File - Mc Candless
de Forest.
Wallace Valve.

Mc Candless Sales of Audions.

Information from files of Sheffield & Betts, attorneys for RCA, in RCA vs. E.J. Edmonds Co on Langmuir Patent #1,282,439 (Grid Leak Patent).

"Investigator 5-27 ~~6-42~~" reports on ~~March~~ April 8, 1926 on interviews with Mr. Grogan, Superintendent of Westinghouse Factory at 35 Steuben St., Brooklyn, N.Y. and Mr. H.W. Mc Candless at Westinghouse Office at 150 Broadway.

Grogan stated that Mc Candless made audions for Dr. Lee de Forest in 1905 and 1906 and also stated that it was not until 1912 that Mc Candless did any business with Wallace.

Saw Mc Candless, explained nature of visit, and he brought out a large stack of old manufacturing records of his company, together with some sales records. Mc Candless went over these records and stated that he made his first tube in 1905 for Dr. Lee de Forest, who had come to him with a Fleming Valve.

While the records show that Mc Candless made tubes for de Forest, there is nothing in the records to show that they were of the tubular type. Mc Candless feels certain, however, that he made a tubular ~~audion~~ bulb for de Forest and this fact is substantiated by a circular printed by de Forest in 1906, which clearly shows a tubular Audion. All transactions at this time were with Dr. de Forest or his assistant, Mr. C.D. Babcock.

The only record that Mc Candless was able to locate today that specified that tubular bulbs had been provided was as follows:-

July 9, 1907 - for Dr. de Forest Tubular bulbs 1¼" diameter.

Mc Candless requests more time to go over records and discuss with Grogan.

— — — — — — — — —

Investigator (Agent 6-42) reports; March 15, 1927, on interview with Mc Candless as follows:-

Mc Candless Sales of Audions (cont.)

All tubes sold to Gernsback were round bulb with candelbra base.

Dr. Goldhorn, on March 6, 1912, purchased a supply of tubes with double grids and plates.

On October ~~8~~ 5, 1912 Mc Candless sent a shipment of tubes to North American Company in New York, but has no information as to type sent.

Mc Candless has large list of tubes sold to Wallace, eg.

Feb 13, 1912	12 round tubes
March 8, 1912	1 " tube
March 19, 1912	1 long type
March 23, 1912	7 long type.

October 12, 1944.

Wallace Valve Detector and Valve Receiver

Information below comes largely from files of Sheffield & Betts, attorneys for R.C.A. in the case of RCA et al. vs. E.J. Edmond & Co. on ~~Langmuir~~ Longmuir Patent #1,282,439 (Grid Leak Patent).

General

Wallace ~~Valve~~ Valve Detectors and Wallace Valve Receiving sets were made, advertised and sold by Wallace & Co., 59 5th Ave, New York City in the period 1911-1913. Wallace & Co. consisted of two men, Paul E. Wallace and Merritt D. Mosher. (See photostat of "Certificate of Doing Business" attached)

Paul E. Wallace

Wallace lived in Rochester, N.Y. at 46 Hortense St. prior to 1910, and at West Henrietta, N.Y. near Rochester, from April 1910 to April 1911. He was engaged in automobile service work in West Henrietta and Rochester, but had no garage or place of business.

He was an amateur radio enthusiast, and used an audion in the standard way in Rochester and West Henrietta early in 1910.

On a trip to New York in January 1910 he visited the de Forest station in the Metropolitan Tower, and also met O.T. Louis of the O.T. Louis Company at 59 5th Ave. He moved to New York in February 1911, leaving his family up-state. He lived at the Hotel St. George in New York.

Merritt D. Mosher (who was born in Sioux City, Iowa) came to New York in May 1911, and lived at the Hotel St. George, rooming with Wallace, until 1912 when Wallace moved to a place on 12th St between 5th and 7th Avenues. Meantime Wallace moved his family to 212 Union Ave., Long Branch, N.J. about March 1911, where they lived until the fall of 1912. Wallace still stayed in New York, but visited his family week-ends and during the summer. Later, he and his family moved to Great Kills, Staten Island where he lived until January 1, 1914.

In 1914-1915 he lived on 61st St in Brooklyn.

Wallace Valve Detector and Wallace Valve Receiver (cont.)

From July 1, 1915 until June 1916 Wallace was radio operator on the U.S. Fisheries ship "Roosevelt"

From June 1916 until February 1917 he was radio officer on the U.S.S. "Kanawha", in naval service

Beginning February 1917 and for some time thereafter he was on furlough from naval service.

He was in Juneau, Alaska prior to summer of 1919, was selling tools for Fairbanks & Co in Summer of 1919, and worked in Detroit in December 1919.

Wallace worked for the International Radio Telegraph Co. at Bush Terminal from February or March of 1920 ~~to~~ until November 1920. During this period, and for some time previously, he lived in Palisades Park, N.J. first at #60 Edsall Blvd, and later at 56 Edsall Place. This latter residence was destroyed by fire, in April 1920 in which he lost all his records, papers, advertising matter, etc. After the fire he moved, on April 24, 1920 to 507 West 123rd St. New York City.

Insert →

~~Began~~ From November 29, 1920 to March 15, 1922 he worked for Westinghouse Elec. & Mfg. Co. on the maintenance and repairs of machinery and apparatus, including radio ~~&~~ apparatus. In this work he reported to Mr. L.D. Canfield at 467 10th Ave., New York City. He was released when he was found to be surreptitiously abstracting electrical supplies.

From early (March?) 1922 to July 1922 he lived at Charleston, W. Va. From July 1922 to September 1923 he lived at Cape May, N.J. He had intended to design radio apparatus for Rosenblatt and Silverstein, but they "jumped" a contract with him and while at Cape May was virtually without employment.

In May and June of 1923 Wallace devoted most of his time to trying to locate and interview men who might have been familiar with his early radio sets. He was employed by S.E. Darby for this purpose.

He went to California in September 1923 and lived at 1241 Eddy St., San Francisco, for about 6 months.

February to July 1924 he did service work for the Federal Telephone and Telegraph Company in Arizona, California, Oregon, and Washington, being employed by the San Francisco office of the Company, 693 Mission St.

He testified for Armstrong in the Armstrong - de Forest interference (see affidavit attached), after which a position was obtained for him with Westinghouse.

Wallace Valve Detector and Wallace Valve Receiver (cont).

From July 1924 to October 1924 he worked at the Federal laboratory in Buffalo, N.Y. under the direction of M.J. Corwin, the Pacific Coast Representative of the Federal Company.

He returned to Los Angeles in October 1924 where he lived at 1184 West 37th St., where he was engaged in confidential business, the nature of which he would not disclose except to say that in May of 1925 he was in Philadelphia doing work for C.D. Ehret and Mr. Deeter, Atwater-Kent general counsel. This work was similar to that done for Darby in May and June of 1923.

Wallace & Co

Wallace began doing business at 59 5th Ave (corner 14th St?) in February 1911 He rented space from O.T. Louis & Company, paying a percentage of the profits as rent. The business was at first known as "O.T. Louis Wireless Department". Mosher worked for him beginning in the summer of 1911. They handled mostly Murdock and Clapp-Eastham parts.

In January 1912, Mosher became a partner (see certificate attached) and they began doing business as Wallace & Co. Mosher left in July 1912. (Mosher worked for Wireless Specialty Apparatus Co. in Boston from Nov. 17, 1917 to Aug. 18, 1919 and lived at 820 Massachusetts Ave, Cambridge, Mass.) Wallace & Co. were in business until November or December of 1913. Space was rented from Mr. Louis until he moved his business in February 1913, when Wallace & Co rented from Holsom Bros. paying a nominal rent.

Wallace Valve Apparatus

The first audion apparatus made and sold by Wallace was a complete receiving set, sold on a mail order to some one in Atlanta or Augusta, Georgia in the summer of 1911.

The Wallace Valve Detector was first made and put on the market around July or August 1911. It was the first radio apparatus made and sold in the regular course of business at 59 5th Ave. Earlier sets were made with the "regular round audion" but later a tubular audion was used.

Wallace Valve Detector and Wallace Valve Receiver (cont.)

Wallace advertised in "Modern Electrics", "Electrician and Mechanic" and "Wireless News". Photostat copies of some of these advertisements are attached, as well as photostat copy of an advertising bulletin of Wallace & Co, and photographs of a Wallace Valve Receiving set. The bulletin was first issued in the summer of 1911, the one photostated having been issued in 1912.

The Wallace Valve Detector illustrated in the bulletin was first made early in 1912 and the one shown in the November 1912 advertisement a little (about a month) earlier.

The illustration of the Valve Receiver in the bulletin and that in the advertisement in Modern Electrics for May 1913 were made from the same cut.

(Note by G.F.J.T - The advertisement of the Radio Telephone Co, 1391 Sedgwick Ave, New York City on page 867 of the November 1913, Vol. 6, No. 8, "Modern Electrics", offering the RJ4 Detector uses the same cut as the Wallace advertisement of November 1912 noted above.

Advertisement in February 1914, Vol. 2 8, No. 2, "Modern Electrics and Mechanics" page 242 shows the RJ4 Detector also with tubular audion.)

The letter from which an extract is given in the May 1913 advertisement was written by Thomas A. McLarney, an operator stationed at Colon, Panama, to Mr. Austin F. Parkhurst of the United Fruit Co. around Dec. 1912 or January 1913. McLarney worked a schedule with the United Fruit ships coming into Colon.

(Note by G.F.J.T. - Major E.H. Armstrong has characterized Wallace as the "original tube bootlegger")

Wallace Valves

Wallace obtained all his audions from H.W. McCandless & Co. McCandless says that it was about January 1912 that he made the first tubular audions for Wallace. Mosher believes that all these "valves" had double filaments

A list of audions sold to Wallace by McCandless at various times is attached, taken from McCandless records. No records are available for 1911,

Wallace Valve Detector and Wallace Valve Receiver (cont.)

since all sales were on a cash basis in that year.

Note by GFJT - It will be observed that the audion bulb shown in the photographs of the Wallace Valve Receiver, has a label marked "Ultraudion" which would seem to indicate that it is not the original bulb. The word "ultraudion" was coined by de Forest to describe one variation of the audion oscillator circuit, some time after the oscillating features were discovered in 1912. Bulbs bearing this label probably were not sold before late 1913 or early 1914 at best.

Attached - Photostat of "Certificate of Doing Business"
Photostat of Wallace Affidavit in Armstrong (Westinghouse) vs. de Forest in U.S. District Court, Southern District of New York, in Equity 17/88, dated June 12, 1923.
Photostats of advertisements
Photostat of Wallace Advertising Bulletin
Photographs (4) of Wallace Valve Receiver.

McCandless Sales of Audions to Wallace

Information from H.W. McCandless in Westinghouse office on Sat. Feb 27, 1926.

1911 - No record. All sales on cash basis.

1912	February 13th	12 bulbs
	March 8th	1 long bulb
	March 23rd	7 long bulbs
	May 15th	6 bulbs
	June 3rd	2 "
	June 18th	12 "
	June 26th	1 "
	September 23rd	10 "
	October 3rd	14 "
	October 22nd	8 "
	December 9th	6 "
	December 31st	28 "
	December 31st	1 "
	Total	108 bulbs.

Total for 1912-1913 = 108 + 172 = 280 bulbs

Note by G.F.S.T. - Peak of sales occurs in winter of 1912-1913, at a time when the "Radio Telephone Co" - legitimate sales agent for Audions - was moribund.

1913	January 18th	17 bulbs
	January 27th	14 "
	January 31st	1 "
	February 5th	8 "
	February 17th	8 "
	February 26th	8 "
	March 1st	15 "
	March 11th	11 "
	April 16th	6 "
	April 19th	6 "
	April 21st	4 "
	April 26th	4 "
	April 26th	10 "
	May 10th	10 "
	July 8th	9 "
	August 18th	8 "
	August 28th	1 "
	August 28th	1 "
	September 5th	8 "
	September 19th	9 "
	October 2	14 "
	Total	172 "

R. C. A. vs. E. J. EDMONDS & CO. INC.

Mr. Grogan of the Westinghouse Plant on Steuben Street, Brooklyn has stated by telephone that he has in writing the records of all of the McCandless audions from 1905 to 1911 or 1912; and to date hereafter in typewritten form.

He has stated that he furnished audions to Wallace & Co. on May 10, 1912, and on Mar. 19, 1912, supplying him, he believes, with the tubular form rather than the spherical form generally used by DeForest Company.

From his records, and those of Mr. McCandless it is believed possible to be able to trace each and every development of the audion construction, as for example when the first Hudson filaments were made; double grids; double plates; etc.

For the purposes of the present suit it would be well to know the dates of all the tubes sold to Wallace; the numbers of tubes; the types etc., and where Wallace was when these tubes were sent to him.

It would also be desirable to know when the first valves were sent to the Federal Telegraph Co., Palo Alto, Cal., or San Francisco, as well as the type of the tube.

State of New York,
County of New York } ss.

On this thirtieth day of January Nineteen Hundred and twelve, before me personally came Paul E Wallace and Merritt D Mosher

to me known, and known to me to be the individuals described in and who executed the foregoing certificate and they severally acknowledged to me that they executed the same.

Charles Ress
Commissioner of Deeds #75
New York City

Certificate
of
Paul E Wallace
and
Merritt D Mosher
Conducting Business Under the Name of
Wallace & Co.

Pursuant to Penal Code
§ 363 B.: L. 1900. C. 216.

FILED
FEB 2[illegible]
CLERK'S [illegible]

Certificate, —§ 363b, Laws of 1907. Chap. 216. No. 201.
V.C.L.L.-E.

Julius Blumberg, Printer and Law Blank Publisher, 62 Grand St., N. Y.

State of New York,
County of New York } ss.

Paul E. Wallace and
Merritt D. Mosher of
the City, County and State
of New York

Do Hereby Certify, That they are

*conducting or transacting the business of buying, selling and installing electrical apparatus

at 59 Fifth Avenue, New York

in the County of New York and State of New York,

under the name of Wallace & Co.

and that the true or real full names of the persons conducting or transacting such business with the post-office address of said persons as follows:

NAMES.	POST OFFICE ADDRESS.
Paul E. Wallace	49 E. 12th St, New York
Merritt D. Mosher.	49 E. 12th St. New York.

Dated, January 30 1912

*Intend to conduct or transact (or are conducting or transacting).

DATA ON AUDION SALES BY McCANDLESS - BREAKDOWN OF SALES TO VARIOUS PURCHASERS

Customer / Month and Year	de Forest and de Forest Companies	Federal Telegraph Company	Marconi W.T. Co. of America	Wallace and Company	J.H. Bunnell and Company	Manhattan Elec. Supply Company	F.B. Chambers Company	J.E. Arnold	Doctor Goldhorn	Doctor Walter G. Hudson	I.W. Henry	Aylsworth Agencies, Inc.	Western Electric Company	Electro Importing Company	Hammond and Harwood Laboratories		Miscellaneous	Cash	Total
1909																			
January	75																		75
February	101																		101
March	84																		84
April	27		1																28
May	16																		16
June	12																	1	13
July	29																		29
August	38																		38
September	0																		0
October	34																		34
November	0																		0
December	24																		24
Total	440		1															1	442
1910																			
January	0																		0
February	28																		28
March	40																		40
April	0																		0
May	36																		36
June	42																		42
July	0																		0
August	22																		22
September	0																		0
October	22																		22
November	0																		0
December	24																		24
Total	214																		214
1911																			
January	6																	1	7
February	0																		0
March	20																	5	25
April	0																	3	3
May	0																	2	2
June	0																*27	5	32
July	12													1			4	1	18
August	0													35			2	4	41
September	2					1								24			6	6	39
October	3					3								25			2	8	41
November	2					2												18	22
December	0													8			1	32	41
Total	45					6								93			42	85	271
1912																			
January	12				1			4						23			5	28	73
February	37		2	12	3									29			7	14	104
March	0		70	8	21	2			7			6					1	20	135
April	0		1		12	1					12			25			2	12	65
May	0	24		6	12				3					11			2	20	78
June	0			15	4									14			3	9	45
July	0	3			12	1						6					4	7	33
August	0	4							1		12						2	9	28
September	0			10	18			5				6		25	7			6	77
October	4			22	6				2									9	43
November	6				12				1	8		6		28			2	7	70
December	0			35	4				3		40		20				1	4	107
Total	59	31	73	108	105	4		9	17	8	64	24	20	155	7		29	145	858
1913																			
January	0	6		32	26									38	6		9	9	126
February	6			24	29							6	20				8	7	100
March	12			26	44									45	5		2	8	142
April	0	24		30	34			26				2		50			4	6	176
May	0			10	31			10				2	20	50	10			4	137
June	0						12	8	3	1		3	6					5	38
July	6	12		9	8			12	2	2							11	3	65
August	0			10	18		24	12	1			5		6	6		**59	12	153
September	33			17	64		12	9						12			19	17	183
October	20			14	25		12	25				2		10			5	4	117
November	105																4		109
December	360							7									1		368
Total	542	42		172	279		60	109	6	3		20	46	211	27		122	77	1716

NOTES * - 25 of these sold to Charles de Grave Sells
** - 50 of these sold to Wireless Specialty Apparatus Company

Ex # 11

WIRELESS TELEGRAPH

SPECIALTIES

WALLACE & CO.

59 FIFTH AVENUE

NEW YORK

Terms-strictly net, cash with order.
We have no agents nor discounts.

COMMERCIAL TYPE PHONES.

The unequalled success of our receiving sets is due in no small measure to the superiority of our phones. They are not rated at a fixed resistance, but are wound so as to contain the proper number of ampere turns in the right place.

Great care is taken in the adjustment of these phones, so as to have the diaphragms the proper distance from the pole pieces, thus producing the right tone or pitch.

The resistance of these phones is about 2200 ohms to the set.

Price, with hard rubber covered head band and 6 foot cord, $8.50.

AMATEUR PHONES.

We also have a lower priced phone, which for the money, is the leader of all others. These phones have time and again shown themselves superior to phones of other well known makes which sell for from $3 to $4 more.

Wound to 2000 ohms per set, and equipped with nickel plated adjustable head band and five foot cord. *Price, $5.00.*

The claims we make for our apparatus are based on the results of actual use by ourselves and the purchasers and users of our goods, and we are ready to substantiate any such claims.

WALLACE VALVE DETECTOR

This detector is not only the most sensitive receptive device used in wireless work, but has the additional advantage of being absolutely permanent in adjustment. In fact, with the exception of the rheostat used to regulate the filament voltage, it requires no adjustment whatever.

No amount of tipping or jarring, such as is encountered on shipboard, can affect it in any way, and it can not be "knocked out" by a heavy transmitting spark as are detectors of the mineral or electrolytic type.

Much more selective tuning may be done with receiving sets employing this device than with those using the ordinary detector.

Everything pertaining to the detector, except the 4 volt 40 ampere hour storage battery which we furnish with it, is mounted in and upon the mahogany cabinet as shown in the cut.

The lamp is provided with two filaments, so that it is not necessary to renew the lamp until both are burnt out. With careful handling each filament should last at least three months with constant use. We do not, however, guarantee these filaments against carelessness or abuse. They are tested and known to be in perfect order before shipment.

The two point switch at the left of the lamp is used to throw on either of the two filaments, and should always be off when sending.

The binding posts under the rheostat are connected to the storage battery, and are marked so that the positive and negative connections may be properly made.

The receivers are connected to the binding posts at the right of the lamp (marked "rec.").

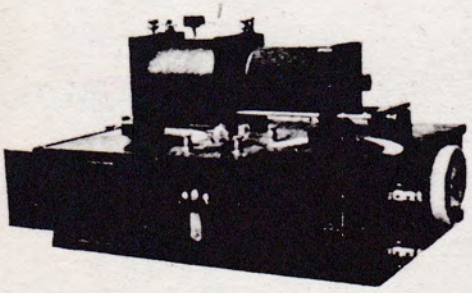
The posts on the back of the box (marked "tuner") are connected to the secondary terminals of the tuning device, across which a variable condenser of moderate capacity should be shunted to get the best tuning.

Price, as shown, together with 4 volt 40 ampere hour storage battery $20.00.

Bulbs are not sold separately except for renewals, and then only upon return of old bulbs.

Renewal Bulbs $3.00.

VALVE RECEIVING SET.



While our valve detector will increase the efficiency of any receiving set from 25 to 50 per cent, it is impossible to get the best results in long distance receiving and selective tuning unless all the component parts of such a set are so built, proportioned and assembled that they bear the proper relation one to another.

In this set all these details have been carefully worked out so as to secure maximum efficiency together with simplicity and ease of operation.

Continued service in actual commercial work, both on shipboard and in land stations, has proven the superiority of these sets to any on the market.

These sets will tune in stations having wave lengths up to 3000 meters if used in connection with a reasonably large antenna.

Price, with 4 volt 40 ampere hour storage battery and our commercial type phones, $65.00.

If ordered without phones deduct $8.50, or if without storage battery deduct $5.00.

Can not be sent by mail.

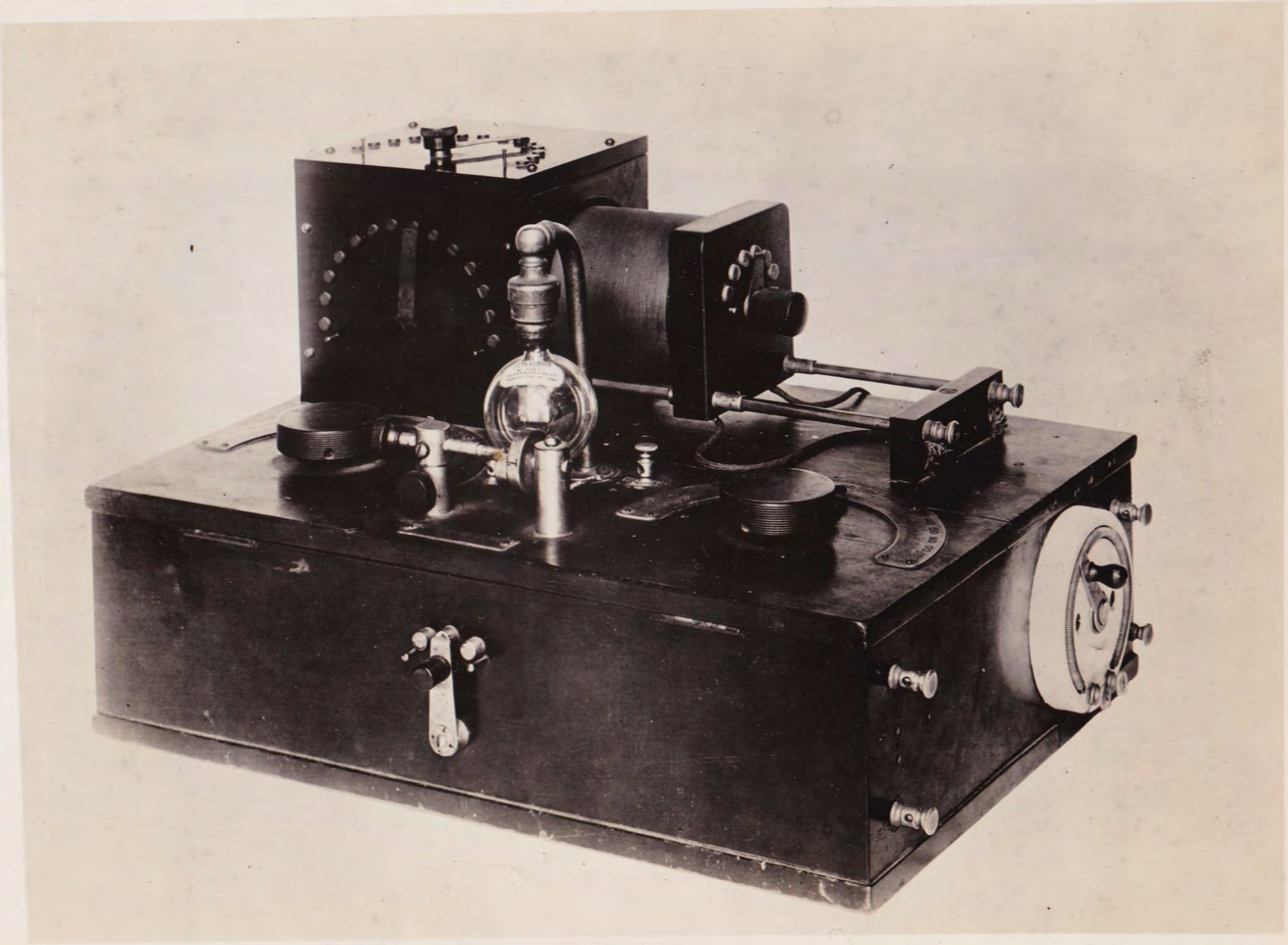
VARIABLE CONDENSER.

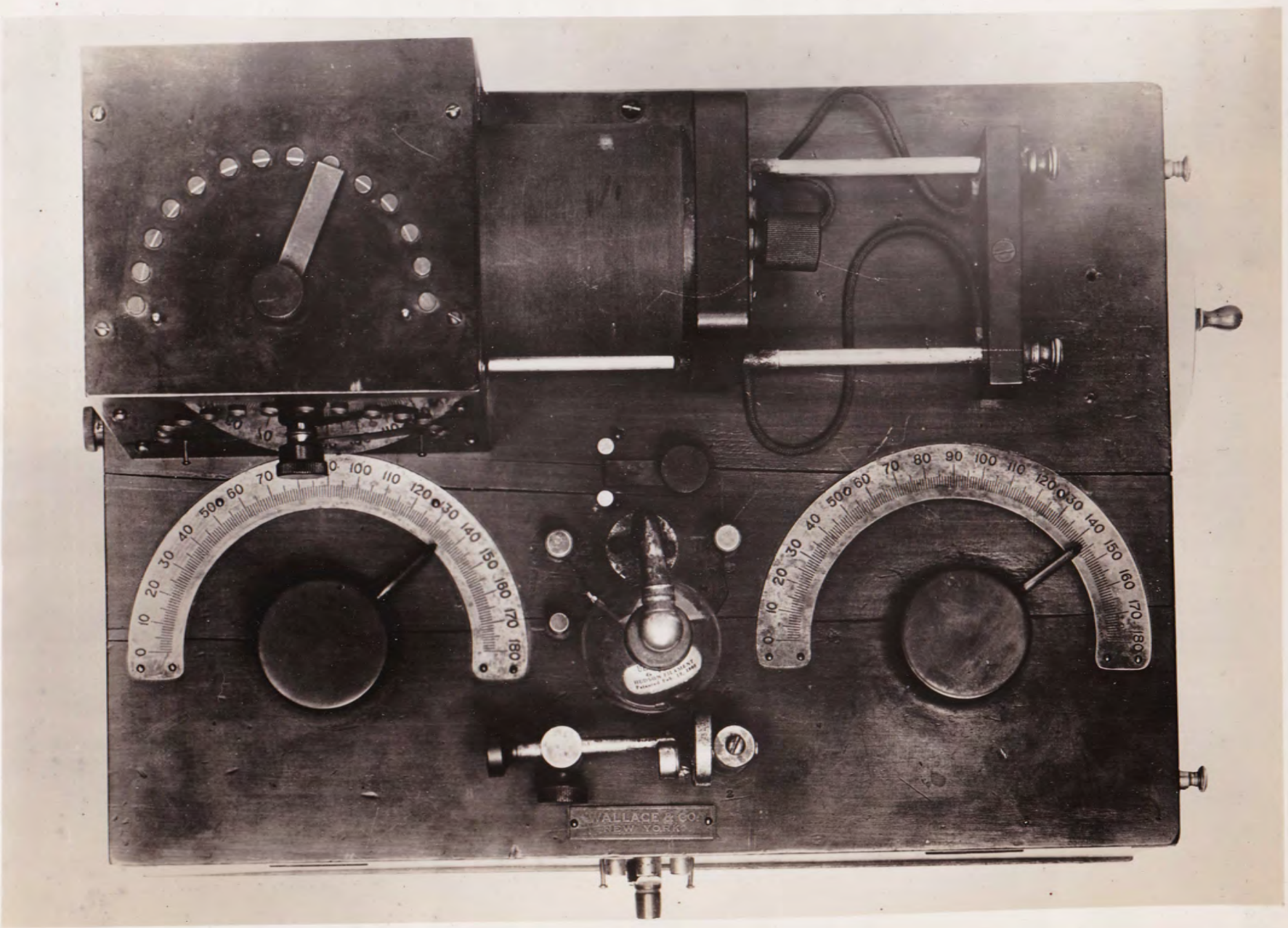
This is the condenser that we use in our receiving sets, and has a range of capacity which will cover all requirements in tuning. It is much more efficient than smaller condensers of equal capacity which have thin, delicate plates spaced closer.

No receiving set will tune as sharply or bring in the signals as well unless equipped with variable condensers.

The capacities of this condenser range from about .00003 M. F. to about 001. M. F.

Price, $7.50.




WALLACE & CO.
NEW YORK