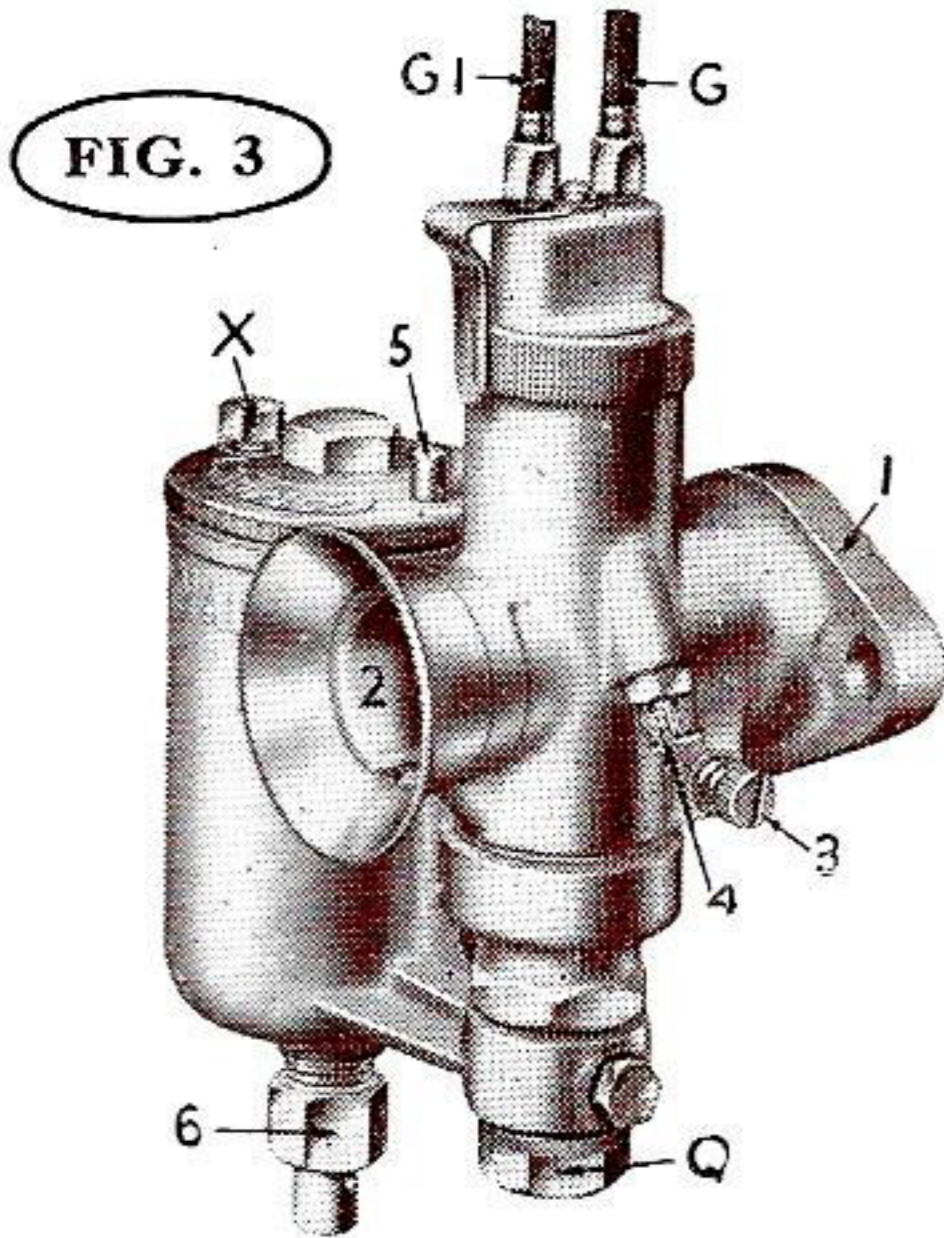


Carburetters with Needle Jet and Pilot Jet

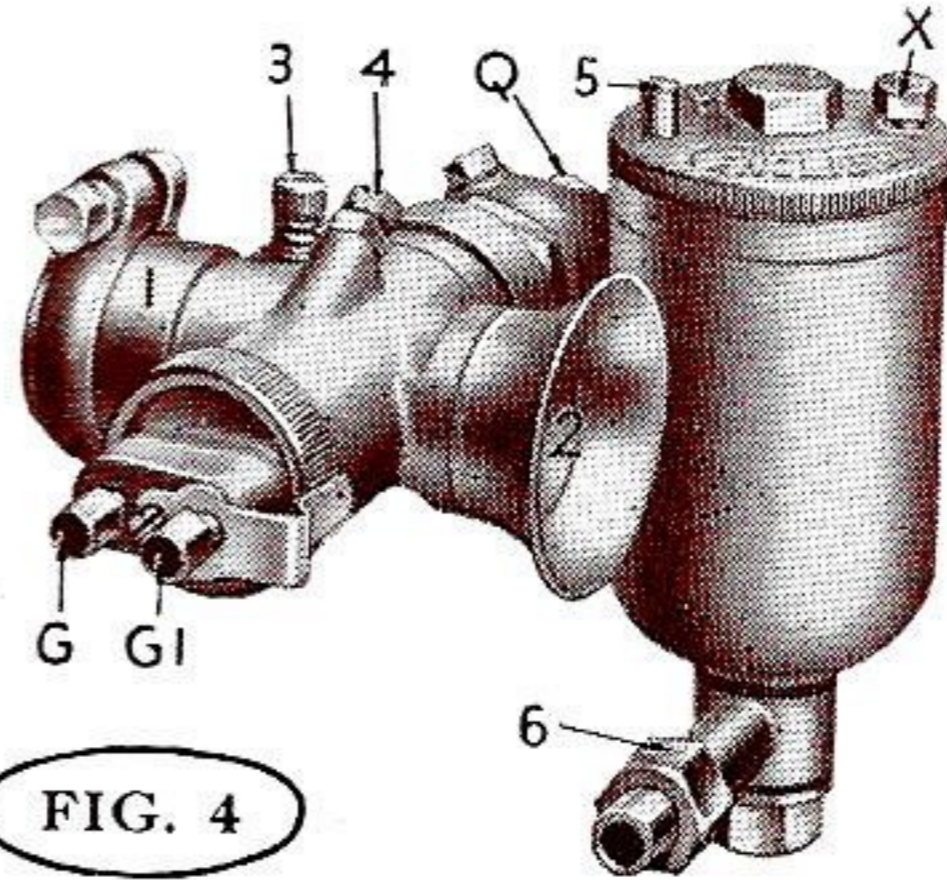
AMAL

CARBURETTERS
TYPES 274, 275, 276 and 289.

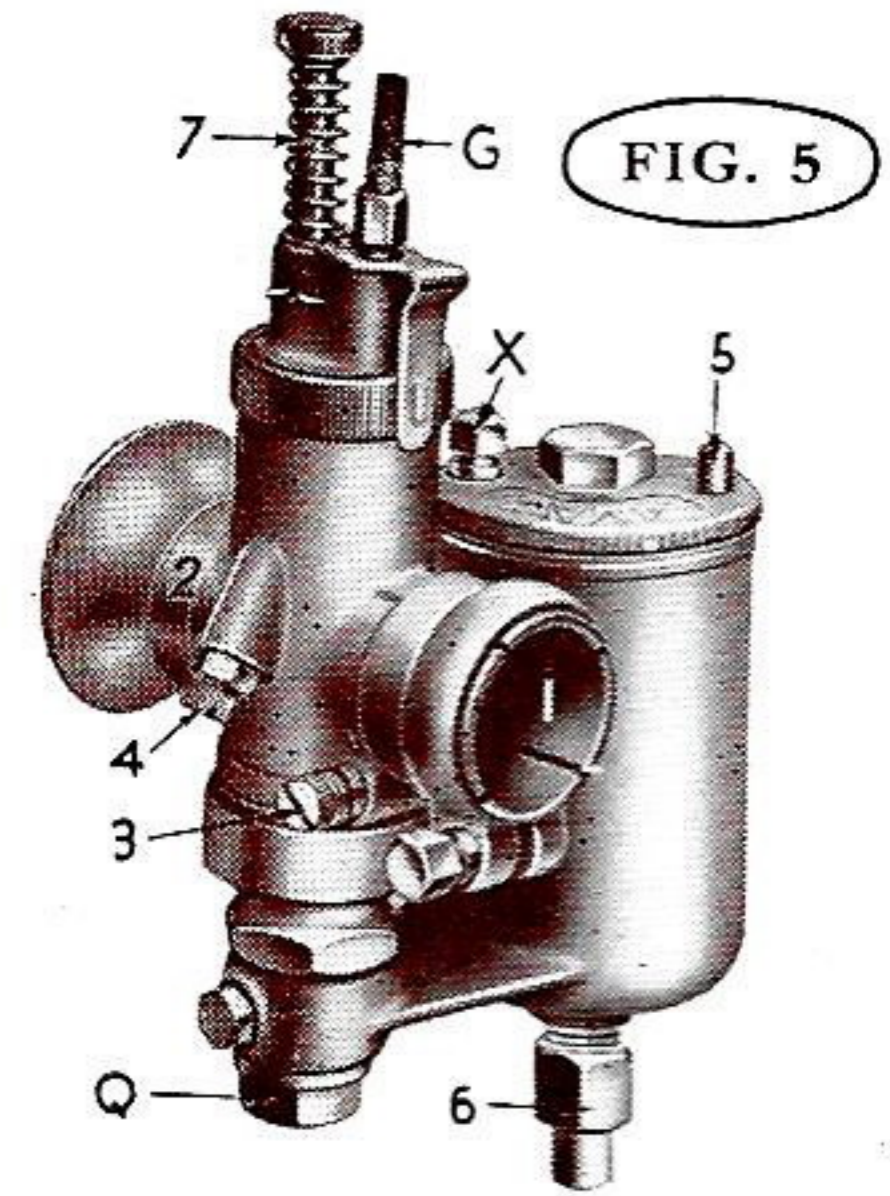
For all Motor Cycles
175 to 1000 c.c. capacity



VERTICAL MODEL
Double Control from handlebar.
Flange or clip fitting to specification.



HORIZONTAL MODEL
showing banjo (6) as an extra.
Illustrations about one third full size



VERTICAL MODEL
Single Control from handlebar.
Air Valve Rod operated (7).
Flange or clip fitting to specification.

Guide to Carburettor Selection for:—

SINGLE CYLINDER ENGINES		Carburettor		SINGLE CYLINDER ENGINES		Carburettor		TWIN CYLINDER ENGINES		Carburettor		
		Type No.	Cross bore inch m/m.	Type No.	Cross bore inch m/m.			Type No.	Cross bore inch m/m.	Type No.	Cross bore inch m/m.	
175 c.c.	TOURING 2-Stroke	274	21/32 16.7	350 c.c.	TOURING 2-Stroke	275	7/8 22.2	350 c.c.	TOURING S.V.	274	25/32 19.3	
	TOURING S.V.	274	25/32 16.7		TOURING S.V.	274	25/32 19.3		TOURING O.H.V.	274	25/32 18.3	
	TOURING O.H.V.	274	25/32 18.3		TOURING O.H.V.	275	13/16 20.6		SPORTS O.H.V.	274	25/32 19.8	
	SPORTS O.H.V.	274	25/32 19.8		SPORTS O.H.V.	276	1 25.4		TOURING S.V.	274	25/32 18.3	
250 c.c.	TOURING 2-Stroke	274	25/32 19.8	500 c.c.	TOURING S.V.	276	15/16 23.8	500 c.c.	TOURING S.V.	274	25/32 18.3	
	TOURING S.V.	274	25/32 18.3		TOURING O.H.V.	276	1 1/16 27		TOURING O.H.V.	274	25/32 19.8	
	TOURING O.H.V.	274	25/32 19.8		SPORTS	289	1 3/32 27.8		SPORTS O.H.V.	275	15/16 20.6	
	SPORTS O.H.V.	275	13/16 20.6		TOURING	276	1 25.4		SCOTT 2-Stroke 206, 151R	1 1/16 27		
600 c.c.				1000 c.c.				1000 c.c.	TOURING S.V.	276	15/16 23.8	
										TOURING O.H.V.	276	1 1/16 27
										SPORTS O.H.V.	289	1 3/32 27.8

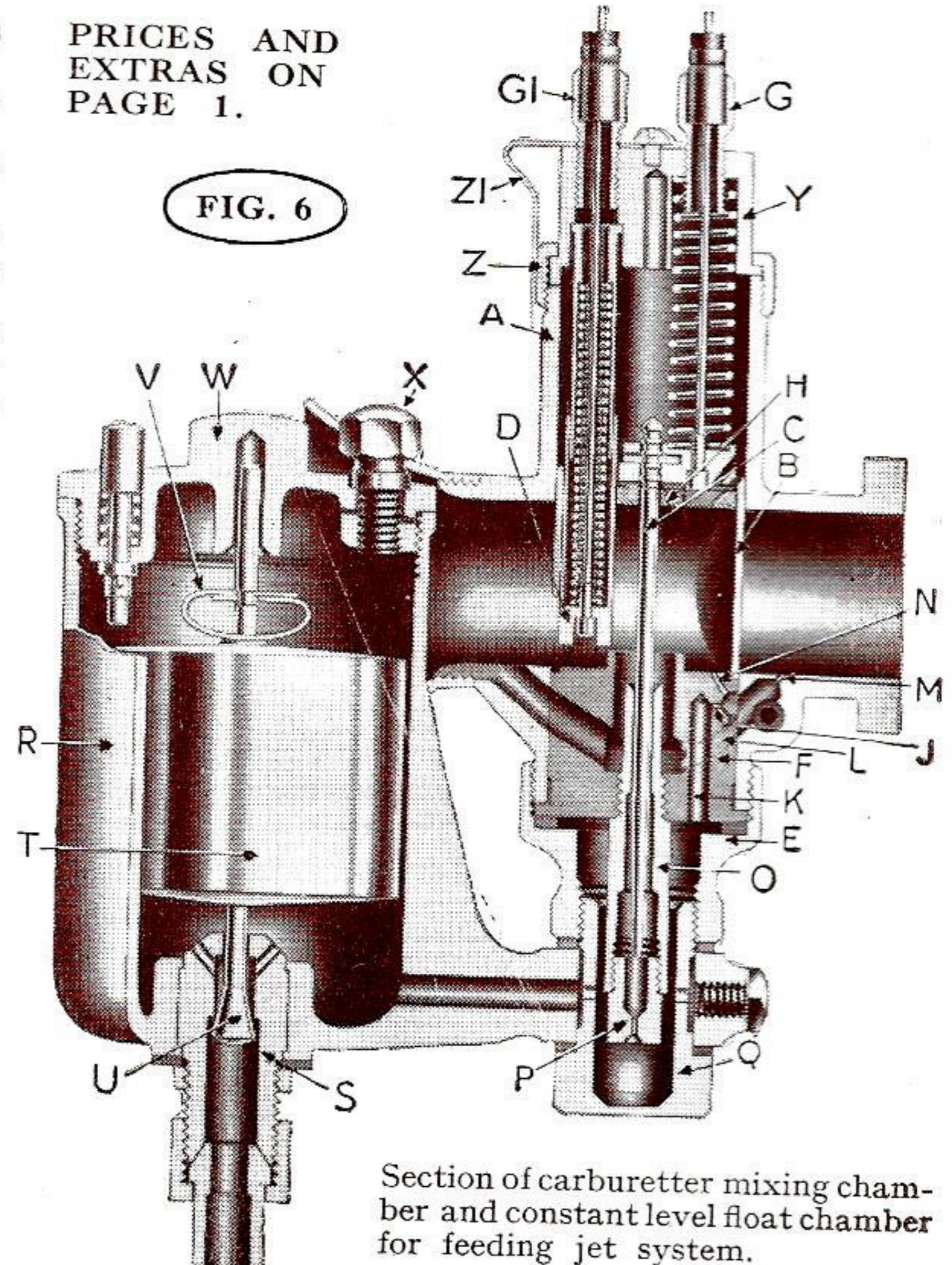
HOW THE CARBURETTOR WORKS.

The design is based on years of experience and successes in the hands of Tourists and Competition Riders alike. The control is by a piston throttle cable (G), operated from the handlebar, and this gives perfect control at low speeds. The mixture is correct throughout the throttle range due to the design, and easy and simple methods of tuning. The cross bore or choke diameter (2) is selected for the size and maximum speed of the engine, its design being streamlined at full throttle for maximum power. The main jet (P) under cap (Q), calibrated and numbered, sets the maximum petrol supply at full throttle but from the tick-over position to nearly full throttle its delivery is restricted by the needle jet. The choke block within the mixing chamber carries the needle jet (O) to which is fed primary air through the intake (2) and petrol from the main jet. The throttle carries a taper needle (C) that rises and falls in the needle jet as the throttle position is moved, to correct the mixture over a wide range of throttle openings: also the cut-away on the inlet side of the throttle ensures pick-up from idling. The position of the needle fitted to the throttle can be set for the individual machine—lowering makes the mixture weaker, and raising makes it richer. Perfect engine idling is obtained by an adjustable pilot air screw (3) and also by an adjustable throttle stop screw (4). An air control (G1 or 7) is provided for starting from and running when the engine is cold.

PRICES AND EXTRAS ON PAGE 1.

INDEX TO ILLUSTRATION IN SECTION.

- | | | |
|-------------------------------|---|---|
| A. Mixing Chamber. | L. Pilot Air Passage. | V. Float Needle Clip. |
| B. Throttle Valve. | M. Pilot Mixture Outlet. | W. Float Chamber Cover. |
| C. Jet Needle and Clip above. | N. Pilot By-pass. | X. Float Chamber Lock Screw (Tickler to left of W). |
| D. Air Valve. | O. Needle Jet. | Y. Mixing Chamber Top Cap. |
| E. Mixing Chamber Union Nut. | P. Main Jet. | Z. Mixing Chamber Lock Ring. |
| F. Jet Block. | Q. Float Chamber Holding Bolt. | Z1. Mixing Chamber Top Lock Spring. |
| G. Cable Adjusters. | R. Float Chamber. | |
| H. Jet Block Barrel. | S. Throttle Stop (see index 4 on figs. 3, 4 and 5). | |
| J. Pilot Jet. | T. Float. | |
| K. Passage to Pilot. | U. Float Needle Valve. | |



Section of carburettor mixing chamber and constant level float chamber for feeding jet system.

FOR DETAILED TUNING INSTRUCTIONS SEE LIST 294R.

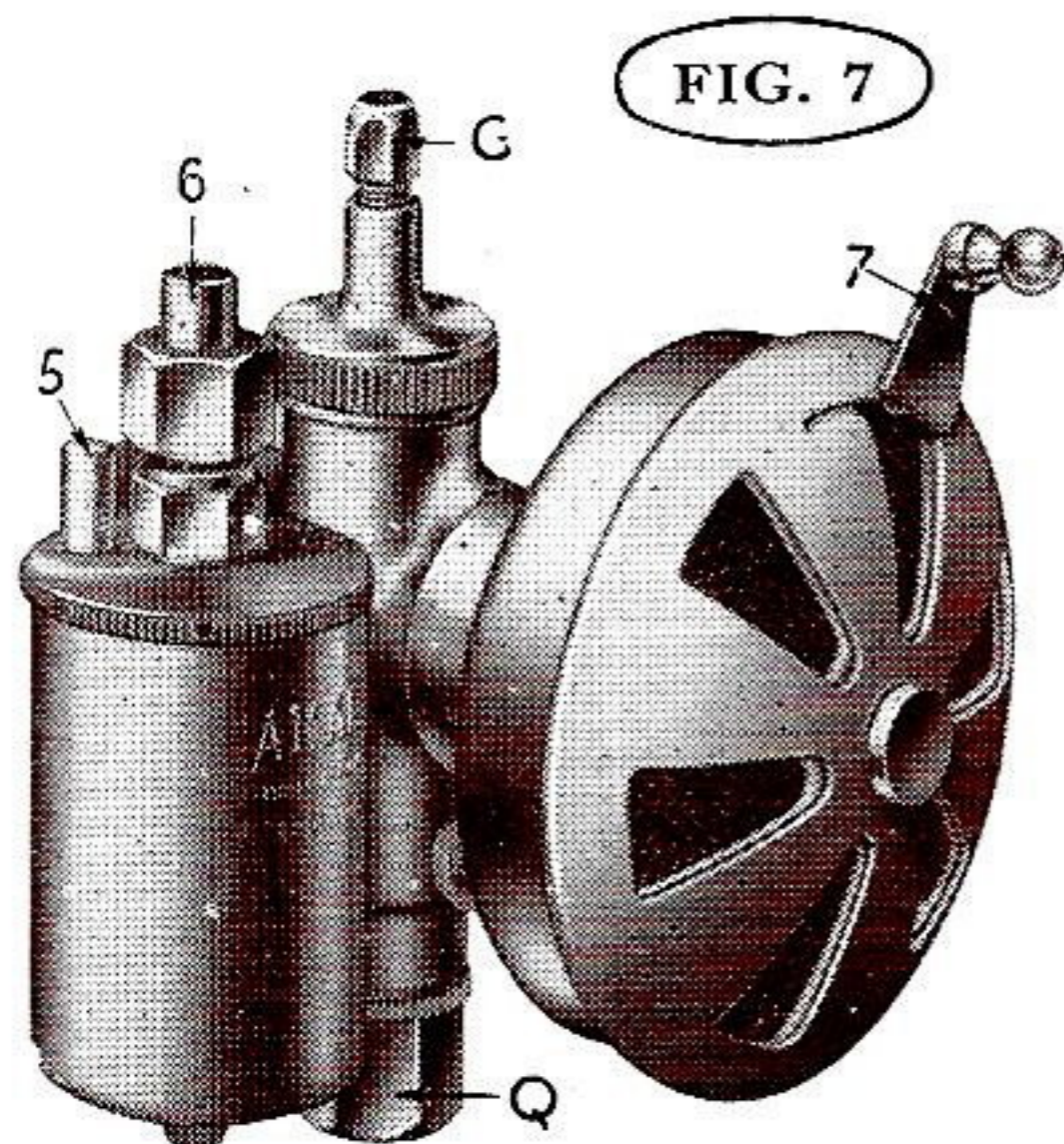
**Carburetters with Needle Jet
but without Pilot Jet.**

AMAL

**SINGLE LEVER
CARBURETTERS
TYPES 259 (265 Scott) 261 and 223**

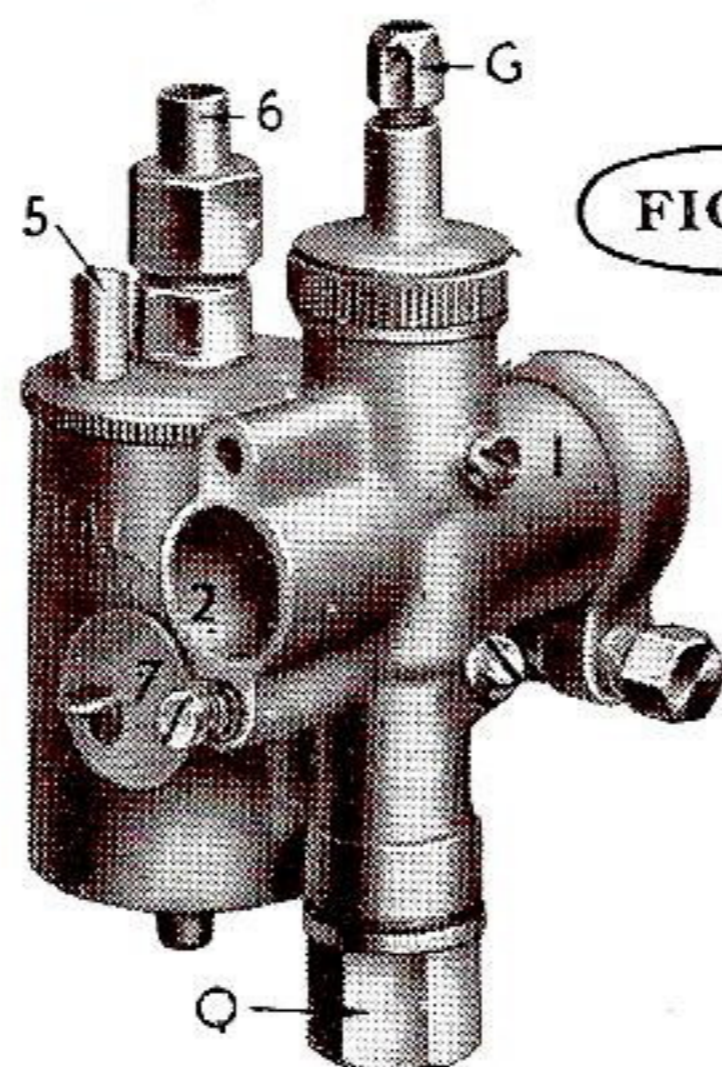
For Auto-cycles & Small Engines

For Cycle Auxiliary Engines see
List No. 456.

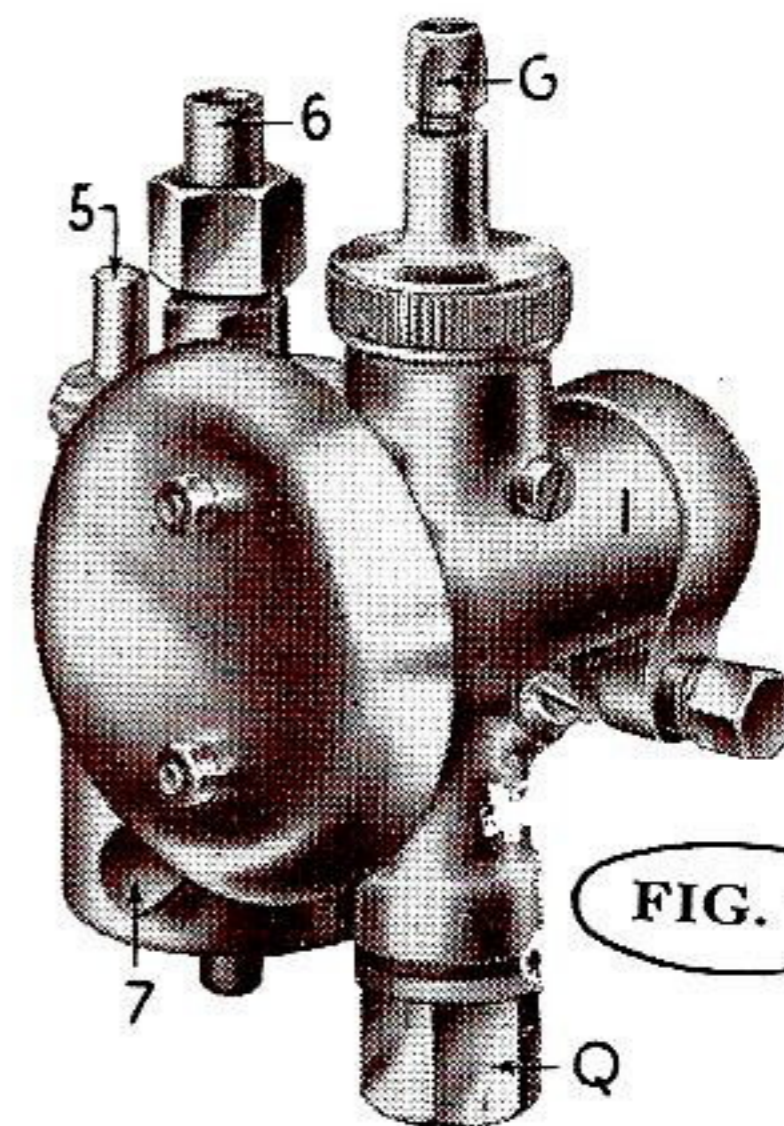


Model with float chamber on left with air strainer and strangler type 224 as extra "D" on page 1.*

Illustrations half full size.



Standard model as A on page 1.*



Model with float chamber on left with blowback cap and air strangler (7) as extra "E" on page 1.*

Prices and Extras on Page I.

Guide to Carburettor Selection for:—

2-Stroke Engines : c.c. capacity of engine	40	70	100	100	140	170	175
4-Stroke Engines : c.c. capacity of engine	55	90	150	150	190	225	250
NOTE.—Engines that have a higher number than 3000 r.p.m. require larger choke bores (2) than indicated. See page 2.	inch m/m.	inch m/m.	inch m/m.	inch m/m.	inch m/m.	inch m/m.	inch m/m.
Throat Bore(2) index	$\frac{27}{64}$ 10.7	$\frac{15}{32}$ 11.9	$\frac{17}{32}$ 13.5	$\frac{17}{32}$ 13.5	$\frac{5}{8}$ 15.9	$\frac{21}{32}$ 16.7	$\frac{11}{16}$ 17.5
Carburettor Type	259 to fit pipes $\frac{3}{4}$ " dia., 19 m/m.			261 to fit pipes 1" dia., 25.4 m/m.			223, 1" dia. pipes

Float Chambers of type 223 are larger than the others and floats interchangeable with type 274 top feed.

HOW THE CARBURETTER WORKS:—See Fig. 10.

The carburettor is designed to suit small engines and to eliminate any difficulty arising out of the use of very small jets. The control is automatic, the hand lever on the bar operating the throttle (15), which in its turn controls the mixture according to the engine speed.

The full power control of the mixture is by the main jet (fig. 21) feeding the engine through a needle-jet (fig. 18), in which there is a needle (fig. 19). The taper on the needle controls the mixture at lesser throttle openings, and the position of the taper in the needle jet, providing a means for richening or weakening the mixture at various throttle positions. The needle is located in the throttle (fig. 15) by a circular spring clip (fig. 14) held down by the throttle spring (fig. 12) and the needle itself is positioned by the particular groove that the clip (fig. 14) is fixed to.

For idling, the fuel supply is controlled by the parallel portion of the needle (fig. 19) entering the bore of the needle jet (fig. 18), the difference in diameter being the jet orifice, which is small—although in case of obstruction or gumming up due to the petrol and oil system, it can be instantly cleared by opening the throttle.

The petrol feed is into the top of the float chamber (fig. 7) where constant levels are maintained, and the petrol at these levels flows to the main jet (fig. 21) through a passage D, and air locks are liberated through the passage C, back into the float chamber at the top.

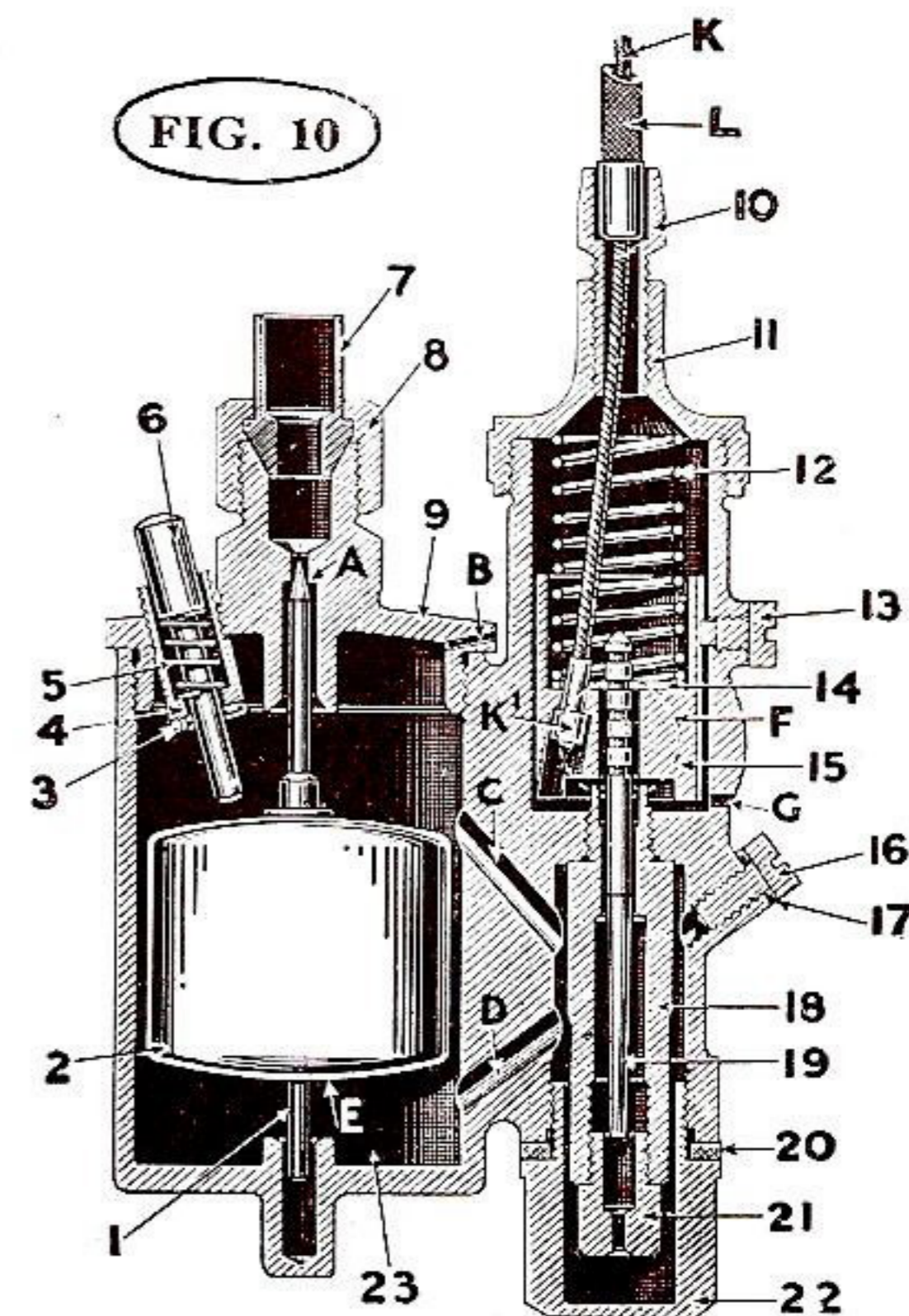
The jets (figs. 21 and 18) can be got at by undoing jet plug (fig. 22). The throttle (fig. 15) and adjustable needle (fig. 19) can be removed by unscrewing the mixing chamber top (fig. 11). The throttle is guided by screw (fig. 13) working in a groove in the throttle, and the slot in the throttle itself enables the cable K to be quickly detached.

The intake of the carburettor may have an air filter and a strangler for closing off the air only for starting when cold.

INDEX TO ILLUSTRATION OF CARBURETTER IN SECTION FIG. 10.

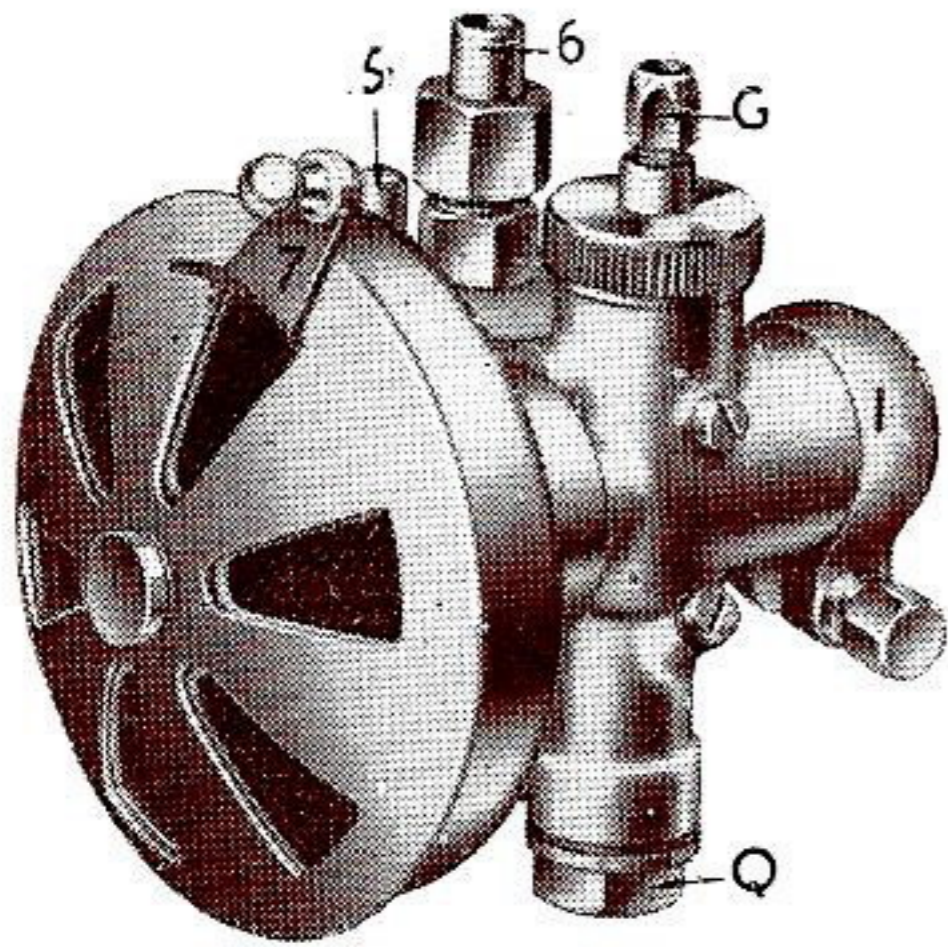
- | | | |
|------------------------------|-----------------------------|-----------------------|
| 1. Float Needle. | 9. Float Chamber Cover. | 16. Feed Hole Screw. |
| 2. Float. | 10. Cable Adjuster. | 17. Feed Hole Washer. |
| 3. Tickler Cotter. | 11. Mixing Chamber Top. | 18. Needle Jet. |
| 4. Tickler Bush. | 12. Throttle Spring. | 19. Jet Needle. |
| 5. Tickler Spring. | 13. Throttle Valve Location | 20. Jet Plug Washer. |
| 6. Tickler. | Screw. | 21. Main Jet. |
| 7. Petrol Pipe Union Nipple. | 14. Jet Needle Clip. | 22. Jet Plug. |
| 8. Petrol Pipe Union Nut. | 15. Throttle Valve. | 23. Float Chamber. |

- | |
|---|
| A. Petrol Feed Needle Seat. |
| B. Air Vent Hole in Float Chamber Cover. |
| C. Air Release Passage from Jet Chamber into Float Chamber. |
| D. Petrol Feed Passage from Float Chamber to Main Jet (21). |
| E. The illustration shows the float and needle as one piece, but if the needle is separate, the float has a spring bow at this point to hold the needle in a groove. |
| F. The choke bore of the Carburettor, the size of which is specified according to engine size and maximum revs. |
| G. Drain hole from mixing chamber to liberate any excess petrol due to flooding. |
| H. Guide groove in the throttle to prevent incorrect assembly. |
| J. Cut-away of the throttle. There are various cut-aways, which are numbered and marked on the bottom of the throttle. The cut-away affects the mixture up to half throttle position. |
| K. Throttle Wire. K1. Wire Nipple. L. Throttle Wire Cable. |



Non-Needle Type. 2-jet model
main jet and pilot jet.

FIG. 11



Model with float chamber on left of air intake which is fitted with air filter and strangler as letter D, page 1, extras.*

Illustrations half full size

AMAL

CARBURETTERS TYPES 52 and 53.

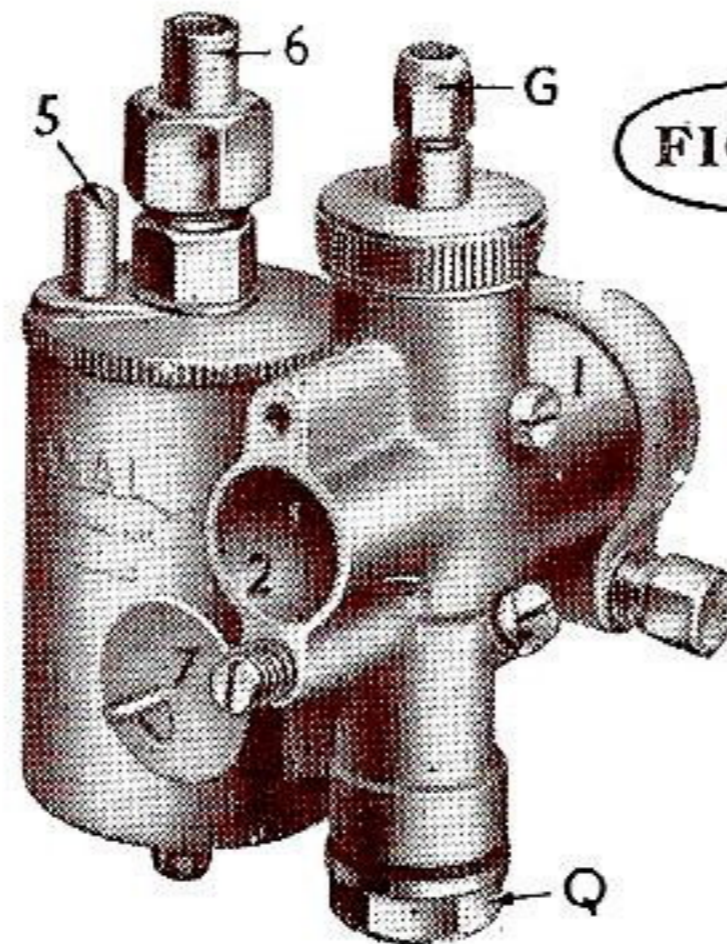
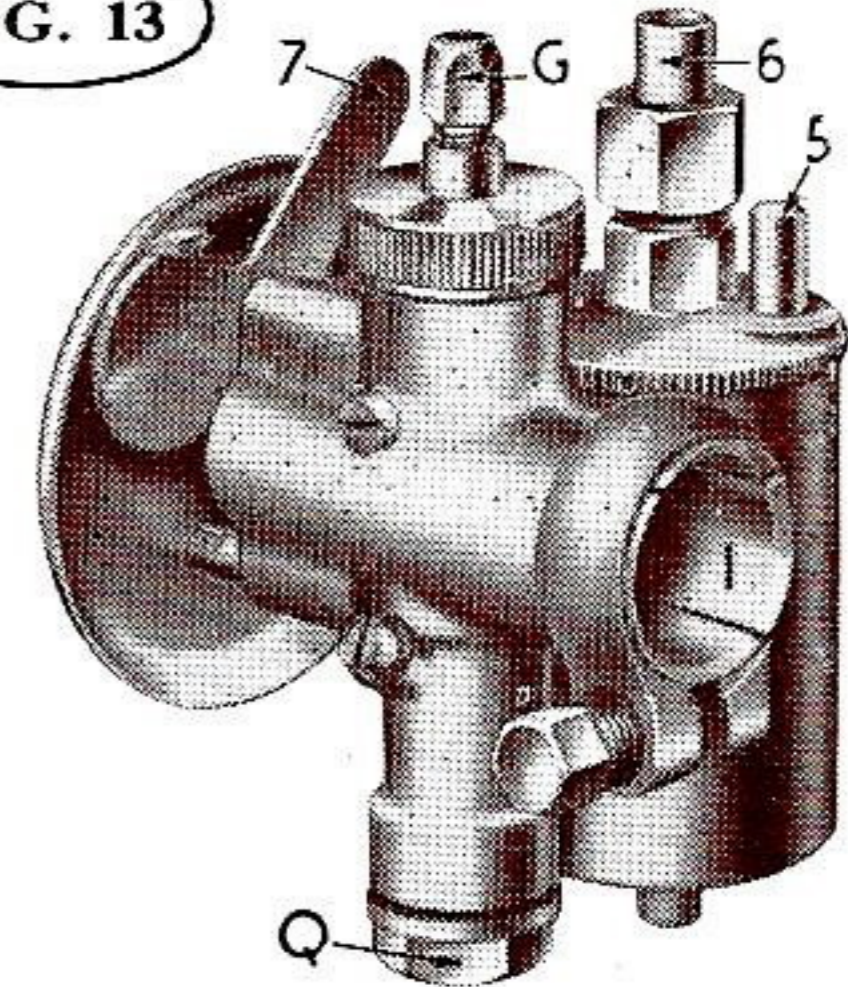


FIG. 12

Standard model, float chamber on left as A on page 1.*

For Ultra Lightweights and small
Marine and Stationary Engines.

FIG. 13



Model with float chamber on left showing standard engine connection and blow-back plate and strangler as letter E, page 1, extras.*

Guide to Carburettor Selection for:—

2-Stroke Engines : c.c. capacity of engine	40	70	100	100	140	170
4-Stroke Engines : c.c. capacity of engine	55	90	150	150	190	225
NOTE.—Engines that have a higher number than 3000 r.p.m. require larger choke bores (2) than indicated. See page 2.	inch m/m.	inch m/m.	inch m/m.	inch m/m.	inch m/m.	inch m/m.
Throat Bore (2)	$\frac{27}{64}$ 10.7	$\frac{15}{32}$ 11.9	$\frac{17}{32}$ 13.5	$\frac{17}{32}$ 13.5	$\frac{5}{8}$ 15.9	$\frac{21}{32}$ 16.7
Carburettor Type	52 to fit pipes $\frac{3}{4}$ " dia., 19 m/m.			53 to fit pipes 1" dia., 25.4 m/m.		

HOW THE CARBURETTER WORKS. See Fig. 14.

This simple type of two jet instrument meets the requirements of certain engines, for example: certain two stroke and small four stroke engines used on motor cycles and on small stationary and agricultural engines and also out-board marine engines. The following points are of note:—

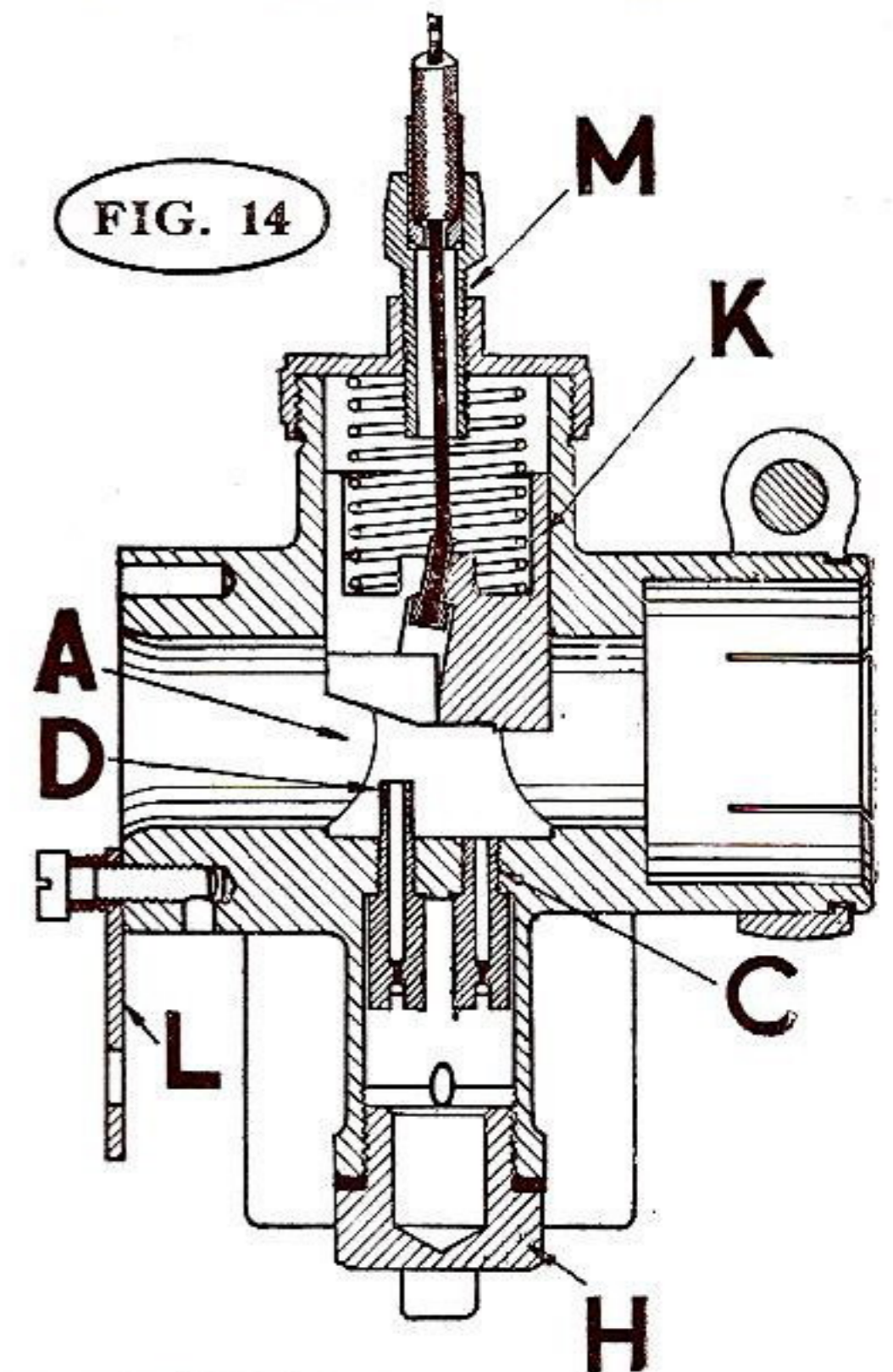
The utmost simplicity in the design and the easy adjustment of two jets makes the carburettor ideal for many purposes. It is operated by a single cable (M).

The petrol feed is always to the top of the float chamber which, in its turn, feeds the jet chamber above cap (H) and maintains a constant level in the jets. The jets have fixed orifices and are numbered according to their flow.

Pilot jet "C" is selected to regulate the mixture strength for slow running and for small throttle openings.

The longer jet, namely, the main jet "D" situated near the air intake, comes into action later when unmasked by throttle valve (K) as it is opened, and this jet controls the mixture strength at full throttle: At intermediate throttle positions, viz., between quarter and three-quarter throttle opening, the mixture is determined by the "cut-away" on the air-intake side of the throttle valve; if the mixture should be weak at half throttle, but correct at full throttle, a smaller cut-away throttle can be obtained to rectify matters (and vice versa).

For starting from cold an air strangler is provided on the intake of the carburettor as (7) in figures 11, 12, 13 above, or described by letter "L" in the sectioned diagram fig. 14. A tickler is provided in the lid of the float chamber for flooding for cold starting.



INDEX FOR FIG. 14.

FOR PRICES SEE PAGE 1.

A. Main Air Intake.	H. Jet Chamber Cap.	M. Throttle Cable adjusting Screw.
C. Pilot Jet.	K. Throttle.	
D. Main Jet.	L. Cold Starting Strangler.	

GENERAL NOTES FOR ALL.

WARNING. Never fit the carburettor to an engine simply because it happens to fit the induction pipe or flange. The cross-bore or choke size, as indicated (2) in the illustrations, is of vital importance to the engine and your attention is drawn to the guide on each page as to the correct size. Carburettors of the same outward size may have different cross-bores.

CARBURETTER JETS are numbered according to their Amal calibration number; never reamer them out. If larger or smaller Jets are wanted get new ones from an Amal Service Stockist.

FLOAT CHAMBER NOTES. Each Carburettor has a float chamber, and its function is so well understood that we have eliminated its description: its purpose is to preserve a constant petrol level in the Needle Jet or the Jets themselves as the case may be, and these levels are not adjustable.

SERVICE. Instructions are available for each type of Carburettor in pamphlets called "Hints and Tips," and replacement parts are numbered and priced by us in official spares lists:—

For Carburettor type 274, 275, 276, 289 ..	Hints and Tips List 294R, and Spares List 351R.
For Carburettor type 261, 259, 265 ..	Hints and Tips List 420R, and Spares List 422R.
For Carburettor Type 223 ..	Hints and Tips List 420R, and Spares List 453.
For Carburettor type 52 and 53 ..	Hints and Tips List 420R, and Spares List 351R.

For advice and spare parts first apply to our appointed Service Stockists. See List 349U for Gt. Britain and 354R overseas.

AMAL LTD., Holford Works, Perry Barr, BIRMINGHAM, 20 ENGLAND.

TELEPHONE: BIRCHFIELDS 4571 (5 lines).

TELEGRAMS: AMALCARB. BIRMINGHAM.