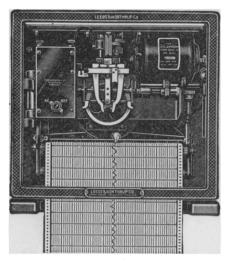
L & N Automatic Recorders For Various Null Measuring Circuits



The following are a few of the measurements that are made and recorded by stock L & N Recorders:

Temperatures with thermo-couples Temperatures with resistance thermometers **Electrolytic** conductivity Hydrogen ion concentration Humidity **Radio** fading Speed Frequency of a.c. systems A.C. Voltage **D.C.** Current **D.C.** Voltage 80₂ CO₂ Other Gases **Power Totalizing** Water Level Smoke Density

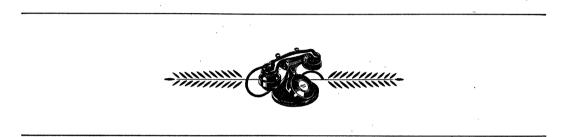
T HIS machine will operate automatically on any of the more usual null electrical measuring circuits, and will record the measurement. With most circuits the record will have a limit of error of 0.5 per cent of the range. It frees laboratory assistants from routine data-reading and graphic tabulation.

This Recorder is the identical machine that is used throughout industry for measurements such as those listed to the left. It is a sturdy, standardized, thoroughly reliable instrument for either shop or laboratory. The circuit of the Recorder can be furnished to meet special requirements.





SAVING MONEY FOR TELEPHONE SUBSCRIBERS



DURING the past fifty-five years, the constant effort of the Bell System has been to provide efficient telephone service for all the people at the lowest possible price. There are many instances of substantial savings for subscribers.

Since the latter part of 1926 the reductions in long distance rates have been particularly marked. For example, a telephone call across the country from New York to San Francisco now costs \$9 instead of \$16.50. Reductions have also been made for lesser distances. Each of the new rate schedules brought a saving of \$5,000,000 to telephone users the first year it was put into effect.

You, as a telephone subscriber, are constantly receiving extra value from your

telephone—because the number of subscribers is increasing, and the more people you can reach by telephone, the more valuable it is to you.

Today, there are few things purchased by the family or by a business that give so much useful service at such low price as the telephone.

Every time you pick up the telephone you become part of a communication system that uses eighty million miles of wire and represents an investment of more than four thousand million dollars. Yet the cost of local service that puts you in direct personal touch with thousands or hundreds of thousands of people in your town or city is only a few cents a day.

* AMERICAN TELEPHONE AND TELEGRAPH COMPANY *



JULY 10, 1931

THOUSANDS of moulds . . .

MOULDS for magnificent Celestialite Globes...thousands, to answer every lighting need ... to adapt to every type of interior and exterior! The skill required in the fashioning of the moulds demands all the extraordinary craftsmanship that produces the Celestialite globes. The range of style and design available in Celestialite is nearly endless. Indeed, moulds are frequently "custom-made" to meet individual taste or unusual settings.

Architects have found in Celestialite the fortunate combination of high quality lighting and distinguished globe design to meet the demands of any interiors. For that reason, great buildings of every character—offices, universities, industrial plants, hospitals, theatres, and department stores have turned to Celestialite as the ultimate answer to the problem of interior lighting.



Gleason-Tiebout Glass Company, 200 Fifth Avenue, New York City

for 100% lighting efficiency



CELESTIALITE'S Three Layers The Reason for its Superiority [1] A layer of crystal-clear transparency—

for body and strength. [2] A layer of white glass_to diffuse the

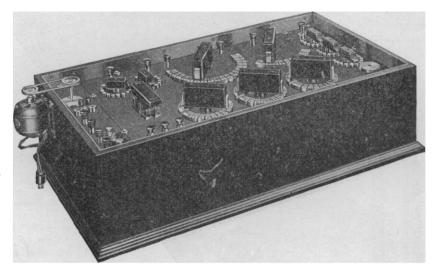
rays and soften the light. [3] A layer of blue glass—to whiten and improve the quality of the light.





5

An Improved Feussner Type POTENTIOMETER



RANGE, o to 1.89999 volts. So designed that six of the contact resistances usually in the potentiometer circuit have been eliminated. Includes Brooks "self-checking" feature so arranged with two dials that standard cell setting can be made to 10 microvolts, the limit of the potentiometer, thus increasing the precision of the instrument. Rheostat for regulating measuring current an integral part of instrument.

COILS of manganin selected for temperature coefficient of less than 0.000015 between 20° C and 30° C. Wound on insulated spools, these being of metal to insure dissipation of heat. Coils adjusted to within .005% after thorough ageing and long observation for constancy. They will remain constant to .02% or better.¹

SWITCHES are of very low and constant resistance, tests having shown their variation to be less than .00003 ohm per switch. Remarkably smooth in operation. Each switch segment accommodates a tapered plug for checking of each resistance.

BINDING POSTS are of copper to minimize thermal electromotive forces.

OIL IMMERSED with motor driven stirrer, and electrically operated temperature control device.

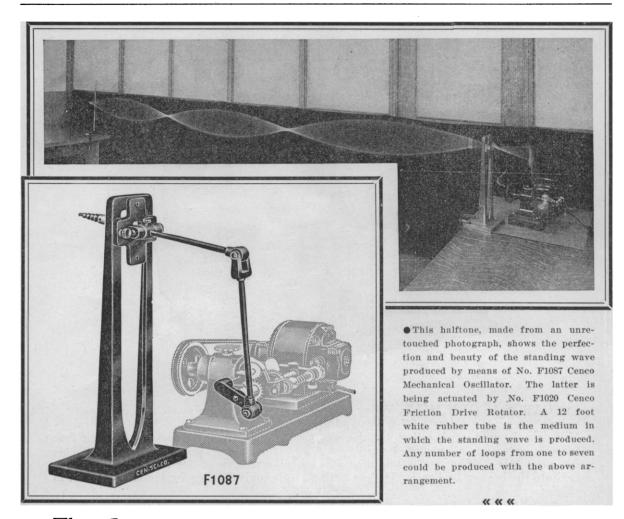
¹ Rosa and Babcock—Bur. Stan. Bull. 4, 121 (1907). Thomas—Research Paper No. 201, Bureau of Standards.

Note: Can be supplied without temperature control and oil immersion at considerable reduction in cost.

EPPLEY

THE EPPLEY LABORATORY, INC. SCIENTIFIC INSTRUMENTS

NEWPORT, R.I.



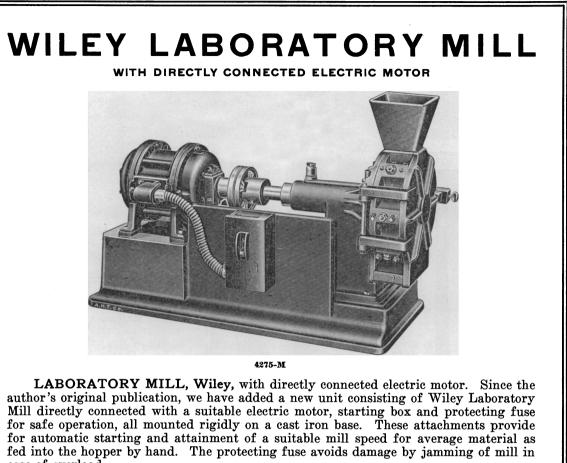
The Cenco MECHANICAL OSCILLATOR

An exceedingly useful accessory to the usual laboratory rotator which permits a variety of experiments to be performed with the rotator that were not previously possible. Chief among these experiments is that of wave demonstration in a most striking manner. Waves can now be generated in a long cord or tube, or a steady regular motion imparted to wave demonstration devices or water waves of desired frequency produced in a wave tank. Meldes experiment can be performed quantitatively on a large scale by measuring the frequency of the standing waves in a sashcord of known weight, diameter and length and under a known tension, when vibrated by this oscillator as an accessory to a rotator equipped with a speed counter.

The Cenco Mechanical Oscillator consists of a rocker arm of variable length-ratio about a fulcrum supported by a massive stand. The rocker arm is actuated by a connecting rod which in turn is given its motion by a counterbalanced crank. The latter fits the standard rotator socket. The rocker arm can be caused to oscillate either in a vertical or horizontal plane and at different heights on the support stand. The free end of the rocker arm is tapered and corrugated, so that a rubber tube may be slipped over it and wired fast. An eye is also provided for the fastening of cords. The amplitude of waves is adjustable over a wide range by sliding the rocker arm in the fulcrum-bearing sleeve and clamping it as desired.

> No. F1087 \$17.50 (Price does not include rotator)

CENTRAL SCIENTIFIC COMPANY LABORATORY MID SUPPLIES Apparatus Chemicals New York-Boston-CHICAGO-TORONTO-LOSANGELES



case of overload. The unit can be mounted on a truck for convenient transportation from one laboratory room to another where grinding is to be done. Floor dimensions of cast iron base, 42 inches long \times 19¹/₂ inches wide. Approximate shipping weight of complete unit, 575 lbs.

At the present time, we are prepared only to supply motors for use on either 110 or 220 volts, 3-phase, 60 cycle, a.c. lines, with permanently located motor-panel.

This unit is in accordance with the suggestions of Samuel E. Pond for an outfit supplied the Marine Biological Laboratory, Woods Hole, Mass., where it is in satisfactory use for grinding agar, gelatine, seeds, seaweed, crab shells, dried animals, etc.

4275-M .	Laboratory Mill, Wiley, with directly connected electric motor, base and equipment, as above described, with directions for use. For 110 volts 3-phase, 60 cycles, a.c. 425.00 Code Word Elnll	, D				
42 75-P.	Ditto, but for 220 volts, 3-phase, 60 cycles, a.c. 425.00 Code Word Elnme					
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THE REVOLT OF THE BIOCHEMISTS¹

By Dr. P. A. LEVENE

THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK

MAX I begin my remarks of this evening by acknowledging my gratitude to the men to whom I owe the great honor of having my name added to the truly illustrious names of the Willard Gibbs medalists who have preceded me. I am referring to the Board of Scientific Directors of the Rockefeller Institute for having liberally supported the work of the Chemical Division and to Dr. Simon Flexner for his help and encouragement, and then to those who have participated in the work of the Biochemical Division of the Rockefeller Institute, some for a longer and some for a shorter period of the twenty-seven years of the existence of the chemical laboratories.

To your section of the American Chemical Society and to the committee of award, I owe a special debt of gratitude, for I accept the medal not as a personal tribute but as an expression of recognition of

¹Address on the occasion of the acceptance of the Willard Gibbs medal.

that branch of science to the progress of which we have devoted our energies.

To-day, this branch of science is in need of encouragement. Even in European countries where biochemistry has had a long and glorious record and a great tradition, it is held somewhat in disfavor today. The story of the rise and fall of biochemistry in the esteem of the higher scientific hierarchies is in a way connected with the incident of the revolt of biochemistry against the concept of vital force or, as the Germans call it, "Lebenskraft." This was a revolt against restriction of the exploits of the human mind, for, modest as the domain of biochemistry may be, it had to align itself with some more universal philosophy in order that it might remain in the family of sciences.

Until nearly the middle of last century, every chemist was a biochemist. Chemical hierarchies did not yet exist. All natural substances whether of mineral,

McGraw-Hill 二 has just published a new third edition of___ PRINCIPLES OF ORGANIC CHEMISTRY By James F. Norris Professor of Organic Chemistry, Massachusetts Institute of Technology 595 pages. 5 x 8. Illustrated. \$3.00 Third Edition—Total Issue 68.000 International Chemical Series More than 200 colleges used the previous edition of Norris's ORGANIC CHEMISTRY. Such a record speaks for itself. The book was adopted in a wide variety of schools—in large universities, in small colleges, in state normal schools, in engineering schools, in colleges for women-not only in this country but even in China and Japan. In this new third edition some of the discussions have been simplified and abbreviated, and the material separated into a larger number of sections. Italics have been used to emphasize generalizations, and topics of a more special nature are printed in small type. Some other important new features of this revision are:-----brief descriptions of a number of new industrial processes and compounds as illustrations of the application of principles; -revision of the chapter on proteins; -addition of a new chapter on alicyclic compounds; -extension of the use of thermochemical data in simple types of reactions.

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