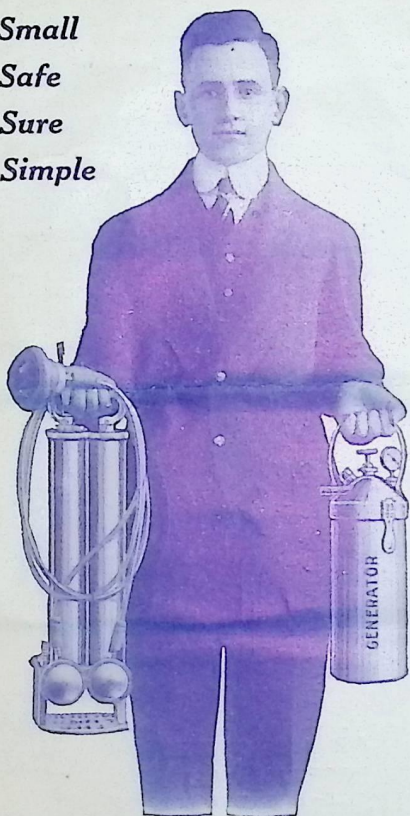


# The Lungmotor <sup>and</sup> the Need of It

Here it is!

Small  
Safe  
Sure  
Simple



The Lungmotor and Oxygen Generator always ready for use—always ready to give air, simple and easy to work—three fingers.

¶ There were over forty thousand (40,000) cases in the United States last year where the Lungmotor could have been used if available, aside from Asphyxia of the new-born, Dispelling the effects of Anaesthesia, and testing death.

¶ This is certainly a startling statement, but a true one.

Many Lives Lost from the Following Causes Could Have Been Saved by Using the Lungmotor

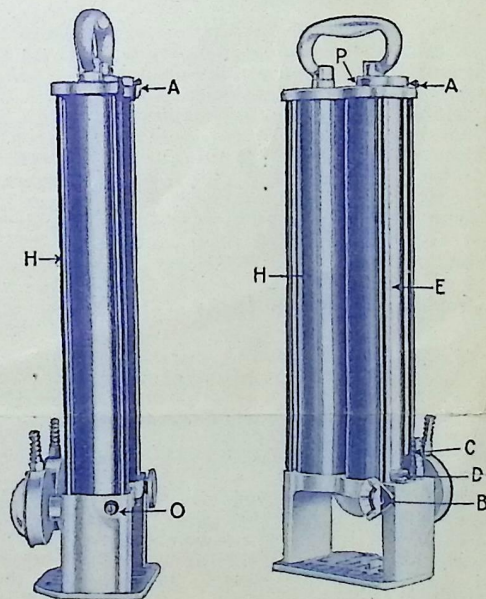
Poisoning from Gases and Fumes    Smoke  
Mining Accidents    Strangulation  
Electric Shock    Collapse after Anaesthesia  
Apparently Drowned    Asphyxia of New-born, Etc.  
Also POSITIVE PROOF of DEATH

¶ Either buy a Lungmotor yourself—or kindly use your influence toward the establishment of Lungmotor protection in your community. You will ever be pleased with your action.



MAIN OFFICE AND WORKS  
180 N. MARKET STREET CHICAGO, ILL.

NEW YORK CITY 1008 Times Bldg.  
BOSTON, MASS. 53 Devonshire St.



SIDE VIEW—showing expiration outlet (O), expiration cylinder (H), volume gauge slide pin (A).

INSPIRATION SIDE and BACK VIEW—showing (A) volume gauge slide pin, (P) pointer for gauge slide pin, (B) air and oxygen mixing valve, (D) air inlet, (C) oxygen inlet (E) inspiration cylinder, (H) expiration cylinder.

Save Human Life—It Pays—Pays Big



# What the Lungmotor Does

The Lungmotor does the very next thing to normal breathing because it supplies—mechanically—the tidal volume of air each expiration (the amount you breathe at rest)—enough air, but not so much as to possibly injure the lung tissues and the circulation, thus not leaving the patient open to pneumonia.

It is safe because it does not depend upon back pressure in the lungs to operate from inspiration to expiration and vice versa.

You can supply oxygen from any kind of container; see article on this page entitled, "Gives Air, Also Oxygen."

The inspiration and expiration and volume obtained by the Lungmotor are regulated in the Device—not in the Lungs, as is the case with the other kind.

Air is always available with Lungmotor. We've run out of oxygen? need not be the agonizing and helpless cry with the Lungmotor. Keep pumping—pumping pure air.

Time is essential in resuscitation cases; the Lungmotor is so compact and light that a man or boy can "flip" a street car, bicycle or horse, or run to the scene of the accident, getting there in the shortest possible time. The Lungmotor can be operated under any and all conditions—in a rocking boat, swaying ambulance, or while the patient is being carried on a stretcher. It can be operated in any altitude.

The Lungmotor is absolutely safe. The maximum pressure on inspiration and expiration is fixed definitely so that it can do no harm to the most delicate lung; this is accomplished by very simple non-movable mechanical parts which maintain only the essential pressure.

## LUNG MOTOR VS. MANUAL METHODS.

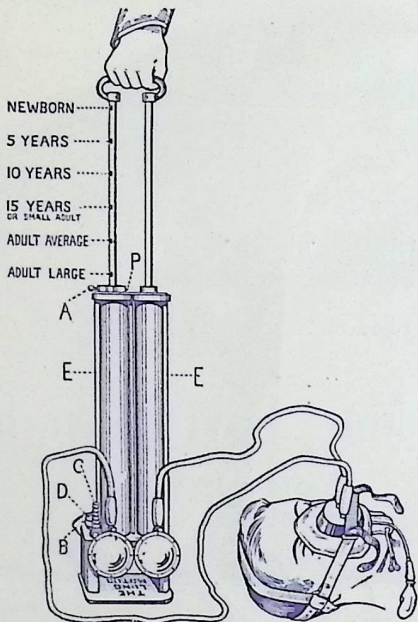
The failure to establish respiratory equilibrium by any of the manual methods now in use is one of the very serious elements which contribute to their inefficiency.

The establishment of the respiratory equilibrium and the consequent induction into action of the suction action of the thorax on the heart and great vessels, which results in increased blood pressure, is the great reason why the Lungmotor produces results in asphyxia which no other method can produce.

## Strong Points of the Lungmotor

- You can always give air.
- You can give any mixture of oxygen and air by instant adjustment.
- You can instantly adjust from new-born to largest adult.
- You can at will increase or decrease respirations per minute.
- You can increase or decrease air volume, or air oxygen volume per respiration.
- You can work fast or slow—give small or large air volume—changeable at will.
- You can help in the effort to breathe without taking off the face-mask.
- You can take care of all water and mucus from the lungs in cases of apparent drowning, without removing the face mask.
- You can prevent air going into the stomach not by holding your finger on the larynx but by a patented throat tube requiring no attention—very simple and yet sure.
- You can cause inspiration without expiration—expiration without inspiration. (This is accomplished without tracheal tubes.)
- Should a face mask become damaged or the rubber pad on the face become destroyed you still can give the patient air or oxygen.

# How Lungmotor Works



This cut (1) shows Lungmotor giving air only (air contains 20.96 per cent oxygen). If you want additional oxygen, you can attach to any kind of oxygen tank, not missing a single air giving stroke. When oxygen container attached, turn valve "B" (see cut 1) and you can then, by observing the volume indicator thereon, give any mixture of air and oxygen through the Lungmotor desired.

The Lungmotor consists of two air pumps which operate in unison, yet are not connected in any way as far as the interchange of air is concerned. At no time does the devitalized air come in contact with the fresh air or oxygen.

An upward movement of the handle of the Lungmotor fills inspiration cylinder with air or oxygen or a mixture of both, according to the setting of the air and oxygen valve (B). At the same time the expiration cylinder fills with the expired air, very gently expelled from the lungs of the subject. Conversely, the following downward movement of the handle and piston forces the air and oxygen now contained in the inspiration cylinder into the lungs of the subject and discharges the expired air of the expiration cylinder into the open.

To make the Lungmotor available for persons of all ages and correspondingly varying lung capacities the Lungmotor is provided with adjustments for different air volumes suitable for new-born, five year old, ten year old, fifteen year old or small adult, adult average and adult large. This provides for all sizes of subject.

Now note volume notches on the inspiration piston rod opposite to each of the sizes of subject, viz: New-born, five years old, ten years old, fifteen years old or small adult, adult average and adult large. These volume notches are engaged by the slide pin. (A.) (See Cut No. 1.) on top of the inspiration cylinder cover. This slide pin can be swung around the circle over the graduated volume, size, and stroke regulating dial, the graduations with plain marks for corresponding ages registering with the notches in the piston rod.

### Take as a Subject—Average Adult:

Set volume indicator to "average adult"—instantly done. No danger of giving subject more air or greater pressure than he should have. Draw out tongue, insert throat (gullet) tube (to prevent air going into stomach) press bulb, snap catch, adjust face-mask—pump. Subject will be supplied

with 570 c. c. or 35.43 cu. in. with each stroke—the volume an average adult would normally breathe at rest.

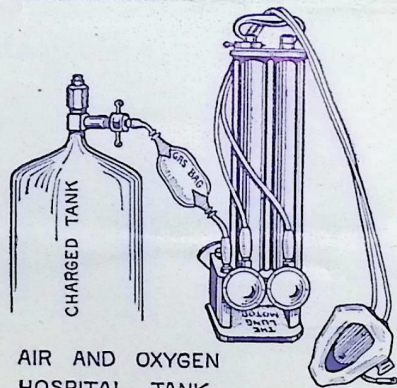
## Gives Air—Also Oxygen

It is generally conceded that the use of pure air alone is sufficient to resuscitate in almost every case, provided it is given the patient in time and in sufficient amount. The Lungmotor will always give air.

In cases where added oxygen is needed the Lungmotor outfit meets all requirements perfectly. Oxygen made by putting fused sodium peroxide in water can be used, on the same principle as making acetylene gas with fused calcium carbide and water.

The hospital is always supplied with regular oxygen tanks and does not need other apparatus to generate oxygen. The Lungmotor being connected up with the regular tanks saves time and trouble to the attendants, answers the same purpose as our generator, and saves the added expense of \$15.00.

If you have no Lungmotor oxygen compound or oxygen tanks you can always give air. No freight bill, no repair charges, no trouble, no failure from lack of oxygen at the vital moment.



This cut (2) shows Lungmotor connected to regular Hospital tank. Amount oxygen to gas bag can be easily regulated by thumb screw on top oxygen tank.

### STATICS OF THE CHEST.

(Show this to a Physician.)

Normally, there exists in the thoracic cavity a negative pressure which varies from about 15 to 30 m.m. This pressure varies, increasing on inspiration and decreasing on expiration.

When we speak of preserving the normal statics of the chest we mean maintaining the normal pressures within the thoracic cavity.

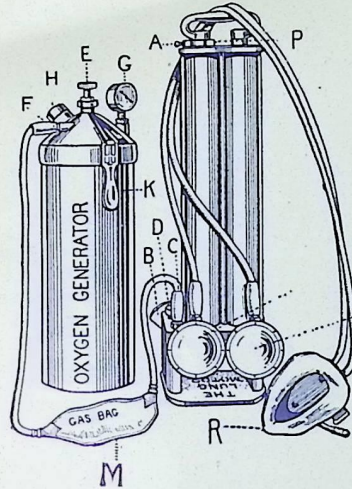
This preservation of the normal pressures within the thoracic cavity assists the circulation, due to the suction action of the thorax on the heart and great vessels during inspiration.

This preservation of the statics of the thoracic cavity by means of the Lungmotor is the great reason for its efficiency as a resuscitating device—the only device accomplishing this.

The Lungmotor facilitates the circulation, causes the blood to flow more freely through the lung to the left ventricle, thereby giving the left ventricle more blood upon which to contract, causing the contraction of the left ventricle to force more blood into the aorta, thereby increasing the blood pressure in the coronary arteries.

The establishment of this respiratory equilibrium and the consequent induction into action of the suction action of the thorax on the heart and great vessels, which results in increased blood pressure, is the great reason why mechanical resuscitation produces results which no other method will produce.

# The Lungmotor



### Connected to Oxygen Generator

Cut shows the Lungmotor with Oxygen Generator and face mask ready to place on patient.

### Explanation of Cut.

- (A) Movable pin which turns by gently pulling and adjusts the Lungmotor from new-born to the largest adult.
- (B) Mixing valve, whereby all air, all oxygen or any percentage of either may be given. Always under instant control of operator by a twist of the thumb screw.
- (C) Oxygen inlet.
- (D) Screened air inlet valve.
- (E) Needle valve which regulates the making of oxygen.
- (F) Outlet for oxygen gas.
- (G) Pressure gauge.
- (H) Safety valve.
- (P) Pointer on the movable adjusting pin (A) and tells when Lungmotor set to right size patient.
- (R) Metal face mask with soft rubber covering to go over face and nose.

### ANYONE CAN USE IT.

Lungmotor always available, because anybody can use it. In the recent New York City subway fire it was used successfully by persons who had never seen the instrument before.

"Now let us



Conserve Human Life."

# What Bureau Mines Order Means

In 1912 two commissions composed of eminent physiologists and technical experts were appointed to investigate the subjects of:

### Resuscitation from Mine Gases.

### Resuscitation from Electric Shock.

The reports of these commissions, in effect, establishes a standard for devices intended for use in inducing respiration mechanically, and have attracted widespread attention.

The commissions were composed of the following members:

- Those marked \* chosen by American Medical Associations.
- Those marked † chosen by National Electric Light Association.
- Those marked ‡ chosen by American Institute Electrical Engineers.

### Resuscitation from Electric Shock.

- \*Dr. W. B. Cannon, Chairman
- \*Dr. George W. Crile
- \*Dr. Yandell Henderson
- \*Dr. S. J. Meltzer
- †Dr. Edward Antony Spitzka
- ‡Dr. A. E. Kennelly
- ‡Dr. Elihu Thomson
- ‡W. C. L. Eglin
- ‡W. D. Weaver, Secretary

This report issued under authority National Electric Light Association.

### Resuscitation from Mine Gases.

- \*Dr. W. B. Cannon, Chairman
- \*Dr. George W. Crile
- \*Dr. Yandell Henderson
- \*Dr. Joseph Erlanger
- \*Dr. S. J. Meltzer

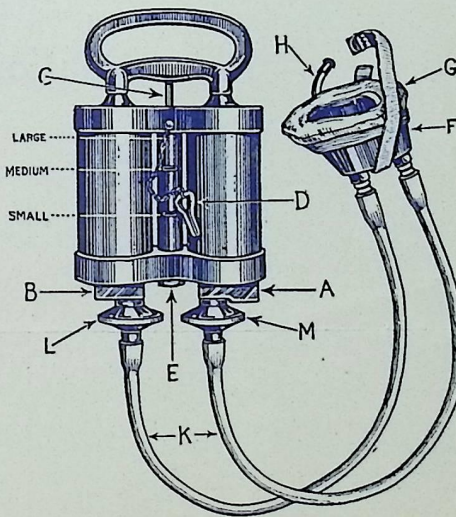
This report issued under authority U. S. Bureau of Mines as public document, Technical Paper No. 77.

The U. S. Government Bureau of Mines, after the issuance of these reports, stopped using Pulmotors and removed them from all mine rescue cars and stations, and after nineteen months of careful investigation by its technical experts and physicians, has just bought Lungmotors to take their place.

The Lungmotor met, physiologically and mechanically, every requirement and test of these commissions.

No device ever received closer scrutiny by reason of the universal interest in, and the importance of the subject, which culminated in the reports of these two commissions. Thus, securing the order, (which means approval) gives the Lungmotor a tremendous victory.

## The Infant Lungmotor



easy of operation, which can be placed in the obstetrical bag and cause no inconvenience. Constructed upon the same basic principle as the large Lungmotor, which has performed so many remarkable resuscitations.

The Infant Lungmotor delivers a volume of air corresponding to the air breathed in the first hour after birth by three sizes of infants, namely:

- (Small) premature infant.....2.5 cu. in.
- (Medium) size infant.....5.2 cu. in.
- (Large) infant.....8. cu. in.

It is intended that the device be worked about 60 times a minute, as this is the rate of breathing inaugurated by the new-born infant. This falls to about 40 at the end of the first hour.

The Infant Lungmotor operates by hand—convenient for obstetrician or nurse—to handle—very simple in construction—very light (4 pounds) including convenient brass box, in which the instrument can be boiled. Measurement over all 2 1/4 x 5 x 10 inches.

By simply unscrewing nut "E" with two fingers it is disassembled and can be thoroughly sterilized. It is so constructed that it is impossible for any one to reassemble it, except in the right way.

Price complete, in hinged brass case, 2 1/4 x 5 x 10 inches .....\$32.50

Cities, Towns, Hospitals, Industrial Corporations, Mines, Bathing Beaches, Parks, Drug Stores, Physicians, Ambulances, Etc., that are equipped to save human life are repaid a thousand fold.



## The Highest Award Grand Prize

(December 1914)

**American Museum of Safety**

INCORPORATED BY SPECIAL CHARTER, CHAPTER 123 LAWS OF THE CITY OF NEW YORK



This Certifies that  
**The Lungmotor**  
HAS BEEN DECREEED AN AWARD OF  
**Grand Prize**  
BY THE JURY OF AWARD OF THE

Second American Exposition of Safety and Sanitation  
1914

HELD IN THE CITY OF NEW YORK  
UNDER THE AUSPICES OF THE AMERICAN MUSEUM OF SAFETY

*John Williams* *Sam B. ...* *...* *...*



**The American Museum  
of Safety**

## BELLEVUE HOSPITAL

New York City, New York

## Has Bought Eight (8) Lungmotors

### READ THE STORY

In February, 1914, after a demonstration of the Lungmotor, an outfit was delivered to Bellevue Hospital, New York City, "on trial." After 30 days' use the Allied Hospitals (Gouverneur, Fordham and the Bronx) were supplied one each "on trial" and Bellevue requested another one.

No effort was made by us to influence the purchase of Lungmotors, because we were satisfied if they were actually used they would by their efficiency justify voluntary action by the Hospital Superintendents to place formal orders.

The order did come (December, 1914) almost nine months after practical trial in many cases.

Now comes further proof of Lungmotor success:—

March 19, 1915, Bellevue Hospital sent in an order for two more Lungmotors—making seven (7) in all.

April 15 another order came for the Drug Dept.—making eight (8) in all.

Plainly, here is a case where it was not simply buying "anything that looks good." They tried out Lungmotors for months before placing their order and then, justified by

actual, practical experience, they order more Lungmotors.

Here is proof that is proof.

Bellevue Hospital knew what mechanical respirators were before the Lungmotor was shown them.

They were in the best possible position to judge—they had owned the "other kind." They did judge—they bought Lungmotors when they needed additional respirators.

Begin saving lives with the Lungmotor in your hospital in cases of:—

Collapse during anaesthesia; asphyxia new-born.

Asphyxiation by gas, fumes and smoke.

Apparent drowning, mining accidents, electric shock.

Suffocation, pneumonia, diphtheria.

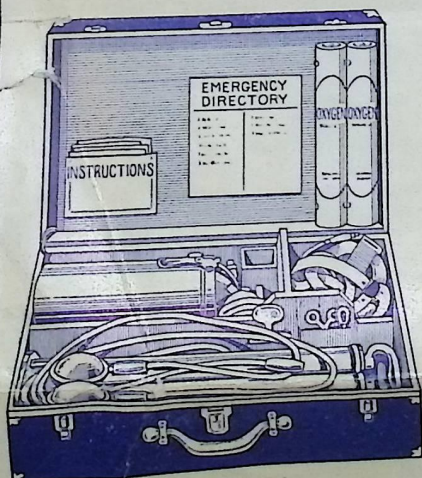
Positive test of death, etc.

We send Lungmotors on inspection. We long ago got beyond the "trial order stage." The safety, success, availability and adaptability of the Lungmotor have been proved hundreds of times.

Let us send you one to look at—keep it a week—get acquainted with it—you'll not send it back.

**Procrastination** <sup>IS</sup> **THE Thief of Life**

## The Lungmotor Outfit Complete



The entire outfit for every emergency consists of the following securely packed in a special strong carrying case:

The Lungmotor with pressure and suction tubes, two sizes face-masks, throat tube, head strap, mouth gag and wedge, tongue forceps, tongue depressor and tracheal tube. Oxygen Generator complete with safety valve—gauge, connecting tubes, also gas bag. Oxygen compound in two cans, each containing six cakes oxygen. Weighs complete, 33½ lbs. Price.....\$150

The Lungmotor (without Oxygen Generator) with pressure and suction tubes, face mask, head strap and other small accessories, All Ready to Give All Air—with gas bag and connections for attaching to any oxygen container. Weighs, in carrying case, but 18½ lbs., size 23x9½x5½ inches. Price.....\$135

Instructions accompany each machine and they are so complete and plain that any one can follow them and successfully operate the Lungmotor.

Please Note: Both Lungmotor and Oxygen Generator separately usable and separately portable.

## They Bought Lungmotors

At a state Medical Society Meeting, the other day, the Lungmotor and "the-other-kind" were shown side by side. The Mayor and Health Commissioner said: "We will buy what the Meeting thinks is the best." They bought Lungmotors.

The Police Department of one of the largest cities in the world wanted eleven mechanical resuscitating devices. The other kind and the Lungmotor were brought before the Surgeons and officials. They could have had four of "the other kind" for nothing, but they bought eleven Lungmotors, and Lungmotors are the only ones they use. They wanted the kind that didn't get out of motive power—the kind anyone could use and the kind that can always supply air at a safe pressure.

More Lungmotors have been bought by the hospitals of New York, Chicago, Pittsburgh and Washington, D. C., during the past few months than "the other kind" has ever sold to hospitals in these cities.

Lungmotor, Complete in Case as shown in cut.....\$150.  
Lungmotor without oxygen generator, but complete for connection with any oxygen container.....\$135.  
Prices f. o. b. Chicago. 30 days net, 2% 10 days