STEAM FIRE ENGINES

Clapp & Jones

Manufacturing Company

Hudson, N.Y.

IMPROVED WATER WORKS MACHINERY, TENDERS
HOSE CARRIAGES, FIRE DEPARTMENT SUPPLIES, ETC.

RAND AVERY COMPANY, PRINTERS
BOSTON, MASS.

CLAPP & JONES
MANUFACTURING COMPANY

HUDSON, N.Y.

BUILDERS OF

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WE TAKE PLEASURE in presenting a new edition of our Circular, and embrace the opportunity to return to our patrons and friends our hearty thanks for the very liberal patronage we have received from all parts of the United States and from foreign countries. We desire, also, to acknowledge our obligations to the Chief Engineers of the various departments where our Engines are in service, and also to the Engineers who have run them, for their kindness in showing their Engines, and explaining the advantages they possess.

The CLAPP & JONES FIRE ENGINE has been before the public over twenty-five (25) years, and during this time it has achieved a wonderful success, there being at present over five hundred (500) of these machines in service.

Testimonials, records of trials, and letters of recommendation, have accumulated to such an extent that we have omitted them from this Circular. We are prepared, however, to furnish overwhelming evidence in this line to any who desire it, and will be pleased to do so at any time.

We now build six (6) separate and distinct sizes of our Steamers, and are therefore fully prepared to furnish an Engine adapted to meet the wants of any locality.

All of our Engines are constructed of the very best materials known for the various parts, and the pieces are made to conform to standard gauges; so that all the pieces and parts are of the same dimensions in engines of a corresponding size.

We aim to build the best Steam Fire Engine in the market, and intend to keep ahead of all competitors in the future, as we have in the past; we are, therefore, continually adding improvements to our steamers.

We should be pleased to furnish specifications, prices, and any other information required, either for Fire Engines or the complete equipment of a Fire Department.

CLAPP & JONES MANUFACTURING CO.

HUDSON, N.Y.

NOTICE.

WE TAKE THIS METHOD of calling attention to the fact that the City of New York, in order to determine which was the best Steam Fire Engine built, decided to have a competitive trial between the "Ahrens," "Amoskeag," and CLAPP & JONES ENGINES.

Trial took place at New York City. The CLAPP & JONES ENGINE was the only Engine that worked the twelve hours; and it maintained the greatest steam and water pressures throughout the day, and threw water farther than either of the other Engines.

The superiority of the CLAPP & JONES ENGINES was so manifest and great over the "Ahrens" and "Amoskeag" Engines, that the Fire Commissioners of said city have since purchased *thirty-one* (31) CLAPP & JONES ENGINES, and have had CLAPP & JONES BOILERS placed on *thirty-three* (33) *Amoskeag Engines* belonging to that Department.

This should be sufficient indorsement of the CLAPP & JONES ENGINES, as nowhere is there so much necessity for a first-class Engine as in New York City, where they are subjected to such wear and tear, and perform more actual service at fires than in any other city in the world.

We are the builders of the Pumping Machinery on the Fire Boats belonging to the cities of New York, Chicago, and Brooklyn.

MATERIAL AND WORKMANSHIP.

WE INVARIABLY USE the best materials of the different kinds used in their construction. The pump is entirely of composition, so that salt or any other impure water will not injure it. The workmanship cannot be questioned, for we employ none but first-class workmen. We put on any style of trimming that may be required.

The axles, frames, braces, etc., are made of Bessemer Steel, or whatever material is best suited for such piece or part. The engine will be hung on Elliptic or Rubber Springs as desired.

The Engine complete presents a very handsome appearance. The Boiler will be covered with a Russian Iron or Brass Jacket, Nickel Plated, as desired.

The Engine is furnished with steam and water pressure gauges, gauge cocks, surface blow cocks, thaw hose, water gauge, signal whistle, variable exhaust nozzle and steam jet, suction hose with suction basket, two (2) brass hose pipes, five (5) nozzles (assorted sizes), one (1) pipe holder, oil can, fire shovel, poker, wrenches, also box for tools, two (2) name plates, which, together with the side or coach lamps and lanterns, will be engraved as desired. The Engine will be arranged so as to be drawn by horse or hand, as desired.

We build six (6) separate and distinct sizes, and are therefore prepared to meet the wants of all.

The special claim of superiority which we make for our Engines, beside, simplicity and durability, is their great power. Our Engines will handle larger streams than engines of the same weight of any other build. We are the only makers who build two sizes (or even one) of engines that handle successfully a two-inch stream.

THE FOLLOWING POINTS of superiority are especially claimed for the CLAPP & JONES ENGINE:—

1. *That it is the simplest Engine now built, and therefore less liable to accident or to get out of repair than any other.*
2. *That the Boiler has extraordinary capacity for making steam, and will stand the strongest firing without injury.*
3. *That steam can be generated with very great rapidity, the Engine started, the throttle valve opened full, and the steam increased, while working, to any pressure required.*
4. *That dirty or salt water can be used, when necessary, without injury to pump or engine.*
5. *The Pump is a model of effectiveness and simplicity. It has few working parts, large water courses, durable rubber valves, and can be taken apart in a few moments for cleaning, if necessary.*
6. *By the use of a connecting rod, instead of link and sliding box, as in other engines, a large saving is effected in friction and seventy-five per cent in cost of oil.*
7. *The stuffing boxes are all outside, and can be taken up while the engine is running.*
8. *The engine is so hung as to bring the centre line of pressure in the centre of the framework, giving the greatest strength with the least weight of material, and entirely avoiding the tendency to spring or bend.*
9. *By our Variable Exhaust Nozzle on the boiler, the engineer can regulate the force of the draught, and control the fire so as to make just the quantity of steam required.*
10. *The Engines are built as light as is consistent with the required strength of the respective parts, and furnished with easy springs and broad wheels to make them run light over any kind of roads.*
11. *Every part of the engine is easy of access, and repairs can be made at any ordinary machine shop, thereby saving the trouble and expense of returning the engine to the manufactory.*
12. *The different parts of the Engine are manufactured in duplicate, so that any piece injured or destroyed can be supplied to order with the certainty of fitting.*
13. *Any ordinary engineer can be instructed in an hour so as to be qualified to run and take charge of the Engine.*

DESCRIPTION OF ENGINE.

OUR ENGINE is what in common phrase is called a "Piston Engine," which, after many attempts to supersede it, is by all first-class engineers and mechanics conceded to be the only true method of working steam and water.

The machinery is so arranged that the connections between the steam and water cylinders are direct through piston rods, and not through shafts and gear, as in some engines, nor through cranks and connecting rods, as in others. The friction is no greater while working through long lines of hose, or during the hardest work, than when doing the lightest.

The economy of this principle is the use of steam; and the very small amount of friction while working, requiring much less fuel and oil, and causing very little wearing of parts, makes it specially worthy the attention of those in want of a first-class Steam Fire-Engine.

CONSTRUCTION.

THE CONSTRUCTION of our Engines is so simple that they are not liable to get out of repair, and do not require an engineer so well skilled as more complicated machines. They are so arranged that the centre line of pressure comes in the centre of the framework, which gives the greatest strength with the least weight of material, enabling us to produce an Engine to do the same work with much less weight than any other.

DUPLICATE PARTS.

AS, IN THE COURSE of years, the working parts of Steam Fire Engines (like those of other machinery) will wear out, we build all such parts of our machines in duplicate; we can, therefore, ship any part without delay. In sending orders for such parts, kindly give the number on the builder's plate on the machine, as a complete mechanical record is kept by us of all engines shipped from our works.

DELIVERY OF ENGINES.

A COMPETENT ENGINEER will accompany every engine shipped from our Works (if within a reasonable distance), whose duty it shall be to submit the machine to such tests as may be required, and to place it in service; also to instruct the local engineer appointed to run the machine, fully in his duties regarding the proper care and management of the same.

Engines for export, and those shipped to a long distance, will be accompanied by full directions for setting up and operating them.

GUARANTY.

WE FULLY WARRANT our machines as regards workmanship, materials, construction, finish, and working qualities; and we agree to replace at our own expense any parts that may fail, such failure being properly attributable to defective material or workmanship.

We also guarantee our engines to perform excellent fire duty through any lengths of hose up to three thousand feet.

THE FOLLOWING IS A DESCRIPTION OF OUR

SECTIONAL COIL TUBE BOILER.

THE SPECIAL DESIGN of M. R. CLAPP'S PATENT COIL BOILER is for Steam Fire Engines, but it is of equal value in any place where economy of space, economy in fuel, quick and steady steaming, are desired; and, above all, its safety under any and all conditions.

This is insured by the natural and free circulation of the water over all of the surfaces that come in contact with the fire, and this holds good as long as there is any water in the boiler. It will also bear the hardest firing, even to the making of one-horse power for every square foot of fire surface. Its general plan is shown in the two annexed cuts.

Fig. 1 is a vertical section through the centre.

Fig. 2 is a sectional cut on a horizontal line, one-half being through the steam chambers; the other half is through the fire-box, just below the lower tube sheet.

Like letters on both cuts refer to the same parts.

a, a, is the outside shell, which extends the whole length of the boiler.

b, b, is the fire-box sheet, which is less in length, it going only to the lower tube sheet.

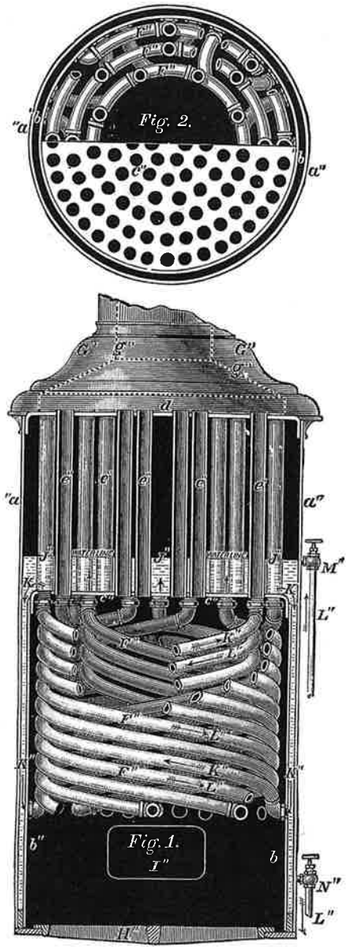
c is the lower tube sheet, showing all the tube holes. The heavy line circles show which are used for the coil tubes in the fire-box; the others are for the smoke tubes.

d is the upper tube sheet, which has holes only for the smoke tubes.

e, e, e, are the smoke or draught tubes, which also answer another very important purpose, — that of drying and superheating the steam. These are usually made of copper or iron, put in on a plan that insures their being tight at all times.

F, F, F, are the sectional coil tubes, the main feature of this boiler. They are in the form of a spiral coil, the spiral bend being enough to leave room for five others of the same size between, so that there are six of these coils in each circular row. The number of rows is determined by the size of the boiler and the amount of steam required.

Clapp & Jones Manufacturing Company.



SECTIONAL COIL TUBE BOILER.

Each coil is connected with the lower tube sheet by screw joints, all right-hand, that require no fibrous or elastic packing, an angle elbow being used to get the short bend at the end; the tubes then make about one turn around the fire-box, and are joined to the side sheet of the same with the same union used at its upper end, which makes a joint that never gets loose from any kind of work it may be liable to. These unions or couplings are made of different kinds of metal, and put together so that no two pieces of iron come in contact to corrode and stick together; and should it, from any cause whatever, become necessary to take these coils out, it can be done, and the same tubes replaced, without destroying any part of them, or damaging any piece so that it could not be used again.

G, G, is the ornamental dome or covering for the upper end.
g, g, is the smoke bonnet and pipes for concentrating the hot escaping products of combustion for the purpose of making a draught of air through the fuel.
H, grate bars.
I, fire door.
J, J, is the water line.

This height has been determined by experiment, yet should be varied a little to get the best drying effect of the coal. A coal that makes a flame would call for a higher range of the water line, while coal that produces heat without the flame would call for a lower range. This the engineer would soon find. The working of the boiler is as follows: The fire being started in the fire-box, as soon as the water in the coils begins to heat, circulation commences from natural causes (nor is it at any time necessary to use a hand-pump or any other artificial means for keeping it up, as has to be with some other kinds), the heated water passing up in the steam drum, and the colder water from the leg and drum taking its place, as is shown by the arrows in the leg, till the whole is heated to the steam-making temperature.

At this point steam pressure begins to show, which goes up very fast, as the water is all so near the steam temperature. Another good point is, that the pressure does not fall when the throttle valve is opened, as in all other kinds. Of course, it is better to carry the water at about the height shown, as a uniform pressure of steam is easier maintained, which is always desirable: yet the limit of safety is not reached till the water is nearly all out, or so long as it is not below the connection of the coils in the leg; and even at this point the only danger is in the damage to the coils from the heat when there is no water to protect them.

Heaters are almost universally used in connection with Steam Fire Engines, to keep the water hot, and in many cases to keep a few pounds pressure to shorten the time of going to work, should the fire be close at hand. This boiler has an advantage over any other for this kind of heating; the circulation is so perfect and free, that all the water in it is heated alike: so, when the fire is lighted, the steam starts immediately up, instead of having to wait till some cold water has been heated, that had not been reached by the very limited circulation there is in them, there being some parts that the circulation produced by the heater does not reach, leaving, of course, this water cold. In some kinds of boilers this is two-thirds of the whole amount, so the heater in these cases is more of a farce than a reality.

The arrows marked *K* show the direction of the circulation when working with the fire in the fire-box; those marked *L* show the direction of it when on the heater, which is directly opposite.

The outside pipe connected at about the water line is the outlet from the heater, and the inlet to the boiler, which carries the heated water over the crown-sheet, where it, as it gets cooler, enters the coils and then the leg, and from there to the pipe near the bottom of the boiler. This pipe leads to the heater, so that the water is kept moving just in proportion to the heat given it. Any kind of a heater can be used with the same result.

These boilers are made of the best boiler-plate steel, and thoroughly stayed; the riveting is thoroughly done, and each rivet finished while yet hot.

M shows the pipe and valve that brings the hot water from the heater.
N is the pipe and valve that leads from the boiler to the heater.
The valve in *M* is a stop and check combined.
The pipe in *N* has a trip-valve that is worked by hand or made automatic, as desired.

The boiler is peculiarly adapted for Steam Launches and Yachts, as it fills every desired requirement; that is to say, —

1. It makes steam quickly from cold water.
2. It makes steam very freely.
3. The space it occupies is very small for the work it does.
4. On account of its weight, it making and maintaining steam so easily, it requires a much smaller size of boiler than would otherwise be required.
5. Lastly, — and what appears to us to be a very important feature, and that is, safety, — it is the only boiler that we know of that it is possible to allow the water to get below the crown-sheet and not burn the boiler.

THE PUMP.

THE PUMP IS OF NOVEL construction, and is like a Chinese puzzle, so admirably does every thing fit; and, when working, the ease with which the immense bodies of water are handled is a mechanical problem not readily understood. Yet there is the fact that the work is done. The arrangements and proportions of its parts are such, and the displacement by the plunger so large in proportion to the space between it and the valves, that it will lift water to a very great height.

The Pump is made entirely of composition (copper and tin) having high tensile strength, as well as all of the pins, rods, etc., with no iron parts to rust. It is so constructed as to require no leather or other forms of packing, making friction for the plunger. It is self-packed and at the same time frictionless in its working, enabling the engine to maintain a high pressure and a high rate of speed for very long runs, with no danger of packing cutting or blowing out, which is of frequent occurrence in other pumps.

The Pump Heads are simply cages, fitted with inlet and outlet valves of the simplest form of construction, doing away with the necessity of spiral springs to bring the valves back to their places; their own elasticity being sufficient to firmly and quickly seat them, having no loss of action in its work. The form of openings in the head, together with the form and lift of the valves, insures the greatest ease in the flow of water into and out of the pumps, and entirely precludes the possibility of sticks, chips, or any other of the numerous obstructions which can pass the strainer, from in any way interfering with its perfect work. The ease with which the valves are removed (which can be done in less than five minutes), should this from any cause be desired, is an advantage had only in this pump. It is also furnished with a circulating or "churn valve," which controls a communication between the suction and discharge chambers, so that the Engine may be kept in motion to feed the boiler when it from any cause becomes necessary to shut off the stream, or for a relief when small nozzles are used, the water simply passing around throught his valve from one chamber of the pump to the other.

All of the packed joints are so made that the packing is not damaged by taking apart, and will last for years if simply left alone. It is held in place by a dovetailed form of groove, to which it is carefully fitted.

These pumps are made to gauges, and with all like parts interchangeable; that is, the valve chamber in one part will fit in any other part of the same pump, or in any other pump of the same size and style in use on our Engines, and it is the same with all other of its parts.

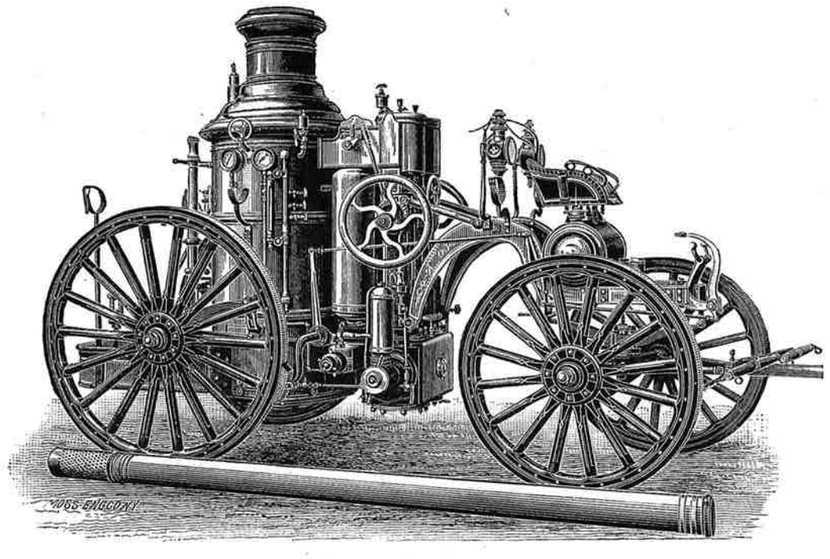
There are only two pieces in this pump that have any surface that can be worn by any kind of use, and these can be taken out and replaced without disturbing the pump, and at a very small cost, when, no matter how long it may have been in use, it will be as good for work as when new.

As corroborative evidence of the great power of our pump, as well as its durability, while making long, continued runs (often as long as two or three weeks at a time), we would state that it is in use on most of the large Fire Boats in the United States. Among many that are using them for this purpose, we would mention the Standard Oil Company, the New York, Brooklyn, and Chicago Fire Departments.

REBUILDING ENGINES.

WE MAKE A SPECIALTY of rebuilding Engines, and have probably rebuilt more engines of other make than our own, than all the rest of the manufacturers put together. What we mean by rebuilding is, to put the whole engine in perfect repair, and make it, when finished, better than new. We say better than new, for the reason that we put our Improved "Coil" Boiler on it, and furnish more steam for the cylinders than it is possible to furnish with any other make of boiler. If your Engine needs rebuilding, don't fail to have our boiler on it. Look at the "cut:" it speaks for itself.

We have over sixty (60) of our boilers on the Engines belonging to the New York Fire Department alone.



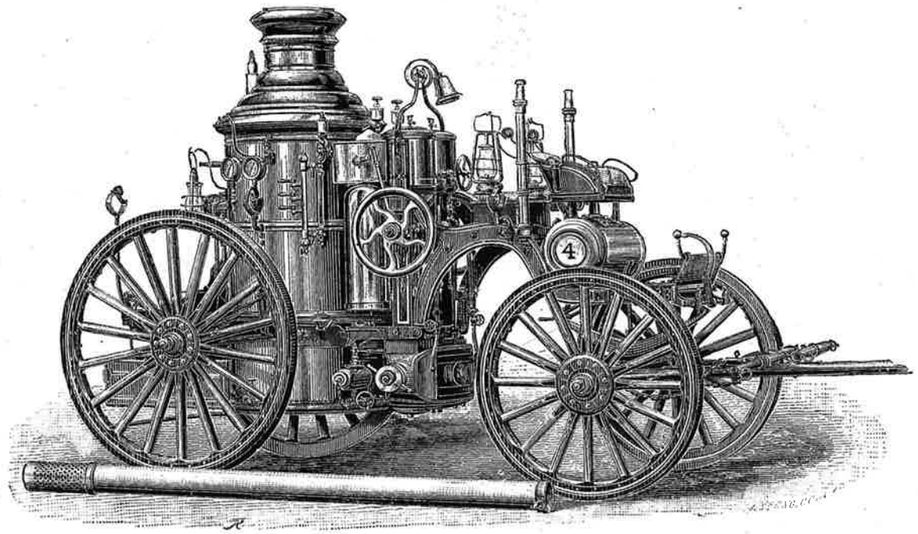
THE CLAPP & JONES STEAM FIRE ENGINE.

Size: Extra No. 1.

Weight: 8,200 pounds.

Capacity: 1,100 gallons per minute.

Dimensions: Steam cylinders, 9¾ inches by 8 inches stroke. Pumps, 5¾ inches by 8 inches stroke. Number of streams, from one to four. Length, 13 feet 7 inches; including pole, 24 feet 3 inches. Height, 9 feet 7 inches. Extreme width, 6 feet 6 inches. This engine will throw a two (2) inch stream from 290 to 325 feet.



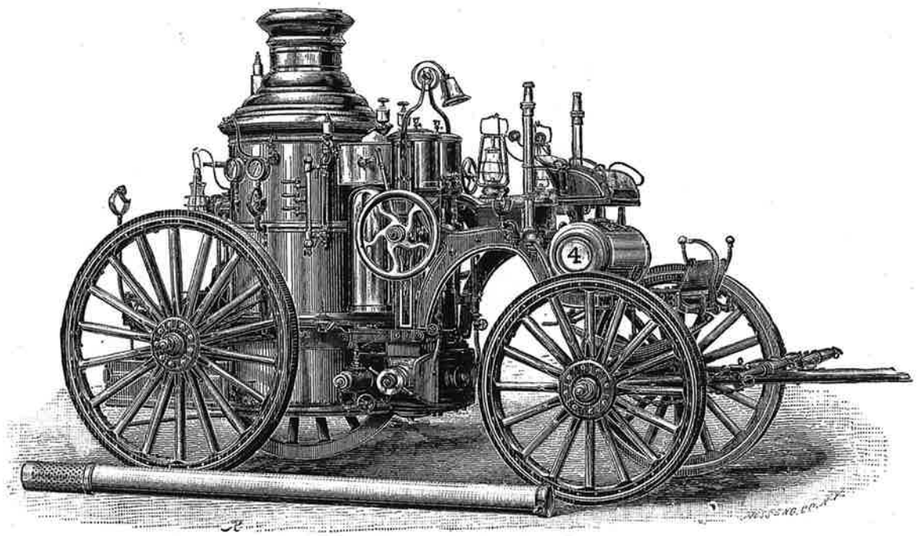
THE CLAPP & JONES STEAM FIRE ENGINE.

Size: No. 1.

Weight: 7,500 pounds.

Capacity: 850 gallons per minute.

Dimensions: Steam cylinders, 9 inches by 8 inches stroke. Pumps, 5½ inches by 8 inches stroke. Number of streams, from one to four. Length, 13 feet two inches; including pole, 23 feet 10 inches. Height, 9 feet 2 inches. Extreme width, 6 feet 6 inches. This engine will throw a one and three-quarters (1¾) inch stream from 275 to 300 feet.



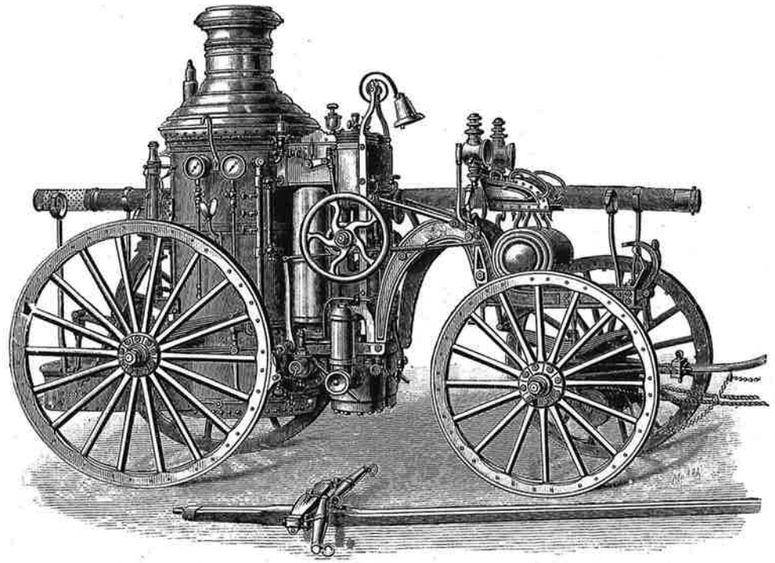
THE CLAPP & JONES STEAM FIRE ENGINE.

Size: No. 2.

Weight: 6,700 pounds.

Capacity: 700 gallons per minute.

Dimensions: Steam cylinders, 8½ inches by 7 inches stroke. Pumps, 5 inches by 7 inches stroke. Number of streams, from one to four. Length, 12 feet 10 inches; including pole, 23 feet 6 inches. Height, 9 feet, 2 inches. Extreme width, 6 feet 6 inches. This engine will throw a one and one-half (1½) inch stream from 275 to 300 feet.



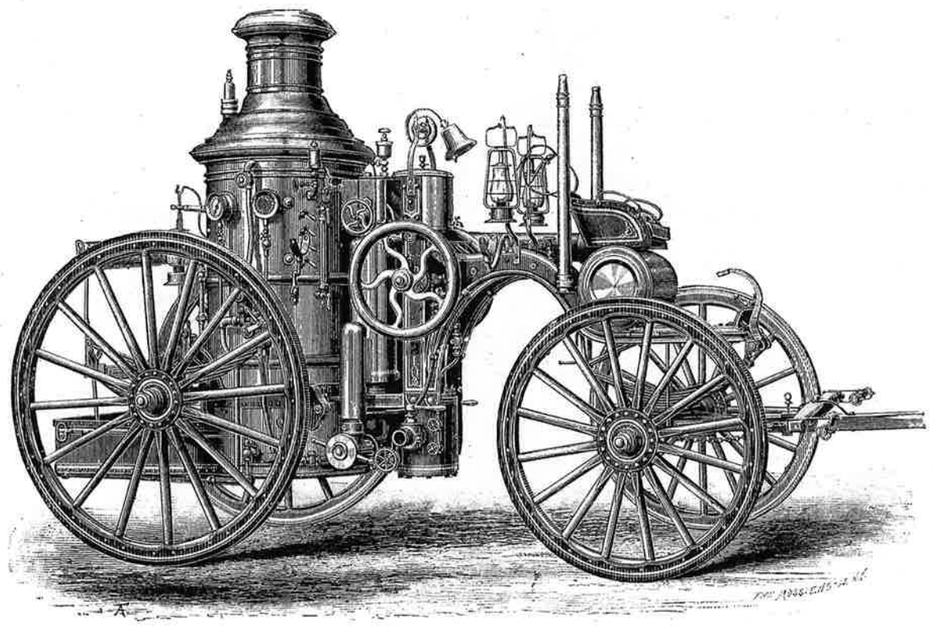
THE CLAPP & JONES STEAM FIRE ENGINE.

Size: No. 3.

Weight: 5,800 pounds; for villages, 5,400 pounds.

Capacity: 600 gallons per minute.

Dimensions: Steam cylinders, 7 inches by 7 inches stroke. Pumps, 4⅜ inches by 7 inches stroke. Number of streams, from one to four. Length, 12 feet 8 inches; including pole, 23 feet 4 inches. Height, 9 feet 2 inches. Extreme width, 6 feet 6 inches. This engine will throw a one and three-eighths (1⅜) inch stream from 275 to 300 feet.



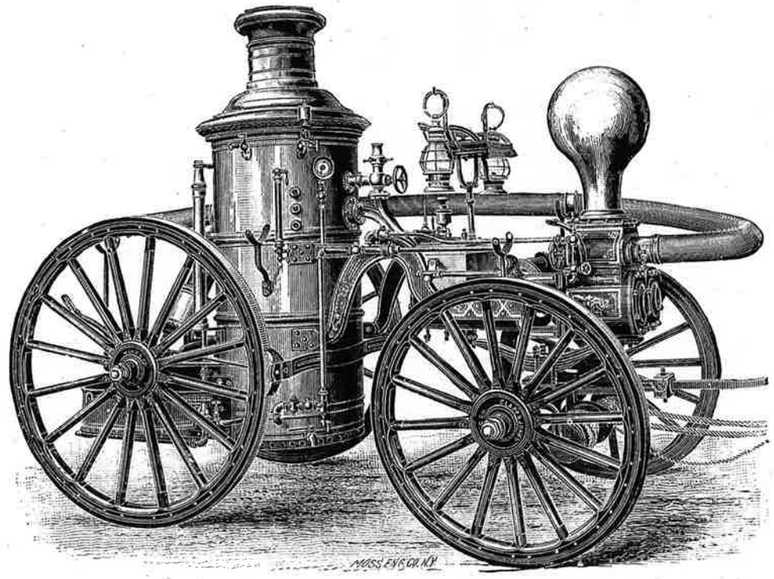
THE CLAPP & JONES STEAM FIRE ENGINE.

Size: No. 4.

Weight: 4,800 pounds.

Capacity: 500 gallons per minute.

Dimensions: Steam cylinder, 9¼ inches by 7 inches stroke. Pump, 5½ inches by 7 inches stroke. Number of streams, from one to four. Length, 12 feet 4 inches; with horse pole, 23 feet; with hand pole, 18 feet 4 inches. Height, 8 feet 5½ inches. Extreme width with horse pole, 6 feet 6 inches; with hand pole, 5 feet 7 inches. This engine will throw a one and three-eighths (1⅜) inch stream from 250 to 280 feet.



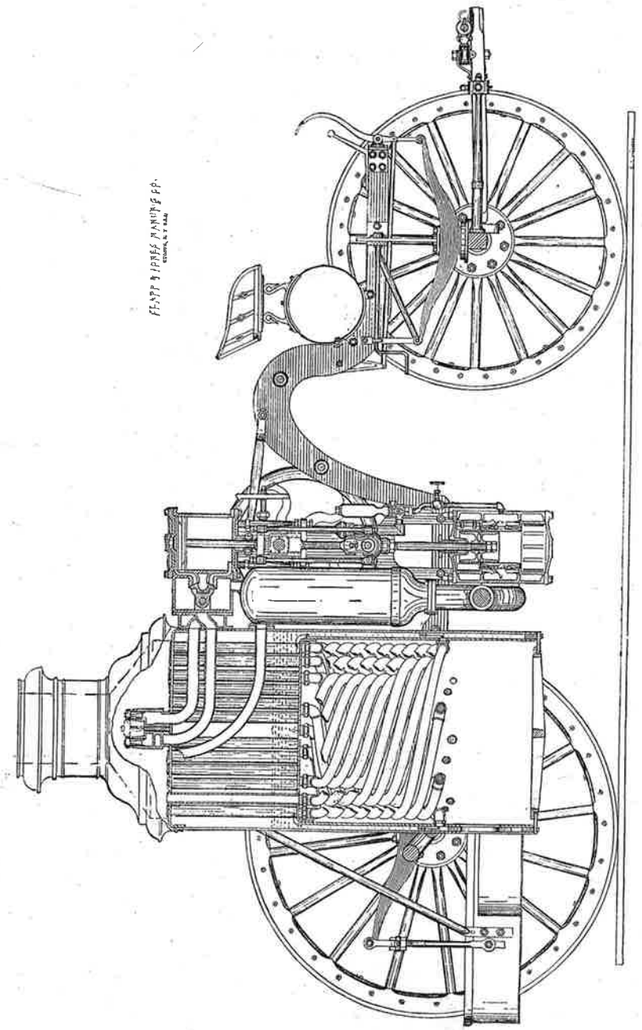
THE CLAPP & JONES STEAM FIRE ENGINE.

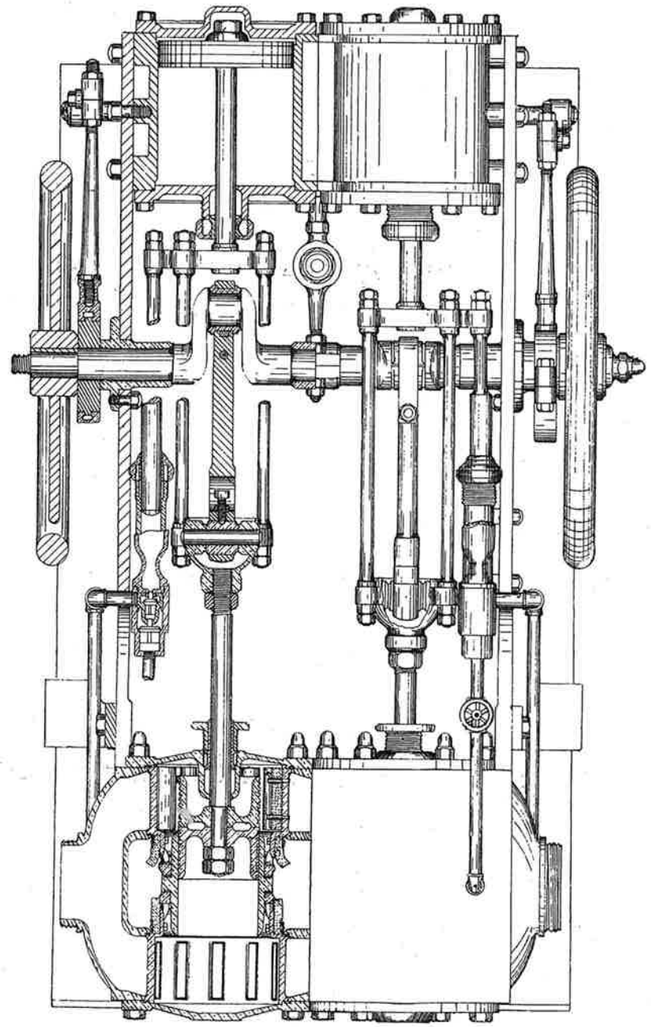
Size: No. 5.

Weight: 4,000 pounds.

Capacity: 400 gallons per minute.

Dimensions: Steam cylinders, 7 inches by 7 inches stroke. Pumps, 4⅜ inches by 7 inches stroke. Number of streams, from one to three. Length, 10 feet 4 inches; including horse pole, 21 feet; with hand pole, 16 feet 4 inches. Height, 8 feet 5½ inches. Extreme width with hand pole, 5 feet 7 inches; with horse pole, 6 feet 6 inches. This engine will throw a one and one-quarter (1¼) inch stream from 230 to 260 feet.





CONCLUSION OF THE REPORT OF THE COMMITTEE OF EXPERT ENGINEERS ON THE EXHIBIT OF STEAM FIRE ENGINES AT THE CENTENNIAL EXHIBITION HELD AT PHILADELPHIA IN 1876.

"CLAPP & JONES ENGINES Nos. 7 and 11 made the best record, and were the only ones, except No. 2 (Silsby) and No. 6 (Clapp & Jones), that went through all the trials without an accident sufficiently serious to interrupt their regular work. These (Nos. 7 and 11) are in most respects the strongest engines, and the most perfect in detail and finish. It is also quite clear that No. 7 (Clapp & Jones) is superior to all others in nearly every point that concerns the making-up of a good steam fire engine. It has done better work than No. 1 (Silsby), has stronger axles, a stronger bed-frame, and is better secured to the boiler; it is more accessible for repairs, is as convenient to work; its wheels appear to be strong enough, and in workmanship and appearance it is equal, if not superior. It uses less oil and less fuel. The bed-frame of No. 1 (Silsby) is so arranged that the front wheels may be turned under, and it has iron wheels, which will be considered of more or less importance. An effort has been made to place a just comparative value on both of these points."

SOME OF THE CITIES AND TOWNS USING "CLAPP & JONES" ENGINES.

NEW YORK CITY, 31 ENGINES.

Brooklyn, N.Y. (4).
Baltimore, Md. (4).
Albany, N.Y.
Troy, N.Y.
Washington, D.C. (7
Rochester, N.Y.
Utica, N.Y.
Cleveland, O. (2).
Boston, Mass.
Chicago, Ill., pumps on fire boats.
Racine, Wis. (3).
St. Paul, Minn.
Hartford, Ct.
San Francisco, Cal.
VALPARAISO, Chili (4).
Minneapolis, Minn.
Easton, Penn.
Peoria, Ill.
Mutual Life Insurance Co., Bayonne, N.J. (2).
Evansville, Ind.
Fort Deposit, Md.
Anderson, S.C.
North Manchester, Ind.
Long Branch, N.J. (2).
Spring Lake, Mich.
Morristown, N.J.
Dover, N.J.
Humane Fire Co., Easton, Penn.
Roundout, N.Y. (3).
Manistee, Mich.
Hudson, N.Y.
Palmer, Mass.
Northampton, Mass.
Mobile, Ala.
Greenbush, N.Y. (2).
Athens, N.Y.
Alpena, Mich.
Borough of Troy, Penn.
Castleton, N.Y.
Titusville, Penn.
Wenona, Mich.
Romeo, Mich.
Richmond, Va.
Corunna, Mich.
Williamstown, Mich.
Carrollton, Mich.
Tivoli, N.Y.
Borough of Stroudsburg, Penn.
Armour, Dole, & Co., Chicago, Ill.
Buckingham & Co., Chicago, Ill.
Pentwater, Mich.
Williamsport, Penn.
Chatham, Ontario.
Pittsfield, Mass. (2).
Lansing, Mich.
Chicago, Burlington, & Quincy R.R.
Gifford & Ruddock, Manistee, Mich.
Catskill, N.Y.
Merchant's No. 4, Mobile, Ala.
Greenville, Mich.
Reading, Penn.
Norwich, N.Y.
De Pere, Wis.
Columbus, Miss. (2).
Green Bay, Wis.
Defiance, O.
Lima, O.
Peru, Ind.
Kokomo, Ind.
Ithaca, N.Y.
Lebanon, Penn.
Napoleon, O.
Owego, N.Y.
West Brighton, S.I.
Wilmington, Del. (2).
Macon, Ga.
Jersey City, N.J. (3).
Wapakoneta, O.
Chillicothe, O.
Appleton, Wis.
Morristown, N.J.
Escanaba, Mich.
Newport, R.I.
Saugerties, N.Y.
Montague, Mich.
Grand Rapids, Wis.
Logansport, Ind.
Ashtabula, O.
New Bedford, Mass.
Massillon, O.
Geneva, O.
Muncie, Ind. (2).
Wash'gton Court House, O.
Salem, N.Y.
Wilmington, O.
Salem, O.
Canastota, N.Y.
Pottsville, Penn.
Port Henry, N.Y.
Red Jacket, Mich.
Albany, Ore.
Scranton, Penn.
J. Estey & Co., Brattleboro, Vt.
Woodland, Cal.
Blissfield, Mich.
Hillsdale, Mich.
Quebec, Can.
La Prairie, Can.
Pt. Levis, Can.
Coatesville, Penn.
Kingston, N.Y.
Neversink Fire Co., Reading, Penn.
Columbia City, Ind.
Brattleboro, Vt. (2).
MONTREAL, Can.
United Fire Co., Fredericksburg, Md.
St. Conegal, Can.
Clyde, O.
Vallejo, Cal.
Gate City Fire Co., Atlanta, Ga.
Atlanta, Ga.
Kinderhook, N.Y.
Hartford, Ct.
HAWAIIAN GOV'T (2).
Elizabethtown, Pa.
Harrison, N.J.
Columbia, Penn.
Weccacoe Fire Co., Wilmington, Del.
Hampden Fire Co., Reading, Penn.
MEXICO.
Junior Fire Co., Reading, Penn.
Atlantic City, N.J.
Indianapolis, Ind.
Lee, Mass.
North Tonawanda, N.Y.
New Brunswick, N.J.
YOKOHAMA, Japan.
Charleston, S.C. (6).
Barnesville, Ga.
Eagle Fire Co., Trenton, N.J.
Pottsville, Pa. (2).
L'Anse, Mich.
Monroe, Mich.
Wallaceburg, Ont., Can.
Bethlehem, Penn. (2).
Huntington, Ind.
Lancaster, Penn.
Vaughn, Wis.
Salaberry of Valleyfield, Can.
Clintonville, Wis.
Ocean Grove, N.J.
Passaic, N.J.
Long Branch, N.J.
Standard Oil Co.
Grand Haven, Mich.
Crisfield, Md.
Nyack, N.Y.
Paterson, N.J. (3).
Ogdensburg, N.Y.
Ypsilanti, Mich.
Antigo, Wis.
Ontonagon, Mich.
Middleburg, N.Y.
Columbia, Pa.
Lynchburg, Va.
Newton, N.J.
Toledo, O. (3).
Fremont, O.
San Jose, Cal.
Virginia City, Nev.
Shreveport, La.
Monroeville, O.
Independence, Ia.
Fort Edward, N.Y.
SPANISH GOV'T.
Hamilton, Ont., Can.
Poughkeepsie, N.Y.
RIO JANEIRO, Brazil.
Marinette, Wis.
Albany, N.Y.
J. I. Case Thresh. Mach. Co., Racine, Wis.
Iron Mountain, Mich.

UNITED STATES GOVERNMENT.