

1912.

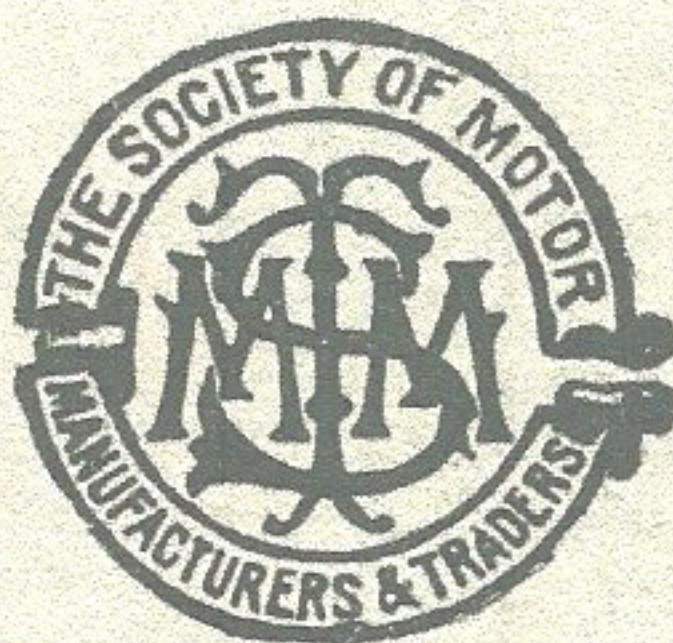
B. & B.

CARBURETTERS

B. S. B.

Motor Cycle and Small Launch
CARBURETTERS

FOR 1912.



Manufactured by

BROWN & BARLOW LTD.,

Westwood Road, WITTON,

BIRMINGHAM, :: ENGLAND.

Telegrams : "CARBURET, Birmingham."

Telephone : 301 East.

Codes : As List, and A.B.C. (5th Edition).

Terms of Business :

TRADE REFERENCE or CASH WITH ORDER.
All Goods FREE ON RAIL BIRMINGHAM only.

Catalogue of Car Carburetters and Float Chambers on Application.

B & B

BROWN & BARLOW LTD.,

Carburetter Manufacturers,

WITTON, BIRMINGHAM.

Dear Sir,

WE wish to bring to your notice a few remarks concerning our 1912 pattern Motor Cycle Carburetter.

This Carburetter has only reached its present state of perfection after experiments extending over a number of years. In it we have retained all the good points which made our pattern so popular, and we have now incorporated further improvements, making it still better.

Everything being made in our works in Birmingham, the **B & B** Carburetter is British Made, and all the various parts are interchangeable one with another.

We only use the very best materials. The whole of the Carburetter, with the exception of three small screws and three springs, being constructed throughout of copper alloy so as to make it rust-proof. All necessary joints are made by brazing; no soft solder is used in any part of the Carburetter or Controller, except the end of the Bowden Cable and in the Float.

We make no attempts to cheapen the Carburetter at the expense of durability or workmanship.

All our 1912 Carburetters (exclusive of the Cable which is Bowden's), if purchased through any of our accredited agents, carry with them a **full Guarantee for 12 months.**

Any replacements from whatever cause (wilful damage excepted), will be made free of charge upon receipt of the part Carriage Paid to our works, together with the particulars of the date and place of purchase.

As we are constantly working for real progress, we are only too pleased to receive suggestions at any time from users of the **B & B** Carburetters.

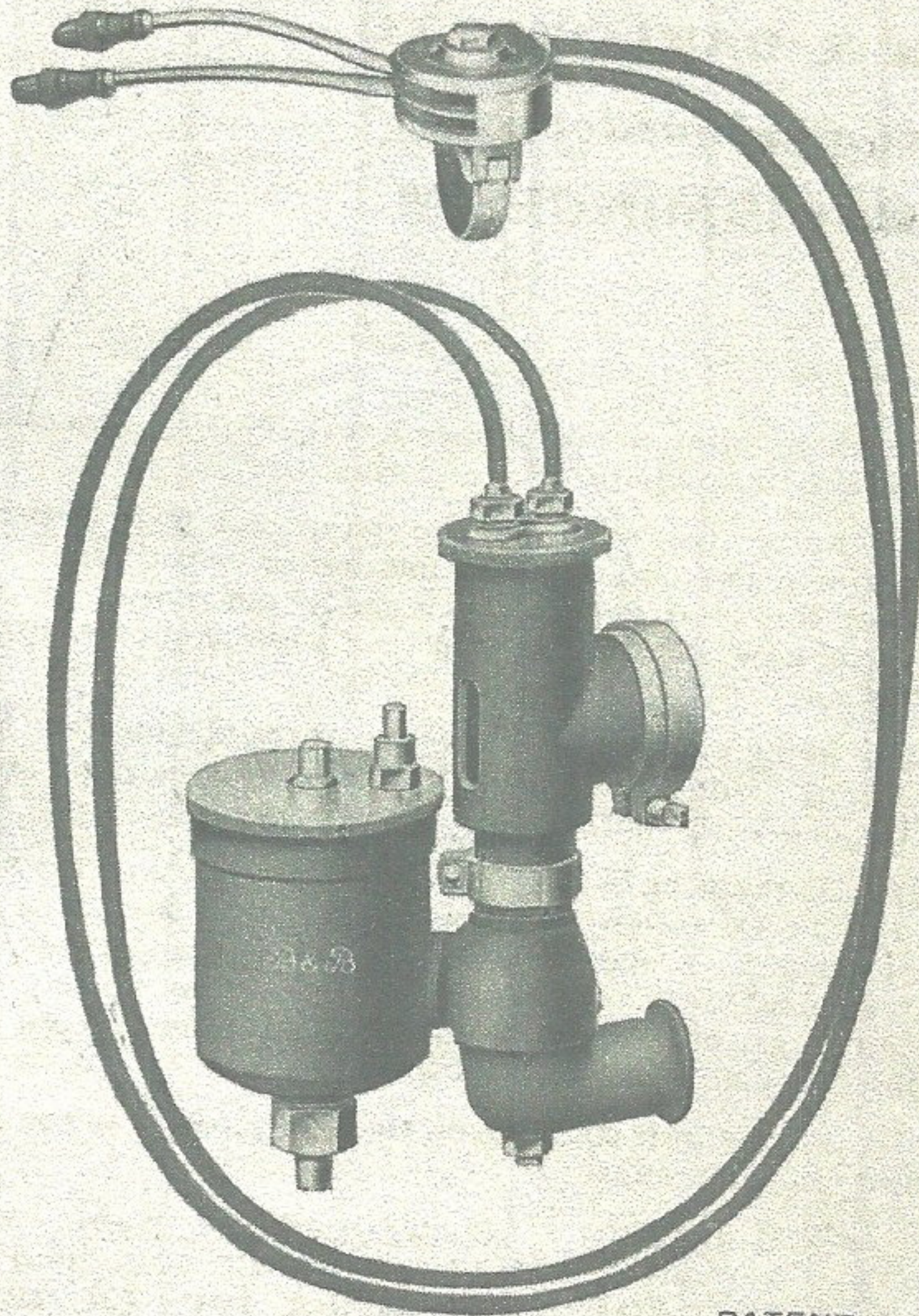
Yours faithfully,

BROWN & BARLOW LTD.

B & B

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1912 SINGLE JET MODEL.



PATENT

BOWDEN LICENCE.

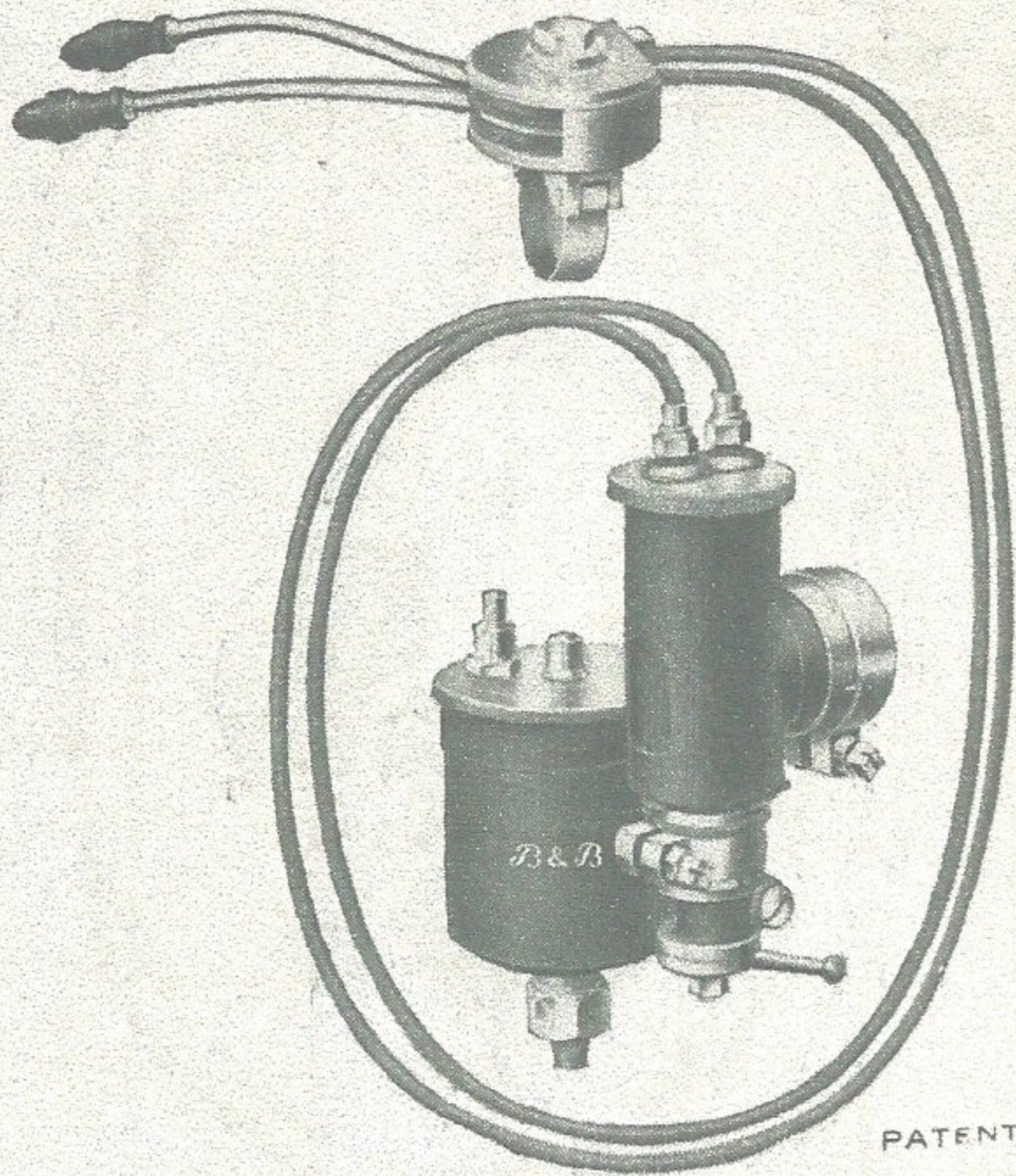
Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft.

Complete, as illustrated, with Cabling 3ft. 6in. long—

Type	Size of Outlet	Code	PRICE
B.O.D.	1in. horizontal	BODILY	30/-
B.O.D.	1in. vertical	BODING	31/6
B.O.D.	1in. Twin	BODKIN	31/6

B & B

1912 UNIVERSAL MODEL.



BOWDEN LICENCE.

Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft.

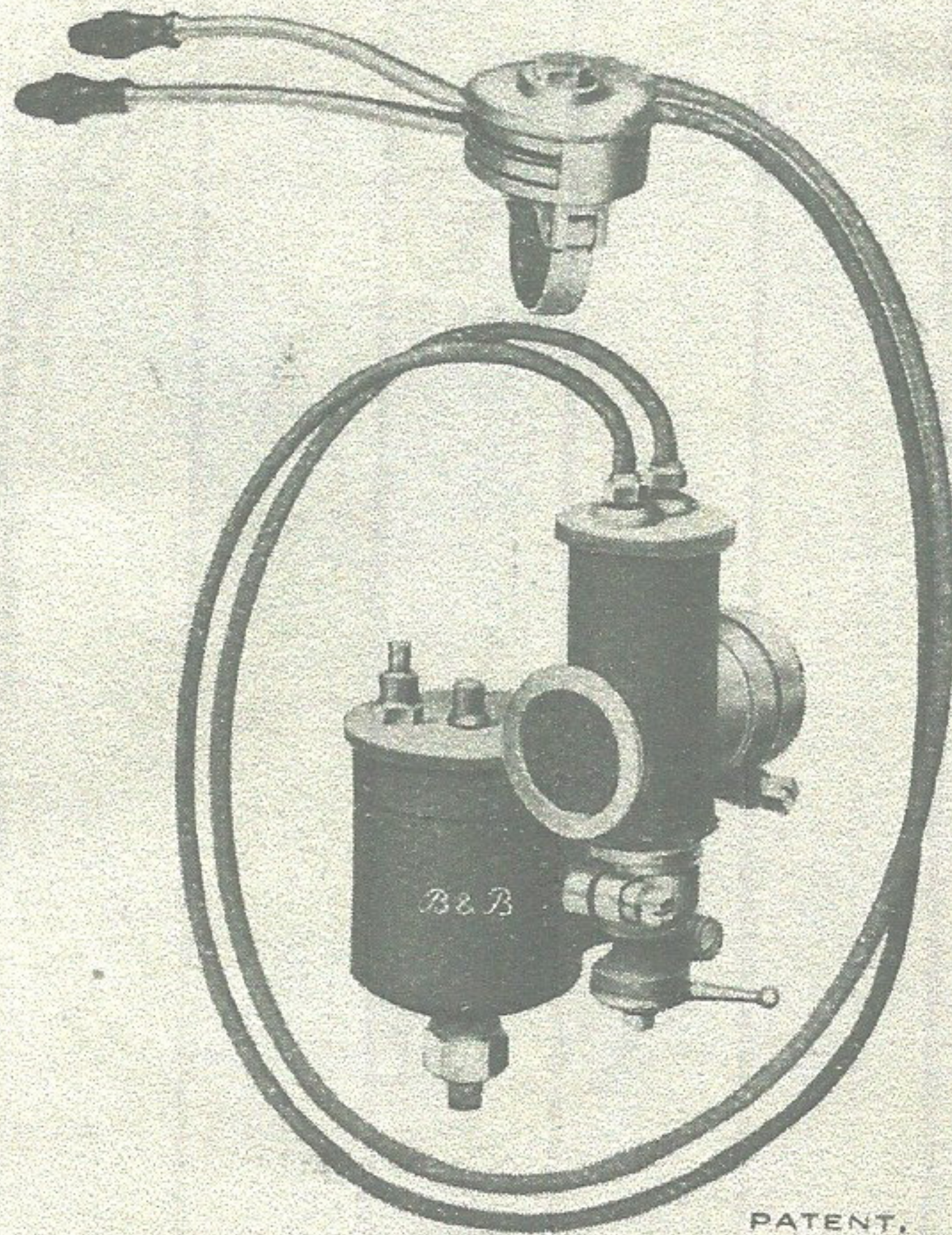
Complete, as illustrated, with Cabling 3ft. 6in. long—

Type	Size of Outlet	Code	PRICE
B.U.C.	1in. horizontal	UNITE	32/6
B.U.C.	1in. vertical	UNION	34/-
B.U.C.	1in. twin	UNFOLD,	34/-

B & B

5)

1912 UNIVERSAL MODEL
With Detachable Gauze Screen.



PATENT.

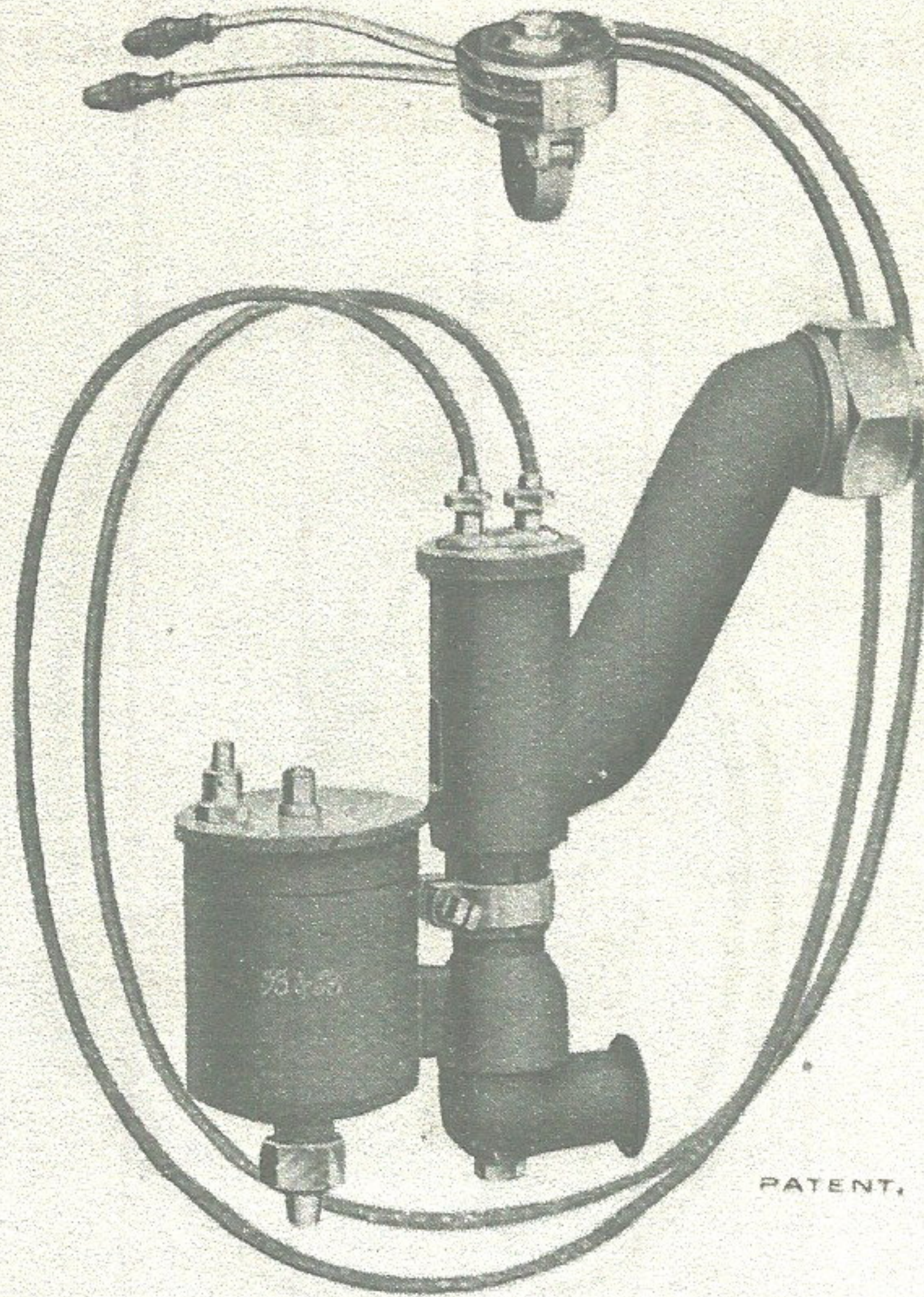
BOWDEN LICENCE.

Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft.

Complete, as illustrated, with Cabling 3ft. 6in. long—

Type	Size of Outlet	Code	PRICE
B.D.S.	1in. horizontal	DUAL	33/6
B.D.S.	1in. vertical	DRIVE	35/-
B.D.S.	1in. twin	DRAG	35/-

B & B



BOWDEN LICENCE.

Special Model, suitable for Machines where there is insufficient clearance for the Cable in the Standard Type. Arranged to screw on Induction Pipe $1\frac{5}{16}$ in. in diam., 18 threads to in., Outlet 1 in. diam.

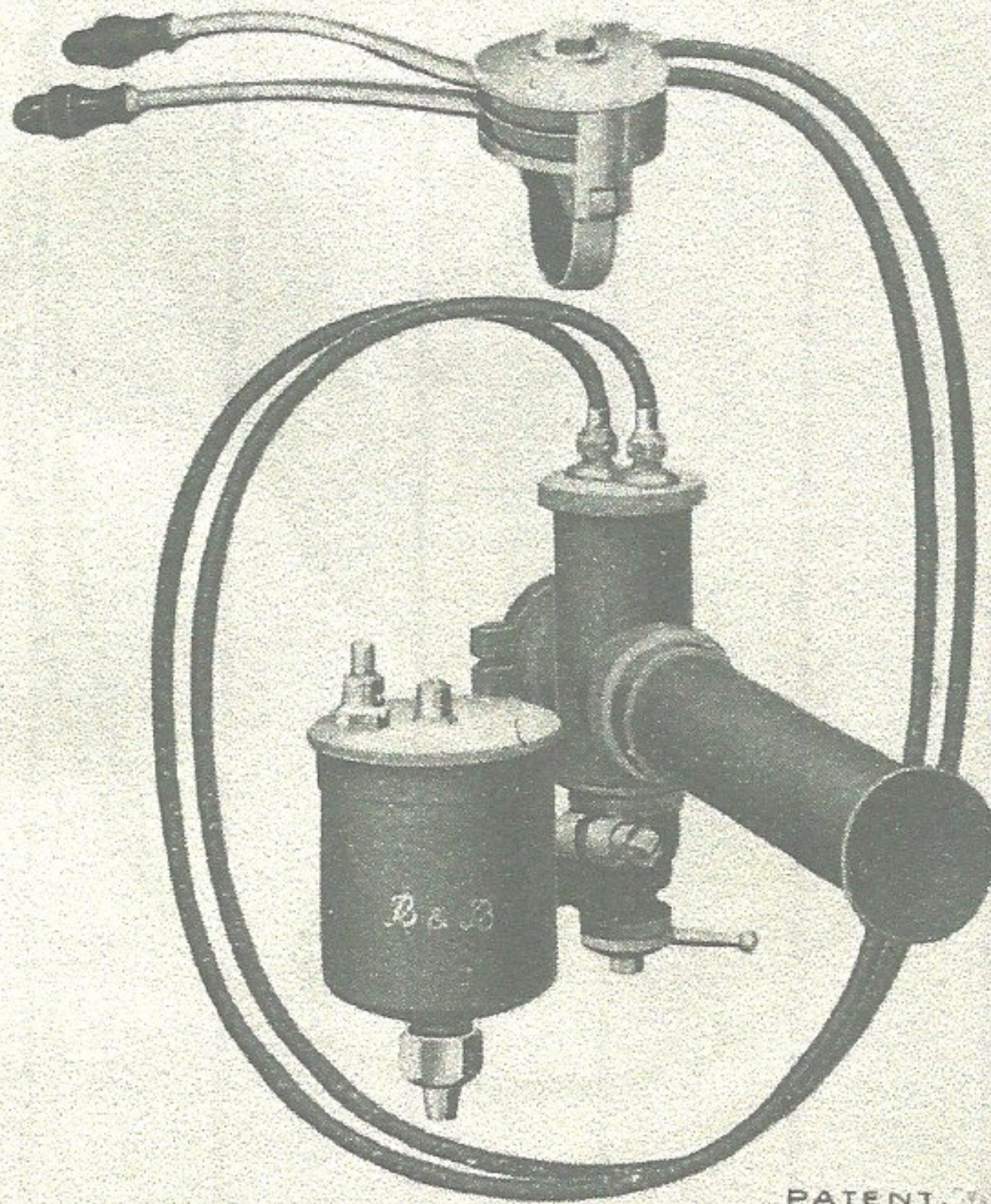
Extra length of Cable over 3ft. 6in. can be supplied at the rate per double ft.

Complete, as illustrated, with Cabling 3ft. 6in. long—

Type	Size of Outlet	Code	PRICE
R.W.M.	Single jet as above, 3ft. 6in. Cable	BRWM	33/-
R.U.C.	Universal Model	URWM	35/6

B. S. B.

**1912 UNIVERSAL RACING MODEL,
WITH EXTENSION PIPE**



PATENT, 219,004

BOWDEN LICENCE.

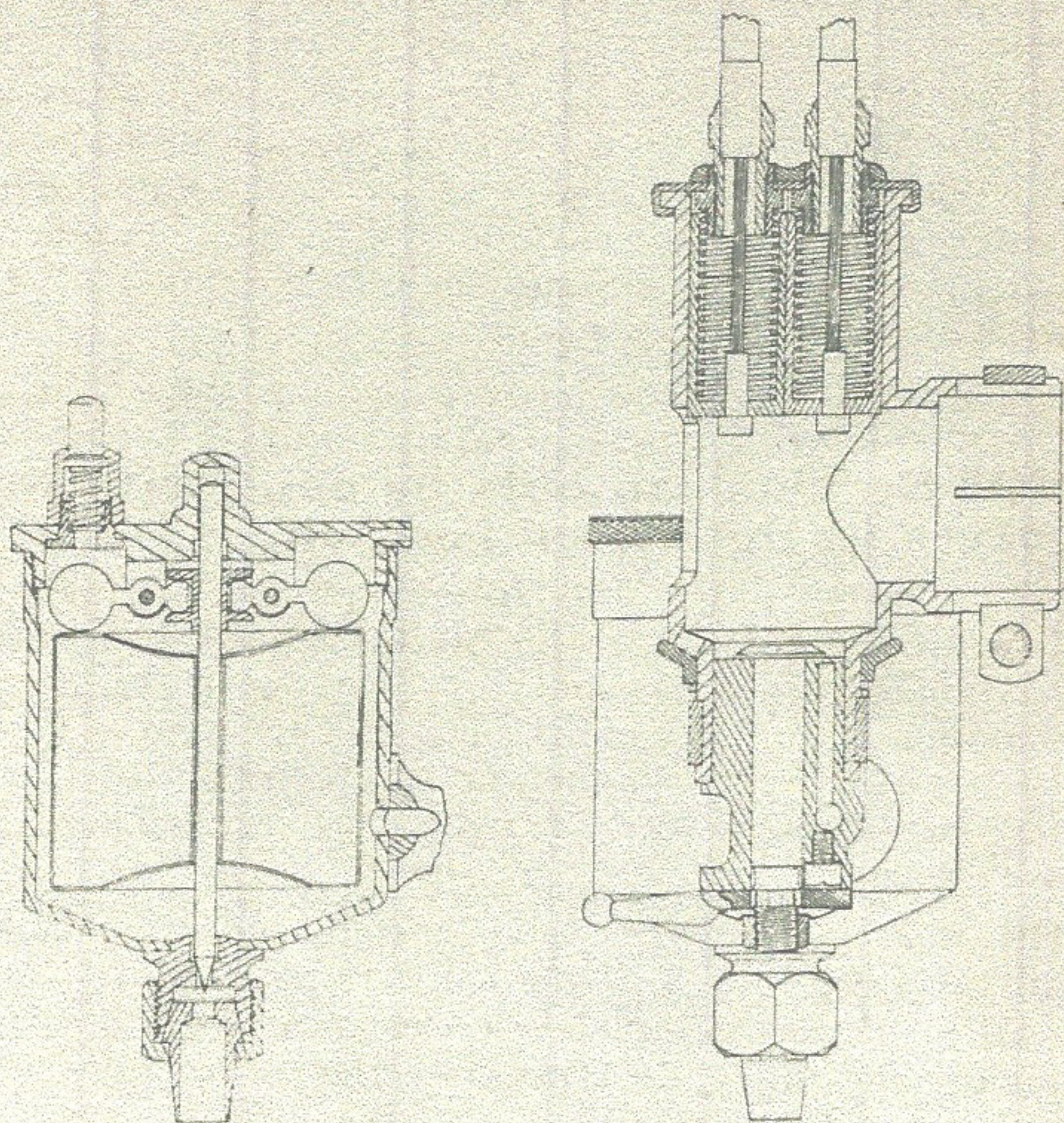
This is a Special Model, made up having a 1in. diam. clear through way and extension pipe.

Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft

Complete, as illustrated, with Cabling 3ft. 6in. long—

Type	Smallest dia. thro' way.	Code	PRICE
R.A.C.	1in.	RACE	35/-

P. & B.



The annexed sectional view shows the general construction of our 1912 Carburetters. The particular model shown is the B.U.C. type illustrated on page 4. The following alterations have been made on our 1912 model—The control levers have been lengthened and set down to harmonise with the handlebar.

The throttle and air valves in our 1912 models are machined out of the solid and have key-ways cut in them which register in a small key fixed in the throttle body. This keeps the valves continuously in register and renders it possible for us to utilise a plain coil type of spring with perfect results. The main operating springs are now of the plain coil type and are very large in diameter which obtains a long life without any deterioration.

A quarter turn of the top cap enables the whole of the valves to be removed as in our 1911 pattern.

NOTE--This can only be done with the valves in the closed position.

On the larger model, the large coupling nut has been dispensed with and a clip of the same type as that used for securing the spraying chamber to the float chamber is utilised in its place. This enables us to use a small pocket spanner or screw-driver to do all that is necessary to detach the Carburetter from the engine.

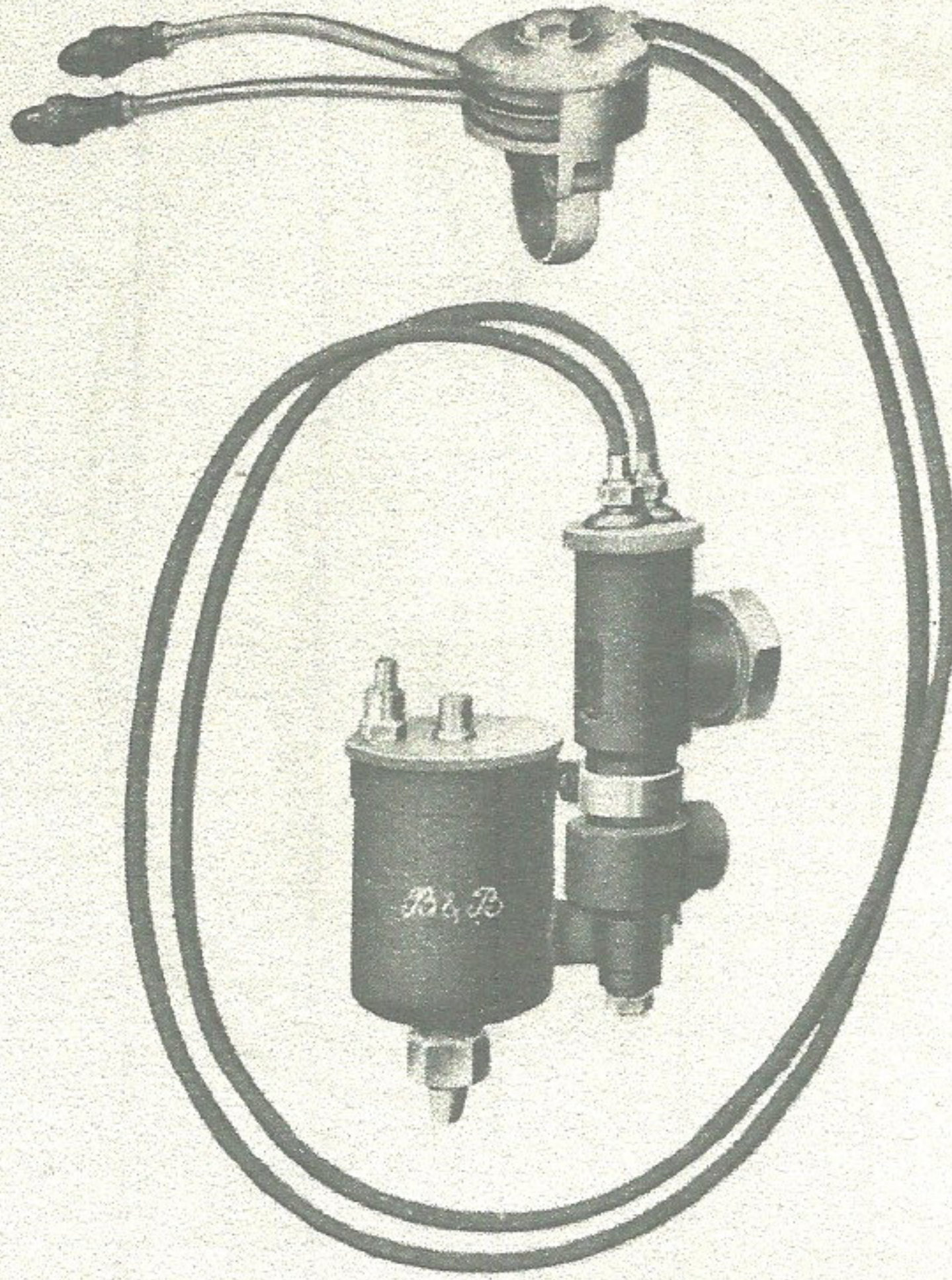
The float chamber is solid drawn and the needle valve seating is now permanently brazed into it. The needle valve is completely covered in as in our 1911 model and the same type of tickler is provided for flooding when requisite.

In the particular model illustrated, the nozzle consists of two small orifices in the platforms, the opening of which can be infinitely varied from the fully closed to the fully opened position by means of the lever underneath.

The bottom air or choke in this model is also adjustable by means of a milled ring which, when rotated opens or closes a number of holes in the bottom of the spraying chamber as required.

B. G. B.

**1912 SINGLE JET LIGHT-WEIGHT
MODEL.**



PATENT.

BOWDEN LICENCE.

Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft.

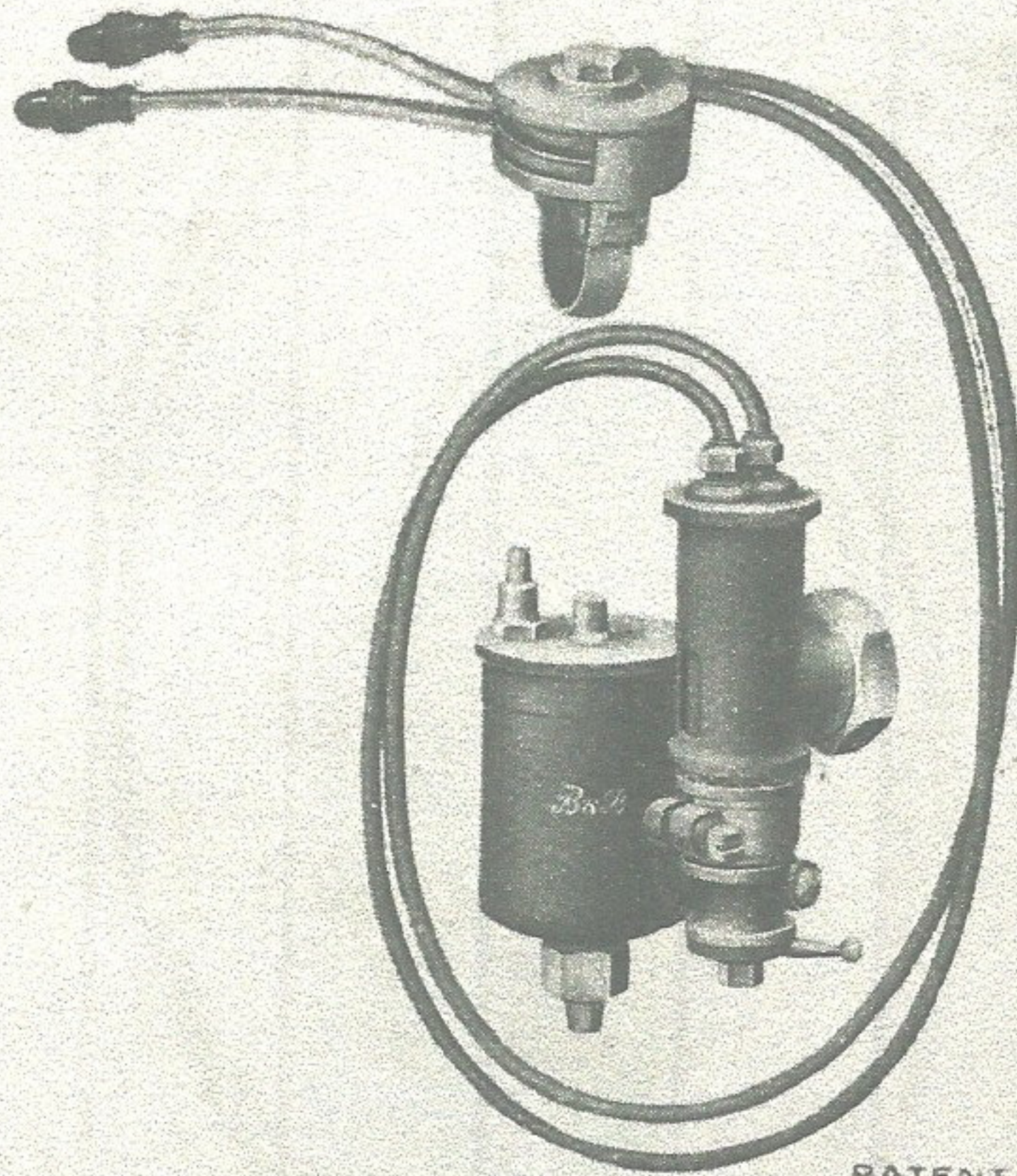
Complete, as illustrated, with Cabling 3ft. 3in. long—

Type	Size of Outlet	Code	PRICE
L.I.T.	$\frac{3}{4}$ in. horizontal	LITTLE	28/-
L.I.T.	$\frac{3}{4}$ in. vertical	LIGHT	29/6
L.I.T.	$\frac{3}{4}$ in. twin	LINK	29/6

B & B

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**1912 UNIVERSAL LIGHT-WEIGHT
MODEL.**



PATENT.
BOWDEN LICENCE.

Extra length of Cable over 3ft. 6in. can be supplied at the rate of 1/- per double ft.

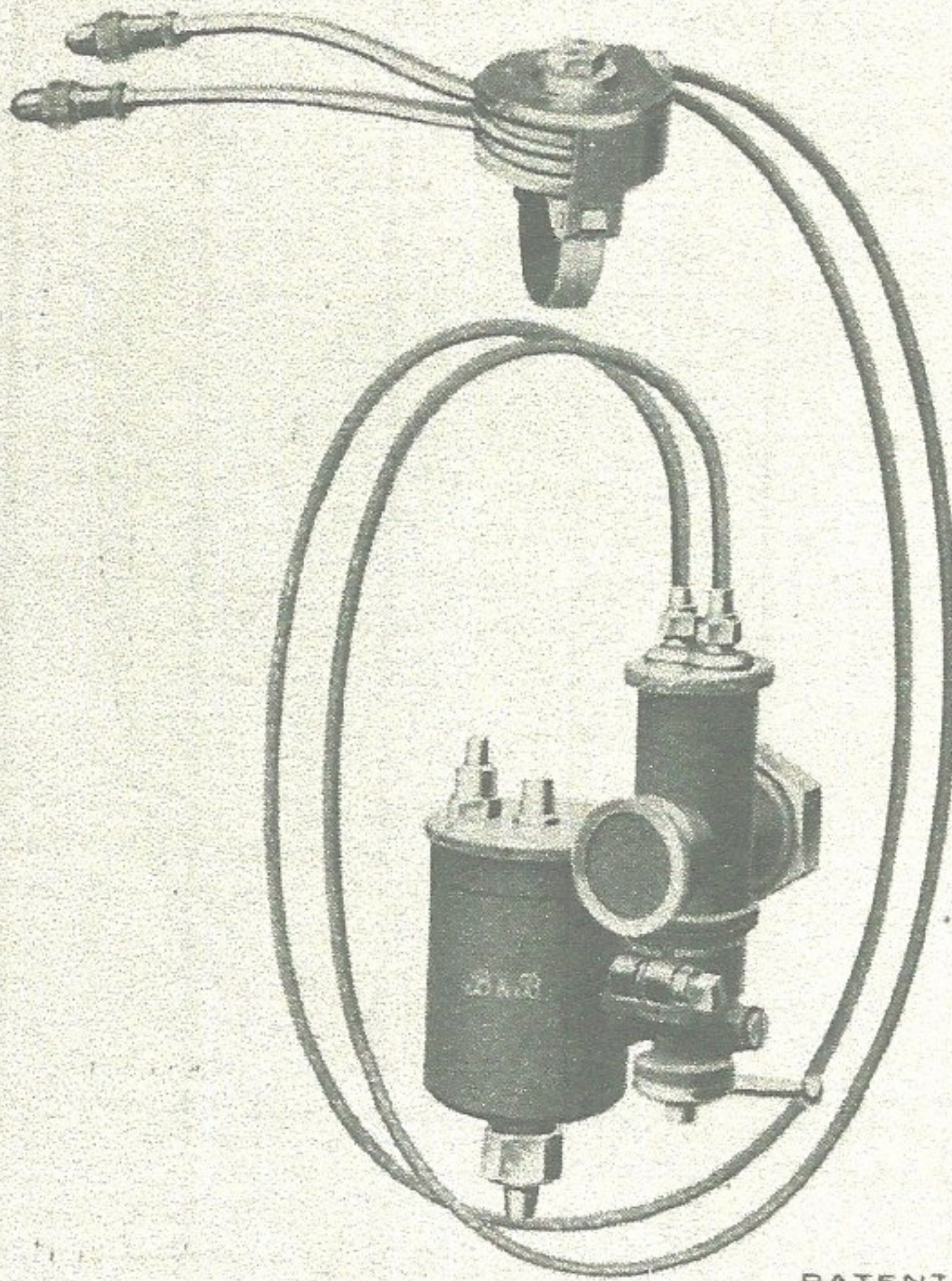
Complete, as illustrated, with Cabling 3ft. 3in. long—

Type	Size of Outlet	Code	PRICE
L.U.C.	$\frac{3}{4}$ in. horizontal	SMALL.	30/6
L.U.C.	$\frac{3}{4}$ in. vertical	SNAP	32/-
L.U.C.	$\frac{3}{4}$ in. twin	SLIDE	32/-

B S B

— 1912 —

**UNIVERSAL LIGHT-WEIGHT MODEL,
with Detachable Gauze Screen**



PATENT.

BOWDEN LICENCE.

Extra length of Cable over 3ft. 6in can be supplied at the rate of 1/- per double ft. extra.

Complete, as illustrated, with Cabling 3ft. 3in. long—

Type	Size of Outlet	Code	PRICE
L.D.S.	in. horizontal	WRTH	31/6
L.D.S.	in. vertical	WIND	33/-
L.D.S.	in. twin	WHIP	33/-

Manipulation of Universal Model Carburetters.

The Universal Model Carburetter is a great refinement upon our single jet models, giving every possible adjustment and meeting all requirements. In order that the best possible results may be obtained, we recommend the user to carefully note the following instructions—

The jet opens by turning the lever in a right-handed direction. Generally speaking, the smaller the nozzle opening the smaller will be the amount of bottom air, or "choke" opening that is required.

For Standard $3\frac{1}{2}$ h.p. engines, a normal setting is 6 holes open in the bottom air, with the nozzle adjusted until the engine will start easily with the extra air fully closed, and the throttle about $\frac{3}{8}$ in. open. NOTE—The throttle lever should not be too far open to start, as if opened too much the engine is apt to choke, and fire in the silencer.

To obtain more power, open the bottom air to the full extent and increase the size of the jet to the desired amount, but any alteration to the size of the jet is re-setting the Carburetter, and consequently, the relative running positions of the air and throttle levers alter as the jet is altered. When the jets are opened out so that the full amount of extra air can be taken, it will probably be necessary to start with the extra air valve partly open.

It is always advisable, when possible, to keep the jet on the small size, as this tends for economy in petrol. To take a steep hill, the jet can be opened out from the saddle while riding and again closed down after having reached the top.

In this model, a choked jet can frequently be cleaned out by the simple expedient of puffing the machine on the stand, shutting the air valve completely, opening the jets to the full, and pedalling the engine round when the strong suction on the big jets nine times out of ten sucks all the foreign matter through.

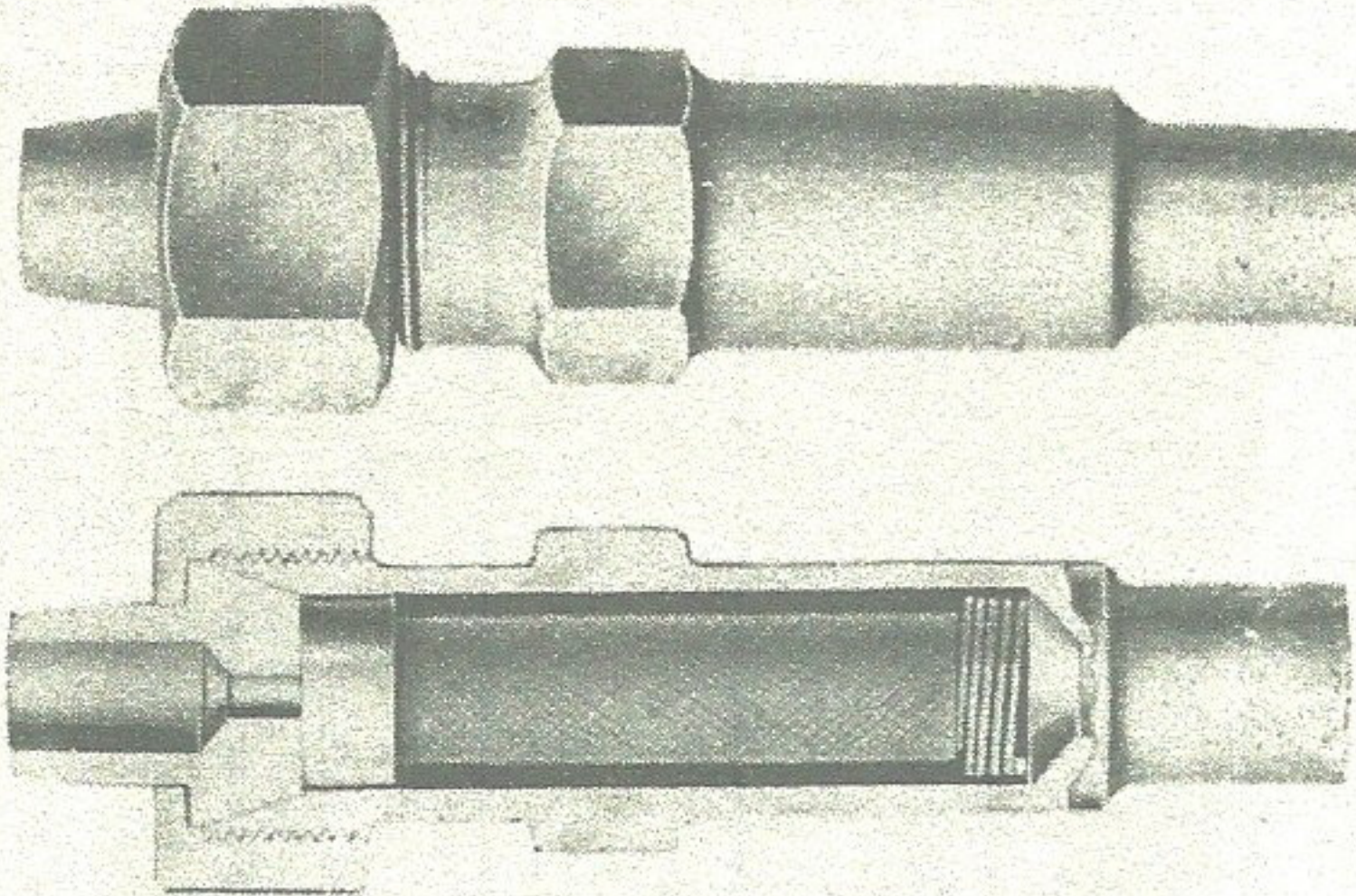
To ensure that any setting is possible, the two nozzles when fully open are equal to a single nozzle of about .05 diameter, so it should never be necessary to open the nozzle to the full extent.

When fixing the Carburetter in position, it is very necessary to have the jet orifices against the outlet from the Carburetter to the engine.

It is not necessary or advisable to "tickle" the float chamber before starting with the Universal Model Carburetter.

B & B

PETROL STRAINER.

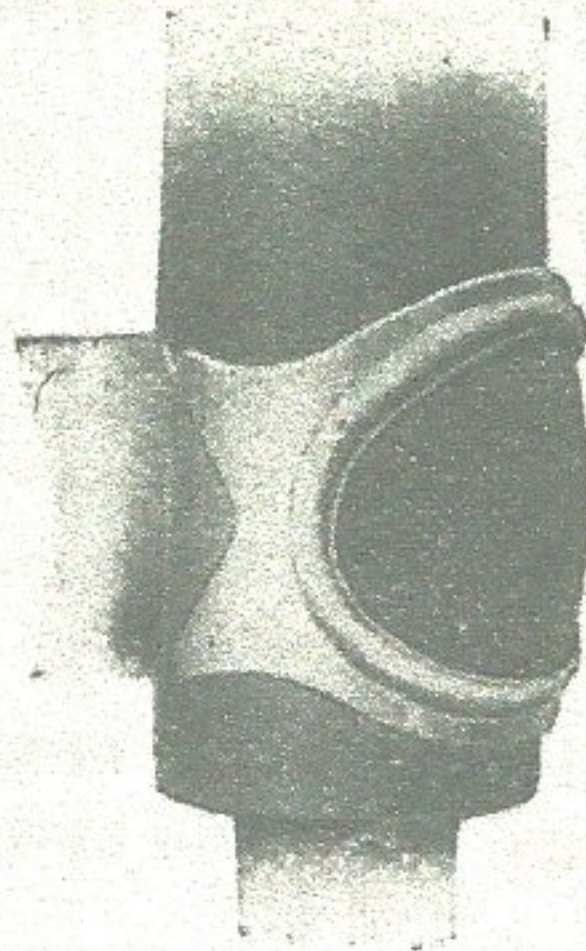


The **B & B** Petrol Strainer is now supplied in two patterns, A and B
PATTERN A is designed to solder into petrol pipe.

PATTERN B is designed to screw directly on to the standard petrol tap ($\frac{7}{16}$ in. diameter, 19 threads to the inch) as used on almost all the modern machines. Other threads can be supplied to order.

Pat. A. Code, CLEAN Price, 2/- Pat. B. Code, STRAIN. Price, 2/-

DUST SCREEN.



A detachable Screen to cover the extra air intake.

NOTE—When used great care should be taken to see that this is kept quite clean, and that there is no clogging of the gauze by dust or mud. To clean, remove the gauze and wash in petrol. Do not wipe with a rag. If the gauze is allowed to become choked, overheating and other troubles will immediately follow.

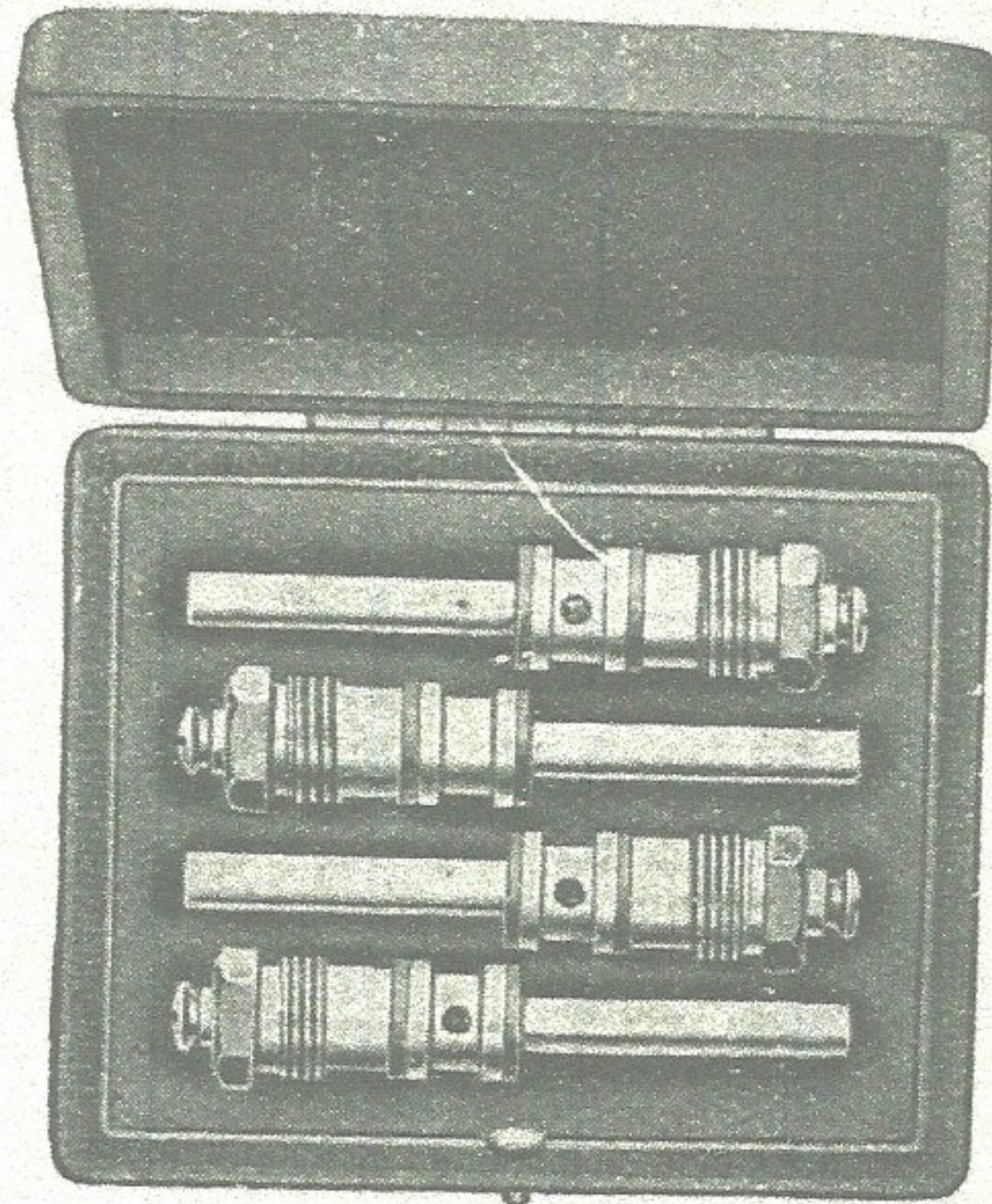
For B.O.D., B.U.C., R.W.M. Types Code, BOND Price, 1/3

B & B

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JETS IN CASES.

For Single Jet Model only



A well-made, velvet-lined Case, containing four Jets of different bores.

Large Jets with Choke Tubes removed give maximum power, but heavy consumption.

Medium size Jets with Standard Choke, give good power with moderate consumption.

Small Jet with small Choke, give moderate power with low consumption.

THE JETS CAN BE CHANGED IN A FEW SECONDS and are suitable for all 1908, 1909, 1910 and 1911 Carburetters.

Case complete, with four different sized Jets—

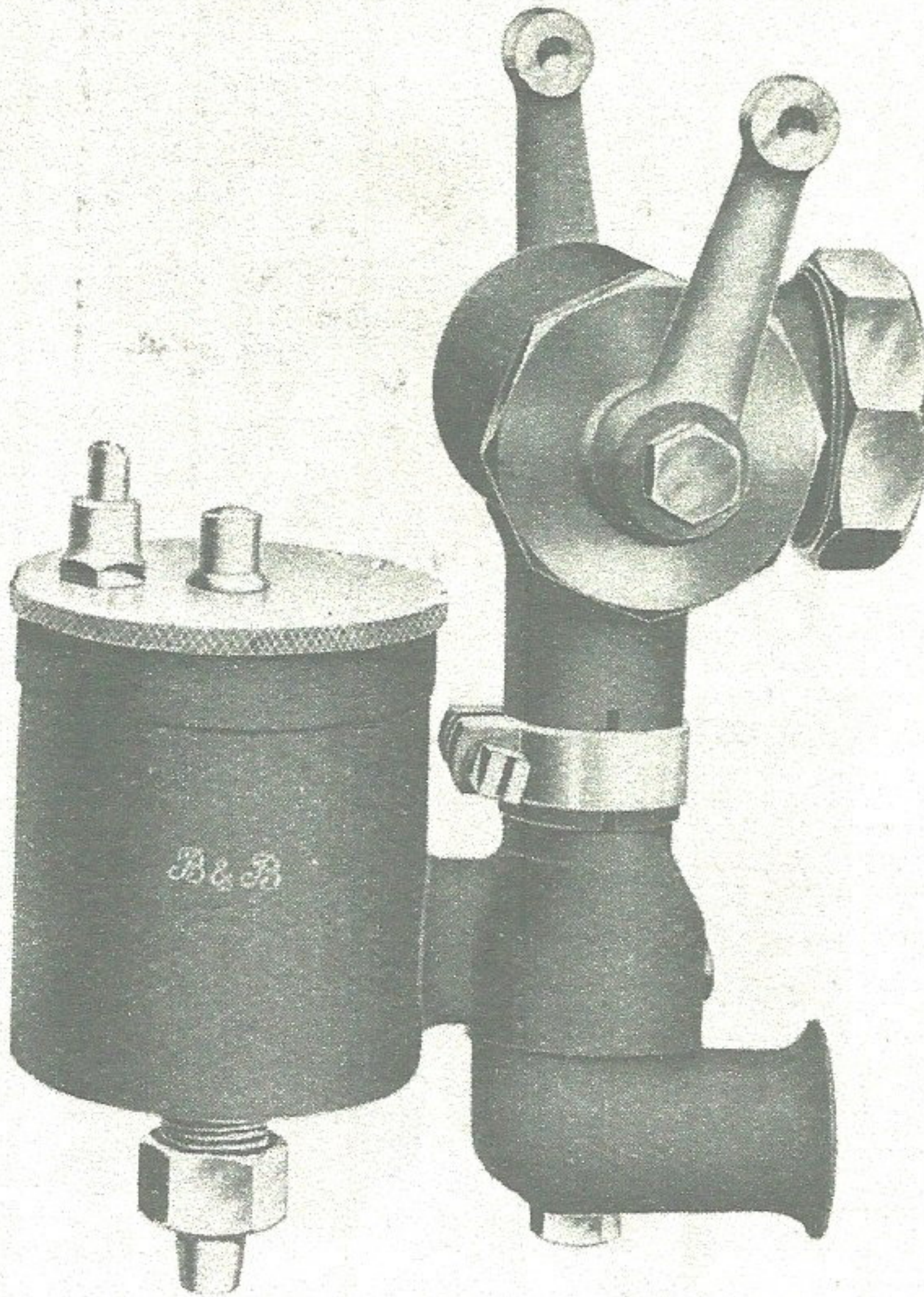
PRICE, 2/6.

Code word—JETTY.

As different Jets are required for different engines, state stroke and bore of engine, or the sizes of the Jets wanted, when ordering. (The following sizes are always sent unless otherwise ordered, '028, '030, '031, '033).

B & B

**1912 LEVER CONTROLLED
CARBURETTORS (Single Jet).**



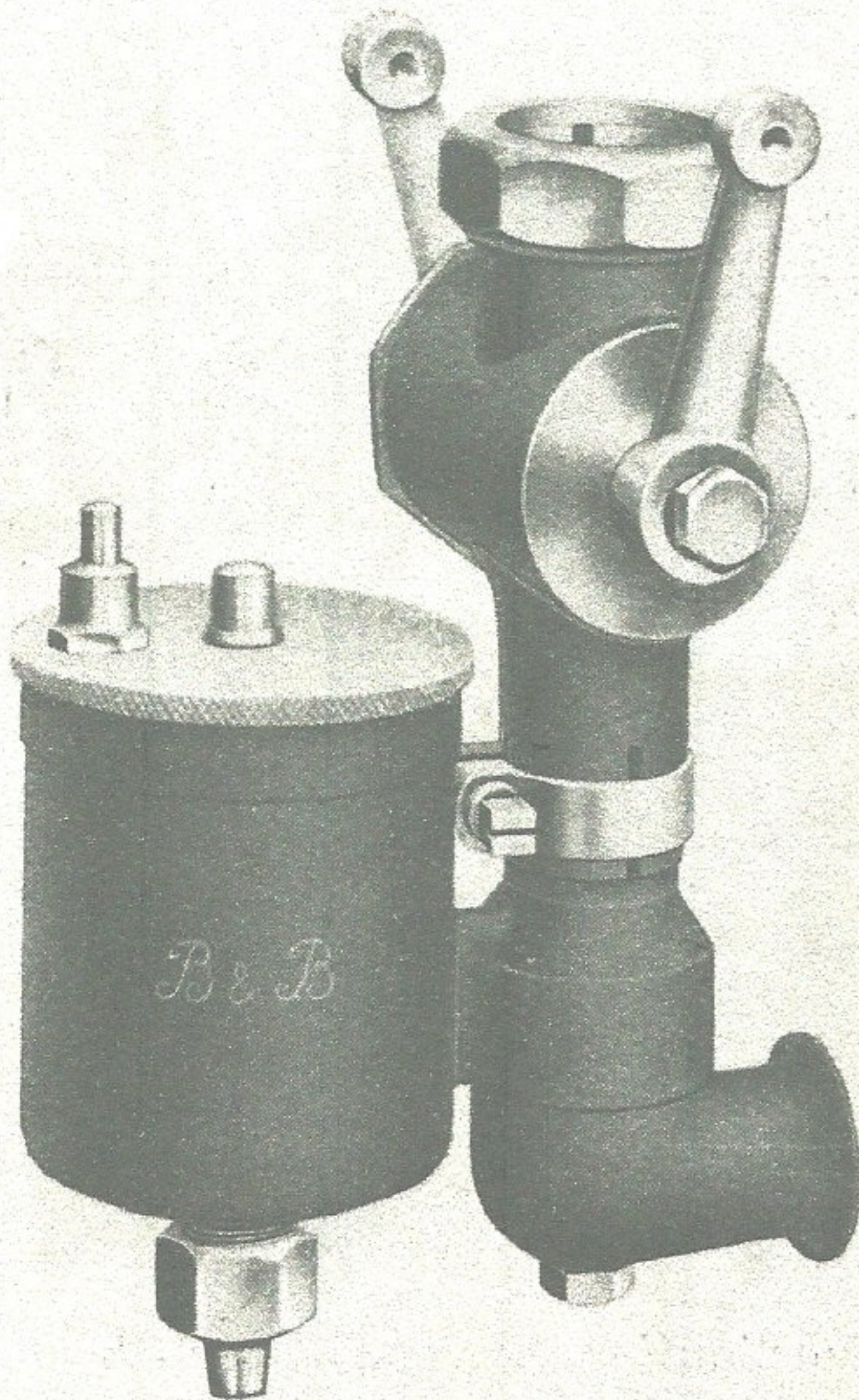
Registered No. 513,259.

Type	Effective Area of Outlet	Code	PRICE
M.U.	tin. horizontal	MUSIC	24/9

B & B

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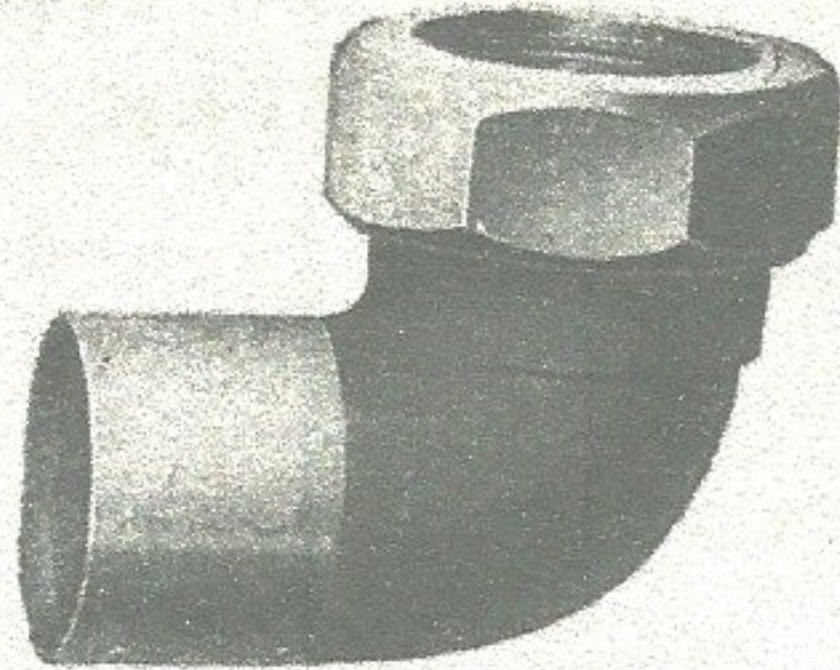
**1912 LEVER CONTROLLED
CARBURETTORS (Single Jet).**



Registered No. 513,249.

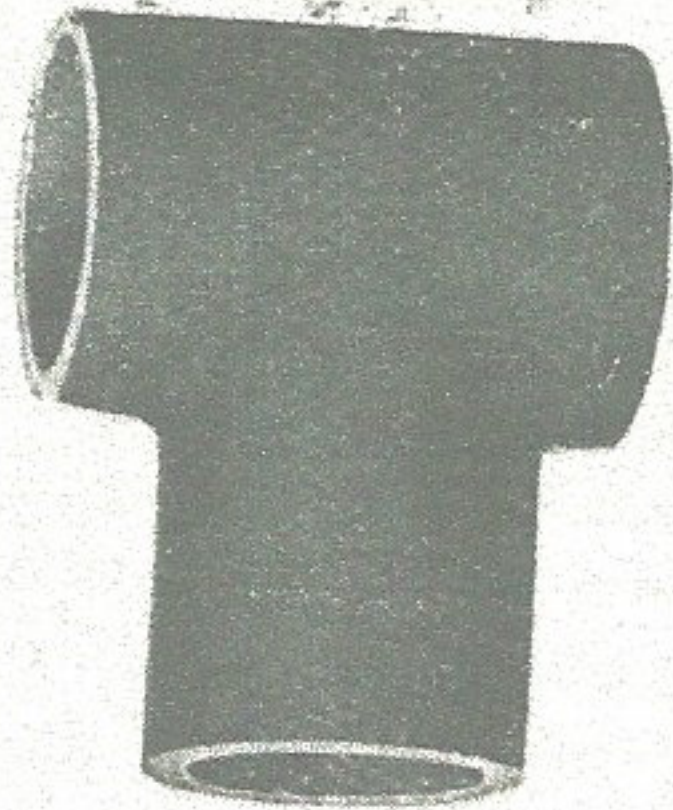
Type	Effective Area of Outlet	Code	PRICE
N.U.	in. vertical	NURSE	24/9

B & B



Right Angle or Vertical Outlet, for B.O.D. or Light-weight Carburetters; also for M.U. and N.U. Types.

	Code	PRICE
For Light-weights	LIKE	1/6
For all other models	BOUT	1/6



Twin Connection for Type B.O.D., M.U. or N.U. and Light-weight Carburetters.

	Code	PRICE
For Light-weights	LIMB	1/6
For all other models	BOOM	1/6

HINTS FOR USERS OF THE B & B CARBURETTER.

We submit the following for 4-Cycle Engines, which may be found useful when checking over the Engine and Carburetter—The Carburetter should be placed as close to the Cylinder as possible. Where it is possible for a twin Engine, fix the Carburetter between the cylinders. The above has the advantage of simplicity, and at the same time the position recommended provides the necessary warm air requisite to run the engine at full power. This also prevents an accumulation of petrol which is apt to take place in an inlet pipe of any length, and the Carburetter is shielded from the rush of cold air at high speeds which causes partial freezing and erratic running. When fitting the handle-bar control it should be arranged so that there is no sharp bend in the cable from the top of the Spraying Chamber. Sharp corners are liable to fray the outer member of the cabling and also render the inner member stiff in working. The petrol pipe should not be less than $\frac{3}{16}$ in. inside, as if smaller, air locks are apt to take place, and should have "easy" bends, and few as possible. We recommend a petrol strainer between the tank and Carburetter (see page 14), but the gauze must be of ample area and not too fine, otherwise the slightest trace of water or lubricating oil in the petrol will immediately stop the flow. The control cabling should not be any longer than is necessary, for if an excessive length is fitted, the loose cable is apt to sway, and so alter the position of the throttle and air valves. The outer member of the cable should be clamped firmly to the frame wherever possible, so as to prevent any swaying of the cable.

Providing the Engine is in good order and the Carburetter correctly set, the results should be as follows—

P & B

With the engine free and the extra air valve fully closed and the throttle a quarter open, the engine should start easily, and when running at full speed on a warm day, should take three-quarters of the extra air. On a cold or wet day, a little less will be necessary. If the petrol level is tested (which can be readily done by removing the spray chamber), the petrol should appear level with the top of the jet. No alteration from this should be attempted, as this is the only real position which will give good results at all speeds. Any variation from this only leads to erratic running.

SINGLE & TWIN CYLINDER MACHINES.

NOTE—These notes should be read as being applied to single jet Carburetters, when Universal type is used, to fit smaller jet signifies to close the jet, the same applies to the adapter.

The following are a few questions we have been asked from time to time—

1.—Engine runs alright slowly, but when put on full power, it falls off in speed after running for half-a-minute, gradually slowing down, and then picks up again; no alteration being made either in the Carburettor or in the engine.

This is probably due to partial freezing caused by the Carburettor being in an exposed position. The cure is to fit the Carburettor in such a position that warm air is drawn through it from the cylinder. The only other cause for this is dirt either in the tank, the petrol pipe, or in the Carburettor; or the tank being almost empty, causing an air lock in the petrol pipe either of which cause erratic feeding of the petrol to the Carburettor. Partial freezing of the Carburettor is often indicated by the formation of moisture on the outside of the inlet pipe.

2—Engine runs and starts easily, but will not take any extra air (providing that no Petrol is sprayed back from the Carburetter, in which case, see note referring to Valves, No. 4), possibly also firing back into the Carburetter.

This is due to too small a jet. The cure is to fit a jet so large that at least half of the available amount of extra air can be taken at full speed. In rare cases this may also be caused by a choked silencer, or by the inlet valve sticking in its guide.

3—The Engine is difficult to start and will not take any extra air, and will not run slowly.

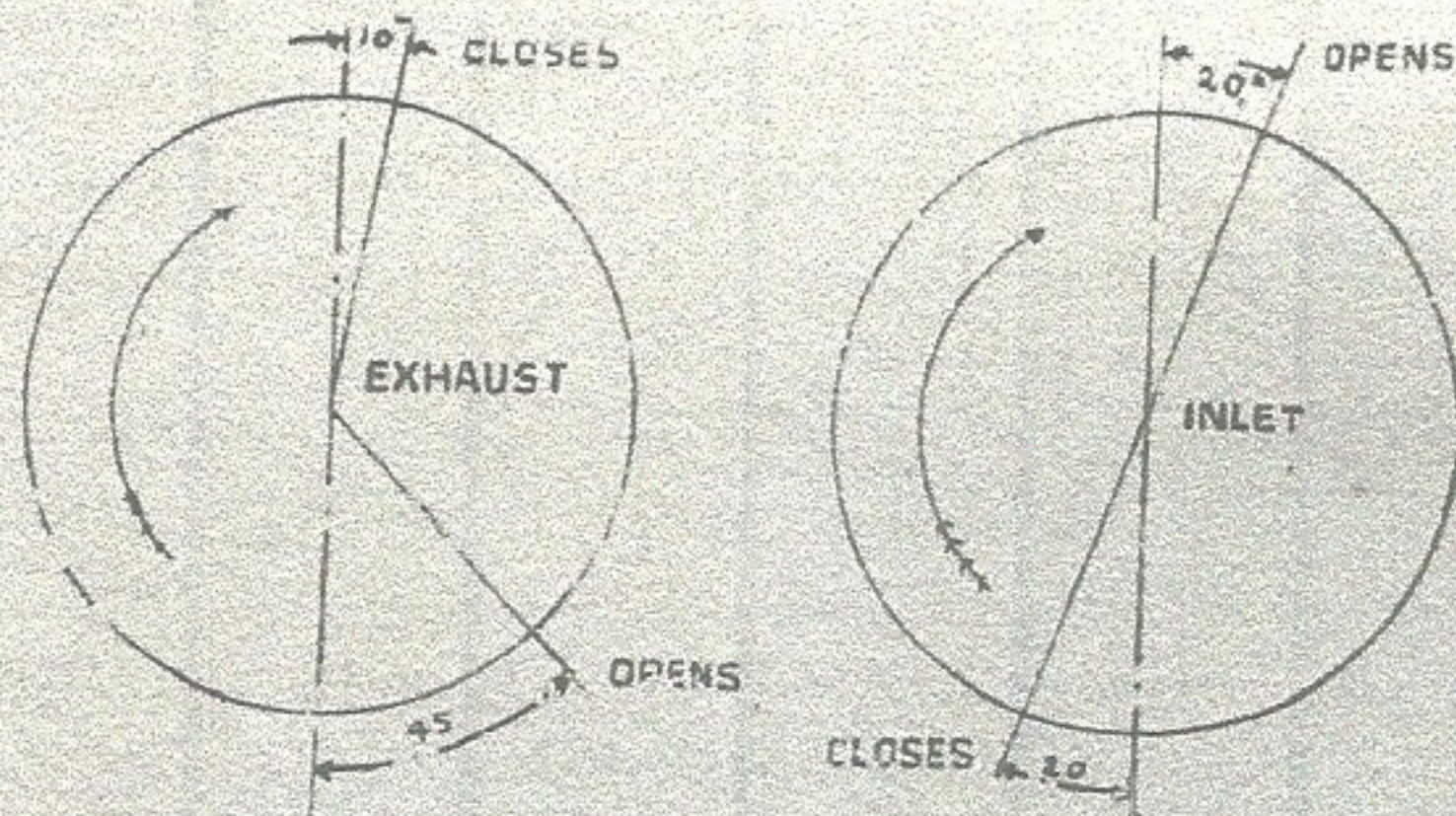
If attributable to the Carburetter, this is due to the Adapter being too large, and possibly also the jet being too small. Fit a smaller Adapter first, and then, if necessary, a larger Jet as well. But it may also be due to (a)—The Carbon Brush in the Magneto fixed behind the Contact Breaker, being struck in its bush, and not having sufficient pressure on the plate to carry the current generated at low speeds. (b)—(Most important). The gap between the points being too wide, caused by wear and want of adjustment. This gap should be kept at the minimum distance advised by the maker of the Magneto, generally about .02in. A wide gap almost invariably causes difficult starting. (c)—The points of the Contact Breaker itself becoming burnt or dirty. (d)—The accumulation of wet or dirt, on the high tension terminal, causing shorting. This of course would mean erratic running at all speeds. (e)—Absence of compression through leakage, in which case the remedy is obvious.

4—Engine starts well but cannot get best results with the throttle fully open.

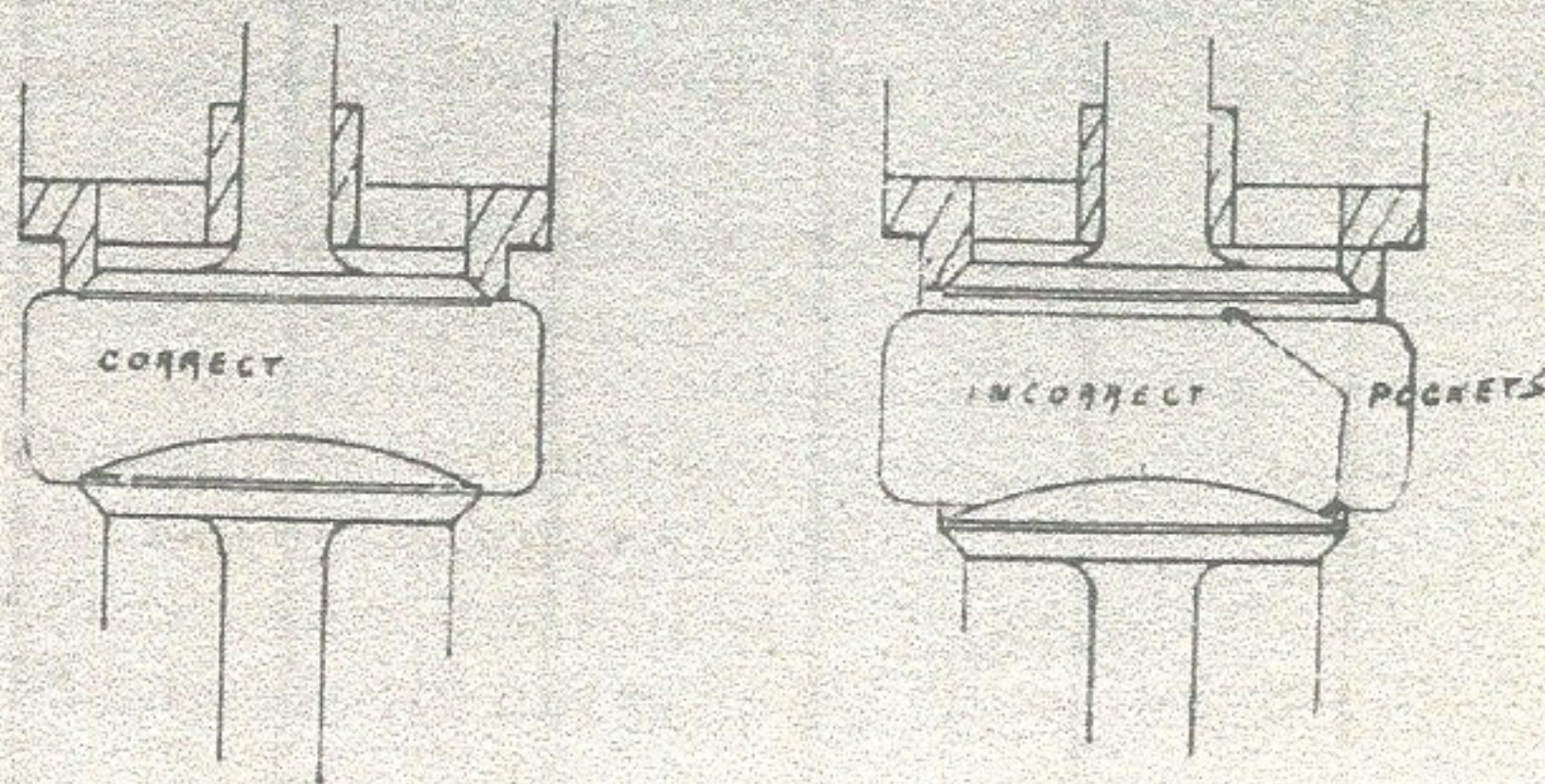
If the Engine has Automatic Inlet Valves, this is probably due to having too large a lift or too weak a spring, or perhaps both. It is most important with Engines of this type to see that the lift is reduced to a

P. S. B.

minimum, and the strength of the Spring increased as much as possible. This, strictly speaking, varies according to the diameter of the Valves, but with a normal Engine of about 75 m/m bore, the valve lift should not exceed $\frac{1}{8}$ in., and the strength of the Spring should be about 2 to 3 lbs. For high speed, less lift and stronger springs; for low speeds, weaker springs. This trouble can also be caused by too short an exhaust cam, or excessive lift, or wrong timing of the same, or a choked Silencer. If mechanically operated valves are fitted, the trouble is probably due to the wrong timing of the Inlet or Exhaust Valve. A normal valve timing should be as diagram.



When checking the valves over, see that they open in the combustion Chamber freely, and are not 'pocketed' in any way. (See illustration).



To get the Engine to respond to the full movement of the Throttle Valve, it is of course obvious that the area of the Inlet Pipe and the area exposed by the opening of the Inlet Valve should at least equal the area of the opening of the Carburetter. Otherwise the Carburetter will only respond up to such time as the two areas become equal. Any further movement is checked by the choking at the Inlet Valve.

5—Engine with Automatic Inlet Valves will not give the full power, if lift of the valve is reduced to $\frac{3}{8}$ in. Probably due to the Inlet Valve being in 'pocket,' as shown in the foregoing illustration.

Cure—Alter the valves so that they lie flush with the inside of the combustion chamber, when closed (as marked 'correct' in the foregoing illustration).

6 Petrol blown back through the Carburetter when Engine is running. (See No. 4).

7—Carburetter takes full air at moderate speeds, and would take more if it were possible. Due to the Jet being too large. Cure—Fit a smaller one.

8—Engine missing fire when running—cannot take full air. Due to fault in ignition.

NOTE—With one exception only, no rapid changes can take place which are due to the Carburetter. Changes due to the Carburetter are only comparatively slow, when compared with the engine speed. The only exception being a piece of grit floating about in the nozzle being sucked up, thus totally stopping the supply of petrol.

9—Overheating of Engine when running full speed—cannot take full air.

This is not due to the Carburetter under these conditions. It may be due to any of the following points: Wrong timing of the Inlet or Exhaust Valve, or insufficient lift on the valve. Late Ignition. Pocketing of the Exhaust Valve, as shown on page 22. Partial

choking of the Exhaust Pipe or Silencer. Too high compression, or the engine being shielded from the air current, and last but not least, to the use of unsuitable lubricating oil.

10—Knocking of Engine on hills.

Probably caused by slight over heating, but may be due to (1)—High compression. (2)—Carbon deposit or sharp projections in the Cylinder, Valve Pockets, or on the Piston. (3)—Ignition too early. (4)—Too high a gear. (5)—Sometimes caused by having a long thin point on Sparking Plug, which, when incandescent causes automatic ignition; can be partially overcome by closing the Air-Valve until the knocking ceases.

11—Irregular running (sometimes called hunting), when driving at high speeds.

This is sometimes attributable to the Valves not following the contour of the cams. If this is so, stronger or livelier springs will effect an improvement. This may also be caused by a weak spring on the Rocking Arm of the Magneto Contact Breaker, or in newer models by the Rocking Arm sticking in its Fibre Bush.

The above are common points we have elucidated manytimes. We are always pleased to assist our clients with any advice in connection with B&B Carburettors.

General Remarks and Hints for Competitions.

For speed purposes the setting can be varied with advantage. For instance, for hill-climbing competitions the jet should be made of such a size that one can take the whole amount of extra air, and for consumption trials, where economical running is required, a smaller adapter as well as a smaller jet can be fitted. The usual settings for single cylinder Engines is generally as follows, although in some instances, it is found

advantageous to depart from them for special reasons.

L.I.T.	64m/m	2 h.p.	Jet	.026in.	Adapter,	.40in.
"	70 "	2 $\frac{3}{4}$	" "	.029 "	"	.44 "
B.O.D.	76 "	3	" "	.031 "	"	.48 "
"	86 "	3 $\frac{1}{2}$	" "	.032 "	"	.53 "
"	89 "	4	" "	.033 "	"	.56 "

Further Notes for Reliability Trials, and Hill Climbs.

See that all points on the Engine are in order in accordance with the hints and tips mentioned in this Booklet. Have the Carburetter carefully cleaned throughout, and fit if possible, a separate Strainer between the Tank and Carburetter. See that the needle valve is not unduly worn on the seating, and do not attempt to grind this in, rather obtain a new one, or have the needle re-turned on its seating. See that the slides work freely, and that the cables are properly adjusted. If a 20 mile limit is fixed, run the machine under touring conditions and if hill climbing is part of the test, and you are allowed to alter Carburetter for it, fix a larger Jet at foot of the hill; if no alteration is allowed during trial, fix up for hill climbing, with large Jet and no Adapter, then drive with as little throttle and as much air as possible. Do not use too high a gear.

Hill Climbs are more often lost by over gearing than by under gearing. When automatic valves are used, too much attention cannot be given to them. A difference of .01 in the lift often makes 2 to 3 miles per hour difference in the extreme speed on the level.

Consumption Trials.

Insert a .44 Adapter for a 3 $\frac{1}{2}$ h.p. machine, and use as small a Jet as possible, about .027. Gear the machine as high as the course will permit of one getting up

B & B

the steepest hill. It is much more economical to run with full open Throttle and high gear and few Engine revs., than with half open Throttle, low gear and high Engine revs.

Simple Formula for the Comparison of Engines.

$$\text{R.A.C. H.P.} = \frac{D^2 \times N}{25}$$

When stroke is taken into consideration—

$$\text{H.P.} = \frac{D \times S \times N}{25}$$

Where D = Diameter of Cylinder in inches

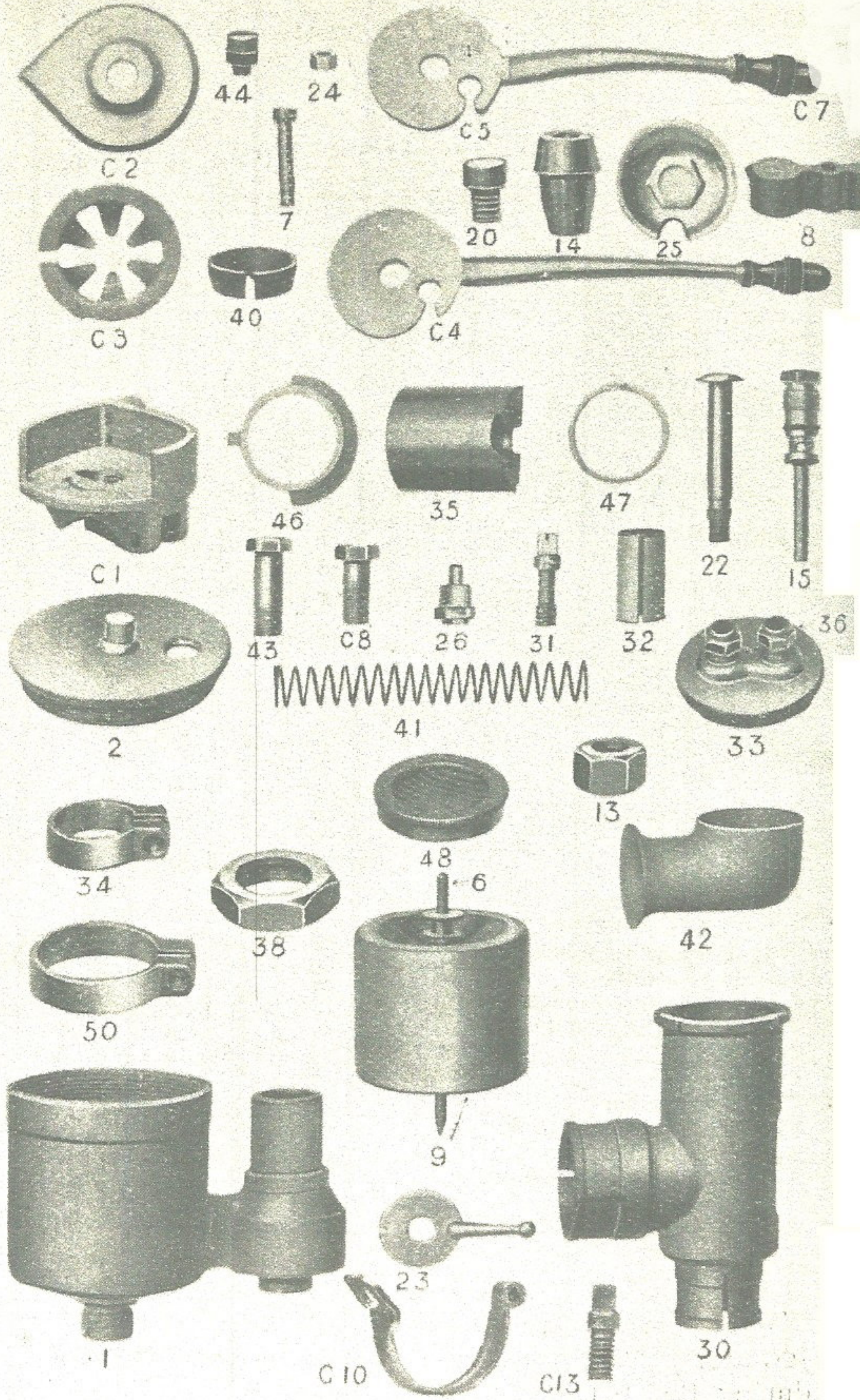
„ S = Stroke of Piston in inches.

„ N = Number of Cylinders.

Some of the principal records made with B & B Carburettors during 1911.

May 12.	World's Records by the late Mr. V. T. Surrudge. 3½ Rudge	} Kilometre, Mile, and 50 Miles.
May 25.	World's Records by the late Mr. V. T. Surrudge. 3½ Rudge	} 1 hour, Flying Lap (Brooklands)
June 7.	World's Records (Class B) by Mr. O. C. Godfrey 2¾ Zenith	} 1 Hour, 50 Miles.
June 21.	World's Records by Mr. G. E. Stanley 3½ Singer.	} 50 Miles.
June 24-25	End to End Side Car Record by Mr. Hugh Gibson. 3½ Bradbury	} End to End (England)
Aug. 31.	Irish End to End Side Car Record by Mr. Hugh Gibson. 3½ Bradbury	} End to End (Ireland)
Oct 3.	World's Record by Mr. W. Stanhope Spencer. 3½ Rudge	} 50 Miles. 100 Miles. 1 Hour. 2 Hours.
Oct 25.	World's Records (Class B) by Mr. Sam Wright 2¾ Humber	} 50 Miles. 100 Miles. 1 Hour. 2 Hours. Flying Lap (Brooklands)

In addition to the above, machines fitted with "B & B" Carburettors have obtained upwards of 300 firsts, 250 seconds, 200 thirds in Competitions during the 1911 Season.



		Universal		Single Jet.	
		Stan- dard.	Light- weight.	Stan- dard.	Light- weight
		s. d.	s. d.	s. d.	s. d.
1	Float Chamber Body ...	5 3	4 9	5 0	4 6
2	Float Chamber Cap ...	3 0	3 0	3 0	3 0
6	Needle and Collar ...	1 0	1 0	1 0	1 0
7	Pins for Weights (pair)...	0 3	0 3	0 3	0 3
8	Weights (pair) ...	0 9	0 9	0 9	0 9
9	Float ...	1 6	1 6	1 6	1 6
13	Petrol Union Nut ...	0 3	0 3	0 3	0 3
14	Petrol Union ...	0 2	0 2	0 2	0 2
15	Nozzle complete...	—	—	0 6	0 6
20	Stop Screw and Fibre Washer ...	0 1	0 1	0 1	0 1
22	Helix ...	1 0	1 0	—	—
23	" Handle ...	0 9	0 9	—	—
24	" Nut ...	0 2	0 2	—	—
25	Spring Washer ...	0 4	0 4	—	—
26	Tickler, complete ...	1 0	1 0	1 0	1 0
30	Spraying Chamber ...	4 3	3 9	4 0	3 6
31	Lock Pin ...	0 3	0 3	0 3	—
32	Adapter ...	—	—	0 3	0 3
33	Throttle Cap with Bushes	1 6	1 6	1 6	1 6
34	Lock Ring... ...	0 6	0 6	0 6	0 6
35	D Valve (each) ...	0 9	0 8	0 9	0 8
36	Adjusting Bush ...	0 3	0 3	0 3	0 3
38	Union Nut ...	—	0 6	—	0 6
40	Lock Ring ...	—	0 4	—	0 4
41	Valve Springs (pair) ...	0 6	0 4	0 6	0 4
42	Hot air Inlet ...	—	—	1 0	0 9
43	Holding Bolt for Hot Air Inlet ...	—	—	0 3	—
44	5B.A. Stop Screw and Fibre Washer ...	0 2	0 2	—	—
46	Air Regulating Washer	0 6	0 6	—	—
47	Spring for ditto ...	0 3	0 3	—	—
48	Dust Screen (complete)	1 3	1 3	1 3	—
50	1 1/4 in. Clip Ring (and bolt)	1 0	—	1 0	—
C 1	Body ...	1 6	1 6	1 6	1 6
C 2	Cap ...	0 6	0 6	0 6	0 6
C 3	Centre Washer ...	0 2	0 2	0 2	0 2
C 4	Throttle Lever with Eb- onite Tip ...	1 3	1 3	1 3	1 3
C 5	Air Lever with Ebonite Tip ...	1 3	1 3	1 3	1 3
C 7	Ebonite Tips ...	0 4	0 4	0 4	0 4
C 8	Centre Bolt ...	0 4	0 4	0 4	0 4
C 9	Cable Ends ...	0 1	0 1	0 1	0 1
C 10	Clip Bands ...	0 4	0 4	0 4	0 4
C 13	1/4 in. Pin for Clip ...	0 2	0 2	0 2	0 2

Engine Revs. at different speeds miles per hour. Diam. of Driving Wheel, 26in*

Gear Ratio.	4	4 $\frac{1}{4}$	4 $\frac{1}{2}$	4 $\frac{3}{4}$	5	5 $\frac{1}{4}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	6
Speed in Miles, hour									
5	260	276	292	309	325	346	358	374	390
10	520	552	584	618	650	692	716	748	780
15	780	828	876	927	975	1038	1074	1122	1170
20	1040	1104	1168	1236	1300	1384	1432	1496	1560
25	1300	1380	1460	1545	1625	1730	1790	1870	1950
30	1560	1656	1752	1854	1950	2076	2148	2244	2340
35	1820	1932	2044	2163	2275	2422	2505	2618	2730
40	2080	2208	2336	2472	2600	2768	2864	2992	3120
45	2340	2484	2628	2781	2925	3114	3222	3366	3510
50	2600	2760	2920	3090	3250	3460	3530	3740	3900
55	2860	3036	3212	3399	3575	3805	3938	4114	4290
60	3120	3312	3504	3708	3900	4152	4296	4488	4680

For 28in. Wheels, multiply Revs. by 1.03. For 24in. Wheels, multiply by 0.93.

SPEED TABLE.

Time per 1 Km.		Km. per hour.	Time per London or Statute mile.		Miles per hour.
Min.	Sec.		Min.	Sec.	
4	—	15	6	—	10
3	—	20	5	—	12
2	30	24	4	—	15
2	—	30	3	—	20
1	40	36	2	40	22.5
1	30	40	2	20	26
1	20	45	2	—	30
1	15	48	1	50	33
1	10	51.5	1	45	34
1	5	55	1	40	36
—	—	60	1	35	38
—	58	62	1	30	40
—	56	64.5	1	25	42.5
—	54	66.5	1	20	45
—	52	69	1	15	48
—	50	72	1	10	51.5
—	48	75	1	5	55.5
—	46	78.5	1	—	60
—	44	82	—	58	62
—	42	86	—	56	64.5
—	40	90	—	54	66.5
—	39	92.5	—	52	69
—	38	95	—	50	72
—	37	97.5	—	49	73.5
—	36	100	—	48	75
—	35	103	—	47	76.5
—	34	106	—	46	78.5
—	33	109	—	45	80
—	32	112.5	—	44	82
—	31	116	—	43	84
—	30	120	—	42	86
—	29	124	—	41	88
—	28	128.5	—	40	90
—	27	133	—	39	92.5
—	26	138	—	38	95
—	25	144	—	37	97.5
—	24	150	—	36	100

WHERE B & B CARBURETTORS CAN BE OBTAINED.

- LONDON—Brown Bros. Ltd., Great Eastern Street.
 East London Rubber Co., " " "
 Hobday Bros., " " "
 Bransome Kent & Co., " " "
 Rotax Motor Co., " " "
 Chater Lea Ltd., Golden Lane, E.C. "
 Hunt's Stores, 104, Newgate Street, E.C.
 Service Co., 292, Holborn.
 Great Eastern Rubber Co., 31, Norton Folgate, E.C.
- MANCHESTER—Manchester Machinists Co., 30, Queen Street, Deansgate.
- LIVERPOOL—Timson Bros., Duke Street.
 Brown & Co., 72, Renshaw Street.
- BIRMINGHAM—Timson Bros., Snow Hill.
- SHEFFIELD—East London Rubber Co., Furnival Street.
- NOTTINGHAM—W. E. Brough & Co., Basford.
- CARDIFF—J. Bould Ltd., 138, City Road.
- BRISTOL—East London Rubber Co., 101, St. Thomas St.
 E. J. Long & Co., Narrow Wine Street.
 Bristol Motor Accessories Co., Stokes Croft.
- BRADFORD—Thos. Dyson Ltd., Park Road.
- CAMBRIDGE—W. King & Co., Bridge Street.
 I. P. Storey, 6, Bridge Street.
- LINCOLN—J. Kirby, Broadgate.
- LEEDS—A. I. Greenwood, 39, Guildford Street.
- NORTHAMPTON—Advance Motors Ltd., Louise Road.
- NEWCASTLE-ON-TYNE—Motor Ignitionisms
 (Ridley Pl) Ltd.

AGENTS:

- AUSTRALIA & TASMANIA—Tozer, Kemsley, and Fisher Ltd., 84, Fenchurch Street, London, E.C.
- NEW ZEALAND—Sargood, Son & Ewen Ltd., 11, Bunhill Row, London, E.C.
- SOUTH AFRICA—Kuhner, Henderson & Co., Salisbury House, Finsbury Circus, London.
- GERMANY—Aachener Stahlwarenfabrik, Aachen.
- FRANCE—E. M. Bowden, 19, Avenue du Roule.
 Paris, Neuely.

