

The Scientific Shop

ALBERT B. PORTER

Scientific Instruments

324 Dearborn St., CHICAGO

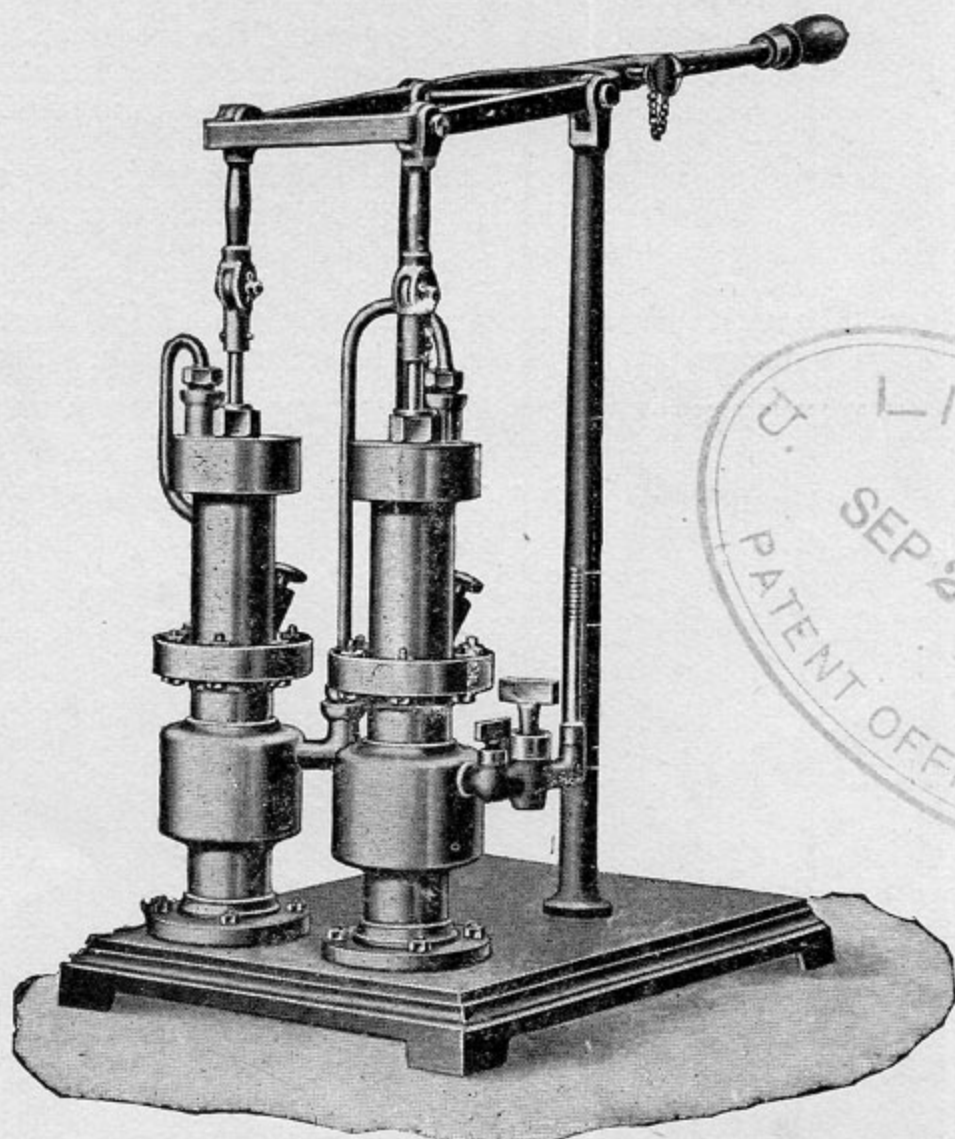
CIRCULAR 320

MAY, 1905

The "Geryk" Vacuum Pumps.

Fleuss' Patents.

The prices given below are for delivery on board cars at Chicago.



C 427

Mechanical air pumps of the older patterns, whether with valves or of the so-called "valveless" type, cannot be depended upon to reduce the pressure of the air in the receiver to less than about 3 mm. as measured on a true mercury gauge, while few of them give in practice a vacuum of better than 5 or 10 mm. There are two reasons for this: first, there is always more or less leakage of air past the valves and piston; second, there is inevitably a certain amount of "clearance" or dead space beyond the piston when at the end of its stroke. If this clearance amounts to, say, 1-100 of the volume of the cylinder there is no possibility of reducing the pressure in the cylinder to less than 1-100 of an atmosphere. When this limiting pressure is reached, the air in the clearance space expands on the up-stroke to fill the cylinder and, when thus expanded, exerts a pressure of 1-100 atmosphere so that no more air can flow from the receiver into the cylinder.

In the "Geryk" vacuum pump both these faults are overcome in a manner as simple as it is ingenious, for the clever design enables the piston to work in a heavy oil which at once fills the clearance space and prevents all leakage of air. Even the smallest single-cylinder "Geryk" pumps give a vacuum of three-tenth



of a millimetre, while the tandem-connected duplex pumps give a vacuum of 1-5000 of a millimetre as measured on a large McLeod gauge. The duplex pumps give, in fact, vacua comparable to those obtained with the best mercurial pumps, and are much more rapid in action. The Duplex Pump No. 1 will exhaust as much air in a minute as a single-fall Sprengel pump will in an hour.

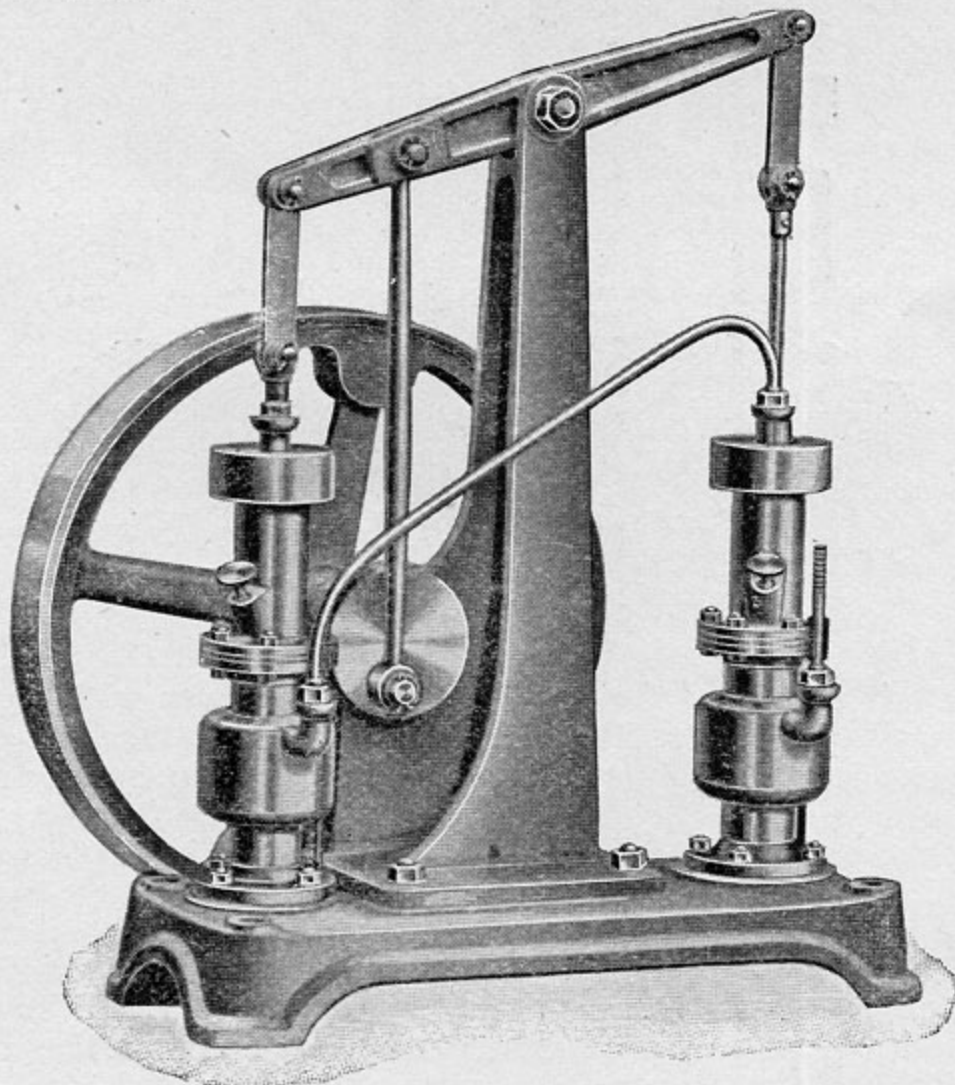
Duplex Geryk Vacuum Pumps.

These double-cylinder, tandem-connected pumps give vacua comparable with those obtained with the best mercurial pumps. They are suitable for exhausting incandescent lamps and Roentgen tubes and are, in fact, extensively employed for these purposes. When used to obtain high vacua it is essential that moisture be kept from the cylinders. A drying tube containing phosphorous pentoxide should always be connected between the pump and the vacuum chamber. Care should be taken to avoid any sudden inrush of air which might blow the light pentoxide into the pump. It is recommended that the surface of the pentoxide be slightly dampened by passing a little steam, or by breathing over the surface so as to set it before connecting up. If kept free from moisture the pumps are always ready for work even after standing idle for many months.

A can of oil is supplied with each pump. When this is exhausted, the pump may be filled with "Standard Gas Engine Oil" which can be obtained from any agent of the Standard Oil Company.

C 427. Duplex Geryk Vacuum Pump No. 1 with two cylinders 2 inches in diameter by 5 inches stroke. Duty-free..... **\$84.00**
Boxing \$2.85

The Duplex No. 1 can be supplied from Chicago stock at \$125.00 duty paid. Boxing extra as above.



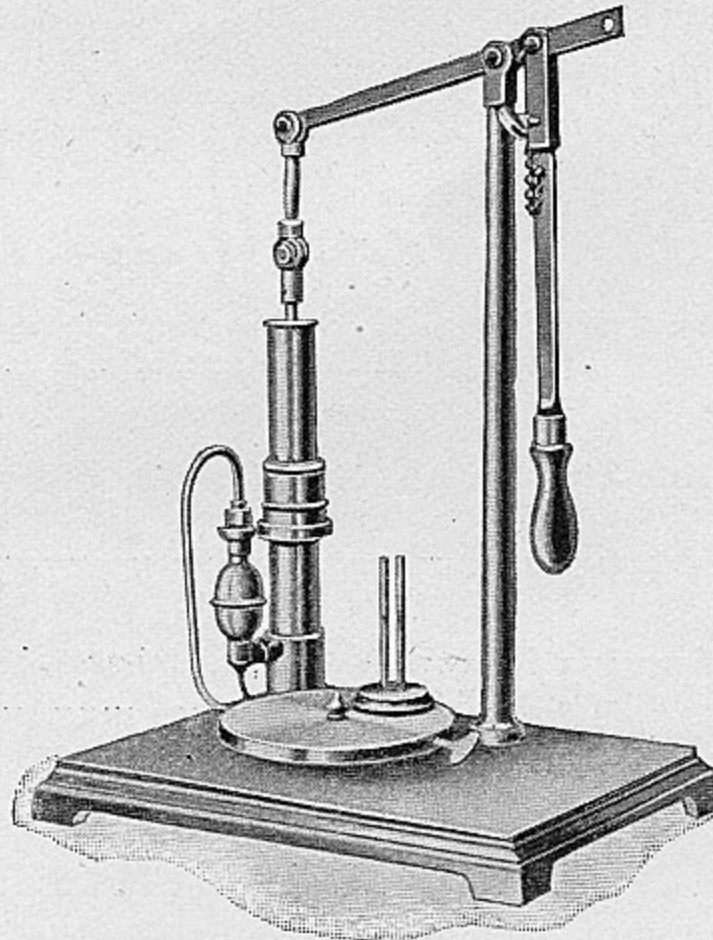
C 428

C 428. Duplex Geryk Vacuum Pump "A" with two cylinders 2 inch diameter by 5 inch stroke and belt wheel for motor drive. Duty-free..... **\$110.00**
Boxing \$2.75

- C 429. Special Vacuum Stopcock** fitted with screw plug for regulating admission of air, fitted to pump. Duty-free.....\$ **3.50**
- C 430. Duplex Geryk Vacuum Pump "B"** with two cylinders $2\frac{1}{2}$ inch diameter by 5 inch stroke. Duty-free... **140.00**
Boxing \$2.75
- C 431. Duplex Geryk Vacuum Pump "C"** with two cylinders 3 inch diameter by 7 inch stroke. Duty-free..... **225.00**
Boxing \$4.25
- C 432. Duplex Geryk Vacuum Pump "D"** with two cylinders $3\frac{1}{2}$ inch diameter by 7 inch stroke. Duty-free... **285.00**
Boxing \$4.25

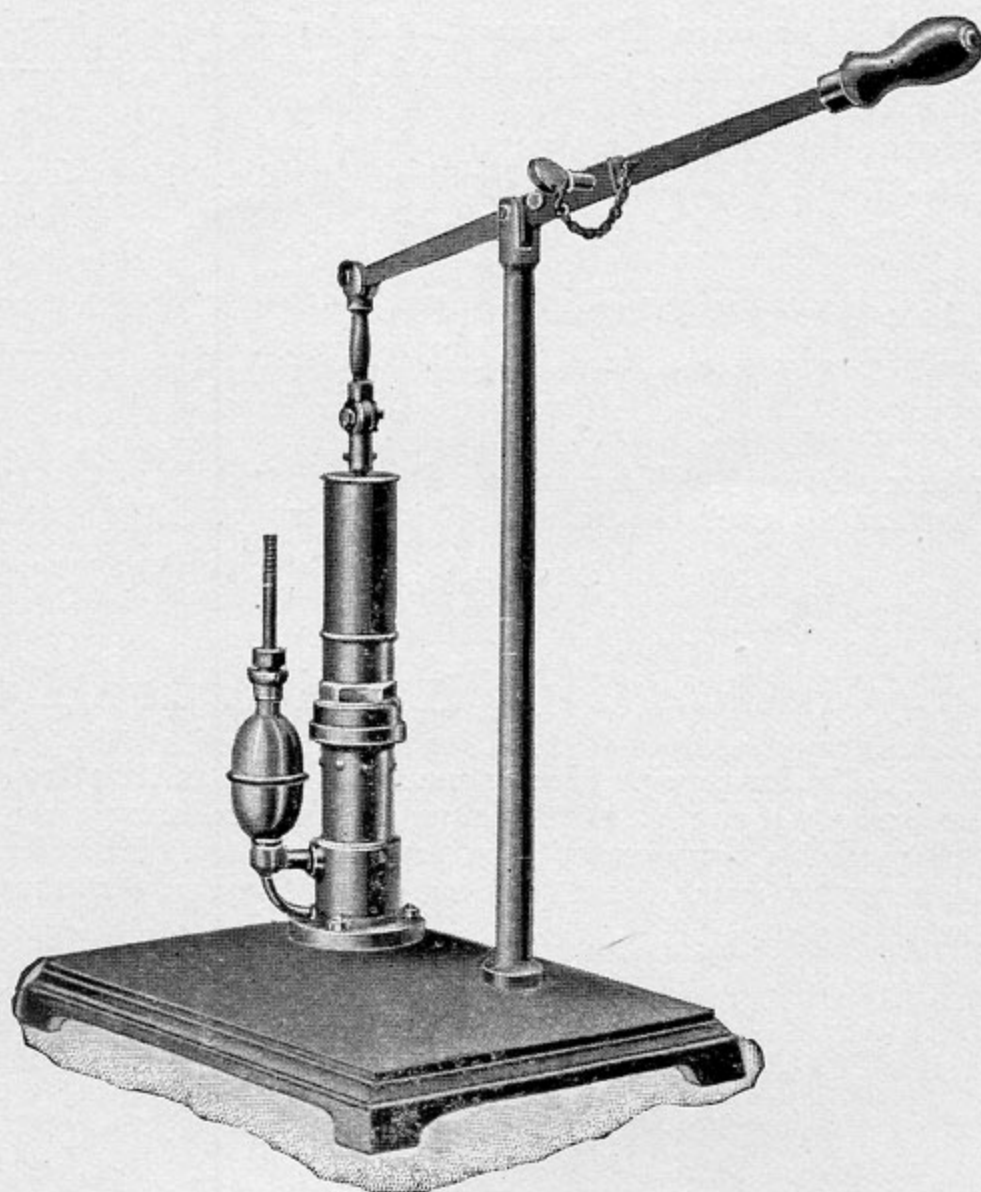
Single Cylinder Geryk Vacuum Pumps.

These single cylinder pumps give vacua within 0.3 millimetre of perfect as measured by the McLeod gauge. With them all the ordinary phenomena, such as the freezing of water by evaporation, etc., can be shown. They are so frictionless that a boy can readily work them, and are always ready for use even if put away for any length of time.



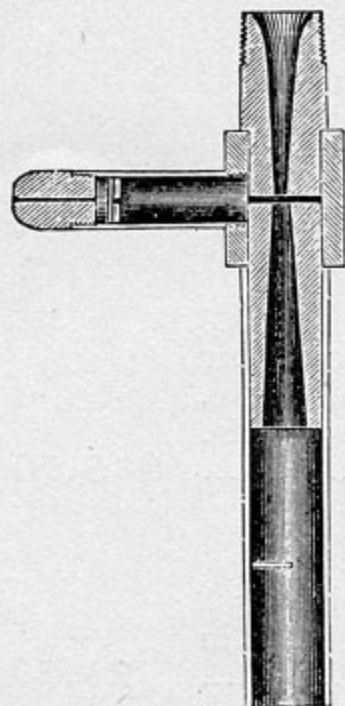
C 433

- C 433. Geryk Vacuum Pump No. 0**, with single cylinder $1\frac{1}{2}$ inch diameter by 5 inch stroke, 7 inch vacuum plate, and vacuum gauge. Suitable for elementary schools. Duty-free.. **\$25.50**
Boxing \$1.25
- C 434. Geryk Vacuum Pump No. 1**, with single cylinder 2 inch diameter by 5 inch stroke. Suitable for hard work in laboratories. Without vacuum plate. Duty-free..... **28.50**
Boxing \$1.25



C 434

- C 435. Geryk Vacuum Pump No. 1**, as above, but with 8 inch vacuum plate. Duty-free..... **\$35.00**
Boxing \$1.25
- C 436. Geryk Vacuum Pump No. 2**, with single cylinder 2 inch diameter by 10 inch stroke. Without vacuum plate. Duty-free..... **42.00**
Boxing \$1.75
- C 437. Geryk Vacuum Pump No. 2**, as above, but with 9 inch vacuum plate. Duty-free..... **51.00**
Boxing \$1.75



C 438

Chapman Filter Pumps.

- C 438. Chapman Filter Pump**, of brass, new model, very efficient, regular size. From stock..... **\$1.00**
- C 439. Same**, larger size. From stock..... **2.00**
- C 440. Faucet Connections** for above. Each, from stock..... **.25**