Instructions

and

Price List of Parts

For Model 116-H

Stewart

Vacuum Gasoline System

as used on

DODGE BROTHERS MOTOR CAR

Keep this book in the tool box of your car

2811-4-27-22

Description of Stewart Vacuum Gasoline System

THE Stewart Vacuum Gasoline System consists of a small tank, installed under the hood of the car. This tank is set up vertically and is connected by brass tubing to the gasoline tank at the rear of the car, the intake passage and the carburetor. A gasoline engine draws its supply of gasoline vapor through the carburetor by reason of the suction due to the downward travel of the pistons. This same suction is employed in the Stewart Vacuum System to draw gasoline from the main tank into the vacuum tank. From this vacuum tank it is fed by gravity at practically a constant head to the carburetor.

The Stewart Vacuum Gasoline Tank consists of two chambers The upper one is the filling chamber and the lower one is the emptying chamber which supplies the carburetor. Between these two is a partition fitted with a flapper valve. The suction of the pistons on the intake stroke creates a vacuum in the upper chamber, and this vacuum closes the valve between the two chambers and also sucks gasoline from the main tank into the vacuum tank. As the gasoline flows into this upper chamber it raises a float valve, which when it reaches a certain height operates a valve, shutting off the suction and at the same time opening a valve to the atmosphere. This admission of atmospheric pressure relieves the vacuum in the upper tank and permits the flapper valve leading into the lower chamber to open, so that the gasoline flows by gravity into the lower or emptying chamber. This lower chamber is always open to atmospheric pressure so that gasoline will flow by gravity to the carburetor in an even, uninterrupted stream.

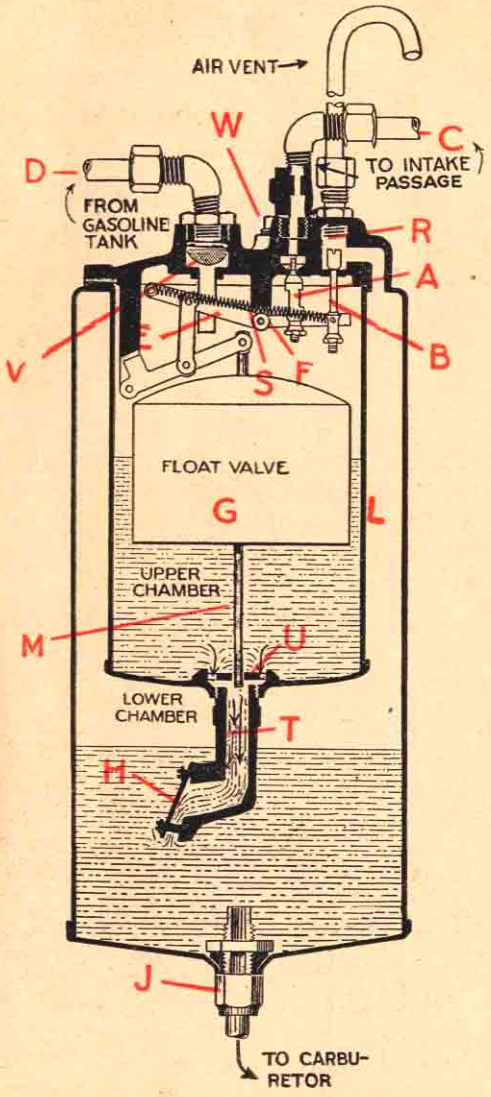
A is the suction valve opening and closing the connection to the intake passage through which the suction from the engine creates the vacuum in the upper chamber.

B is the atmospheric valve, which permits or prevents atmospheric pressure in the upper chamber. When the suction valve **A** is open and suction is drawing gasoline from the main tank, this atmospheric valve **B** is closed. When the suction valve **A** is closed, then the atmospheric valve **B** must be opened, as atmospheric pressure is necessary in the upper chamber in order to allow the gasoline to flow through the flapper valve **H** into the lower chamber.

C is the tube connecting the vacuum tank with the intake passage.

D is the tube connecting the vacuum tank to the main gasoline tank.

E is the lever to which the two coiled springs are attached, and which is operated by the movement of the float **G**.



F is the short lever which is operated by the springs attached to lever **E** and which in turn operates both valves **A** and **B.**

G is the float, the position of which in the upper chamber regulates the levers and hence the action of the valves.

H is the flapper valve in the outlet **T.** This flapper valve is held closed by the action of the suction whenever the valve **A** is open, but it opens automatically when the float has closed the vacuum valve **A** and has opened the atmospheric valve **B.**

K is the tube connecting the lower chamber of the vacuum tank to the carburetor float chamber.

L is the channel space between the inner and outer shells of the vacuum tank and connects the lower chamber with the air vent **R,** thus admitting atmospheric pressure in this chamber at all times. This affords an even, uninterrupted flow of gasoline to the carburetor by gravity.

M is the float guide which insures proper operation of the float.

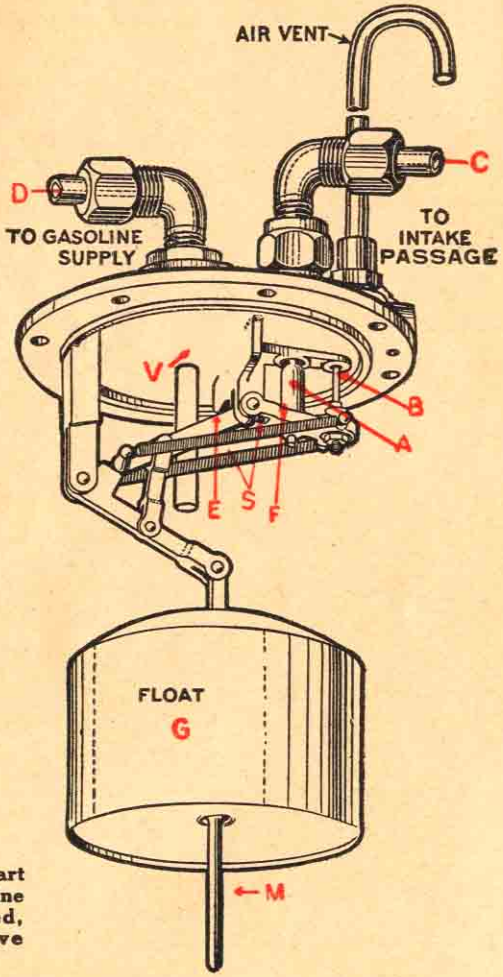
R is the air vent above the atmospheric valve. The reason for locating this air vent as high as possible is for the purpose of preventing an overflow of gasoline when the rear end of the car is raised considerably above the front end. Through this air vent the lower chamber is always open to the atmosphere.

S are the two coiled springs which control the valve mechanism and keep either one or the other of the two valves tightly against its seat.

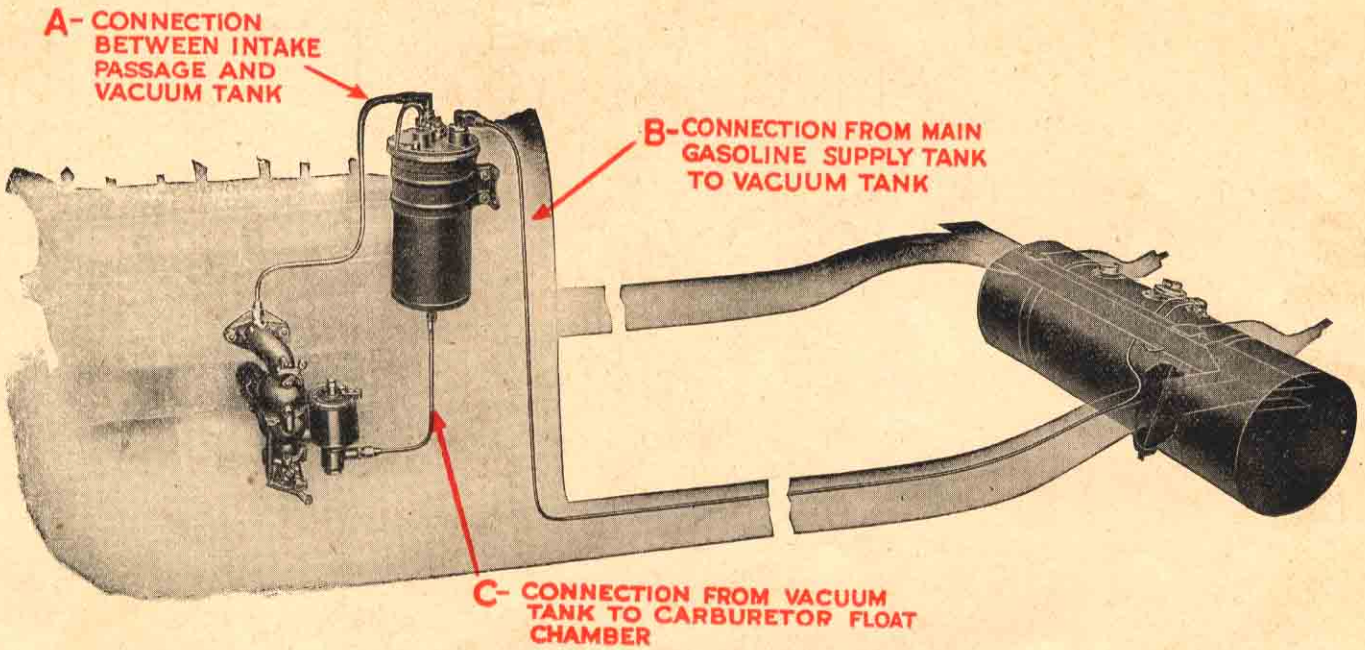
T is the outlet passage from the upper to the lower chamber, and contains the flapper valve H.

V is the small wire screen strainer for the gasoline entering the vacuum tank, which prevents the admission of dirt and sediment.

W is the flushing plug which should be removed for cleaning the tank and the valves, and filling the tank when this cannot be done readily by use of the starter.



Top of Stewart Vacuum Gasoline Tank removed, showing valve mechanism.



Above illustration shows the Stewart Vacuum Gasoline System as installed on Dodge Brothers Motor Car.

Care and Repair of the Stewart Vacuum Gasoline System

The simple and durable construction of the Stewart Vacuum Tank makes it unlikely that it will require any repairs. If the instructions for its care are carried out the Vacuum Gasoline System will continue to operate satisfactorily. If at any time, however, adjustment or repairs should be necessary the directions given in this book should be followed carefully.

FILLING THE TANK IN STARTING.

If a vacuum tank ever becomes entirely empty, fill it by closing the engine throttle and turning the engine over a few revolutions by the starter. This will create sufficient suction in the vacuum tank to draw gasoline from the main tank and fill it. If the tank has been allowed to stand empty for considerable time, it may not fill easily when the engine is turned over, due to dirt or sediment under the flapper valve (H) or a dry atmospheric valve (B) or suction valve (A). To overcome this trouble, remove the plug (W) in the top and squirt a little gasoline into the tank which will wash the dirt from the valve faces and thoroughly wet them.

CONNECTIONS AND TUBING.

Coupling and elbow connections should always be kept screwed down tight. Care should be taken that the tubing contains no sharp, flat bends that might retard the flow of the gasoline.

STRAINER.

The gasoline strainer (V, see page 3) should be cleaned about every three weeks. This is readily done by unscrewing the nut in the top of the tank into which the tube from the main gasoline tank fits.

FLUSHING THE TANK.

Every three months, whether it seems necessary or not, the tank should be flushed through the plug (W) after disconnecting the tube leading to the carburetor float chamber. At the same time all connections should be inspected to see that they are absolutely tight.

ADJUSTMENTS

VENT TUBE OVERFLOW.

The air vent allows atmospheric pressure to be maintained in the lower chamber. If the vent tube overflows regularly, it may be due to the air vent in the main gasoline tank being clogged. This air vent should be inspected and thoroughly cleaned regularly to prevent it becoming stopped up with dirt.

GASOLINE LEAKAGE.

Gasoline leakage from any place other than the air vent tube is

due to one of the following causes: A leak in the outer wall of the tank, which can be repaired by soldering up the hole; a loose carburetor connection in the bottom of the tank, which should be tightened; a leak in the tubing from the carburetor to the vacuum tank or from the vacuum tank to the main supply tank. All connections and tubings should be inspected for such leaks.

FAILURE TO FEED GASOLINE TO THE CARBURETOR.

When the engine will not run properly, first ascertain if the trouble lies in the vacuum system. This can be done by removing the carburetor float, and observing whether or not the gasoline runs into the carburetor float chamber. Another test is to remove the inner vacuum tank. If the lower tank is filled with gasoline and the tube leading to the carburetor is unobstructed and the engine still refuses to run properly, then the fault lies elsewhere, and not in the vacuum system.

FAILURE OF TANK TO OPERATE PROPERLY.

Examine the gasoline strainer (**V**, see page 3) which is the screen located in the tube from the main gasoline tank. This screen collects all foreign substances that are in the gasoline. If the tank fails to work it may be that this strainer is clogged, thus preventing the flow of gasoline into the vacuum tank. It can be cleaned easily by unscrewing the connection at the elbow. This screen should be cleaned every three weeks so that no sediment can collect on it, or in the tank.

The float (**G**, see page 3) should be air tight. If it develops a leak and fills up with gasoline, it will not operate satisfactorily to close the vacuum valve, and open the air valve. This allows gasoline to be drawn into the intake passage which in turn will choke the engine. Proper operation depends upon the float being air tight.

To overcome a leaky float action temporarily until a garage can be reached, remove the plug (**W**) at the top. In some cases the suction of the engine is sufficient to draw gasoline into the tank even with this plug open, but not enough to draw it into the intake passage, and thus choke the engine. If, however, this does not work, close up the plug (**W**) with the engine running. This will fill the tank. After running the engine until the tank is full, remove the plug (**W**) until the gasoline gives out. Repeat this operation until a garage is reached where the leaky float can be repaired, as directed on page 8.

The flapper valve (**H**, see page 3) may be out of commission. A small particle of dirt getting under the flapper valve will prevent it from seating air tight and, therefore, destroy the proper suction action. In order to determine whether or not the valve is operating satisfactorily, first plug up the air vent, then detach the tubing from the bottom of the tank to the carburetor. Run the engine with the starter and place the finger over this bottom opening. If the suction is felt at this place, then it is evident that the flapper valve is being held

off its seat and letting air into the tank instead of drawing gasoline.

In many cases this condition of the flapper valve can be remedied by merely tapping the side of the tank, thus shaking loose the particle of dirt or lint which has clogged the valve. If this does not work, remove the tank cover, as described below, and lift out the inner tank. The flapper valve on the bottom of the inner tank can then be cleaned easily.

The intake connection (C, page 4) may be loose, allowing the air to be drawn into the intake passage and preventing the proper suction action. This leakage can be detected by applying oil to the connection while the engine is running and observing whether or not it is drawn in.

REPAIRS

TO REMOVE THE TOP.

In removing the top of the tank, after taking out the screws, insert the point of a screw-driver between the cover and the gasket at a point opposite the vent tube, and twist the screw-driver, which will loosen the cover, then run the blade of a knife carefully around the top, between the cover and the gasket, so that this gasket is separated without damage.

TO REPAIR A LEAKY FLOAT.

Remove the top of the tank to which the float is attached as directed above. Dip the float into a pan of hot water in order to locate the leak, which can be ascertained by the appearance of bubbles. If the gasoline cannot be shaken out of the float, punch two small holes, one in the top and the other in the bottom of it, to empty out the gasoline. Then solder up these holes and the leak, making sure that all gasoline has been drained out before applying a hot soldering iron, and using no more solder than is absolutely necessary.

In taking out the float and repairing it, be careful not to bend the float guide rod. A bent guide rod will strike against its guide and retard the float action, producing the same effect as a leaky float and allowing gasoline to enter the intake passage. Make sure that the rod is perfectly smooth so that it cannot catch in the guide.

RETURN OF TANK FOR REPAIRS

If for any reason you find it necessary to return your tank for repairs, ship the complete tank to our nearest Branch House or Service Station, lists of which are printed on page 12.

Be sure to pay all transportation charges. As we carry no accounts with car owners, we will be obliged when return-

ing a part to you to make the shipment C. O. D. if there are any charges and the amount of the incoming express charges will have to be added if the tank has not been sent to us prepaid. Where there would otherwise be no charges this will entail an extra expense on you, which can be avoided by making the shipment prepaid. Shipments by parcel post are at the owner's risk.

We have service stations in all the important cities where repairs and adjustments can be handled with the same promptness and efficiency that they would receive at our factory or branches. It will save you time and transportation charges to send or take the parts or vacuum tank complete to the nearest Service Station. If you can find no near-by Service Station in our list on page 12, write us for this information.

Mark plainly your name and address on the outside of any package sent to us, as we will not receive it if it is sent C. O. D. if the name of the sender is not placed upon it. If the charges are not prepaid, there is danger of it not being properly returned unless the sender's name and address is attached. Give full information by separate letter concerning what is the matter with the vacuum tank and the method of making the return you desire, to expedite our work and return shipment.

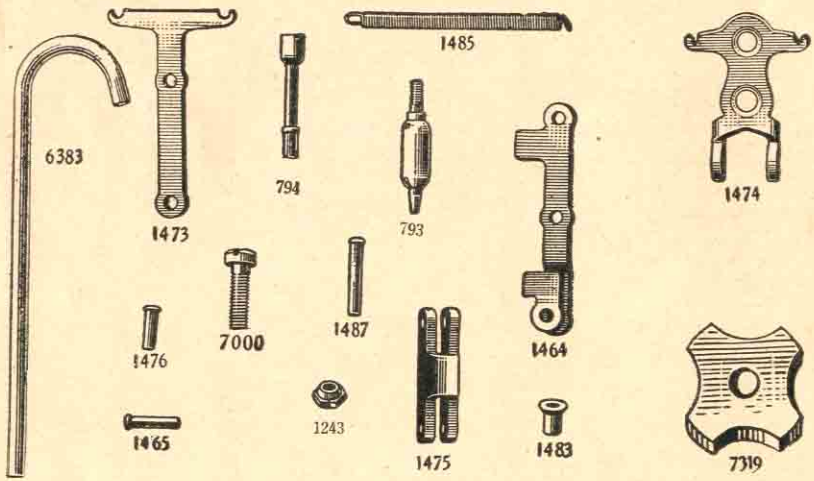
Repairs and adjustments are generally made by our Service Stations and Branches the same day they are received. Your co-operation in seeing that we receive full information concerning your tank and the shipping directions, will enable you to obtain the best possible service. If for any reason you do not receive prompt, efficient service from any of our Branches or Service Stations, kindly advise us direct.

Price List of Parts

for Stewart Vacuum Gasoline System—Model 116-H.
Installed on Dodge Brothers Motor Car.

In ordering, be sure to specify part number in order to avoid error

793	Vacuum Valve Stem	$0.25
794	Atmospheric Stem	.25
1243	Valve Stem Collar	05
1464	Float Lever	.25
1465	Float Lever Pin	.25
1473	Spring Lever	doz. .06
1474	Valve Stem Lever	.25
1475	Lever Connecting Link	.25
1476	Connecting Link Pin	doz. 1.50
1483	Valve Stem Sleeve	doz. .06
1485	Valve Tension Spring	doz. 1.25
1487	Valve Stem Lever Pin	.05
2389	¼-inch Split Lock Washer	doz. .06
2762	Vacuum Check Valve	doz. .05
2807	¼-20 Hexagon Nut	.35
3416	Float Assembly	doz. 1.25
3477	Gasoline Strainer Assembly	1.50
3686	Top Cover Assembly	.30
3830	Cover Gasket	2.50
3913	Flapper Valve Assembly	doz. 1.50
4471	Band Bracket	1.25
4473	Bracket Clamp Screws	.35
1480	Pipe Plug	doz. .50
6185	Outside Shell Assembly	doz. 1.25
6383	Vent Tube Extension	2.75
6384	Vent Tube Extension Connection	.30
7000	Cover Screws	.30
7319	Fibre Float Stem Guide	doz. .05
7485	Inner Shell Assembly	.05
		2.50



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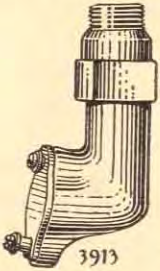

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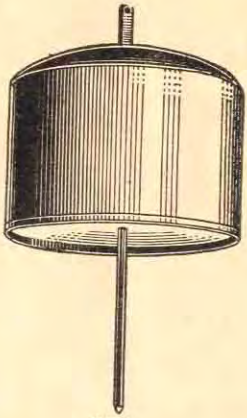

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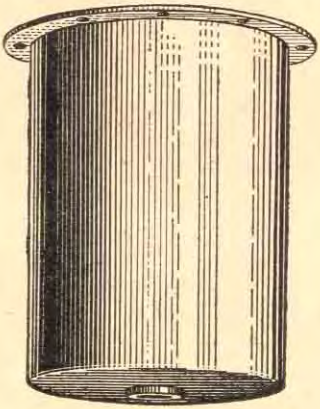

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2389

4471

Stewart-Warner Speedometer Corporation

Executive Offices: 1826-52 Diversey Parkway

CHICAGO, U. S. A.

Factory at Chicago, Ill.

BRANCHES { **Chicago, 1312 Michigan Avenue**
Detroit, 7321 Woodward Avenue
New York, 549-551 West 52nd Street

Stewart-Warner Speedometer Corporation Branch Offices and Authorized Service Stations

CALIFORNIA—
Fresno, 2037 Merced St.
Los Angeles, 1366 S. Figueroa St.
Oakland, 326 Twenty-third St.
San Francisco, 1450 Van Ness Ave.
San Diego, Front and F Sts.

COLORADO—
Denver, 1153 Bannock St.

CONNECTICUT—
Hartford, 45 Wells St.

DISTRICT OF COLUMBIA—
Washington, 1117 Fourteenth St., N.W.

GEORGIA—
Atlanta, 399 Peachtree St.

ILLINOIS—
Chicago, 1852 Diversey Parkway
Chicago, 1312 Michigan Ave.

INDIANA—
Indianapolis, 514 N. Capitol Ave.

IOWA—
Des Moines, 1600-1602 Locust St.

KENTUCKY—
Louisville, 628 S. Third St.

LOUISIANA—
New Orleans, 1304 St. Charles Ave.

MARYLAND—
Baltimore, 1117 Cathedral St.

MASSACHUSETTS—
Boston, 1111 Commonwealth Ave.
Springfield, 761 Main St.

MICHIGAN—
Detroit, 7321 Woodward Ave.
Grand Rapids, 710-12 Monroe Ave.

MINNESOTA—
Minneapolis, 1116-18 Second Ave., S.
St. Paul, 231 W. Sixth St.

MISSOURI—
Kansas City, 1827 Grand Ave.
St. Louis, 3206 Locust St.

NEBRASKA—
Omaha, 2043-2045 Farnam St.

NEW JERSEY—
Newark, 332 Plane St.

NEW YORK—
Albany, 338 Central Ave.
Brooklyn, 1060 Bedford Ave.
Buffalo, 1224 Main St.
New York, 549-551 W. 52nd St.
Rochester, 296 East Ave.
Syracuse, 516 E. Genesee St.
Utica, 211 Post St.

OHIO—
Cincinnati, 224 E. Seventh St.
Cleveland, 2309 Chester Ave.
Columbus, 304 East Long St.
Toledo, 609-611 Huron St.

OREGON—
Portland, 94 N. Broadway

PENNSYLVANIA—
Harrisburg, 1133 Mulberry St.
Philadelphia, 1419 N. Broad St.
Pittsburgh, Baum Blvd.
and Millvale Ave.
Scranton, 123 Franklin Ave.

RHODE ISLAND—
Providence, 110 Broadway

TENNESSEE—
Memphis, 241 Monroe Ave.

TEXAS—
Dallas, 1920 Commerce St.
El Paso, 710 Texas St.
Houston, 1914 Main St.
San Antonio, Avenue D and Fifth St.

UTAH—
Salt Lake City, 69 W. Fourth South St.

VIRGINIA—
Norfolk, 2005 Brambleton Ave.
Richmond, 1615 Broad St.

WASHINGTON—
Seattle, 1515 Broadway
Spokane, 1131 West First Ave.
Tacoma, 735-737 Broadway

WISCONSIN—
Milwaukee, 582-584 Jefferson St.

CANADIAN SERVICE STATIONS

ALBERTA—
Calgary, Stewart-Warner Products Service Station, 303 Seventh Ave., West

BRITISH COLUMBIA—
Vancouver, Granville and Pacific Sts.

MANITOBA—
Winnipeg, 644 Portage Ave.

ONTARIO—
Toronto, 587 Yonge St.

QUEBEC—
Montreal, 146 Bleury St.

FOREIGN SERVICE STATIONS
EUROPE

DENMARK—
Copenhagen, Simonsen & Neilsen Frederiksholm Kanal 4.

ENGLAND—
London, The Cooper-Stewart Engineering Co., Ltd., 11 Broad St., Bloomsbury, W. C., 2.

FRANCE—
Paris, Markt & Co., 107 Avenue Parmentier

HOLLAND—
Schiedam, Stewart-Warner Products Service Station, Postbus 78.

NORWAY—
Christiania, Norsk Cycle and Motor Aktieselskat Stortingsgatev 16.

SWEDEN—
Stockholm, Svenska Cykel and Motor Aktiebolaget, Stockholm 5.

BELGIUM—
Brussels, Mestre & Blatge, 10 Rue de Page.

SWITZERLAND—
Geneva, Societe Anonyme de Fournitures, l'Industries et l'Automobile, 10 Rue de la Scie.

ITALY—
Milano, Markt & Co., Via A.,Aleardo 2

EAST AND FAR EAST

INDIA—
Bombay, A. Hyland, Ltd., Hughes Rd.

HAWAII—
Honolulu, Von Hamm-Young Co., Ltd.

JAPAN—
Tokyo, Yanase & Co., Gofukubashi, Marunochi.

CHINA—
Shanghai, Shanghai Horse Bazaar and Motor Co., Ltd., 36 Bubbling Well Rd.

PHILIPPINE ISLANDS—
Manila, The Manila Trading and Supply Co., The Escolta.

AUSTRALASIA

NEW ZEALAND—
Wellington, Hope Gibbons' Sons, Ltd.
Christchurch, Hope Gibbons' Sons, Ltd.
Brisbane, Martin Wilson Bros., Ltd., 299 Adelaide St.
Sydney, Bennett & Wood, Ltd., 234 Pitt St.
Sydney, The Cooper Engineering Co., Ltd., 129 Sussex St.
Melbourne, Berry & Roche Pty., Ltd., 239 Swanston St.
Adelaide, Cornell, Ltd., 122 Pirie St.
Perth, The Goodyear Tyre Depot, 806 Hay St.

AFRICA

BRITISH SOUTH AFRICA—
General Distributors, Ltd.
Port Elizabeth, General Distributors, Ltd.
Johannesburg, General Distributors, Ltd.
Cape Town, General Distributors, Ltd.
Durban, General Distributors, Ltd.

MEXICO

MEXICO CITY—
Mexico Auto Supply Co., Avenue Ayuntamiendo 117.

SOUTH AMERICA

ARGENTINE—
Buenos Aires, Wm. Cooper & Nephews, Calle Maipu 87.

URUGUAY—
Montevideo, Wm. Cooper & Nephews, Calle Uruguay 820.

WEST INDIES

CUBA—
Havana, The Electrical Equipment Company of Cuba, Avenida de Italia 29