Wisconsin, Iowa, North and South Dakota, Illinois, Michigan, Ohio, Colorado, Wyoming, Montana, Washington, and New Mexico. Its western market would prove particularly profitable over the next decade. Hand-drawn hose reels and chemical engines also found a market in industrial fire brigades. Nott soon had the business on a catalog basis, offering standard designs for a fixed price in small communities where competition from the trust was negligible. For towns that had matured enough to need horse-drawn hose wagons and ladder trucks, Nott by 1904 had turned almost exclusively to Seagrave as a supplier. Seagrave, in turn, set up a Canadian subsidiary in Walkerville, Ontario, to escape import duties and open a rich field for Nott sales agents in the frontier towns of western Canada.²⁷



In August, 1903, W. S. Nott incorporated its fire apparatus manufacturing business as a separate firm, the Nott Fire Engine Company. It had the same officers as its parent corporation; presumably, the move simply separated the assets and accounts of the risky fire engine business from the primary Nott interest in the thriving market for industrial belting. The parent firm retained its role as sales agent for Seagrave, where it had no investment.²⁸

THE INTERNATIONAL Fire Engine Company, meanwhile, was having its own problems. In April, 1903, Charles T. and William S. Silsby, whose steam fire engine business had been an important element of

²⁵ See folders in general files series, 1901-09.

²⁶ Paul C. Ditzel, *Fire Engines, Fire Fighters: The Men, Equipment, and Machines from Colonial Days to the Present* (New York: Crown Publishers, 1976), 152-155, 161.

²⁷ Specifications, attached to contract, Feb. 26, 1903, Hammond, La., folder; folders in general files series, 1904-10.

²⁸ *Minneapolis Journal*, Aug. 23, 1903, p. 7; letterhead on bill, Feb. 24, 1904, in Missoula folder.

both the American Fire Engine Company of 1891 and the International trust, disposed of all interests in and severed connections with both firms. Efforts for the rest of the year to hold the trust together by raising more capital proved futile. In January, 1904, its liquid assets of \$95,205 and receivables of \$176,523 fell well short of its \$347,294 liabilities. The firm went into receivership. A \$2.5 million offering of bonds and trust certificates apparently failed to raise enough additional capital to cover its debts. The problems of the trust are not well documented, but one may surmise that its investors, more intent on milking the market than on providing working capital, failed to recognize the elasticity of fire apparatus demand—and the competition that firms like Nott and Seagrave could offer. Although the failure of the trust cannot be credited wholly to Nott's success, it offers an interesting demonstration that monopolies need not be omnipotent in the face of a challenge.²⁹

Within the crumbling trust, the American Fire Engine Company remained solvent. In early 1904, it merged with LaFrance to form the American-LaFrance Fire Engine Company. Although the new firm announced in April it had purchased the entire property of the International trust and would manufacture all its lines of equipment, Amoskeag, Ahrens, and Waterous soon went their own way as independent firms. American-LaFrance remained large enough, however, to convince Nott and Seagrave it was simply a reincarnation of the trust. "It has taken a long time to circumvent the octopus [*sic*] but we finally landed," wrote a salesman in February, 1904. The next month, Nott proudly informed a customer that it was "the only concern in the U.S. today that . . . manufacture the entire

line independent of any Trust or combination." F. S. Seagrave warned Nott in May. "We expect you will have competition on the aerial truck from the new Internation[al], that is to say the American LaFrance Company," and in June again cautioned, "we are well informed that the American Trust or a new Combine is going to be a strong force in the mar[k]et." As late as 1910, Seagrave referred to American-LaFrance as "the trust."³⁰

In reality, the fire apparatus business after 1904 divided among half a dozen major suppliers, of which American-LaFrance was simply the largest, with Nott an effective competitor. Ahrens (reorganized as Ahrens-Fox in 1908) and Amoskeag shared with them the bulk of the market for steam fire engines. Waterous concentrated on gasoline-engine pumpers, making most of its sales to smaller cities in the Midwest and Canada. Seagrave, which achieved national prominence by patenting a spring hoist for aerial ladders in 1901, successfully contested the market for ladder trucks and water towers with American-LaFrance. Other firms such as Pirsch edged into larger market shares for lighter equipment.³¹

Nott's ambition took second to none. Where American-LaFrance dubbed its steamer the "Metropolitan," and Ahrens marketed the "Continental," Nott transcended geographic limits by naming its steamer the "Universal." By August, 1905, it had delivered 50 steamers to 48 cities, and had nine more under construction for seven cities. Nott spiral-tube boilers replaced older boilers on 11 steamers in nine cities. In November, with a three-month backlog of orders, Nott decided to expand its Central Avenue factory to half again as much space. Production in the larger plant ran from 30 to more than 50 steamers a year, sold to customers from New York and Buffalo in the East to Seattle and Los Angeles in the West, from Milwaukee and Minneapolis in the North to Atlanta and New Orleans in the South. Multiple orders from large cities like New York and Chicago kept the plant at full capacity.³²

Bitter competition still characterized the market. When American-LaFrance brought out a patent spring-hoist aerial ladder in 1904, Seagrave bent every effort to keep its own design foremost. Nott salesmen handling the Seagrave line sometimes found themselves in a difficult position. When, for example, Winnipeg requested bids for a steamer, aerial, and water tower in 1904, Nott salesman Emmett Browning responded on behalf of Nott for the steamer and Seagrave for the ladder and tower. Seagrave confidently told Browning, "By their own description, we understand thoroughly that their [American-LaFrance] truck is vastly inferior to ours, but what it lacks in actual quality, they will make up by lying, and their usual well known methods."³³

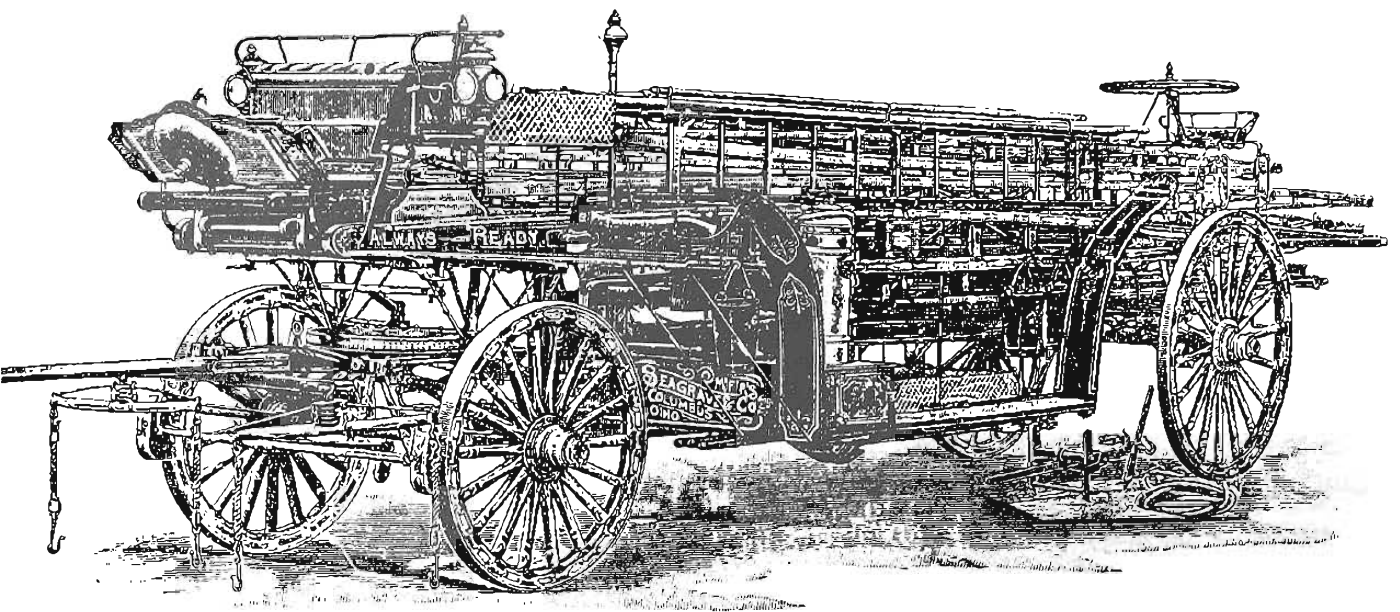
²⁹ *Fire and Water Engineering*, April 25, 1903, p. 167; *New York Times*, Jan. 8, 1904, p. 9, Jan. 20, 1904, p. 11; Hass, *Dean of Steam*, 167. A reorganization plan on Oct. 1, 1903, merged the American and International companies. James R. Clarke, president of American since Sept. 10, 1903, was named receiver for the International Co. on Jan. 6, 1904.

³⁰ *Fire and Water Engineering*, Jan. 16, 1904, p. 27. April 9, 1904, opposite p. 150-151; R. E. King to Nott Fire Engine Co., Feb. 9, 1904, in Kansas City, Mo., folder: [W.S. Nott Co.] to Percival C. Edwards, Feb. 9, 1904, attached to undated contract in Amasa, Mich., folder: F.S. Seagrave to E.P. Browning, May 2, June 1, 1904, in Winnipeg, Manitoba, folder; E.M. Lee to Browning, June 15, 1910, in North Vancouver, B.C., folder.

³¹ See *Fire and Water Engineering*, 1904-10.

³² *Fire and Water Engineering*, Aug. 12, 1905, p. 90; *Minneapolis Journal*, Nov. 3, 1905, p. 7. New York City bought 20 Nott steamers from 1903 through 1910; Calderone and Lerch, *Wheels of the Bravest*, 40-53; *Fire and Water Engineering*, Sept. 1, 1909, p. 169-170. Estimate of production made from incomplete record of manufacturer serial numbers.

³³ Seagrave to Browning, May 2, 1904, in Winnipeg folder.



SEAGRAVE COMPANY letterhead, featuring a fire engine bearing the motto "Always Ready," 1904

Two days later, however, Seagrave worried that the "La France people are likely to be heard from with their imitation truck," and that the "Waterous people would bid [for American-LaFrance] both on that [water tower] also Aerial Truck unless some compromise is made." He suggested a deal to allow the Waterous agent to bid on behalf of Seagrave instead, with Browning getting part of the commission. However, when Browning objected to allowing another agent into his exclusive territory, Seagrave hastily wrote "Friend Browning" to reassure him, but pleaded that he "fix things so that we are sure of that Aerial and Tower. . . . We want those orders awfull bad. fix it to get them for us."³⁴

A month later, Seagrave wrote Browning that he had advised the Waterous agent to join with Browning "and put in such separate bids as will in either case give the trade to my goods and that you and they share the agents profit thereon." Seagrave on his own next offered \$300 to the Waterous agent to stay out of the bidding against Seagrave, half of it to come from Browning's commission. The unscrupulous Waterous agent, however, demanded in return that Nott stay out of bidding on the steamer and upped the ante to \$450. So desperate was Seagrave for the sale (apparently, because it included the first spring-hoist water tower offered by his firm) that he accepted the agent's terms. Browning would have none of it. He went ahead with his bid for Nott and Seagrave (the latter complaining that he was "terribly disappointed")—and won the sale.³⁵

Rivalry with Waterous actually pitted Nott against another Twin Cities firm. The Waterous Engine Works had manufactured fire apparatus and pumps in St. Paul since 1888. It built up a market in smaller towns and cities of the Midwest by offering inexpensive ver-

sions of large-city equipment: a straight-frame, horizontal steamer, an innovative hand-drawn aerial ladder truck, and a variety of hose carriages and reels. It also sold an upright, crane-neck steamer that found buyers in larger cities as far afield as Springfield, Massachusetts. In 1898, it brought out a pumper powered by a gasoline engine and drawn by hand or horses. Waterous had retained its right to market this machine while it was part of the International trust, and the pumper continued to sell widely in small towns and villages across the country after the St. Paul firm broke away in 1904. The Winnipeg competition suggests that Waterous initially remained close to the trust's successor, American-LaFrance, but in the fickle world of business alliances, by 1908 Waterous was acting as Canadian agent for Nott chemical engines.³⁶

Western and Canadian markets remained important for both Nott and Seagrave production of lighter equipment. "When do you think? They will have our

³⁴ Seagrave to Browning, May 4, 10, 1904, in Winnipeg folder.

³⁵ Seagrave to Browning, June 1, 6, 13, 20, 1904, in Winnipeg folder; *Fire and Water Engineering*, July 28, 1906, p. 420.

³⁶ *Fire and Water*, Aug. 25, 1888, p. 91, Jan. 5, 1889, p. xv, July 25, 1896, p. 361-362, Oct. 2, 1897, p. 367; *Fire and Water Engineering*, Aug. 13, 1904, p. 78, Oct. 7, 1905, p. 219, Oct. 14, 1905, p. 229; "Mgr. Wpg. Branch," The Waterous Engine Works Co. Ltd. to W.S. Nott Co., Dec. 8, 1908, in Waterous Engine Works folder; Clarence E. Meek, "From Hand Cranks to Self-Starters," *Fire Engineering* 113 (Aug., 1960):722-723; John M. Peckham to author, Oct. 11, 1986. Waterous, like Nott, pioneered but failed to compete successfully in building motor fire apparatus. It continued to build fire pumps, however, and remains, as a division of Amhoist, a major supplier of pumps for fire apparatus.

new waggons here," inquired a Nott agent in 1908 from Victoria, British Columbia. "[W]rite to Seagrave & tell him to do his best work on these as I want to show those hobos out here what sort of apparatus is manufactured in the East." Competition had developed in this market by 1909, when Nott's Winnipeg agent advised, "we find it practically impossible to sell your chemicals in competition with the Oberchain [sic] & Boyer machine, unless we had a cheaper machine to offer. We have just . . . lost another sale simply on account of price." Sales methods in all markets continued to be irregular when deemed necessary. "I have also gone further," wrote one agent after a successful sale of Seagrave equipment in 1913, "and paid the commission that was agreed upon. The party wanted this immediately." There are strong implications in his letter that the party was the fire chief.³⁷

DESPITE competition, sales remained so strong that Nott (as well as Seagrave and Ahrens-Fox) had to pass up exhibiting products at the 1909 conference of the National Association of Fire Engineers because of their press of work. By 1910, however, it was clear that motor fire apparatus would command a growing share of future orders. Nott already had some experience with building internal combustion engines. Its original 1901 line of apparatus had included a motor-powered rotary pumper, similar to the Waterous engines, that appealed to volunteer fire departments wanting pumping capacity without the constant attendance needed to keep

steam fire engines ready for operation. Nott announced construction of both a motor-driven pumper and a motorized steamer in late 1910.³⁸

The steamer, built for New York City, mounted a standard second-class Nott boiler and pump on an enormous, eight-ton 100-horsepower motor-driven chassis. New York did not find it a success. The motor pumper, equally large, featured a three-cylinder piston pump rated at 1,000 gpm. In 1912 tests, it delivered 1,275 gpm at 171 pounds-per-square-inch pump pressure, superior to most modern-day pumpers, but it vibrated so badly it found no buyer. Nott had more success with a line of rotary pumpers introduced in 1912. Minneapolis, St. Louis, New York, and Chicago were early buyers. Offered with four-, six-, and eight-cylinder engines capable of pumping 600, 800, and 1,200 gpm, the rigs suffered from large, clumsy chassis with an outlandishly high center of gravity, and less-than-reliable motors. A 600-gpm pumper tested at the National Association of Fire Engineers' conference in 1913 achieved its rated capacity, but failed to finish a six-hour pumping test.³⁹

No American city ordered steam fire engines after 1914. American-LaFrance, Ahrens-Fox, and Seagrave poured large amounts of capital into design, tooling, and production of motor fire apparatus, and new builders such as Webb and Robinson entered the national field. Nott faced new competition after 1910 even in its regional small-town market from another Minneapolis firm, the Northern Fire Apparatus Company—which, ironically, in 1920 would build a plant on 18th Avenue Northeast, a few hundred feet away from the Nott factory.⁴⁰

Nott tried to respond with a whole new line of Universal motor apparatus in 1914. Its design was startlingly modern, with direct drive to the rear axle (as opposed to the more common chain drive), a streamlined radiator, semienclosed cab, built-in tool compartments, and an enclosed pump mounted at the running-board level. It sold reasonably well, primarily to western cities, but not enough to overcome Nott's design failures of the previous three years and the huge head start in the motor fire apparatus market gained by its competitors. Faced once again with the need for major investment to remain in the market, Nott refused to take up the challenge. At the end of 1915, W. S. Nott ceased production of its own chassis and terminated the Nott Fire Engine Company. The parent firm, however, continued to produce chemical engines for small towns in its Central Avenue plant; particularly popular after 1913 was the "Victor" model mounted on a Model-T Ford chassis specially built for it.⁴¹

W. S. Nott had remained an active sales agent for Seagrave even when its subsidiary was producing motor apparatus. On occasion, its Seagrave sales representa-

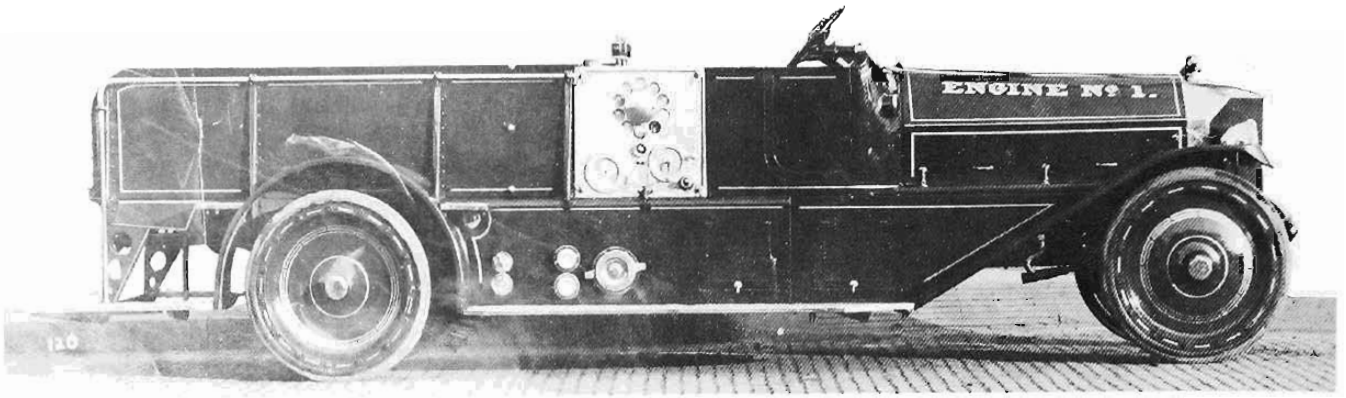
³⁷ Thomas Davis to Browning, July 5, 1909, in Victoria, B.C., folder; "Mgr. Wpg. Branch," The Waterous Engine Works Co. Ltd. to W.S. Nott Co., Dec 8, 1908, in Waterous Engine Works folder; [Browning] to the Seagrave Company, Dec. 2, 1913, in Wichita, Kans., folder. The competing firm was Oberchain and Boyer of Logansport, Ind.

³⁸ *Fire and Water Engineering*, Sept. 1, 1909, p. 169-170, Nov. 9, 1910, p. 321; Peckham, *Fighting Fire*, 97; Meek, "Hand Cranks," 722-723.

³⁹ *Fire and Water Engineering*, Feb. 22, 1911, p. 119, Mar. 15, 1911, p. 181, Mar. 22, 1911, p. 187, Sept. 25, 1912, p. 234, Mar. 26, 1913, p. 202-203, Sept. 10, 1913, p. 217-223; Meek, "Hand Cranks," 722-723; Calderone and Lerch, *Wheels of the Bravest*, 53, 56.

⁴⁰ Walter P. McCall, *American Fire Engines Since 1900* (Glen Ellyn, Ill.: Crestline Publishing Inc., 1976), 23-46; Ditzel, *Fire Engines*, 188-194; Sanborn Map Company, *Insurance Maps of Minneapolis, Minnesota 8* (New York: The Company, 1913, updated to 1928): 966; City Planning Commission, Minneapolis, map, Ward 9, District N, Block 6, in "Building and Housing Survey" (Minneapolis: City Planning Dept., July 1, 1937); *Minneapolis Tribune*, Dec. 11, 1910, p. 34, Dec. 25, 1910, p. 20. Northern Fire Apparatus became the Northern Pump Company, then Northern Ordnance, and remains in business as a subsidiary of FMC.

⁴¹ *Fire and Water Engineering*, Nov. 18, 1914, p. 376, Jan. 5, 1916, p. 8. See, for example, Proposal and contract, Sept. 17, 1915, Fox Lake, Ill., folder, and Contract, Nov. 24, 1916, Bedford, N.J., folder.



NOTT'S attempted comeback vehicle, about 1914, featuring a streamlined, startlingly modern design

tives even bid against agents for the Nott Fire Engine Company. When the latter went out of business, however, Nott became an agent for its former archrival, American-LaFrance, in place of Seagrave. Nott's abrupt abandonment of Seagrave probably represented a careful business judgment that American-LaFrance would prove a stronger supplier in the ultracompetitive field of motor fire apparatus. At the same time, the difficulties of working with the autocratic, nervous, and sometimes erratic F. S. Seagrave are evident in the Nott files. Seagrave remained an old-style entrepreneur, controlling all decisions in his firm at a time when sales agents negotiated as much with their supplier as with their customers. Salesmen had the delicate task of balancing their suppliers' prices against a price to the customer low enough to win the sale, still leaving a balance sufficient for their firm's profit and their own commission. The Nott correspondence is filled with arguments between Seagrave and his agents over factory price quotations. Emmett Browning was emphatic to his friends on the ease of working with American-LaFrance as compared with Seagrave.⁴²

AFTER 1916 Nott diversified its industrial supply business as the advance of electrical power reduced its market for leather belting. Auto tires, batteries, pipe lagging, radios, refrigerators, and roofing were only a few of the many products Nott sold as it became more a jobber than a manufacturer. H. E. Penney rejoined the Minneapolis Fire Department as master mechanic, where he built more than 30 pieces of motor fire apparatus for the city from 1920 until he retired in 1927. Although Nott seems to have dropped production of its Model-T chemical engines after 1918, it continued to build a limited number of chemical engines and hose wagons on commercial truck chassis in the early 1920s. It remained agent for American-LaFrance and a wide line of accessory fire equipment, hose, and supplies. Then, in 1925, the Nott company re-entered the major apparatus market.⁴³

Its reasons resembled in one respect those that had prompted its first efforts in 1901. American-LaFrance

apparatus was apparently too expensive for many small towns looking for modest-sized rigs. Nott announced a new line of pumpers and triple combinations (carrying three components: a pump, hose, and chemical or "booster" water tank), to be marketed as Universals, selling for \$1,500 to \$3,000 less than comparable American-LaFrance products. Both advertising and name plates on the rigs attributed the line to Nott, but com-



PIERCE ARROW chassis with a chemical engine, 1924, built by H. E. Penney after he left the Nott Fire Engine Company

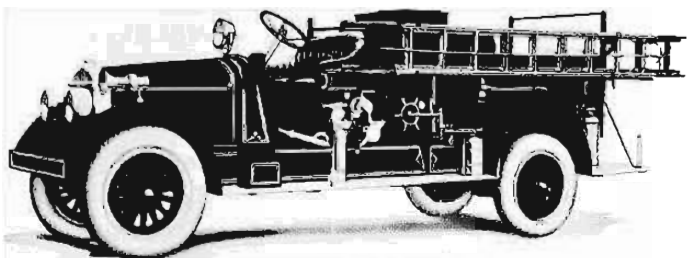
pany records reveal it was built for Nott by the Luverne Fire Apparatus Company of Luverne, Minnesota. Production of the new line ran from 10 to 25 rigs per year from 1925 through 1928, then fell off sharply with the onset of the Great Depression. Sales of the 75 or more rigs produced occurred almost entirely in Minnesota and immediately adjacent states. As introduced, the design used a Continental engine and Northern pump with capacities of 350 gpm to 500 gpm, limiting sales to small towns. A larger Continental engine in 1928 and

⁴² Pencil notes of bids, Sept. 16, 1913, Vancouver folder; *Fire and Water Engineering*, Jan. 5, 1916, p. 8; folders in general files series, 1902-15; Heath interviews. Donald Heath's father, Willard B. Heath, was a close personal friend of Browning.

⁴³ See listings and advertisements in annual *Minneapolis City Directory*, for example, 1927, 103; Heath, *Mill City Firefighters*, 100-101, 105, 131-132, 219-223; Nott History file.

Waterous pump in 1930 increased capacity to 600 gpm and even 750 gpm, but efforts to interest larger cities failed, particularly as municipal financial problems in depression years drastically limited the market for all fire apparatus. The Luverne company built its last rig for Nott in 1931.⁴⁴

W. S. Nott continued to build some fire apparatus on commercial truck chassis for the small-town trade, as well as selling a large catalog of hose, nozzles, lad-



UNIVERSAL rig, built for Nott by the Luverne firm

ders, extinguishers, and other firefighting gear. It typically took orders for rigs to be built in its Minneapolis plant on chassis supplied by truck dealers in the towns ordering apparatus. These rigs were fitted out with equipment that Nott ordered from other national suppliers. In 1936, however, all of its personnel engaged in municipal fire department sales faced a threatened investigation by the Minnesota public examiner into alleged kickbacks to officials, particularly in the iron range towns. It was not the first time Nott had faced

⁴⁴ Bid document, June 8, 1926, in Rice Lake, Wis., folder, Memorandum of agreement, W.S. Nott Co. and Luverne Fire Apparatus Co., Jan. 2, 1926, in Contract with Nott Co., 1926, folder, and other folders, 1925-33—all in Luverne Fire Apparatus Co. files series. The Luverne Automobile Company began manufacture of fire apparatus in 1916 and remains in business as a fire apparatus maker. *Fire and Water Engineering*, Mar. 22, 1916, p. 192.

⁴⁵ Interview with Robert Morgan, April 4, 1985, notes in author's possession; *Minneapolis Tribune*, Jan. 17, 19, 30, 31, 1929, Nov. 14, 15, 1930—all p. 1; George H. Mayer, *The Political Career of Floyd B. Olson* (Minneapolis: University of Minnesota Press, 1951), 15.

⁴⁶ Here and below, see Morgan interview; W.S. Nott Co. catalog, *Firefighting Equipment and Supplies* (Minneapolis, 1941); Terry Fiedler, "How A Fire Truck Company Stays Out of the Red," *Minnesota Business Journal*, May, 1984, p. 34-39. Six Nott steamers are known to be preserved: one by the Tucson Fire Department, one by the Los Angeles Fire Department, one by Wainwright's Lehigh Valley Museum at Bethlehem, Pa., and three by private collectors in the New York State area; Gary K. Aardahl to Robert W. Morgan, Aug. 26, 1977, James B. Cain to Nott Co., Jan. 11, 1980, Warren I. Shumaker to R.W. Morgan, May 21, 1981, R.W. Morgan to Thomas E. Wainwright, Aug. 10, 1983, all in Nott History file.

public scandal. In 1929 Hennepin County Attorney Floyd B. Olson, relentlessly pursuing rumors of graft on the Minneapolis City Council, brought indictments against five aldermen and seven businessmen. These included Nott salesman Emmett Browning, charged with having paid a \$700 bribe to an alderman to secure a fire-hose sale. Browning, one of only two of those charged who pleaded innocent, won acquittal in a jury trial, largely on the basis of his personal reputation. Publicity of the graft investigation helped Floyd Olson on his way to winning the governor's office in 1930.⁴⁵

The Nott company managed to escape damaging public scandal in 1936, but the incident led toward its eventual and final withdrawal from fire apparatus production in order to concentrate on the firm's far greater (and less risky) trade in industrial supplies and wholesaling. It found a successor to its fire apparatus business in Elmer H. Abrahamson, fire chief and town blacksmith for Lindstrom, Minnesota, who had built a successful rig for his department in 1938. Nott arranged to transfer its apparatus business to Abrahamson, helping him to set up the Minnesota Fire Equipment Company in 1939. After a company reorganization in 1940, Nott scrapped or sold all equipment and inventory for fire apparatus production remaining in its Central Avenue plant. It remained a jobber for fire department supplies, however, and solicited sales and supplied accessories to Minnesota Fire Equipment until 1942.⁴⁶

This newly founded firm went on to become the General Safety Equipment Corporation, the state's largest builder of fire apparatus, now located in North Branch. It supplies the bulk of fire trucks for the Twin Cities area and communities in a multistate region. Nott for many years retained significant business in industrial fire protection, offering extinguishers, equipment, engineering, and training, but now concentrates on power transmission for industry—no longer leather belts, but such modern technology as electric motors, hydraulic drives, and V-belt drives. Its plants in north-east Minneapolis and Bloomington provide comprehensive design and engineering services for materials-handling systems, and the company also markets conveyor belts and forklift trucks. Only in its archives and in the handful of Nott steamers still found in fire department museums and private collections remains the evidence of how a Minnesota business fought the "fire engine trust" at the turn of the century—and won.

THE DRAWINGS on p. 174 and p. 177 are from William T. King, *History of the American Steam Fire-Engine*; the photo on p. 175 is courtesy of the Extra Alarm Assn.; that on p. 180 is courtesy of the Minneapolis Fire Dept.; those on p. 182 are in the 1905[?] Nott catalog; p. 186 (top) is in the author's collection; all others are in the historical society collections.



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