Tucson Fire Department
1922 Couple Gear Electric Truck

Courtesy Roberts Collection:

SPECIAL NOTE

The following are information is from the Roberts collection.

This is a bid for an apparatus that the Tucson Fire Department did not purchase.

PROPOSAL

OF

Electric-Truck

The Couple Gear Freight Wheel Co.

Grand Rapids, Michigan

FOR FURNISHING

MOTOR FIRE APPARATUS

July 24, 1922. 19

To City of Tucson, Arizona.

We hereby propose and agree to furnish, after your acceptance of this proposition and the proper execution and approval of the accompanying contract, the following Apparatus and Equipment:

One 75ft. "Couple Gear" Gas Electric Aerial Ladder Truck,

as per specifications attached.

all of which is to be built in accordance with the specifications attached, which are made a part of this agreement and contract. To ship same in about 90 working days after date of receipt and approval of contract properly executed, subject to delays from all causes beyond our control, for the sum of Fourteen Thousand---------- Dollars ($14,000.00), F. O. B. Cars

Tucson, Arizona-----Tax paid.

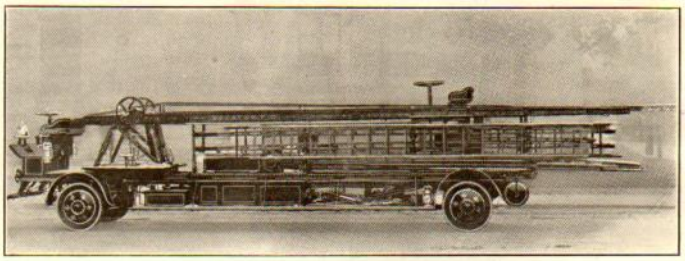
Electric-Truck

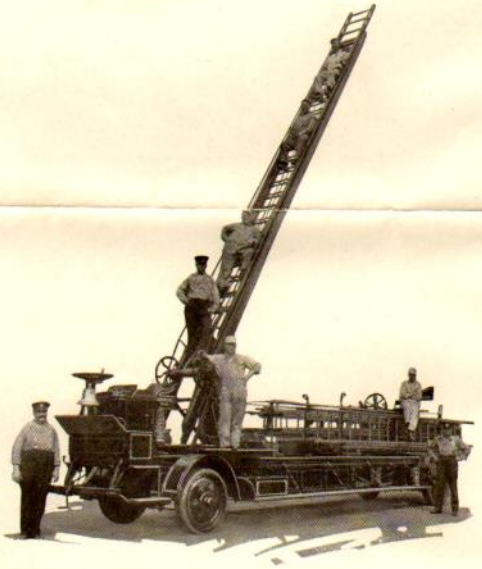
The Couple Gear Freight Wheel Co.

By John A. Ost.

DESCRIPTIVE SPECIFICATIONS

Couple-Gear Aerial Ladder Truck





Ladder and Hoist test made at Decatur, Illinois, August 1st, 1916

Weight of men	760 lbs.
Weight of ladder	850 lbs.
Duration of test	1 hour
Deflection of ladder	None
Drop in ladder	None

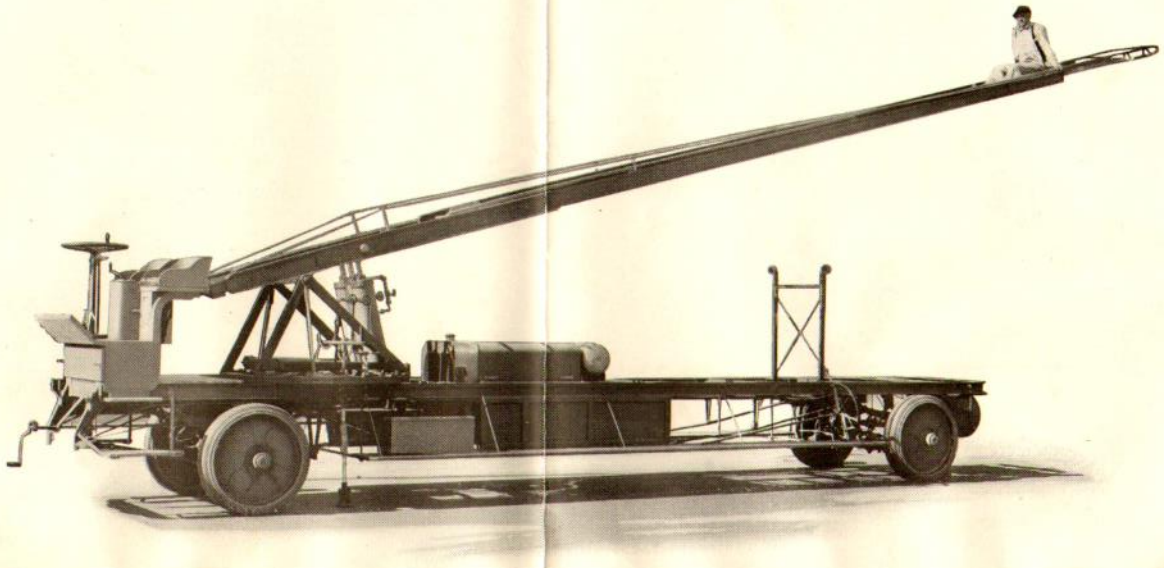
One man with one hand raises and lowers the ladder as desired

Electric-Truck

Couple-Gear Freight-Wheel Co.

Grand Rapids, Michigan

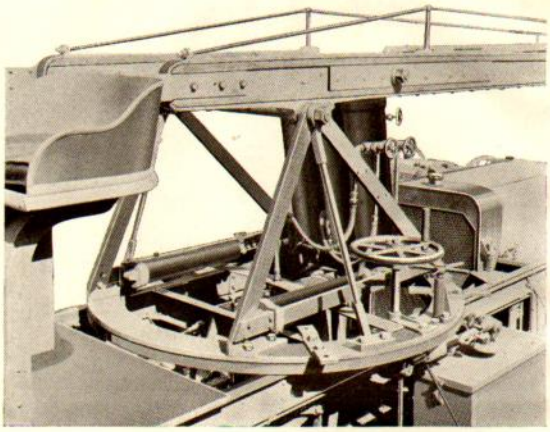
Form D Sheet 1



Gas-Electric Aerial Ladder Truck

Four Wheel Drive Four Wheel Steer

Form D Sheet 2



THE LADDER HOIST

Our turn table is of standard type. The circles are forged and turned from high carbon steel, the upper ring is carried on $\frac{7}{8}''$ steel balls.

The Hoist is the Dahill Compressed air type, Liquid controlled, and consists of three 7-inch cylinders with pistons and rods. These cylinders are connected by trunion to the turn table and have free oscillating movement. The outer end of Piston rods are connected by trunion to main ladder.

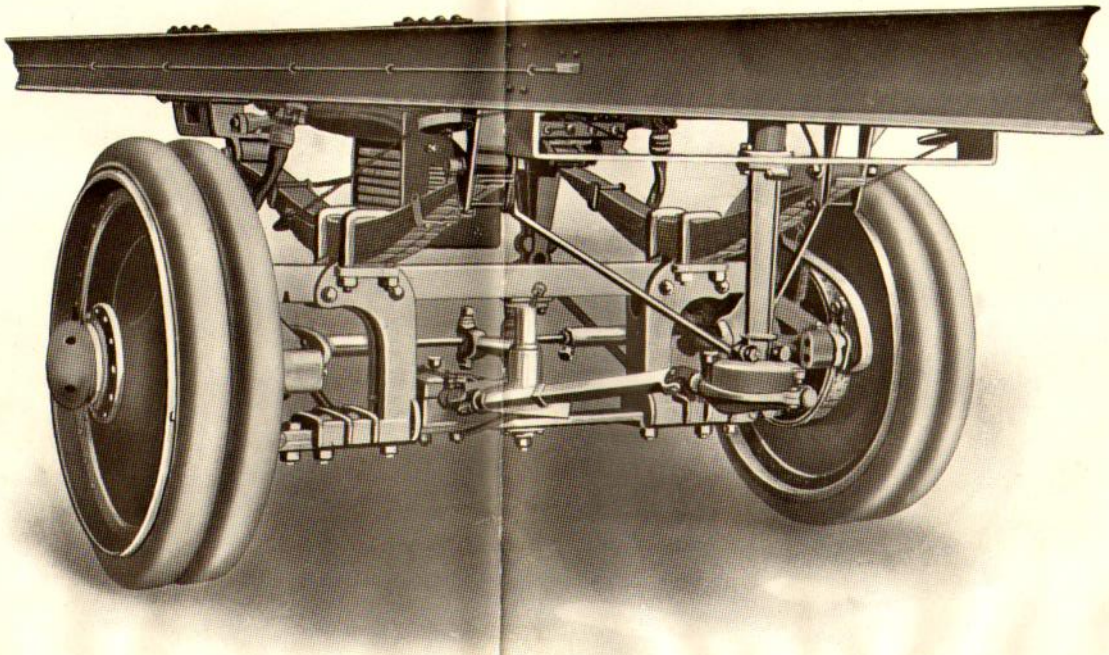
Opening one valve permits compressed air to flow freely into the bottom of the two outer cylinders.

The center cylinder is filled with oil and equipped with Bipass and air chamber in combination. The opening given the valve in the Bipass piping regulates the speed at which ladder is elevated. The check valve in Bipass line automatically locks the ladder in position when air is cut off.

Air tank and motor driven compressor are carried in rear of chassis frame. One man with one hand raises and lowers the ladder at will.

This type of hoist is in use in the following cities: New Bedford, Mass., 3; Baltimore, Md., 16; Fall River, Mass., 1; Boston, Mass., 1; Cambridge, Mass., 1; Brocton, Mass., 2; Lowell, Mass., 2; Manchester, N. H., 1; Portland, Me., 1; Detroit, Mich., 2; Richmond, Va., 2; Houston, Texas, 1; Decatur, Ill., 1.
Taunton, Mass., 1., St. John, N.B. 1;

Couple-Gear propelled aerial ladder outfits are in use in the following cities: Springfield, Mass., 4; Philadelphia, Pa., 1; New York City, N. Y., 4: Washington, D. C., 1; Trenton, N. J., 1; Grand Rapids, Mich., 2; Akron, Ohio, 2; Wilmington, Del., 1; Decatur, Ill., 1; Vancouver, B. C., 1; North Yakima, Wash., 1; Medicine Hat, Canada, 1; Butte, Mont., 1; Calgary, Canada, 1.

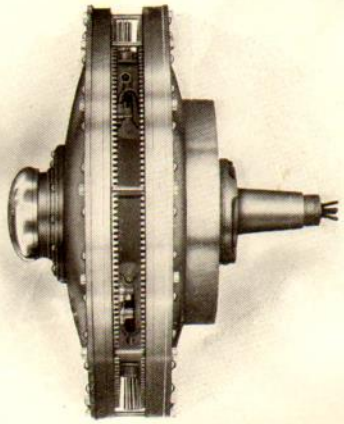


Standard Axle and Steering Gear Construction

Aerial Ladder Chassis

Form D Sheet 4

The "Couple-Gear" Motor Wheel



Notice the slight angle of the motor shaft which allows the two pinions to engage (from their opposite sides) their respective halves of the double cog rack.

The projecting arm or stub is keyed into a taper sleeve in the steering knuckle and through its center the wires are connected to the motor.

Rack and pinions cut from steel.

Illustration represents complete wheel with tire ane band removed to show relative position of the two pinions.

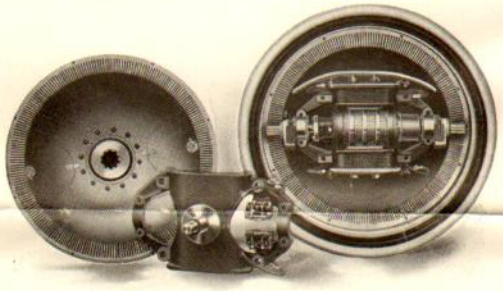
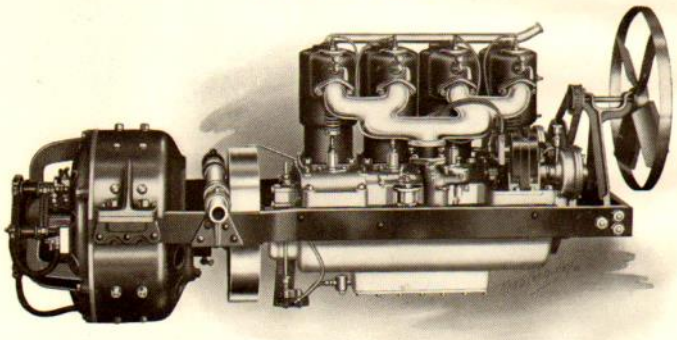


Illustration shows front disk and side of motor removed, giving access to the armature, field coils and bearings.

"Couple-Gear" transmission consists of an electric motor in each wheel, the motor armature having a pinion on either end, one pinion pulling up on one side of the wheel, the other pulling down at the opposite side, and both working at the periphery. An "evener" device permits of compensating movement and divides the force "equally" between the two pinions regardless of any unequal wear or adjustments.

We guarantee to deliver 97 per cent. of motor energy to the rim of wheel.

Power Plant



Self-Contained "Couple-Gear" Gas-Electric Power Outfit

SPECIFICATIONS

Couple-Gear Freight Wheel Co.

ELECTRIC TRUCK

MOTOR AERIAL LADDER TRUCK

Four-Wheel Drive and Steer

GENERAL CONSTRUCTION:

The Apparatus is of the latest and most approved design and embodies the best practice in Motor Fire Apparatus Construction. It is built with careful consideration to symmetrical proportions, distribution of load, and simplicity of details. The best material and labor attention obtainable enter into its construction; particular attention being given to strength, balance, and bracing, to stand the severe strain of municipal service.

All parts or units, whether built in our own shops or manufactured for us under contract by specialists in various lines, are of latest and best design, adapted to our special work: the finest jigs and templates being used to insure perfect fits and alignments. All parts that can be so made, are interchangeable, and the finish, both mechanical and decorative, is guaranteed to be the very best possible to procure. All parts of chassis requiring lubrication are fitted with compression grease cups. All bolts for motors, steering gear, axles, springs, engine and generator are held in place with castellated nuts and cotter pins or suitable lock washers and every precaution taken to insure safety and certainty of operation.

The following specifications apply to our special construction and describes our apparatus as built to withstand the extreme shocks and strains of Fire Department service, and to operate with the highest possible degree of simplicity and certainty. Inasmuch as we hold ourselves responsible for the correct operation of our apparatus, we cannot make changes in fundamental design or construction, but many details of equipment can be modified if necessary, to meet the needs of the purchaser.

MOTOR:

Four cylinder, four cycle, vertical type, water cooled Tee-Head Motor of special design and construction.

Wisconsin Bore, 5¾" Stroke, 7" Brake Horse Power, 52.9SAE

CYLINDERS:

Are cast from gray iron, finest quality, non-heating. The intake and exhaust manifolds are of large areas and give free passage to all gases. All cylinders fitted with priming cups. Cylinders bored, ground and finished with the aim of holding positive compression. Water passages accessible and large, insure free circulation and ample clearance space. Perfect jigs and templates are used in the building of our motors.

PISTONS:

Of special cast iron, ground and finished, fitted with split piston rings, each carefully ground on three sides, so as to prevent any gas passing them. The piston pins are of heat treated, hollow steel ground to size and locked in place.

CONNECTING RODS:

Of heat treated, drop forged steel with a sufficient factor of safety for strength: all interchangeable. Rod ends and caps machined to perfect fits, special jigs being used. Exceptionally large bearings of white metal, brass backed, grooved for oil. Caps are held in place by *four* large stud bolts, shims being used to allow adjustment of bearings.

VALVES:

Mechanically operated. Intake and exhaust valves are on opposite sides of cylinders and easy of access, ample clearance over valves. The valves and valve areas are large and all parts interchangeable. Valves are of forged nickel steel, heat treated and machined to perfect valve seat fit.

Hardened forged steel valve lifters, perfectly finished, running in guides of bronze. The bottom of valve lifter is fitted with Chrome Nickel Steel rollers and pin to prevent wear on cam. A lock nut device provides for perfect timing adjustment. Valve lifter is splash oiled at bottom from crank case. Due to the construction, the operation of the valves is noiseless.

CRANK SHAFT:

Of special heat treated nickel steel, hardened and ground, of large diameter and with large main bearing surfaces. The bearings are of special white metal, bronze backed, oil grooved and oiled by force feed and splash. The flywheel is bolted to Crank Shaft: this together with the complete pistons and other attachments, are perfectly adjusted on a knife edge balance.

CAM SHAFTS:

Are made from a solid piece of heat treated steel: the cams integral with shaft are finished, case hardened, and ground to perfect accuracy. The cam shafts have extremely large bronze bearings. Shafts easily removable.

GEARS:	Crank shaft, pump and magneto gears are made of special steel, cut helically and lubricated by pump.
BEARINGS:	Steel pins are used in the wrist pin bearings. Connecting Rod Bearings are of special white metal, bronze backed. Crank Shaft Bearings are of special white metal, bronze backed. Cam Shaft Bearings of bronze. Fan: Ball Bearings. Guides for valve lifters are of bronze. Piston rings are ground on three sides to perfectly fit grooves.
CRANK CASE:	Of cast metal alloy, strengthened by ribs cast solidly into body, but of such construction as to permit the oil to flow to oil well. Special jigs and templates are used in the perfect machining of this casting. Drain plugs in bottom of oil well for the removal of oil. The bottom of crank case is securely bolted to the main crank case and is made removable. This casting is also ribbed for strength. Breath pipes are connected to crank case.
IGNITION:	Consists of two separate and distinct systems, each operating on a separate set of spark plugs. First: High Tension Magneto, jump spark. Second: Spark coil fitted with double switch and starting button and connected with each cylinder. Six (6) volt storage battery with distributor. This system gives perfect ignition to the large volume of gas used in motors of this size, and prevents burning gas passing the exhaust valve at the time of its opening, thus preventing the deformation of exhaust valves due to excessive heating. The Magneto Gear Shaft is fitted with full universal joint, an improvement for take-up in alignment and for easy removal of magneto. The cutting out of a cylinder does not materially affect the operation and does not need attention until return to headquarters.
STARTING AND LIGHTING BATTERY EQUIPMENT:	One (1) 12-volt storage battery for starting and lighting is carried in proper compartment.
WIRING AND SECONDARY WIRING	All wire carried in suitable conduit and heavily rubber insulated to protect from wear or short circuit. All terminals protected from moisture and well waterproofed. All spark plug terminals fitted with quick detachable connections.
MAGNETO:	High Tension magneto jump spark.
CARBURETOR:	Float feed, automatic auxiliary air intake. Water jacketed, guaranteeing perfect mixture at any speed of motor, and under any weather conditions.
GASOLINE TANK:	Cylindrical, 16-gallon capacity. A valve of easy access regulates the flow from gravity tank, or shuts it off entirely. A large filling spud conveniently located on top.
LUBRICATION:	Mechanical, dear driven, oiler to bearings also splash system in crank case. A simple oil circulating pump at lower crank case driven by gear from Cam Shaft gear, taking oil through strainer and forcing it to all bearings and working parts, and maintaining oil lever in the motor. Entirely automatic. Oil supply is carried in reservoir in lower crank case, provided with filling spud. Drain plugs at bottom of crank case for removing oil. Sight glass on side of crank case showing level of oil.
COOLING SYSTEM:	The circulation of water through the entire system by a gear driven pump, driven by gear off cam shaft. Pump mechanism being of *bronze* and all water circulating pipes of brass. Radiator, mounted in front of engine and back of turn table, of the best approved honey-comb type, on bearings so attached to frame that twisting or vibration will not cause leaks. Aluminum Ball Bearing fan, belt driven, adjustable on eccentric bearing.
HOOD:	Of heavy steel, ventilated and fitted with doors on both sides so that all necessary adjustments to motor may be made without removing hood.
ELECTRIC GENERATOR:	Frame of crucible steel. Generator is designed for this class of work and built especially for it. Both mechanically and electrically, every consideration based upon our extended experience has been given to meet the contingencies and requirements of road locomotion. The generator is rated 12½ KW at 100 volts 680 revolutions per minute and will run complete sparkless with an ampere load, 200 per cent. in excess of its normal rating and with 100 per cent. rise in speed. The voltage at the maximum speed can be held down as low as 40. It is a 6 pole machine with the same number of commutating poles, compound wound with dropping characteristic, which automatically assists the engine to hold or increase speed at approximately the same rate as the increase in power is demanded for the vehicle propulsion. A rheostat is connected to fields by means of which operator may raise or lower the speed ratios at will. The bearings of plastic bronze, ring oiled.

MOUNTING OF POWER PLANT: The engine and generator are mounted back of the aerial ladder turn-table, making the power plant practically one unit and eliminating the use of long driving shaft and universal couplings and placing entire power plant in the safest possible position. This method of suspending the power plant relieves it from any tension or twisting strain when truck is running over uneven places on the road, and more evenly distributes the load on the front and rear wheels. Either engine or generator can be removed without disturbing the other.

CONTROL: The truck can be driven either under the control of the engine throttle by varying the speed of the engine to suit the speed of the truck and road conditions, or through the electric controller which in connection with the rheostat gives 150 changes of speeds with a constant speed of the engine and allows operating the motors in parallel or series. There are the same number of speeds backwards as forwards and the control is the same in either direction.

ELECTRIC CONTROLLER: Is of the street railway type, having three speeds forward or reverse. There are two levers, one for the forward movement, one for the reverse and electric brake. These levers are interlocking, eliminating the possibility of going from forward to reverse or vice versa when power is applied to the wheels. Controller is built specially for this class of work, having extra large contact blocks and fingers to prevent fusing. Contact finger springs are adjustable with set screws and lock nuts to allow maintaining perfect contact between block and fingers. The electric brake controlled through this controller. By the removal of four thumb screws, the entire front casing of controller can be removed, which allows of easy inspection and adjustment. Controller placed at left side of driver, within easy reach.

ENGINE CONTROL: Through throttle and spark hand levers on steering column, also foot accelerater on foot board. Control rods are fitted with ball and socket joints, insuring perfect operation at any position.

WHEELS: Are of the solid disk type, mounted on gerenous roller bearings, which are hardened and ground to accurate guage. The disks are of steel, fitted to forged and finished steel bands, which are designed to take the standard makes of solid rubber tires, and the latter can be easily removed when repairs or changes are necessary. These disks enclosing the motors are water and dust tight and are fitted with hand-hole doors, which give ready and easy access to the motors.

Standard hardened thrust bearings are mounted on front and back of wheel and provide for accurate and positive lateral adjustments. Wheels are attached to axles by massive knuckles, each being a driving and steering wheel, assuring the utmost tractive power. Wheels are interchangeable. Each motor and wheel can be removed as a single unit by the removal of one nut. Any part of motor or wheel can be removed and replaced in not to exceed two hours.

DRIVING MOTORS: Of special design and manufacture for this particular class of work. Direct current, series wound, wick oiled plastic bronze bearings. Wound with insulation which eliminates burning out under proper working conditions, and we agree to rewind, free of charge, the armatures or fields of any motor, if at any time they burn out, due to any defect of these parts. Motor frames are crucible steel: driving pinions are nickel steel. One motor enclosed in each of the four wheels. Readily accessible without removing the wheel from the truck. Our ten years experience in constructing motors for this particular service has enabled us to produce a design of motor, which will run in our dust and water proof wheels without sparking or overheating. Not only is long life and excellent service secured from these motors, but a motor capable of giving to each wheel a drawbar pull of 1,400 pounds or a total of 5,600 pounds for the truck. When connected to a 6-volt dry battery and drawing 4 amperes, will start the wheel, weighing 900 pounds, revolving when on the test block.

TRANSMISSION: The power is applied in balanced division to opposite sides of the rim of each wheel. Gear reduction 18½ to 1 without the aid of countershaft, eliminating using sliding gears, clutches, universal joints and driving shafts. We guarantee this device to transmit direct to the wheel rim 97 per cent. of the energy developed by the motor when working at normal load.

POWER PLANT AND TRANSMISSION GUARANTY: That the transmission gear which divides the motor energy so that it is equally applied to both sides of each wheel, will show a brake test efficiency of 97 per cent. at normal load for the motors.

That rough or snow covered pavements and low temperatures will not render it necessary to cut down the amount of load carried. That the current consumption is increased and speed decreased in proportion to the severity of the above conditions but not sufficiently to cause undue strain or injuries to any part of the mechanism.

That we will replace, free of charge, at our factory any mechanical parts of this latter mechanism which may prove defective or are worn beyond an efficient working condition within one year from date apparatus goes into service. Pinons,

and gears, armature bearings and wheel bearings are guaranteed for 10,000 miles and all replacements are on a service basis.

The draw bar pull required to move the truck on a good level road is approximately 350 pounds. The overload capacity of the generator and motors, operating through the "Couple-Gear" is sufficient to give a maximum draw bar pull of approximately 5,600 pounds or 16 times that required to move the car on a level.

BRAKES: Each wheel to be fitted with mechanical internal contracting double acting foot brake, operating equally well in either forward or reverse movement of the truck. Front and rear wheel brakes being operated in two independent groups through foot pdals. Truck also equipped with three point electric brake for both forward and reverse, so arranged that it is impossible to go into reverse when the controller is in the position for forward movement or vice versa without going through the electric brake, necessitating stopping the car before power is applied in the opposite direction. The operation of these is such that whenever they are applied the driving power is simultaneously cut off. ~~All brakes, both mechanical and electrical, are under the control of the driver, which places the full control of the power plant and brakes under one hand.~~

AXLES: Are of the built-up type with hardened and ground seats to receive the steering knuckles. The main beam is drop forged from special steel, having high tensile strength and elastic limit. They are rigidly hot riveted to crucible steel bridge forks and will carry an overload of 100 per cent. All parts are jigged and machined to guages which make them positively interchangeable.

MAIN FRAME: Is entirely of steel and so designed to give flexibility that will meet the most severe road conditions without crystallization. It is thoroughly trussed with forgings of our own production to care for any excessive shocks to which it may be subjected. Main frame 6-inch 13 pound channel steel, braced with suitable cross members of same size secured to main frame by gusset plates, hot riveted. Main frame side members double trussed horizontally and diagonally braced to assure rigidity in all directions. All trusses and diagonal rods fitted with adjustable turn buckles and lock nuts. All spring brackets, pedestals and cross members are hot riveted.

SPRINGS: Four semi-elliptic Vanadium steel springs, oil tempered and of most suitable length, thickness and width to carry the loads imposed. Springs are assembled with flake graphite lubricant between the leaves and are attached to spring brackets with suitable bolts and castellated nuts and cotter pins; said bolts being fitted with grease cups to permit ready lubrication at the point of wear. Spring jacks engage top bar of front axle.

STEERING: Steering gear of the worm and sector type, irreversible operating all four wheels in two independent groups. Steering wheel and column for the front wheels to be set at the front end of the truck and operated by the driver. The rear wheels being operated in another group in similar manner by tillerman, sitting over the rear of the truck. Tillerman's steering wheel and column both removable to permit operation of aerial ladder and removal of other ladders.

DRIVER'S SEAT: Is made of steel, finely upholstered, with nickel plated brass rail.

TILLERMAN'S SEAT: Is of a similar shape and construction to driver's seat and is arranged so as to swing clear of the ladders when the aerial ladder is being raised or lowered. Seat is held in open position by means of springs and lock.

SIDE STEPS: Side steps or running boards are held on each side of the truck by means of very rigid brackets securely braced to prevent swaying. Steps are covered with best corrugated rubber matting; front edge protected by half oval metal moulding extending the full length of the step. On the sides of the turn-table at the front are similar running boards.

FENDERS: Well constructed steel fenders are placed over the front and rear wheels and connected to the running boards and are amply large and strong to protect the truck from flying mud.

AERIAL LADDER: The aerial ladder is in two sections, the upper slide or section operating between the main rail of the lower section, and when fully extended reaches.....75.....feet from the ground. It is built of the choicest selected naturally seasoned Oregon fir. The rungs are selected thoroughly seasoned second growth ash, split (not sawed) before turning. The rungs are secured to the ladder sides by means of flange sockets, into which the rungs are secured by wedges. These sockets are secured to the ladder sides by means of counter sunk bolts, and the construction is such as to give the ladder utmost stiffness in all directions, and at the same time, permit the ready removal of any rungs for replacement without disturbing any other part. The lower end of the main ladder is strengthened by heavy steel yoke forging;

every sixth round is of steel. Main ladder is heavily trussed, and ownig to the method of operation and ample power available for same, these ladders are built heavier and stronger than is customary. The fly ladder is of the same material and similar construction as the main ladder, and its upper end is protected by steel shoes. The fly ladder is hoisted by means of two hand crank wheels operating drum and phosphor bronze cable, and is held in position by automatic ladder locks.

THE HOISTING DEVICE: The hoisting device is the Dahill Improved Design air and hydraulic type, in which all gears, worms, pinions, springs or other mechanical devices are eliminated, and consists of two air and one hydraulic cylinders, pivotedly mounted on the turntable directly under the main ladder with piston rods extending upwards. The outer end of each rod being connected by suitable yoke and shaft to the ladder; one air tank and one motor driven air compressor in connection therewith, with suitable connections and valves for operating control. All parts have a factor of safety of four-to-one, and will elevate the ladder from horizontal to vertical position carrying a man with it in six seconds. Is strictly a one-man-operated equipment and ladders may be raised or lowered an inch or more at a time at the will of the operator. The air compressor is carried on the main frame, and the connection to the tank is made by means of a flexible tubing. Current for operating the motor is furnished from the battery or gas-electric power unit, as the case may be.

ARCHES: angle shoe type

Of steel [redacted] The number of the arches [redacted] to be such as to provide adequately for nesting of the ladder equipment.

GENERAL LADDER CONSTRUCTION: The ladders to be constructed of carefully selected material and to be as light as possible consistent with safety. Ladder sides to be made of thoroughly seasoned by natural methods. Oregon fir. Ladder rungs to be second growth, naturally cured ash. Extension ladders to be equipped with approved automatic safety locks and raising mechanism. All ladders to be ironed at the ends and strengthened laterally by iron cross rods placed at proper intervals. All ladders to have their length on each side near the butt in plain figures.

TURNTABLE: The turntable is mounted directly upon the main frame of the truck, over the front axle. It is 5½ feet in diameter, made of steel *forging* accurately turned and revolves upon steel balls, thus reducing friction. It is fitted with a rack and pinion and hand wheel placed convenient to the operator and can thus be revolved with utmost ease and speed. It is provided with a lock to secure it in any position desired.

BASKET: Truck is fitted throughout the space from the generator in front to the rear axle, with a metallic basket, slat bottom for carrying miscellaneous implements, according to Standard practice. This basket will be as large as space permits, constructed of steel, and securely fastened to the running board brackets and main frame.

TOOL BOXES: Made of fine grained white ash, properly painted, striped and varnished. Fitted with full length door. Placed in front of each running board. Axes, crowbars, roof cutters, door opener, the sledges, etc., are placed in suitable holders in convenient places on the running board, basket, etc. The pike poles are placed in suitable holders in convenient places on the ladder brackets.

LIGHTING SYSTEM: Two (2) 12-inch electric head lights; one electric tail light.

STARTING SYSTEM: [redacted] Delco or its equal.

SIGNAL SYSTEM: One 12-inch locomotive bell. Bell mounting will be either rigid or swinging as desired.

FINISH: All bright metal parts are heavily nickel plated, first being copper plated to produce the highest quality of finish.

PAINTING: Standard vermillion, striped with gold unless otherwise specified. All paint work to be of the highest possible grade.

SPEEDS: All ranges to 25 miles per hour on hard level streets. Proportionate decrease for grades and road conditions.

TIRES: [redacted] 36 inches diameter. x 8" solid.

WHEEL BASE: Twenty-four feet on 65 and 75 foot trucks and twenty-eight feet on 85 foot trucks. Can be changed to suit requirements if necessary.

TREAD: Sixty-eight inches.

ROAD CLEARANCE: Eleven inches.

Dimensions over all.	Height	Width
For 65 foot	9′ 0″	6′ 8″
For 75 foot	9′ 0″	6′ 8″
For 85 foot	9′ 0″	6′ 8″

TOOL EQUIPMENT: One (1) No. 29 double end wrench. One (1) hammer.
One (1) No. 31 double end wrench. One (1) pair adjustable pliers.
One (1) No. 12 iron monkey wrench. One (1) set magneto wrenches.
One (1) ¾-inch socket wrench. One (1) screw driver.
One (1) ½-inch socket wrench. One (1) cold chisel.
One (1) motor terminal socket wrench. One (1) round punch.
One (1) stub nut wrench. One (1) oil can.
One (1) thrust collar wrench. Two (2) disc puller bar.
One (1) valve cap wrench. Four (4) disc puller bolts and nuts.
One (1) wheel door wrench. One (1) 8-inch screw jack.
One (1) hub cap wrench. One (1) jack bar.
Four (4) extra motor brushes. Four (4) extra generator brushes.
Six (6) extra fuses.

DELIVERING ENGINEER: The company agrees to furnish a competent mechanic to make delivery of the apparatus and remain with it for a period of two weeks, to instruct the City's Fireman in the care and operation of the truck.

Equipment for 75-foot Aerial

Two (2) twelve-inch headlights.
One (1) brass locomotive bell.
One (1) forty-five-foot extension ladder.
One (1) sixteen-foot extension ladder.
One (1) thirty-two-foot single ladder.
One (1) twenty-eight-foot single ladder.
One (1) twenty-four-foot single ladder.
One (1) twenty-foot single ladder.
One (1) sixteen-foot roof ladder.
One (1) twelve-foot roof ladder.

Four (4) axes.	One (1) wire cutter.
Two (2) crowbars.	One (1) tin roof cutter.
Eight (8) pike poles.	Two (2) extinguishers.
Two (2) crotch poles.	[redacted].
Four (4) lanterns.	One (1) battering ram.
Two (2) wall picks.	One (1) pull-down hook.
Two (2) shovels.	Two (2) pitchforks.
One (1) oil can.	One (1) door opener.

One (1) 175-foot rope and snatch block.

ALL AGREEMENTS ARE CONTINGENT UPON DELAYS RESULTING FROM ALL CAUSES BEYOND OUR CONTROL.

CONTRACT

THIS AGREEMENT, Made by and between **THE COUPLE GEAR ~~FREIGHT WHEEL~~** ELECTRIC-TRUCK **COMPANY**, party of the first part, hereinafter called the Company, and

the City of Tucson, Arizona.

party of the second part, hereinafter called the Buyer.

WITNESSETH: That the Company agrees to sell, upon the conditions which are below written, the apparatus and equipment hereinbefore described which is to be in accordance with the specifications and guarantees attached, the same being made a part of this agreement and contract.

Delivery to be made on board cars at Tucson, Arizona. and shipment to be made from the factory within 90 working days after receipt and approval of this contract, duly executed, or as soon thereafter as is consistent with good workmanship and proper painting, subject to delays resulting from any causes beyond the control of the Company.

The Buyer agrees to purchase and pay for the aforesaid property, delivered as aforesaid, the sum of Fourteen Thousand---------- ($ 14,000.00) Dollars; to be paid to **THE COUPLE GEAR ~~FREIGHT WHEEL~~** ELECTRIC-TRUCK **COMPANY** at its home office as stated below, in New York exchange, with interest at the rate of six per cent per annum, upon any sum not so paid from the time such payment becomes due until same is paid.

Terms of payment to be:

Fourteen Thousand---------- Dollars in cash within 10 days after delivery and acceptance of the apparatus and equipment.

The buyer to permit test of apparatus and accept it, if in accordance with contract, within 10 days after its delivery.

All contracts are taken subject to the written acceptance of the Company, by an Officer of the Company. At the request of the Company, the Buyer agrees to furnish to the Company a written opinion of the City or Town Attorney as to the power of the municipality to make this contract, and also as to the notes or warrants, if any, to be given in payment for any part of the above named purchase, being valid, legal and enforceable obligations of the municipality.

It is mutually agreed and understood between the parties hereto that the Company shall remain the owner of and retain the title to the property above described until the whole amount of the purchase price thereof shall have been paid. It is further mutually agreed that in case of default of payment as above agreed, or in the event of an attempt by the Buyer to sell, incumber, conceal, remove or dispose of any of the aforesaid property before the same shall have been fully paid for, then the said Company shall have the right to take possession of said property, and for such purpose may enter into any buildings or places where the same or any part thereof may be contained, and all payments which shall have been made upon or by reason of this contract shall be applied as, and shall be in full force for, the rent and use of said property to the date of such taking.

Witness our hands and official seals this ..... day of ..... 191....

The Couple Gear ~~Freight Wheel~~ Electric-Truck **Co.**

Attest ..... By .....

Party of the first part.

.....

.....

Party of the second part.

SHIPPING INSTRUCTIONS:

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.....

.....

Write to

.....

for further information desired.

AGENT'S MEMORANDA:

If a sworn or special form of bill is required, kindly mail to the Company the proper blanks with returned contract.

PROPOSAL AND CONTRACT

By

The Couple Gear Freight Wheel Co.

ELECTRIC TRUCK

Made with

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.....

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Date 191

For .....

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.....

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Contract Dated 191

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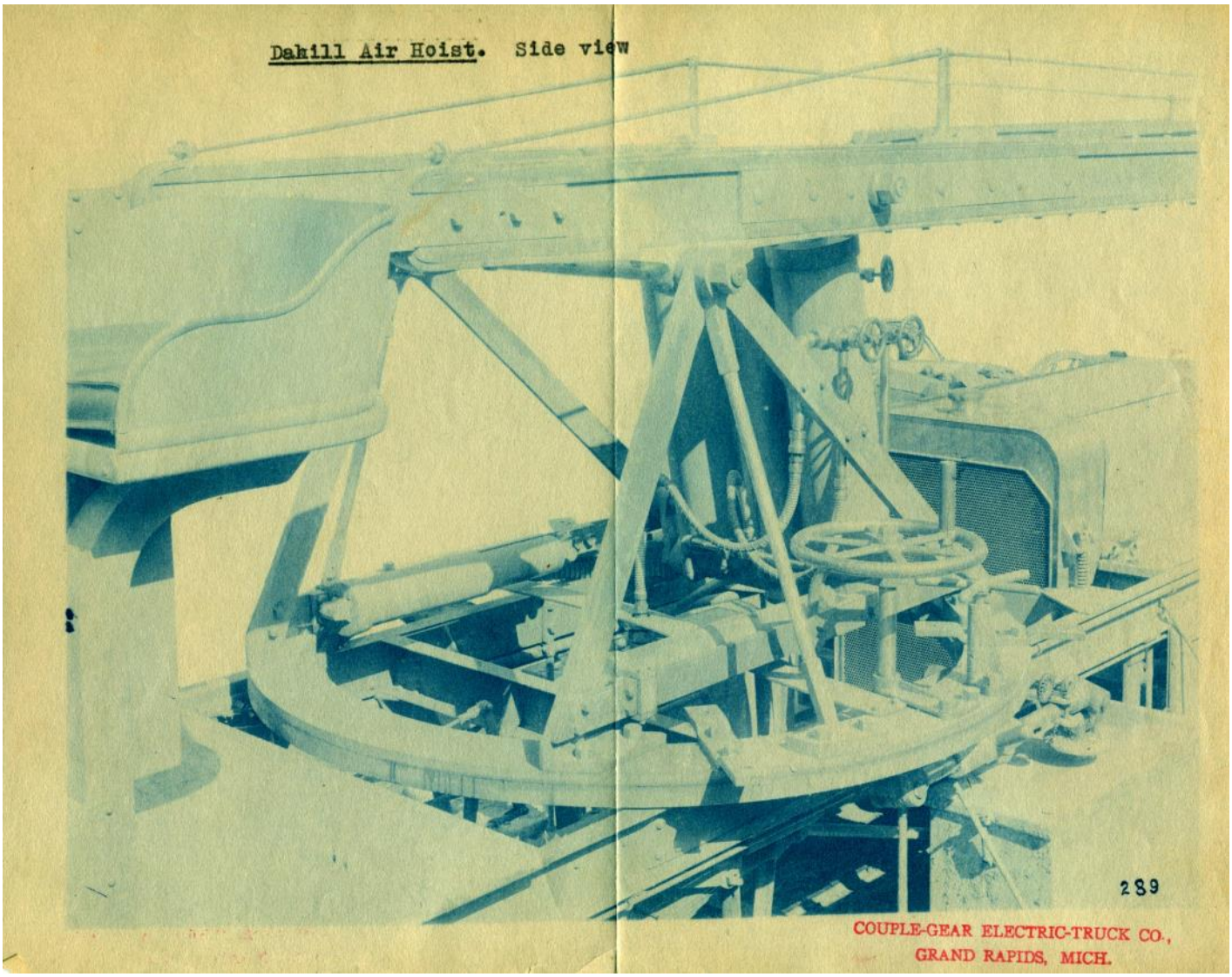
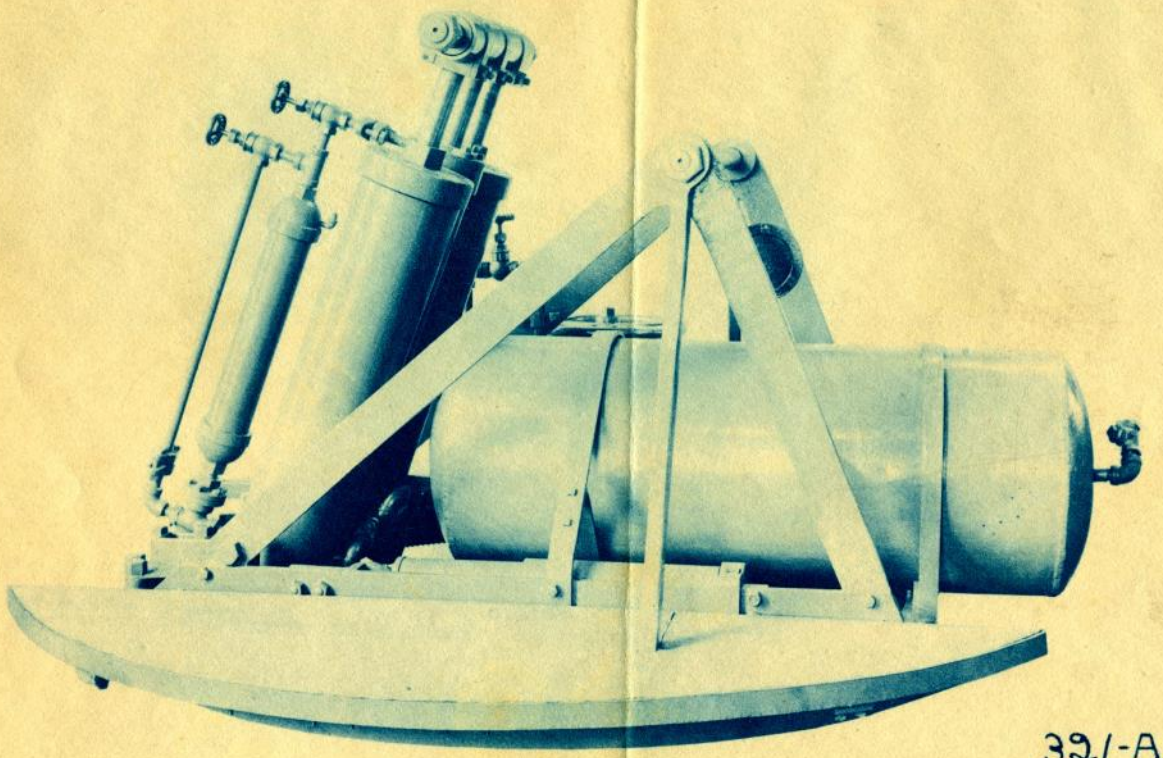
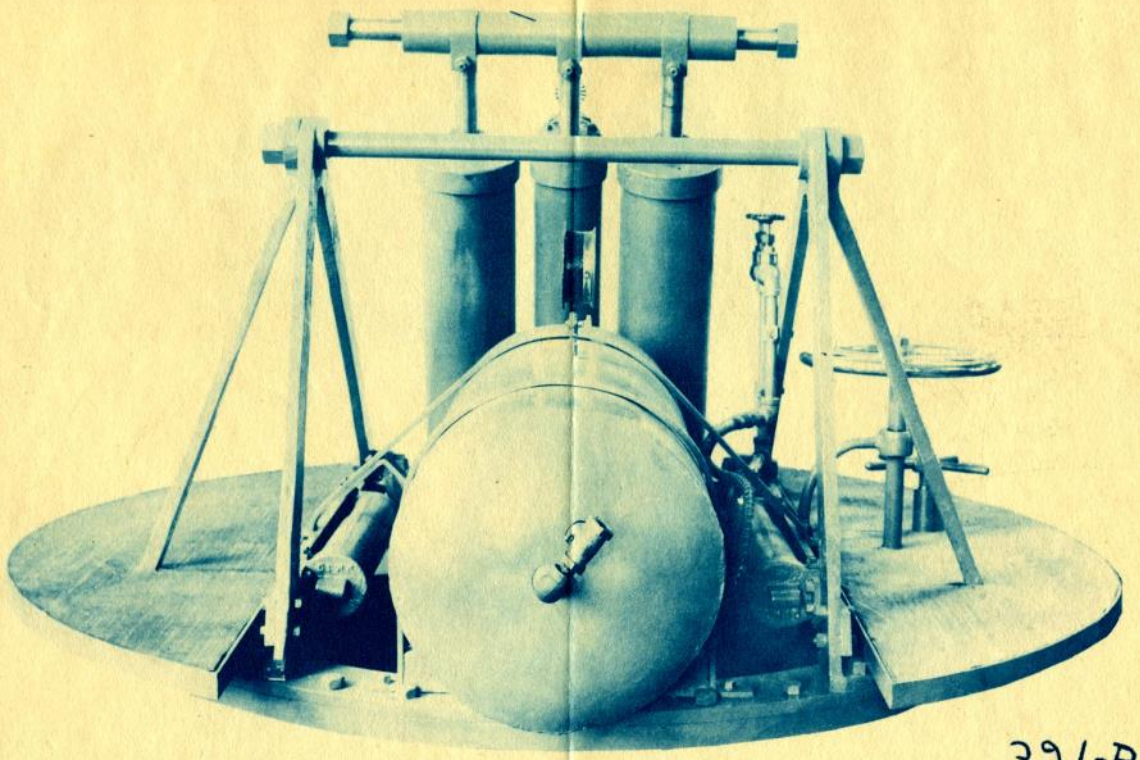

Dahill Air Hoist. Side view
289
COUPLE-GEAR ELECTRIC-TRUCK CO.,
GRAND RAPIDS, MICH.

Dahill Air Hoist.



321-A

Dahill Air Hoist-



321-B

COUPLE-GEAR ELECTRIC-TRUCK CO.,
GRAND RAPIDS, MICH.

Greater Tucson Fire Foundation

Thanks you for taking an interest in Tucson Fire Department history —

This is one of many sections that contain information, documents, letters, newspaper articles, pictures, etc. They have been collected and arranged in chronological order or by a subject. These items were collected, organized and entered into a computerized database by Dave Ridings Assistant Chief Tucson Fire Department, Al Ring friend of the department, Greater Tucson Fire Foundation and with the help of many friends and fellow firefighters.

All graphics have been improved to make the resolution as good as possible, but the reader should remember that many came from copies of old newspaper articles. This also applies to other items such as documents, letters, etc.

Credit to the source of the documents, photos, etc. is provided whenever it was available. We realize that many items are not identified and regret that we weren't able to provide this information. As far as the newspaper articles that are not identified, 99% of them would have to be from one of three possible sources. The *Arizona Daily Star,* The *Tucson Citizen* and the *Tucson Daily Citizen,* for which we want to give a special thanks.

Please use this information as a reference tool only. If the reader uses any of the information for any purpose other than a reference tool, they should get permission from the source.

Should the reader have additional information on the above subject we would appreciate you sharing it with us. Please see the names and contact information on the 1st. TFD Archives page right below this paragraph.

Greater Tucson Fire Foundation