Finding No.	H. P.	Part No.	Name of Part	Selling Price
134	2½ & 4	1226	Flywheel Key	.35
135	2½ & 4		Button Head Screw, No. 8—32 x ⅜"	.05
136	2½ & 4		Countersunk Screw, No. 14—20 x ¼"	.05
137	2½ & 4		Fillister Head Screw, No. 14—20 x ⅜"	.05
138	2½ & 4		Button Head Screw, No. 14—20 x ¾"	.05
139	2½ & 4		Fillister Head Screw, No. 14—20 x ½"	.05
140	2½ & 4		Button Head Screw, No. 10—32 x 1"	.05
141	2½ & 4		Fillister Head Screw, No. 14—20 x 1"	.05
142	2½ & 4		Cup Point Set Screw, ⅜"—16 x 1"	.05
143	2½		Governor Bracket Screw, ½"—13 x 1½"	.05
144	4	6067	Main Bearing Stud	.10
145	2½	5967	Main Bearing Stud	.10
146	1¾ & 2½	5014	Connecting Rod Stud	.10
	4 G	6014	Connecting Rod Stud	.10
147	2½		Hex. Cap Screw, ½"—13 x 2"	.05
148	4 G		Hex. Cap Screw, ½" 13 x 1½"	.05
149	1¾		Main Bearing Hex. Cap Screw, ⅜"—16 x 1½" (not shown)	.05
150	1¾		Cylinder Head Hex. Cap Screw, 7/16"—14 x 1¼" (not shown)	.05
151	1¾ G		Rocker Arm Bracket Hex. Cap Screw, 5/16" —18 x 1" (not shown)	.05
197	1¾	4038	Cam Roller Yoke Guide Cap	.90

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Gas Power is a publication of 100 to 120 pages devoted

exclusively to gasoline engines and their application to farming. Each issue contains a wealth of valuable information essential to every power user, besides a valuable experience and Question and Answer Department, open at all times to readers of the magazine, covering fully gasoline engine troubles and remedies, and this department alone is worth ten dollars a year to any power user.

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Gray Motor Company

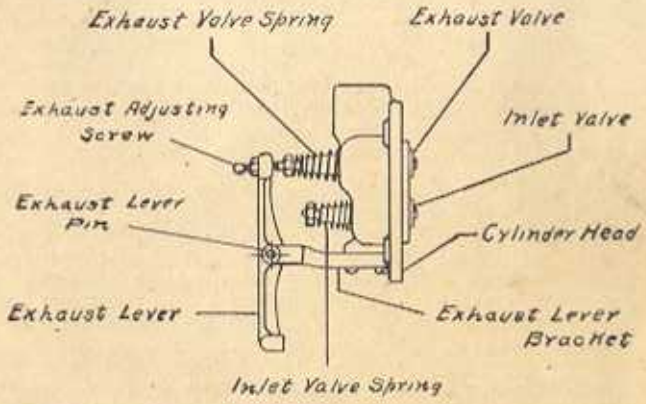
Detroit, Mich.

INSTRUCTIONS FOR STARTING AND OPERATING GRAY FOUR CYCLE STATIONARY ENGINES ON GASOLINE.

When shipped, the engine is all complete on skids, the skids forming the lower part of the crate. Be careful in removing crate not to pry against the engine or any of its parts, as they might be damaged. After the crate is removed, turn the flywheel around a few times to see that all working parts are in order.

Then examine wiring and connections and see that everything is correct and tight according to wiring diagram on pages 12-13-14. (Be sure that you compare the wiring diagram applying to your engine.)

The inlet valve (see cut below) may be stuck by paint or gummed oil and may not work back and forth readily when flywheel is turned around. You can remove paint or gummed oil with gasoline or kerosene until the valve works freely; then squirt a little lubricating oil on the valve stem. If the valve sticks, the engine will start hard.



Fill the oil cups or lubricators with gas engine oil, also main bearings (not machinery or steam engine oil—very important, and adjust the lubricator to feed about fifteen drops per minute until the engine has been used steady for a week or so, after which the oil may be reduced to ten drops per minute.

Oil all of the small moving parts of the engine and governor with gas engine oil by means of a squirt can and fill the hopper full of water, which should be replenished when it is three-quarters evaporated. (In cold weather it is advisable to put boiling hot water in the hopper, which will make the engine start quite easily.)

No fear need be had if water boils in hopper.

Fill the gasoline tank with gasoline, strained through a cloth or chamois. Be careful that there is no dirt or water in the gasoline. Any dirt getting into the tank will cause trouble sooner or later.

See that there is no leak in the gasoline tubing between the tank and the mixer. There is a check valve in the tubing next to the mixer (or this check valve may be found in some engines near the tank). The ball in this check should work freely up and down. It sometimes sticks, but seldom on a new engine.

Be sure every bolt, nut and pin is tight each time before starting up your engine.

You are now ready to start the engine.

With a squirt can inject two or three squirts of gasoline in the air inlet, see page 10, also into the priming cup on the side of the cylinder.

Retard the timer lever located at larger gear by shoving it toward the cylinder as far as it will go.

Close the switch.

Next open the needle valve on mixer about one-half to one turn from the closed position. The best intermediate position can be easily determined by noting what effect a slight turn makes in the speed of the engine and its exhaust. (See note below.)

Next take hold of the rim of the flywheel on the governor side of the 4 H. P. and larger sizes (use the handle in flywheel on smaller sizes) and give it a quick pull over once or twice, which is turning the flywheel from left to right as you stand facing the governor side of it, and the engine should start every time providing everything is properly adjusted, and the batteries in good condition, and the spark plug point not over 1/32 of an inch apart. (See page 6) for electrical suggestions.

NOTE: If too much gasoline (the needle valve opened too much) the exhaust will be black, so that the needle valve should be screwed in a trifle until the black smoke ceases. Blue smoke is an indication of too much lubricating oil. When the black smoke is produced the engine will not speed up nor will it develop full power and will sometimes stop.

If not enough gasoline is fed, flames will issue from the muffler and the engine will stop. After the proper point or adjustment of needle valve has been found it can be left in that position.

Keep gasket tight between cylinder head and engine (see page 8) replacing gasket.

FOR OPERATING ON KEROSENE.

See pages 10 and 11.

TO STOP ENGINE.

Turn off the switch and be sure that the flywheel does not stop at a point which will allow the exhaust valve to remain open which allows valve to rust. (Exhaust valve is open when it is shoved in.)

TO PREVENT FREEZING.

Open drain cock of cylinder. Neglecting this will cause you an expense.

To Change Speed, see view "B", pages 9 and 15.

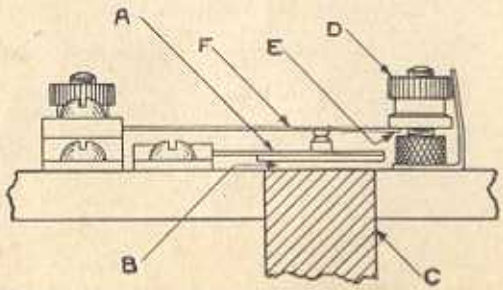
ADJUSTMENT OF NATIONAL COIL.

Adjustment is made by turning thumb nut D up or down.

Space B should be about 1/32 in.

When space E is entirely closed the coil is taking its maximum current.

Springs A and F when disassembled should have a slight upward curve.



The cut shows position of vibrator when properly adjusted.

Be sure that the platinum point on springs A and F is clean and not pitted; if so, use a very fine file and smooth them up before adjusting coil, also see that they come squarely together.

If your needle valve of mixer is properly adjusted and your wiring is in good shape, your coil will be in a position to give quick action and ample spark with the smallest possible consumption of battery current.

TO TEST SPARK PLUG AND BATTERIES.

Lay the plug on the exhaust lever bracket of the engine, seeing that the **metal body** of plug **only** rests on the bracket, with the high tension or large wire attached to the plug, have the switch on, turn off the gasoline at the needle valve, and slowly turn the fly-wheel around until contact is made, when the coil should buzz and there should be a spark between the **points** of the plug **only** (points to be not over 1/32 inch apart, and spark to be a sizzling blue—not a red color; if it is red, batteries are weak.) If you discover any spark or flashes when looking up inside of the plug, this is an indication that the plug is short circuited and should be cleaned or a new plug used.

When your engine fails to start put an ammeter or "battery tester" on the batteries and see that there are none showing less than ten amperes. If so, throw them away and put in a new battery. An ammeter only costs $1.50 and we can supply this to you if you desire.

Be sure that all the wires are tight and the connections are made according to diagram shown on pages 12-13-14 applying to

your engine. See that no loose wire strands touch any metal part of engine or coil except the binding posts.

TIMING THE SPARK.

To ascertain if your engine is properly timed, turn the fly-wheel around until the piston is on its farthest **compression in-stroke**, when the crank shaft will be on "dead center" shove the timer lever back toward the cylinder as far as it will go when contact should just be made. Contact is made when coil buzzes.

ADJUSTMENT OF BEARINGS.

Every engine that is sent out has its bearings properly fitted; however, with use the bearings will slacken, and to insure best satisfaction this slackness should be taken up.

Care should be taken when making the adjustment of the connecting rod and main bearings of your engine, so as not to set them too tight. Tighten the bolts alternately and after they have been set, turn the engine over several times to be sure there is no bind. If there is any bind, especially in the main bearings, you will find it hard to start and there will be a constant loss of power and you will be troubled with hot bearings.

A bearing should be adjusted so there is a little side play but no up and down or forward and back motion, and to obtain this proper adjustment it is sometimes necessary to use thin shims or liners of very thin tin or paper.

POINTERS.

Pounding—Caused by loose connecting rod or loose key in fly-wheel or carbon deposit.

Hot Bearings—Not enough lubricant or bearings too tight.

Back Firing—Through intake; not enough gasoline, or leaking intake valve.

Flames from Muffler—Not enough gasoline; needle valve not opened enough or check valve on gasoline tube not seating.

Black Smoke from Muffler—Too much gasoline.

Loss of Power—Air shut off too much. Needle valve on mixer opened too much. Gasoline too low in tank causing engine to miss.

Irregular Speed—Governor hooks or detents fitted too closely or too far apart, see diagram page 9 and 15 (can be ground off to give more clearance), or worn down too much.

When full power is not wanted—Partly close damper on air inlet to mixer, screw in the needle valve, reducing gasoline supply, until engine runs regular and no black smoke shows at muffler. Retard timer lever to prevent heavy explosions.

This is very desirable when driving water pump, cream separator, washing machine or for any other light work where the full power of engine is not required. This also saves gasoline.

Be sure every bolt, nut and pin is tight each time before starting up your engine, especially the piston pin bolt, otherwise the pin may work endwise scoring the cylinder.

REPLACING GASKET.

If cylinder gasket should ever blow out, remove the cylinder head and scrape **every particle** of the old gasket from the cylinder head as well as from the end of the cylinder, then use 1/32 inch card or pasteboard packing to make your new gasket, applying a coat of medium thick shellac with a brush to both sides of the gasket before replacing this and the cylinder head.

Draw up snugly on the cylinder head bolts, each a little at a time, until all are thoroughly tight, allowing the engine to stand for half an hour before starting up and after the first four or five explosions see if you cannot take up a little more on the cylinder head bolts, being careful not to twist them off in the cylinder. Sheet lead 1/16 inch thick makes a good gasket. It should be coated with shellac.

STARTING UNDER LOAD.

Many failures to start, and engine starting hard can be avoided by having a friction clutch pulley or a tight and loose pulley on a line shaft and machines to be driven so that the engine can be **started up without load.** After it has attained its working speed the load can be thrown on **gradually.**

REGAINING LOST COMPRESSION.

If your engine hasn't good compression this may be caused by dirt or carbon under the inlet or exhaust valve preventing it from seating and should be cleaned with gasoline or kerosene or the exhaust valve adjusting screw may be in too far, preventing valve from seating. Another cause for loss of compression is a leaking cylinder head gasket or too much oil having been used or a poor grade causing the piston rings to stick in their grooves, and the remedy is to remove the piston and rings—soak these in kerosene oil, compressing the rings with your finger until they work freely in and out of the piston grooves.

A hissing noise when turning the fly-wheel around on a new engine by hand is an indication of a slight leakage by the piston rings, but is not anything serious as the rings will soon conform to and bear on the cylinder walls after the engine is used a week or so.

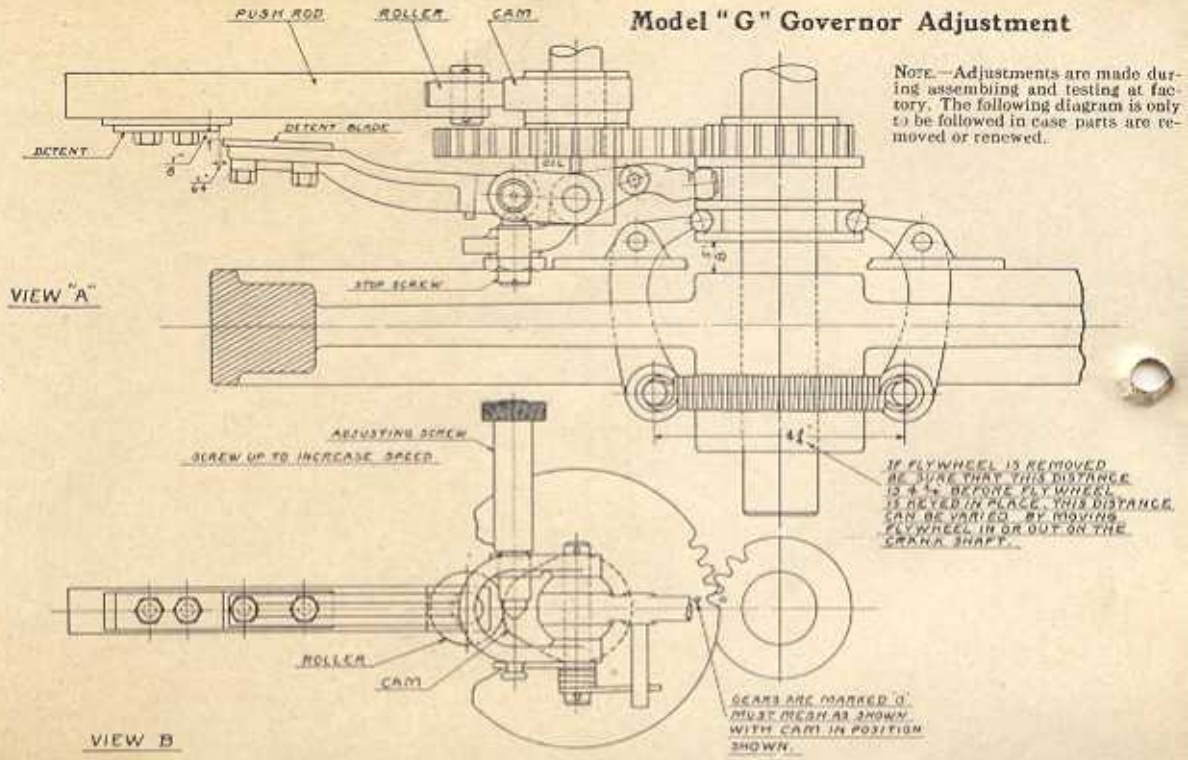
This blowing by the rings should not be had when engine is working.

LIME IN HOPPER.

As all water contains some lime, trouble is sometimes experienced by a formation of lime in the bottom of the hopper surrounding the cylinder, which in time will prevent the circulation of water around the cylinder, causing undue heat, loss of power, and will require more cylinder oil to overcome this.

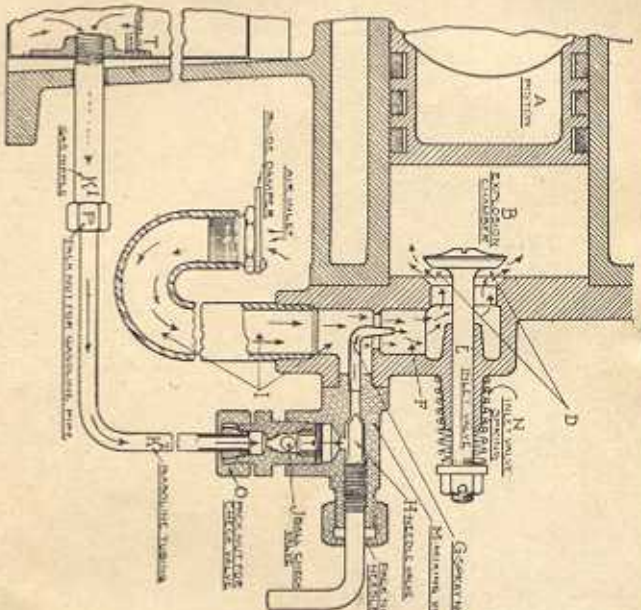
You can remove this deposit of lime by mixing a solution of water and sulphuric acid, three parts water and one part sulphuric acid, allowing this to set in the hopper for ten hours, when the mixture and deposit of lime can easily be removed from the hopper.

Model "G" Governor Adjustment



NOTE.—Adjustments are made during assembling and testing at factory. The following diagram is only to be followed in case parts are removed or renewed.

DETAIL OF MIXING AND SUCTION FEED.



Please refer to these details when writing us for information about suction feed or any trouble.

Be sure ball check "J" and inlet valve "E" are not stuck and work freely—that pack nuts "O" and "P" are tight. Also pack nut for needle valve. See that inlet valve is not stuck and moves in when fly-wheel is revolved.

STARTING INSTRUCTION FOR MODEL "G" GRAY ENGINE ON KEROSENE.

First—Close needle valve on mixer that leads to tank filled with kerosene in base of engine. Have timer lever shoved toward cylinder as far as it will go, which retards the spark.

Second—Close air throttle on mixer.

Third—Put a half teaspoonful of gasoline in air inlet on mixer.

Fourth—Prime cylinder through priming cock with gasoline.

Fifth—Close switch and start engine.

Sixth—After engine is started shove timer lever away from cylinder as far as it will go.

Seventh—When the engine has almost used up the small amount of gasoline in air inlet, open the kerosene needle about one-quarter turn and engine should readily run on kerosene, if not inject more gasoline and run a few minutes, then open needle valve again.

Caution—Do not turn on kerosene unless engine is working properly, as you will probably cause engine to flood, in which case you will have to close needle valve and crank engine until you have overcome flooded condition.

When operating on kerosene the engine must have sufficient work to allow water in hopper to become hot.

In cold weather it will improve the starting and running of engine to fill hopper with hot water before starting.

The throttle on air inlet can be set in any position necessary to give good results; in most cases this throttle should be partly closed as it increases the efficiency of the engine.

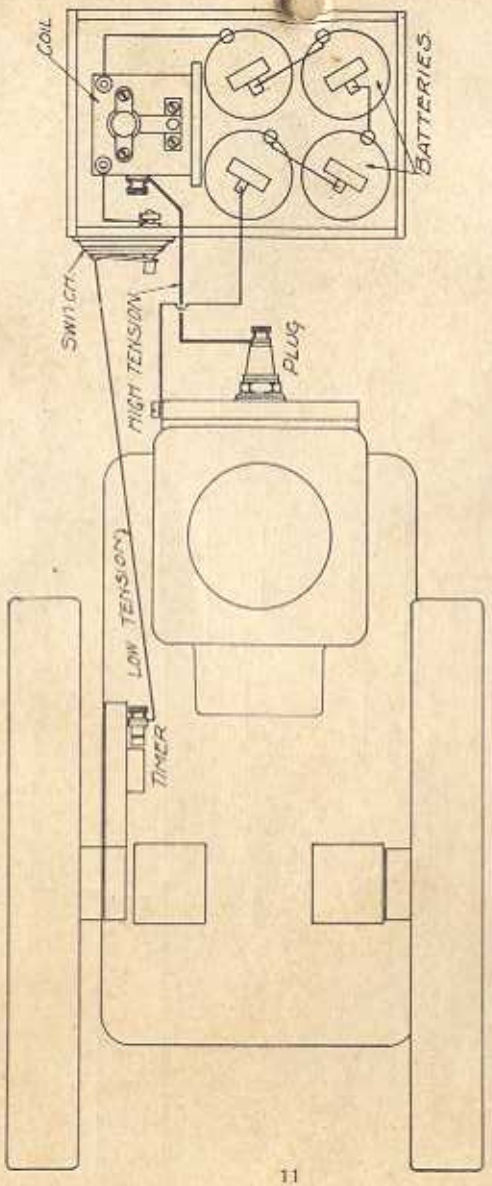


Diagram for wiring 1¾ and 2½ Engines Model "G-2"

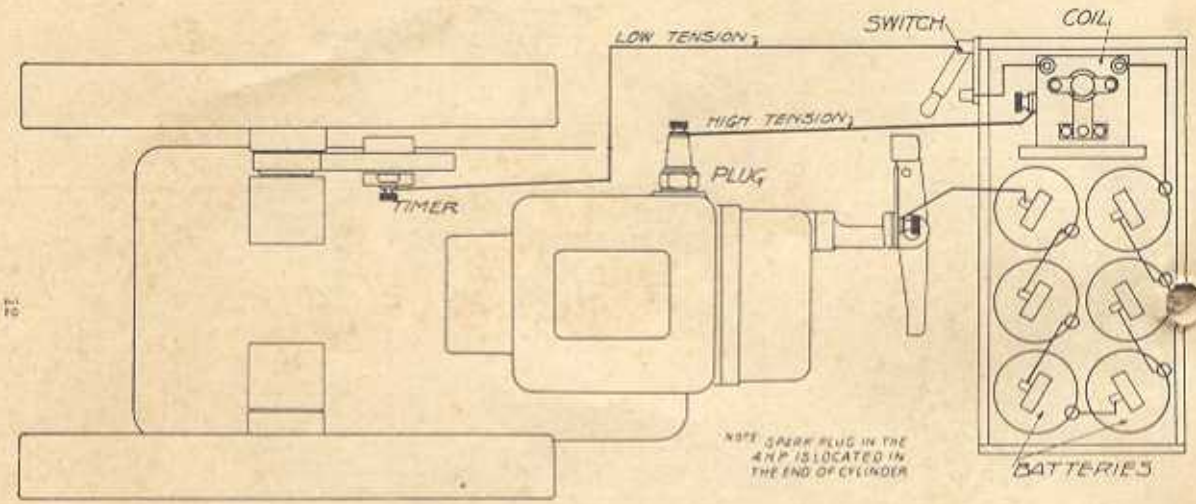
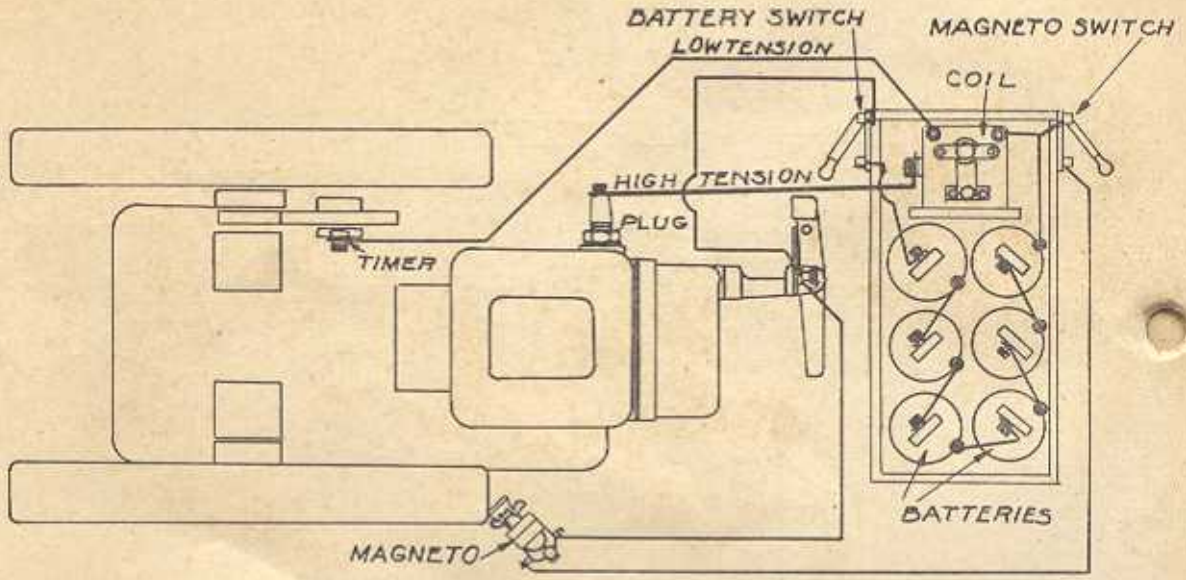


Diagram for wiring 4 "G-2" and 6 "L" Gray Junior Engines

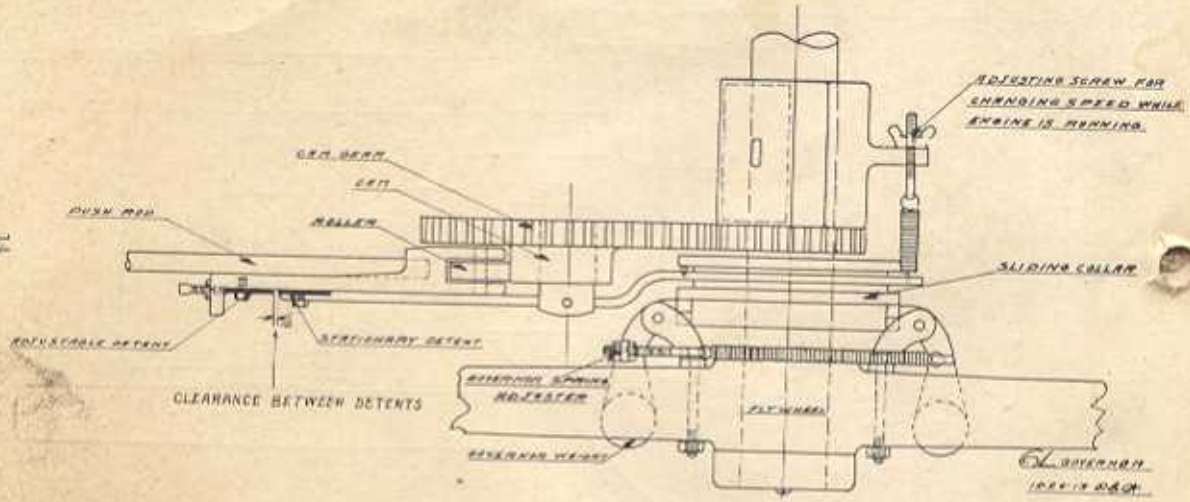
Note 4 H. P. "G-2" has 4 batteries and 6 "L" has 5



Wiring diagram showing Magneto and Battery wiring

Note—4 H. P. "G-2" has 4 batteries and 6 "L" has 5

Governor Adjustment for 6 H. P. Model "L"



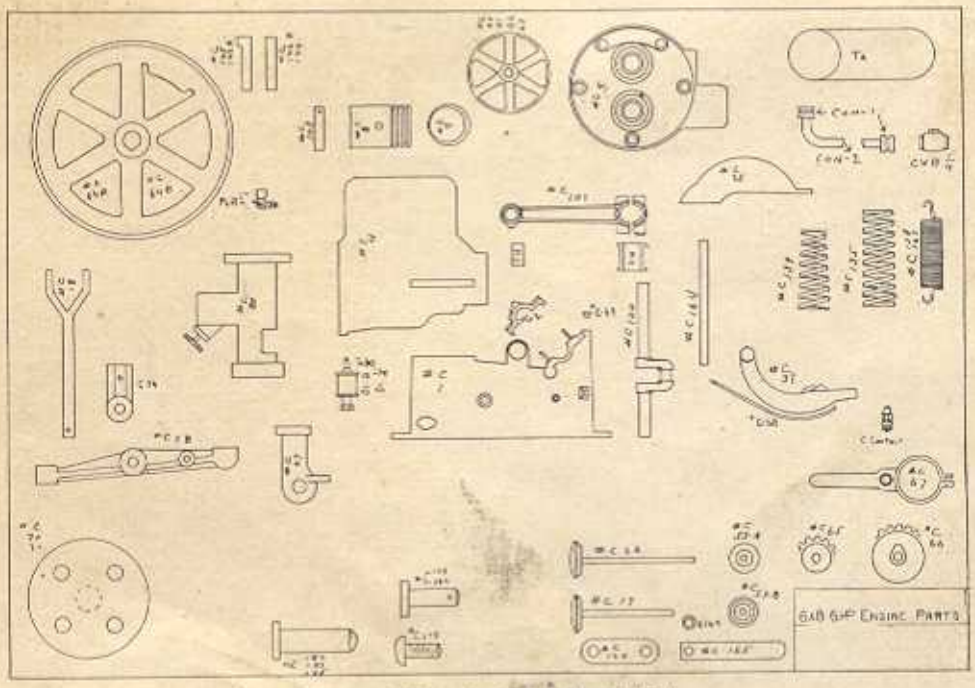


Diagram of Parts for 6 H. P. Model "L."

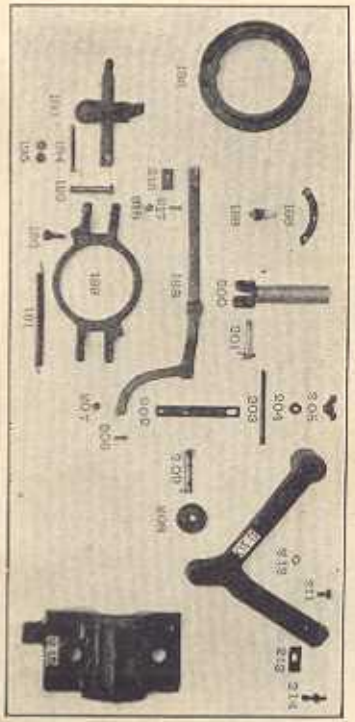
Repair Parts Price List of 6 "L" Gray 4-Cycle Stationary Engine

Finding No.	Name of Parts.	Price.
C- 1	Base	$18.00
C- 2	Main Bearing Cap (Babbitted)	each 1.50
C- 4	Cylinder	35.00
C- 5	Cylinder Head	12.00
C- 8	Piston with Rings	10.00
C- 9	Piston Ring	each 1.00
C- 10	Wrist Bearing	per pair 1.50
C- 12	Connecting Rod Bushing	1.00
C- 17	Intake Valve	1.50
C- 18	Intake Valve Lever	.75
C- 26	Exhaust Valve	1.50
C- 27	Exhaust Lever Bracket	.80
C- 28	Exhaust Lever	.80
C- 29	Exhaust Cam Roller	.60
C- 37	Governor Weight	1.00
C- 53-A	Intake Valve Spring Washer	.25
C- 53-B	Exhaust Valve Spring Washer	.25
C- 63	Pulley 12 x 10	5.50
C- 64-A	Fly Wheel (Governor side)	16.00
C- 64-B	Fly Wheel (plain)	16.00
C- 65	Gear on Crank Shaft	2.25
C- 66-A	Gear with Cam	3.00
C- 67	Timer Collar and Lever	1.10
C- 68	Bell Crank Lever	1.75
C- 69	Oil Cap	each .10
C- 70	Exhaust Muffler (Outside Half Drum)	2.50
C- 71	Exhaust Muffler (Inside Half Drum)	2.50
C- 74	Intake Lever Casting	.10
C- 75	Oil Guard (not shown)	1.10
C- 80	Gasoline Mixer	4.00
C-100	Crank Shaft	17.00
C-101	Connecting Rod (complete)	10.00
C-102	Piston Pin	1.50
C-135	Spring (Exhaust)	.50
C-138	Spring (Governor Weight)	.35
C-139	Spring (Intake Valve)	.50
C-142-A	Fly Wheel Key with Gib	.40
C-142-B	Fly Wheel Key without Gib	.25
C-144	Crank Shaft Gear Key	.20
C-145	Pulley Key with Gib	.40

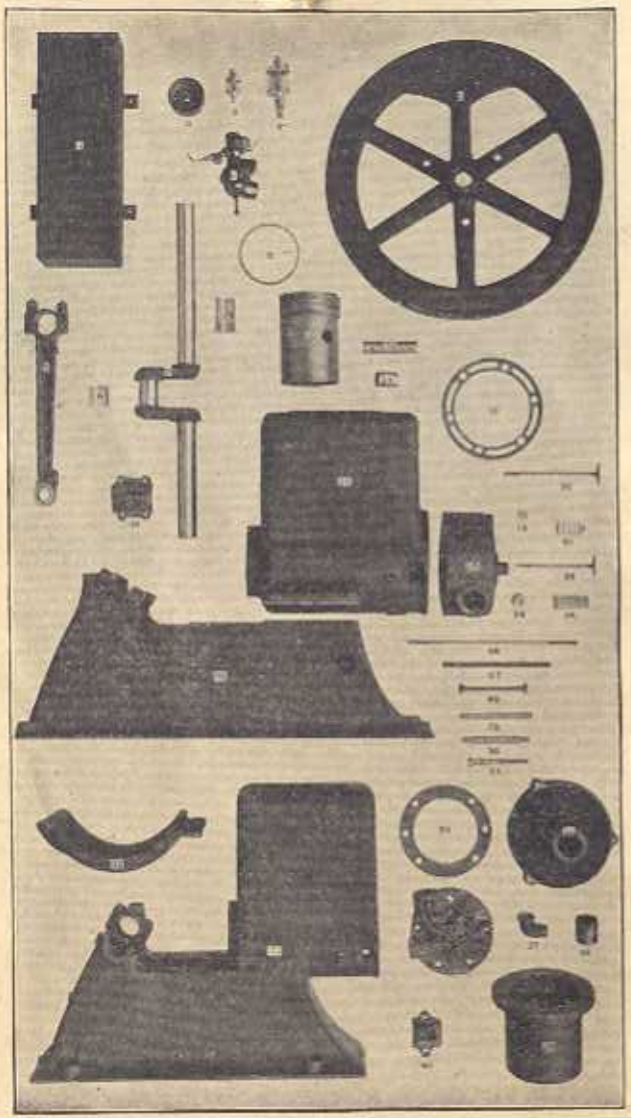
Finding No.	Name of Parts.	Price.
C-164	Exhaust Rod	.50
C-165	Spring (Circuit Breaker)	.30
C-167	Spring (Spiral Governor Lock Lever)	.35
C-168	Spring (Flat Governor Lock Lever)	.40
C-169	Insulator (Circuit Breaker)	.15
C-178	Contact Screw	.25
C-179	Exhaust Cam Roller Pin	.30
C-180	Governor Weight Spring Pin	.35
C-181	Pump Connecting Link Pin	.20
C-182	Cam Gear Pin	.80
C-183	Governor Lock Lever Pin	.80
C-184	Exhaust Lever Bracket Pin	.80
C-185	Bell Crank Pin	.80
CVB ¼	Ball Check Valve	.50
CON 1	Connector ¼ Pipe to ⅜ Tubing	.25
CON 2	Connector and ⅜ Copper Tubing	.50
OIB ⅜	Cylinder Oiler	1.00
OI ¼	Crank Pin Oiler ¼	1.00
PCA ¼	Priming Cup ¼ Right Angle Close Shank	.60
TA	Tank (Gasoline)	3.00
	Spark Plug (not shown)	.80
	Brass Contact Complete for Timer Lever	.75
	Coil (not shown)	6.50
	Batteries (not shown) each	.20
	Battery Box (not shown)	1.60
	St. Ell 2-inch (not shown)	.20
	St. Ell ⅜ 45 degree (not shown)	.10
	Nipple (for 2-inch Pipe) (not shown)	.15
	Close Nipple ¼ (not shown)	.10
	Connecting Rod Cap (not numbered)	1.50
	Connecting Rod Stud and Nuts (not shown) each	.35
	Main Shaft Studs and Nuts (not shown) each	.35
	Drain Cock (not shown)	.35
	Exhaust Adjusting Screw and Nut (not shown)	.30
	Skidg, complete (not shown)	2.50
	Wire (not shown)	.60
	Switch (not shown)	.60

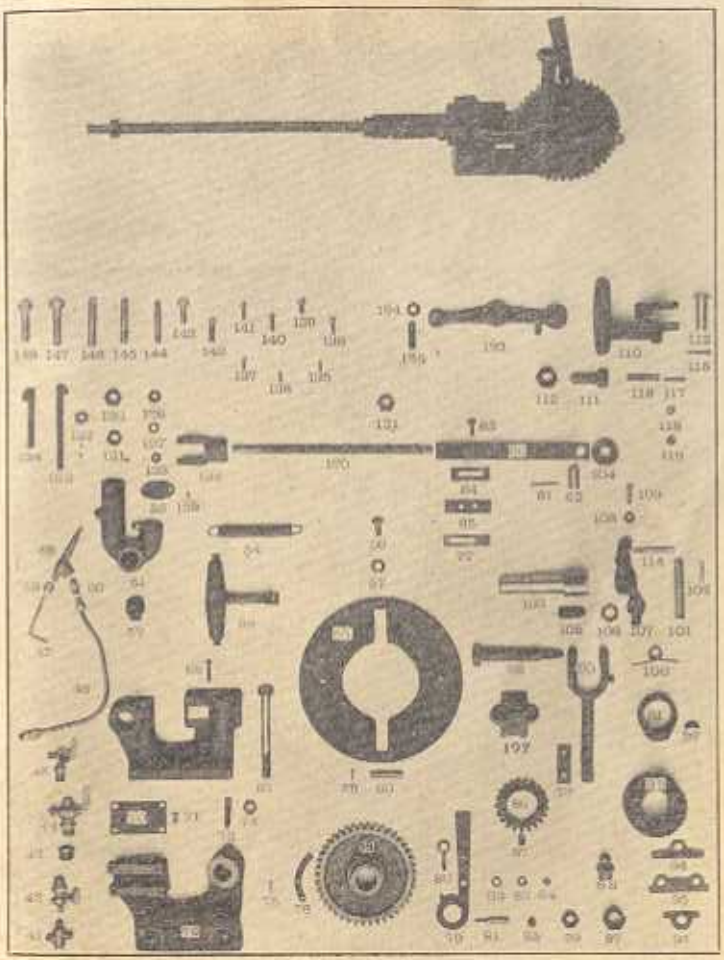
In writing us do not omit any little detail, even though you may consider it unimportant, and always give us the horsepower, model and date your engine was bought whether direct from us or from an agent and his name.

Repair Parts Price List of Model "L" Governor Parts



Finding No.	Part No.	Name of Part.	Price.
188	C-79-1	Governor Lock Lever	$ 1.00
189	C-82	Governor Bracket Collar	.75
190	C-87-A	Governor Weight	1.75
191	C-139	Governor Weight Spring	1.20
192	C-180-1	Governor Weight Pin	.35
193		Governor Bracket Collar Screw	.40
194		Governor Weight Pin Adjusting Screw	.95
195		Governor Weight Pin Adjusting Screw Nut	.30
196	C-89-1	Governor Collar	1.75
198	C-178-A	Contact Spring	.45
199		Contact Plug Complete	.90
200	C-182-1	Yoke Pin	1.00
201		Lock Lever Pin	.35
202	C-167	Lock Lever Spring	.35
203		Lock Lever Spring Adjusting Screw	.50
204		Lock Lever Spring Adjusting Screw Nut	.05
205		Wing Nut for Adjusting Screw	.10
206		Lock Lever Screw	.95
207		Lock Lever Spring Nut	.95
208	C-99	Exhaust Cam Roller Pin	.50
209	C-179	Two Way Lever	1.75
210	C-56-2	Two Way Lever Cap Screw	.95
211		Two Way Lever Nut	.95
212		Detent—B	.40
213	C-148-2	Detent—B Set Screw and Nut	.40
214		Oil Cap (not shown)	.10
215	C-8-2	Bearing Cap—Left	.20
215-A	C-8-3	Bearing Cap—Right	1.50
215-B	C-8-3	Bearing Cap	1.50
216	C-148-1	Detent—A	.60
217		Detent Screw	.95
218		Detent Nut	.05





Repair Parts Price List of 1¾, 2½ and 4 H. P. Model "G-2"

Finding No.	H. P.	Part No.	Name of Part	Price
1	1¾	4090	Gasoline Tank	$ 1.75
	2½	5090	Gasoline Tank	2.50
	4	6090	Gasoline Tank	3.00
2	2½-4	6049	Key	.15
3	1¾-2½-4		No. 0 Splash Oiler	1.25
4	1¾		No. 1½ Gravity Oiler	1.50
	2½-4		No. 2 Gravity Oiler	1.80
5	1¾	4047	Flywheel (Governor Side)	8.00
		4048	Flywheel (Pulley Side)	8.00
	2½	5048	Flywheel (State whether Governor Side or not)	11.00
	4	6048	Flywheel (State whether Governor Side or not)	14.00
6	1¾	444091	½" Mixing Valve	2.00
	2½	445091	¾" Mixing Valve	2.00
	4	446091	1" Mixing Valve	2.50
7	1¾	4012	Connecting Rod and Cap, Babbitted	3.00
	2½	5012	Connecting Rod and Cap, Complete with Bushings	5.00
	4	6012	Connecting Rod and Cap, Complete with Bushings	6.00
8	2½	5016	Connecting Rod Split Bushing (per set)	1.00
	4	6016	Connecting Rod Split Bushing (per set)	1.20
9	1¾	4011	Crank Shaft	8.50
	2½	5011	Crank Shaft	11.50
	4	6011	Crank Shaft	13.50
10	2½	5065	Main Bearing ½ Bushing (per pair)	1.25
	4	6065	Main Bearing ½ Bushing (per pair)	1.50
11	1¾	19113	Piston Ring	.50
	2½	1182	Piston Ring	.60
	4	1200	Piston Ring	.90
12	1¾	4070	Piston, Complete with Rings	6.00
	2½	5070	Piston, Complete with Rings	8.00
	4	6070	Piston, Complete with Rings	9.00
13	1¾	4072	Piston Pin	.50
	2½	5072	Piston Pin	.90
	4	6072	Piston Pin	1.25
14	2½	1612	Piston Pin Bushing (Bronze)	.35
	4	6015	Piston Pin Bushing (Bronze)	.45
15	4	6007	Cylinder Head Gasket	.25
16	4	6066	Main Bearing Cap	1.25
17	4	6004	Cylinder	27.00
18	4	6006	Cylinder Head	7.50
19	1¾	4045	Intake Valve Spring Retainer	.10
	2½-4	6045	Intake Valve Spring Nut	.10
20	1¾	4040	Exhaust Valve	.90
	2½	5040	Exhaust Valve	1.00
	4	6040	Exhaust Valve	1.25
21	1¾	4044	Intake Valve Spring	.20
	2½	5044	Intake Valve Spring	.30
	4	6044	Intake Valve Spring	.35
22	1¾	4043	Intake Valve	.80
	2½	5043	Intake Valve	1.00
	4	6043	Intake Valve	1.25
23	1¾	4041	Exhaust Valve Spring	.10
	2½	5041	Exhaust Valve Spring	.30
	4	6041	Exhaust Valve Spring	.35
24	1¾	4045	Exhaust Valve Spring Retainer	.10
	2½-4	6042	Exhaust Valve Spring Nut	.10
25	4	6001	Base	15.00
26	1¾	4033	Push Rod	.20

Finding No.	H. P.	Part No.	Name of Part	Price
	2½	5033	Push Rod	.30
	4	6033	Push Rod	.35
27	2½		¼" x 9⅛" Oil Nipple	.10
	4		¼" x 8⅛" Oil Nipple	.10
28	1¾		⅜" x 5" Skid to Engine Bolt and Nut	.10
	2½		⅜" x 5½" Skid to Engine Bolt and Nut	.10
	4		½" x 5¼" Skid to Engine Bolt and Nut	.15
29	1¾		7/16" x 1¼" Cylinder Head Cap Screw	.05
	4	6009	⅝"—11 x 6 1/16" Cylinder Head Stud (Long)	.20
30	4	6008	⅝"—11" x 5 9/16" Cylinder Head Stud (Short)	.20
31	4		½" x 4½" Governor Bracket Cap Screw	.20
32	1¾	4075	Oil Guard	.50
	2½	5075	Oil Guard	.85
	4	6075	Oil Guard	.90
33	1¾	4004	Cylinder and Base	12.00
	2½	5004	Cylinder and Base	29.00
34	1¾	4007	Cylinder Head Gasket	.05
	2½	5007	Cylinder Head Gasket	.20
35	1¾	113516	1" Pancake Muffler	1.90
	2½	114516	1¼" Pancake Muffler	2.25
	4	115516	1½" Pancake Muffler	2.50
36	1¾	4006	Cylinder Head	4.00
	2½	5006	Cylinder Head	6.00
37	2½-4		¾" Street Ell for Gasoline Tank	.15
38	1¾		1" x 2" Nipple for Muffler	.05
	2½		1¼" Close Nipple for Muffler	.05
	4		1½" Close Nipple for Muffler	.10
39	1¾	4115	Shaft Pulley	1.75
	2½	13505	Flywheel Pulley, 6" x 4½"	2.50
	4	18550	Flywheel Pulley, 8" x 6"	3.40
40	1¾	4066	Main Bearing Cap	.60
	2½	5066	Main Bearing Cap	1.00
40A	1¾		¼" x 8" Gasoline Filler Nipple (not shown)	.10
41	2½ & 4 G2	6008	Horizontal Check Valve, ⅛"	$ .50
42	2½ & 4 G2		¼" Pet Cock for Base Drain	.20
43	4 G2		¾" x ¾" Bushing (Brass)	.35
44	4 G2		¾" Drain Cock	.40
45	2½ & 4 G2		¼" Standard Priming Cup	.45
46	1¾-2½ & 4 G2		¼" x 9" Gasoline Tubing and Connections	.70
47	1¾-2½ & 4 G2	6108	Needle Valve	.10
48	1¾-2½ & 4 G2	6095	Pack Nut	.05
49	1¾-2½ & 4 G2	6503	Needle Valve Body	.75
50	1¾-2½ & 4 G2		⅛" Vertical Check Valve	.25
51	1¾ G2	4091	Mixing Chamber	.60
	2½ G2	5591	Mixing Chamber	.70
	4 G2	6591	Mixing Chamber	.80
52	2½ G2		½" Iron Pipe Plug	.05
	4 G2		¾" Iron Pipe Plug	.05
53	2½ & 4 G2	6125	Air Throttle	.05
54	1¾ G2	4055	Governor Weight Spring	.15
	2½ & 4 G2	6555	Governor Weight Spring	.15
55	1¾-2½ & 4 G2	6557	Governor Weight	.90
56	2½ & 4 G2		Governor Weight Lug Plate Cap Screw, ⅜"—16 x ⅞"	.05
57	2½ & 4 G2		Governor Weight Lug Plate Lock Washer, ⅜"	.05

Finding No.	H. P.	Part No.	Name of Part	Selling Price
58	2½ & 4 G2	6558	Governor Weight Lock Plate	1.00
59	1¾-2¾ & 4 G2		Governor Weight Cotter Pin, 3/32" x ¾"	.05
60	1¾ G2	4059	Governor Weight Pin	.10
	2½ & 4 G2	6559	Governor Weight Pin	.10
61	2½ & 4 G2		Roller Yoke Cotter Pin, 3/32" x 1"	.05
62	1¾	4031	Cam Roller Pin	.15
	2½ & 4 G2	6531	Cam Roller Pin	.15
63	1¾		Cam Roller Yoke Hex. Cap Screw, ¼"—20 x ½"	.05
	2½ & 4 G2		Cam Roller Yoke Hex. Cap Screw, ¼"—20 x ⅜"	.05
64	2½ & 4 G2	6519	Detent	.20
65	2½ & 4 G2	6518	Detent Base	.05
66	1¾	4032	Cam Roller Yoke (Rough)	1.00
	2½ & 4 G2	6532	Cam Roller Yoke	1.25
67	4 G2		Governor Bracket Hex. Cap Screws, ½"—13 x 4½"	.20
68	2½ & 4 G2		Flywheel Cap Button Head Screws, No. 14—20 x ¾"	.05
69	4 G2	6550	Governor Bracket	3.40
70	2½ & 4 G2	6552	Governor Bracket Plate	.10
71	2½ & 4 G2		Governor Bracket Plate Fillister Head Screw, No. 14—20 x ¾"	.05
72	2½ G2	5550	Governor Bracket	2.40
73	1¾-2½ & 4 G2		Cam Gear Spindle Dog Pt. Set Screw, ¾"—16 x 1¼"	.05
74	2½ & 4G2		Timer Lever Spring Hex. Lock Nut, ¾"—16	.05
75	1¾-2½ & 4 G		Timer Contact Spring Button Hd. Screw, No. 8—32 x ¾"	.05
76	1¾ G	4080	Timer Contact Spring	.10
	2½ & 4 G	6080	Timer Contact Spring	.10
77	1¾ G	4019	Detent	.20
78	1¾ G	4021	Detent Arm Shoe	.20
	2½ & 4 G	6521	Detent Arm Shoe	.20
79	2½ & 4 G	6077	Timer Lever	.20
80	2½ & 4 G	6078	Timer Lever-Spring	.10
81	1¾	4079	Timer Contact	.10
	2½ & 4 G	6079	Timer Contact	.10
82	1¾-2½ & 4 G		Timer Contact Washer, 3/16"	.05
83	1¾-2½ & 4 G	6082	Insulator	.10
84	1¾-2½ & 4 G		Binding Post Hex. Nut, No. 10—32	.05
85	1¾-2½ & 4 G	6084	Binding Post Knurled Nut, No. 10—32	.05
86	1¾ G	4029	Cam Pinion	1.00
	2½ G	5029	Cam Pinion	1.50
	4 G	6029	Cam Pinion	1.80
87	1¾ G		Cam Pinion Key, 5/16" x 5/16" x ½"	.05
	2½ & 4 G		Cam Pinion Key, ½" x ½" x ½"	.05
88	1¾ G	4026	Cam and Gear (combined)	1.50
	2½ G & G	6526	Cam [illegible] Gear	2.00
89	1¾-2½ & 4 G	446553	Governor Adjusting Screw	.35
90	1¾ G	4020	Detent Arm	.50
	2½ & 4 G	6520	Detent Arm	.60
91	2½ & 4 G	6025	Exhaust Cam	2.00
92	2½ & 4 G		Cam Key, No. A Woodruff	.10
93	1¾ G	4076	Sliding Collar	1.30
	2½ G	5576	Sliding Collar	1.40
	4 G	6576	Sliding Collar	1.50
94	1¾ G	4068	Main Bearing Liner	.10
	2½ G	5068	Main Bearing Liner	.10
95	4 G2	6068	Main Bearing Liner	.10
96	1¾ G	4017	Connecting Rod Liner	.05

Finding No.	H. P.	Part No.	Name of Part	Selling Price
	2½ G	5017	Connecting Rod Liner	.05
	4 G	6017	Connecting Rod Liner	.05
97	1¾ & 2½ 4 G		Connecting Rod Hex. Nuts, ¼"	.05
			Connecting Rod Hex. Nuts, ½"	.05
98	4 G 2	6074	Oil Chamber Cap	.05
99	2½ G 2 4 G 2		Main Bearing Hex. Nuts, 7/16"—14	.05
			Main Bearing Hex. Nuts, ¼"—16	.05
100	1¾-2½ & 4 G	6502	Governor Lever Spring	.05
101	1¾	4059	Governor Lever Pin	.15
	2½ & 4 G	6504	Governor Lever Pin	.15
102	1¾-2½ & 4 G		Governor Lever Cotter Pin, 3/32" x 1"	.05
103	1¾ G	4028	Cam Gear Spindle	.65
	2½ & 4 G2	6528	Cam Gear Spindle	.75
104	1¾ G	4030	Cam Roller	.20
	2½ & 4 G2	6530	Cam Roller	.25
105	1¾-2½ & 4 G	6501	Governor Lever Stop Screw	.15
106	1¾-2½ & 4 G		Governor Lever Stop Screw Nut, ¼"—18	.05
107	1¾ G	4022	Detent Lever (Roll End), (not shown)	.50
	2½ & 4 G	6522	Detent Lever (Roll End)	1.00
108	1¾-2½ & 4 G	6503	Detent Lever Roll	.05
109	1¾-2½ & 4 G	6521	Detent Lever Roll Stud	.05
110	1¾ G	4036	Rocker Arm Bracket	1.00
	2½ G	5036	Rocker Arm Bracket	1.25
	4 G	6036	Rocker Arm Bracket	1.25
111	1¾ G		Cylinder Head Hex. Cap Screws, 2-16—14 x 1½"	.05
	2½ G		Cylinder Head Hex. Cap Screws, ¼"-13 x 2"	.05
112	4 G 2		Cylinder Head Stud Hex. Nut, ¼"—11	.05
113	1¾ G	4037	Rocker Arm Pins	.20
	2½ & 4 G	6037	Rocker Arm Pins	.25
114	1¾-2½ & 4 G	6505	Governor Lever Spring Post	.05
115	1¾-2½ & 4 G		Rocker Arm Pin Cotter, 3/32" x 2"	.05
116	2½ & 4 G	6083	Circuit Contact Spring	.10
117	2½ & 4 G		Binding Post Button Head Screw, No. 10—32 x 1"	.05
118	2½ & 4 G	6082	Insulator	.10
119	2½ & 4 G	6084	Binding Post Knurled Nut	.05
120	1¾ G	4033	Push Rod	.25
	2½ G	5533	Push Rod	.35
	4 G	6533	Push Rod	.35
121	2½ & 4 G		Push Rod Hex. Nut, ½"—13	.05
122	2½ & 4 G2	6038	Rocker Arm Yoke	1.00
123	1¾ G	4035	Rocker Arm	.45
	2½	5035	Rocker Arm	.75
	4	6035	Rocker Arm	1.00
124	1¾		Adjusting Screw Lock Nut, 5/16"—18	.05
	2½ & 4	02750	Adjusting Screw Lock Nut, 7/16"—20	.05
125	1¾		Rocker Arm Adjusting Screw, 5/16"—18 x 1½"	.05
	2½ & 4 G	03725	Rocker Arm Adjusting Screw, 7/16"—20 x 1½"	.05
126	4 G		Main Bearing Stud Hex. Nut, ¾"—16	.05
127	2½ & 4		Valve Spring Hex. Lock Nut, ½"—24	.05
128	2½ & 4		Hex. Nut, ½ thickness, No. 14—20	.05
129	2½ & 4		Air Throttle Button Head Screw, No. 8—32 x ¼	.05
130	2½ & 4		Hex. Nut, ¼"—13	.05
131	2½ & 4		Hex. Nut, ½ thickness, ¼"—13	.05
132	2½ & 4		Hex. Nut, 7/16"—14	.05
133	1¾	4051	Flywheel Key	.35
	2½ & 4	6051	Flywheel Key	.25

INSTRUCTION BOOK

AND

REPAIR LIST

FOR

GRAY

4-Cycle Stationary Engines

Models G-2 and L

1914

GRAY MOTOR COMPANY

DETROIT, MICHIGAN

Adv. 5-171-5M-6-2-14

LUBRICATION

For cylinder lubrication of Gray Four Cycle Stationary Engines we strongly recommend **Gargoyle Mobiloil "A"**, manufactured by the Vacuum Oil Company, of Rochester, N. Y.

We include a sample can of this oil in the equipment of our engines. If you are unable to obtain it in your vicinity we can supply you at the following prices f. o. b. Detroit, Mich.:

Barrels	55c per Gal.
Half Barrels	58c per Gal.
5 Gal. Cans	65c per Gal.

GRAY MOTOR COMPANY
DETROIT, MICHIGAN

Correction was made in numbering the pages

Where you are referred in the copy to look on certain pages for wiring diagrams, electrical connections, etc., the page given is in A.L.S. issue one number too high.

For example, on page four in the 10th line from the top, we say "see page 30"; the drawing we want you to refer to is really on page 31.

Important

Our engines are constructed in the best possible manner of the highest grade of materials and in the best equipped shop in the country. It is our ambition to supply our customers with motors that will compare favorably with any gasoline engine built, regardless of price. Every part has been carefully machined and fitted in jigs to a perfect fit, and every adjustment has been made during our rigid test so that the engine should reach you ready for work.

A Gasoline Engine does not contain life, therefore cannot become "Balky." It will run with proper adjustments. Are you going to let this lifeless object get the better of your brains? A little more time spent reading this book will save you hours of unnecessary work and will possibly save us from being condemned when we are not at all to blame.

We would rather place our engine in your hands if you will master the contents of this book and follow its instructions than to place it in the hands of the best of the "so-called experts" who claim to know all about gasoline engines. They usually do more harm than good.

If after carefully studying and applying all the information in this book to your engine, you fail to get good results call in some friend who owns or has operated an engine, or write fully to Gray Motor Company Service Department, telling us just how your engine acts, and what you have done to overcome your troubles.