

# MEDICAL



## COLLECTORS



## ASSOCIATION

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### **Newsletter #38** **December 22, 2000**

Happy New Year to you all. Although you are receiving this Newsletter in January, 2001 it is the last Newsletter of the year 2000. The completion of the material for the Newsletter was delayed by the need to get the final manuscript of my forthcoming book on the evolution of the stethoscope to the printer. I am happy to report that sometime towards the end of the spring this book, which outlines the invention of the stethoscope and its transition to modern form, will be available with over 120 illustrations of various stethoscopes.

The annual meeting which was held on October 13<sup>th</sup> in Hartford at the Minczer Museum of Medicine and Dentistry was a great success. The program was full of fascinating information, both about the history of medicine in Connecticut and a number of interesting artifacts. The Museum itself was a delight to visit with a broad array of very interesting antique medical instruments. We all owe a vote of thanks to Dr. Bernard Kosto and to Diane Hensdorf for arranging this meeting so well. Hartford itself is a wonderful historic site with many wonderful museums to visit, as well as Mark Twain's home. The program was complimented by the drive to Hartford, which allowed all of the participants to observe the fall foliage at its peak of color.

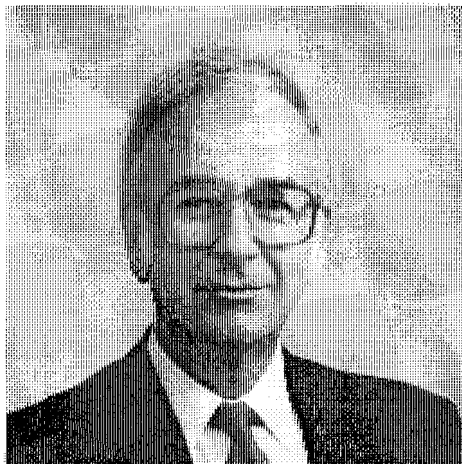
Plans are currently underway for the next meeting which will be held in Mobile, Alabama. This promises to be a special event hosted by Dr. Sam Eichold. Sam has been very actively interested in the Medical Collectors Association and in medical history. The Medical History Museum in Mobile is named after him in recognition of his efforts and is a very interesting place to see.

We will be announcing more detailed information about the meeting later in the Spring. The dates for it are tentatively set for October 5<sup>th</sup> and 6<sup>th</sup>, 2001.

Things have been relatively quiet on the medical collecting front. There have been a few auctions of note throughout the country, but the major site for auctions of medical antiquities remains in London. A new website on medical collecting has been set up by Dr. Robert Greenspan. I am enclosing in the Newsletter a copy of a couple of pages from the site. Dr. Greenspan has spent a very long time preparing this at great effort, and I commend all of you to visit it for further information to pursue your interests.

This issue we are celebrating Brandreth's Pills with Bill Helfand's historical images of the Drug Market. I also have included a photocopy of a page from the Sears Roebuck catalogue of 1904 showing various forms of examining tables. The reason for including this for your interest is because several of these tables have appeared on the market during the past year. Also, those of you who visited Charleston may recall seeing a couple of them at the Waring Historical Library of the Medical University of South Carolina. These are very nice decorative pieces of furniture. I have one in my office. Unfortunately, most of them are missing the stirrups and the foot rest but even without it they still remain quite interesting.

Relevant to my interest in the stethoscope, I am enclosing a picture of a stethoscope which was sent to me by Alex Peck. It is notable because it does not have a central hole. Solid stethoscopes were used dating all the way back to Laennec and for many years there was a debate over the relative value of the solid stethoscope versus stethoscopes with central holes. Most of the solid stethoscopes were more cylindrical in nature than the one shown here, but this appears to be one of that type.



There was a major role for solid stethoscopes in what was called stethoscopic percussion where one listened through the stethoscope as the body was percussed to delineate the outline of the internal organs.

Dr. Arthur Foresman has submitted an item for the "Can You Identify" column. Anybody who has some idea of what this instrument is should fill out the sheet and return it to me.

Also enclosed is a photocopy of a brochure describing the Hospices de Beaune in Burgundy. This very interesting museum celebrates the role of the Duke of Burgundy in providing care to the poor from the 15<sup>th</sup> century onwards.

Since we are discussing patents, I thought it would be interesting to include a photocopy of a patent of a stethoscope. This is noteworthy because it is a monaural stethoscope produced by C.J. Pilling, et al and it was patented in October, 1933, thereby attesting both the very late interest in monaural stethoscopes and the great difficulties in dating these instruments.

Questions come up about various x-ray devices, both with regard to identification and their age. I have also included with this Newsletter some pages from an x-ray instrument catalogue of 1906, which I thought would be helpful to those of you who encounter these devices from time to time and would like to consider acquiring them. They represent yet another branch of medical instrument collecting.

Once again, best wishes for a Happy New Year and I look forward to seeing all of you in Mobile. The first Newsletter of 2001 will be out late in the Spring, but there will be announcements providing more detailed information about the meeting before that.

Sincerely,

M. Donald Blaurock, M.D., Ph.D.

## CAN YOU IDENTIFY THIS?

See attached letter for additional information.

I think this is a:



From:

Please Return to M. Donald Blaufox, M.D., Ph.D.

**FORESMAN DERMATOLOGY, PLLC**

AUBURN MEMORIAL MEDICAL BUILDING  
77 NELSON STREET, SUITE 210  
AUBURN, NEW YORK 13021

ARTHUR H. FORESMAN, M.D.  
PAMELA L. FORESMAN, M.D.

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DIPLOMATE, AMERICAN BOARD OF DERMATOLOGY  
FELLOW, AMERICAN ACADEMY OF DERMATOLOGY  
FELLOW, SOCIETY FOR DERMATOLOGIC SURGERY

October 17, 2000

M. Donald Blaufox, M.D., Ph.D.  
Montefiore Medical Park  
1695A Eastchester Road  
Bronx, NY 10461

Dear Don:

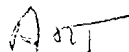
Joanne and I certainly enjoyed the meeting in Hartford and as always, you and Mitch did a great job. I am enclosing a few photographs as well as the dimensions of that object.

1. The clear glass appears to be blown with a pontil, 9 ½" high, 3 ½" wide.
2. The porcelain container with a cork in the top has a spigot on the base. The spigot handle appears to have a dragon design. There is an opening on the top for the metal tube. It measures 7" high and 3 ½" in diameter.
3. The porcelain base is 8 ½" x 3 ½".

You may very well be right. It may not be pharmaceutical as one can never trust history that is given by the dealer.

Say hello to your wife.

Sincerely,



Arthur H. Foresman, M.D.

AHF:alh

**From:** Peck, Alex <antiques@advant.net>  
**To:** Don Blaufox, M.D. <blaufox@aecom.yu.edu>  
**Date:** Monday, July 26, 1999 11:47 PM  
**Subject:** monaural

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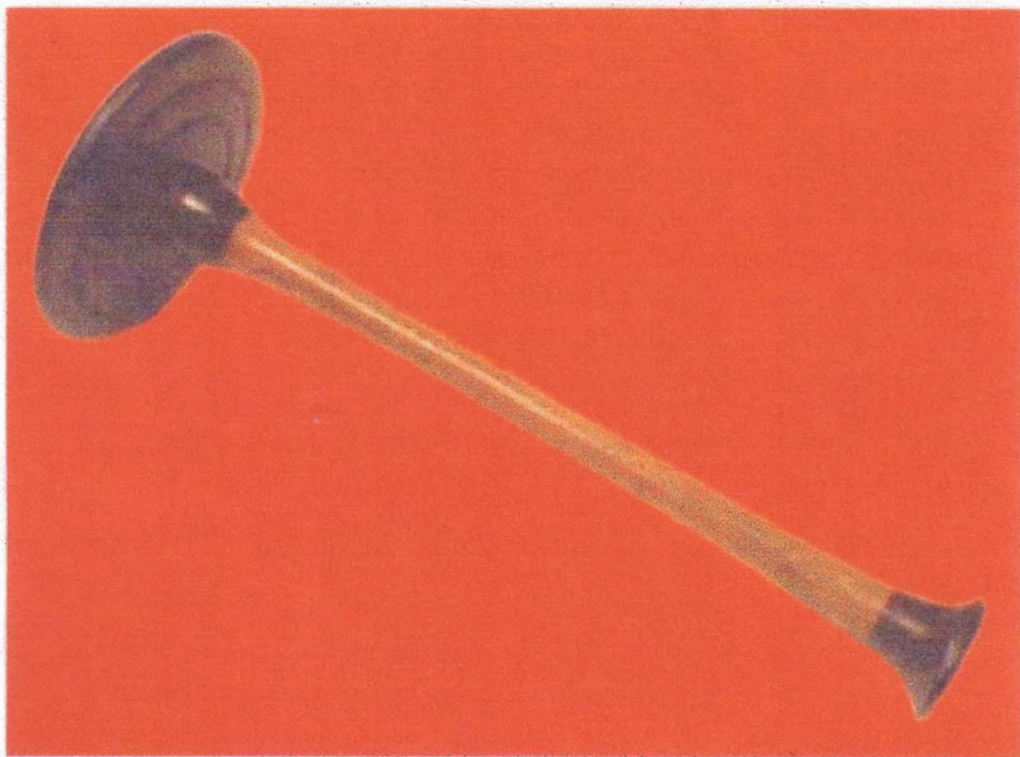
Don,

Here are some better pictures of the monaural.

Alex Peck  
P.O. Box 710  
Charleston, IL 61920  
217.348.1009

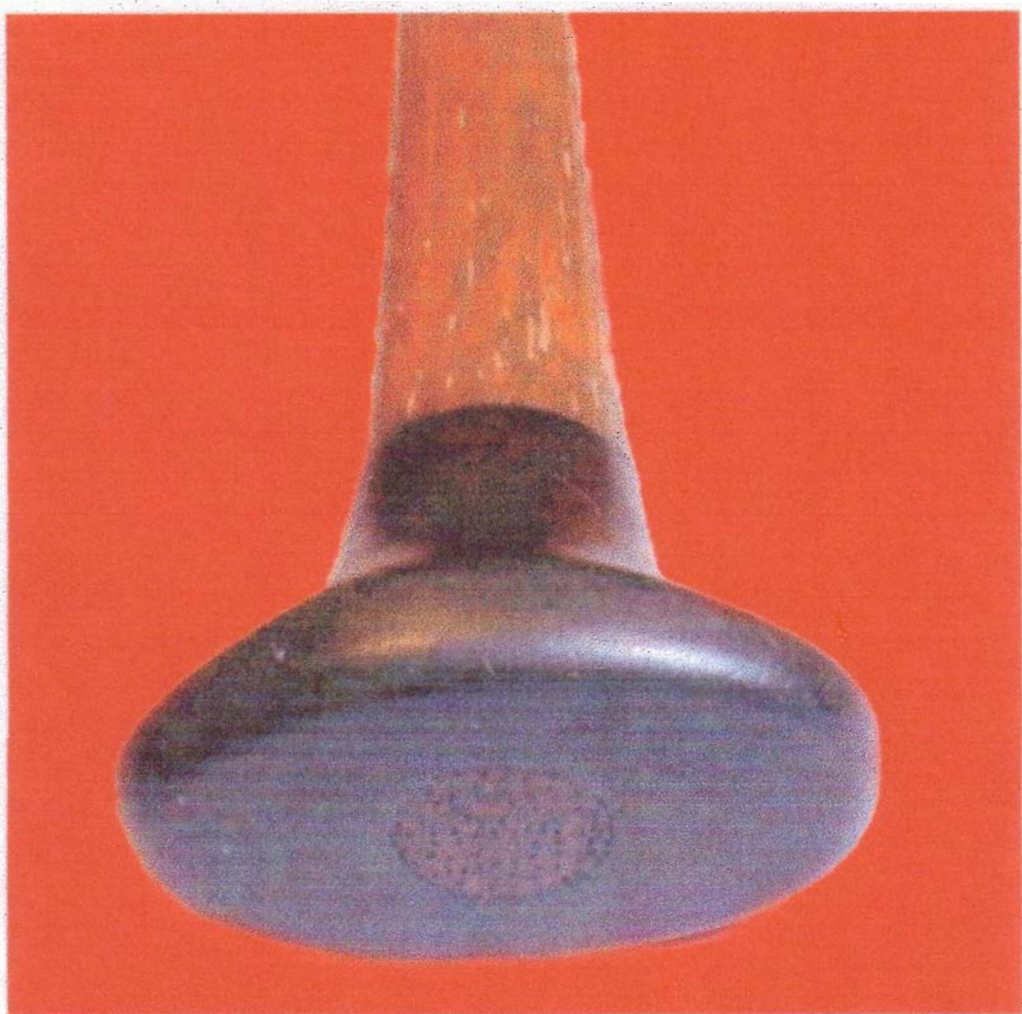
Picture Attachments:

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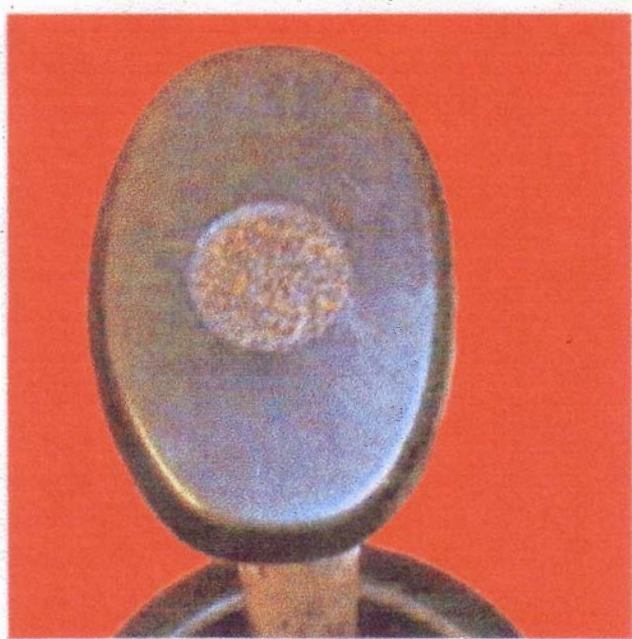


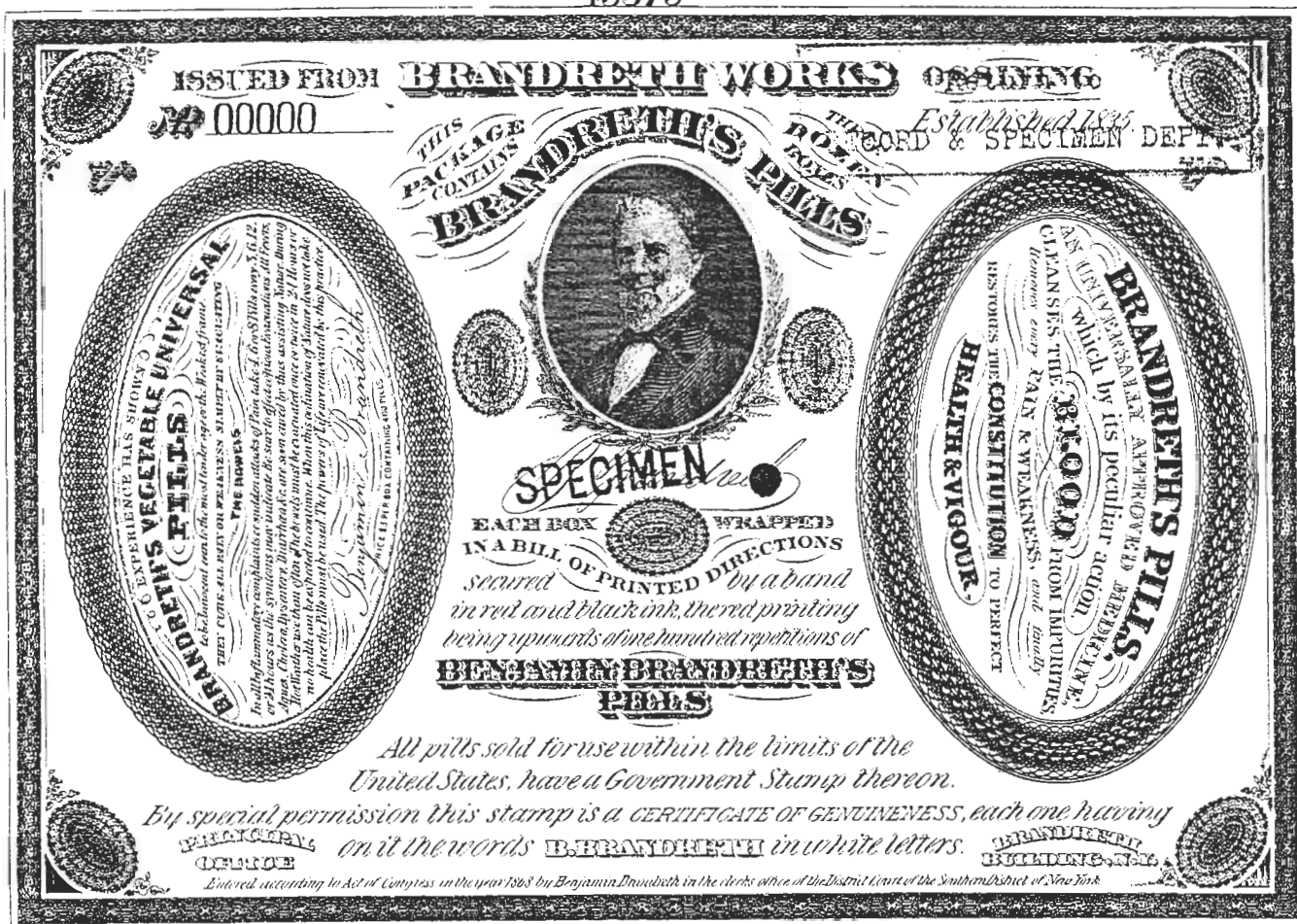
**File:** stethoscope, monaural, no hole.jpg





File: stethoscope, monaural, no hole, detail of chestpiece.jpg





## Historical Images of the Drug Market—LI

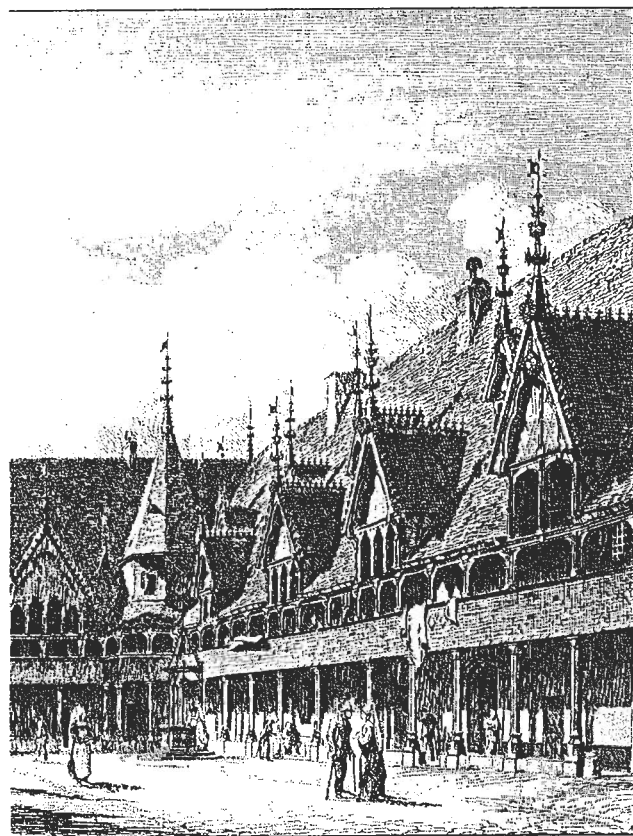
by William H. Helfand

Brandreth's Pills were first marketed in England in 1759 and came to America in the 1830s via a grandson of Dr. William Brandreth, the inventor of the formula. The pills' prime indication was constipation; they comprised a mixture of herbs and roots which had been long known to cure this affliction, including sarsaparilla, aloes, gamboge, guaiac, colocynth, and capsicum. As expected, competition was severe, and treacherous agents even introduced products with similar packaging or similar brand names. The proprietors of Brandreth's Pills took numerous measures to prevent counterfeiting, providing their agents with certificates of agency which, they pointed out, were engraved at great expense, including a beautiful view of their plant, then at Ossining, New York, at the

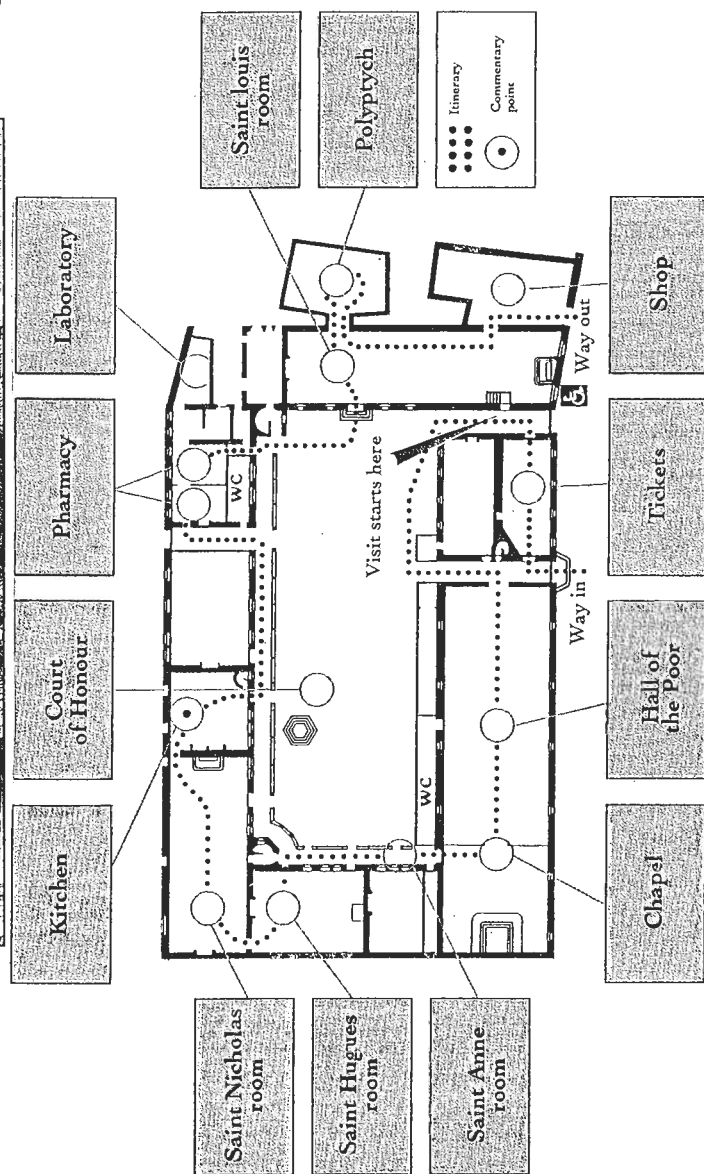
top. In the 1840s they warned that, "each box of the genuine has upon it three copyright labels. That each label has two signatures of Dr. Benjamin Brandreth upon it. That there must be upon each box three signatures thus: B. Brandreth, M. D. and three signatures thus: Benjamin Brandreth." In 1868 they went further, having each package "secured by a band in red and black ink, the red printing being upwards of one hundred repetitions of Benjamin Brandreth's Pills." The American Bank Note Company printed a special label for packages of 36 such boxes, a specimen of which is shown in the illustration. Not all patient's or pharmacist's labels have been designed in as complicated and elaborate a way as this one.



## Visit to Hôtel-Dieu



# Hospices de Beaune Hôtel-Dieu



## PALACE FOR THE POOR

### A work of charity

Perfectly preserved from the Middle Ages, the Hospices de Beaune Hospital was built in 1443 by Nicolas Rolin, Chancellor of Philippe-le-Bon, Duke of Burgundy.



In the wake of the Hundred Years' War, Beaune was suffering from poverty and famine. Three-quarters of the town's inhabitants had no supplies. To redeem the situation, the Chancellor and his wife, Guigone de Salins, decided to found a Hospice for the Poor («Les Pôvres»). They endowed it with an annual income, provided it with its own resources (vines and saltworks) and engaged a large number of artists in its decoration.

### A unique monument

During the periods he spent in Flanders (of which the Duke of Burgundy was also Lord), Nicolas Rolin drew his inspiration from the northern hospitals, for the building of is "palace for the poor".

The "Hôtel-Dieu", or Hospital, with its gothic façades, is today considered a jewel of medieval architecture. The multicolored tiles are thought to have originated in central Europe. The style proved so popular that it gradually spread through Burgundy and eventually came to be considered typical of this province.



### A model hospital

From the Middle Ages to the 20th century, countless sick were taken in and cared for in several of the large rooms by the Sisters of the Hospices de Beaune. The Hôtel-Dieu rapidly gained a great reputation amongst the poor, nobles and middle-class alike. It was subsequently enlarged with donations from the latter and embellished with new rooms and works of art, thus becoming a true «Palace for the Poor».

In 1971 its medical activities were transferred to a modern hospital, but the retirement home was retained. The Hospices run 61 hectares of vineyards inherited over the centuries and each year since 1859 have organized the most famous wine auction in the world.





## 1) GREAT HALL OF THE POOR

### *The centre of the Hospital*

Opened in 1452, the Great Hall of the Poor is still its original size of 50 m long, 14 m wide and 16 m high. Tables and benches were placed down the middle of the room for meals. These were served in pewter dishes instead of the wooden ones which were the custom in hospices. Behind each bed, there was a chest in which the patients' clothes were kept. The medieval style furniture was made in the last century when restoration of the room began in 1875, and is now placed in the original position.



### *A sumptuous decor*

The huge vault which resembles a ship's hull is richly decorated. The many-coloured dragons which «spit out» the cross beams are reminiscent of the monsters of hell. The comical faces of the Beaune middle-class people are accompanied by animal heads symbolising their respective failings.

In places, the floor tiles bear the interwoven monograms of Nicolas Rolin and Guigone de Salins. The «Seulle\*» motto accompanying them shows that Guigone was the only one in her husband's thoughts !

Above the large door is the remarkable «Christ aux Liens» dating from the end of the 15th century and carved from a single block of oak.

## 2) CHAPEL

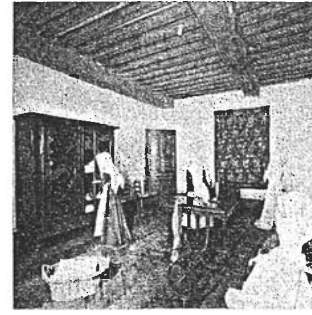
The chapel is an integral part of the Hall of the Poor and symbolises the perfect alliance between the religious and medical practices at the Hôtel-Dieu, the patients being able to take part in services without having to move about.

It was here that Rogier Van der Weyden's famous polyptych was originally placed. It can now be seen at the end of the visit. The remains of Guigone de Salins lie under a bronze plaque.



## SAINT ANNE ROOM (not open to visitors)

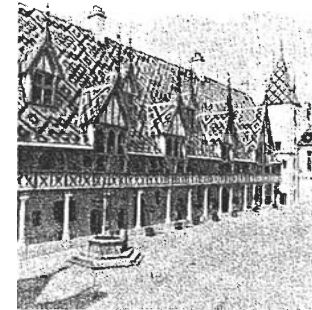
This room originally held 4 beds reserved for «noble souls», thus respecting the wish of the benefactor François Brunet de Montforand, whose heart lies here. Although altered over the centuries, the room still bears the traces of the former linen room.



On the back wall hangs a brightly-coloured tapestry dotted with weapons and bearing the founders' motto. The sumptuous coverings were placed on the bed of the sick on feast holidays.

## 3) COURT OF HONOUR AND ROOFTOPS

Several times during your visit, you will cross the courtyard which is the best known view of the Hôtel-Dieu. The roofs are covered in glazed multicolored tiles which create extraordinary geometrical patterns.



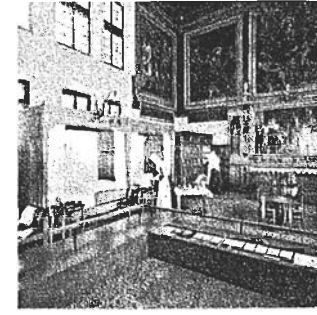
The two bedroom wings are surmounted by numerous gable windows with carvings and lead decorations which are true works of art. Two galleries, one above the other, gave the Sisters shelter from the elements in which to carry out their duties. The warm colours of the timber and clay contrast vividly with the stone and slate-built wing opposite containing the large hall.

The building overlooking the street is deliberately dark and austere so as not to give an impression of wealth and attract thieves. It boasts, however, a steeple 50 m high with a peal of bells.

In the middle of the courtyard is the well, which provided the Hospices with a convenient water supply. This is one of the best examples of elegantly executed Gothic wrought-ironwork in France.

## 4) SAINT HUGUES ROOM.

Created in 1645 at the instigation of Maître Hugues Bétault, this room is evidence of the involvement of the benefactors in the history of the Hospital. It has always been dedicated to the sick and here we are constantly reminded of them. The shelves above the beds held their personal possessions and a cord helped them to sit up more easily.



### *The wall paintings*

Nine of the eleven wall paintings by the Parisian painter Isaac Moillé illustrate the miracles of Christ. The other two depict Saint Hugues dressed as a bishop and as a Carthusian monk. On the ceiling is the «miracle of the pool at Bethesda». The reredos illustrates the miracle of Saint Hugues bringing two children who succumbed to the plague back to life.

## 5) SAINT NICHOLAS ROOM

Designed to take in the «Poor and sick in danger of dying», the Saint Nicholas room separated the unwell from the frail and dying.

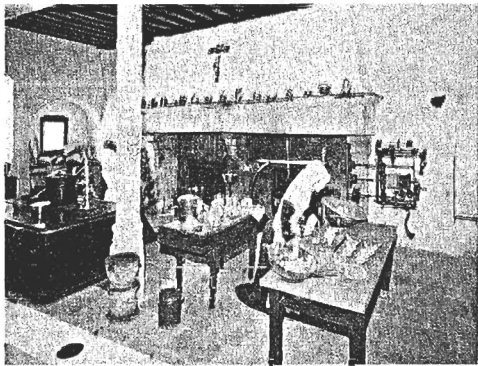
Relatively small, this room contained 12 beds for male and female patients. When Louis XIV visited the Hôtel-Dieu in 1658, this shocked him profoundly and he set up an annuity of 500 pounds for new arrangements to be made to separate the men from the women. The present size of the room dates from the second half of the 18th century.



The Saint Nicholas room today houses a permanent exhibition on the history of the Hôtel-Dieu. Of particular interest is an astonishing straw model made in the 18th century by a patient. The floor has been excavated and covered with glass to reveal the floodlit river Bouzais flowing beneath. This water course carried the rubbish downstream proof of the attention given to matters of hygiene when the building was being designed.

**6) KITCHEN** (Son and Lumiere takes place here every 15 minutes)

The kitchen has recently been restored to how it looked a century ago. A 19th century cooker, like the one used in the Hospital, was rescued from a restaurant in Saulieu. The huge dresser is in the style of those shown on postcards at the beginning of the century.



The masterpiece remains the huge dual-hearth Gothic fireplace which has preserved its original accessories. The floor of the hearth is tiled with the famous tiles bearing the «Sculle\*» motto. The large hinged bracket is for moving the cauldrons to and from the fire.

The most spectacular item is the steel spit, made in 1698. It is being turned by a little robot called «Maître Bertrand». He is wearing the traditional costume of large floppy boots, white breeches, red jerkin with gold buttons and a white cap with turned-up brim. As he turns the handle, he seems to be keeping a watchful eye on the goings-on in the kitchen.



**7) PHARMACY**

In the Middle Ages, each hospital had its own pharmacy since there was no organized production of medicines. Pharmaceutical knowledge was still in its infancy and used a great variety of ingredients, many of them produced locally.

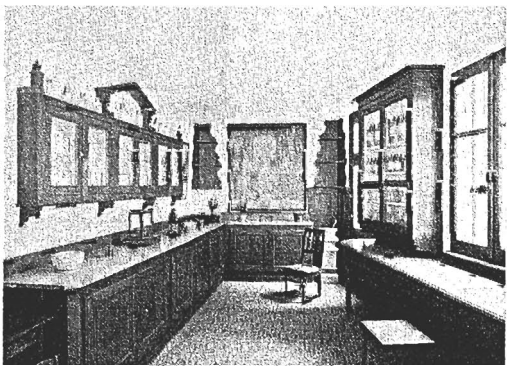
The first room contains a very fine example of an 18th century larder with an amazing array of pewterware used down through the ages at the Hospital.

In the second room - the so-called pharmacy - the shelves hold earthenware and glass pots which contained «special potions», with evocative names such as woodlouse powder, shrimps' eyes, vomit nut powder, «élixir de propriété»...

Some of the plants used were grown in the vegetable garden which was at the back of the Hospices and connected to the building by a covered way.

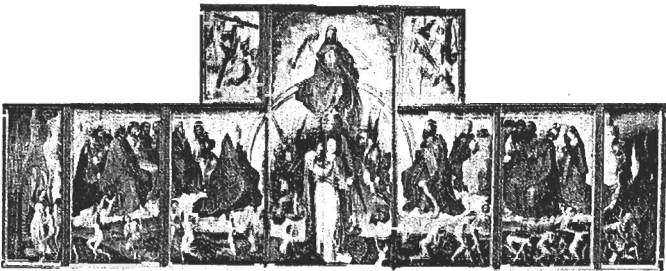
As an extension to the pharmacy, the laboratory (not open to visitors) was, in its time, at the forefront of pharmaceutical knowledge, the most elaborate medicines being distilled in the boiler topped by three huge retorts.

A curious wooden screw press was used for crushing raw meat over a glass jar which collected all the juice. This was the only known medicine for tuberculosis in the 18th century.



**8) POLYPTYCH** (Entrance at Saint-Louis room)

Ordered by the Chancellor Rolin, this 15th century polyptych is attributed to the Flemish artist Roger Van der Weyden. Representing the Last Judgement, it was placed above the altar in the Chapel, but was only allowed to be seen by the sick on Sundays and feast days.



*Outer panels (closed)*

Nicolas and Guigone Rolin, kneeling in prayer, face each other, whilst the grisaille paintings depict the Annunciation, Saint Sebastian (patron of the Chancellor's Cavalry) and Saint Antony (patron of the Hôtel-Dieu) followed by his pig.

*Inner panels (open)*

Christ the Supreme Judge, majestic in his purple robes. His right hand, holding a flowering fleur-de-lys, is raised and beckons the chosen ones. His left hand, in contrast, is lowered in disapproval as if to say «Away from me, ye that are under God's curse. Away to the eternal fire....»

At Christ's feet : the four angels, harbingers of the Last Judgement, surround the Archangel Michael. Resplendent in his contrasting white robe and scarlet cloak, his face expressionless, he weighs those risen from the dead.

*Left hand panels*

Next to the rainbow, the Virgin begs for mercy for the sinners. Behind her, six apostles and four male Saints.

*Righthand panels*

Next to the rainbow, Saint John the Baptist, six apostles and three female Saints.

*Bottom of panels*

To the left of Christ: the Damned, frightened and despairing. To his right : the Blessed making their way to Paradise.

*Tapestry «thousand flowers»*

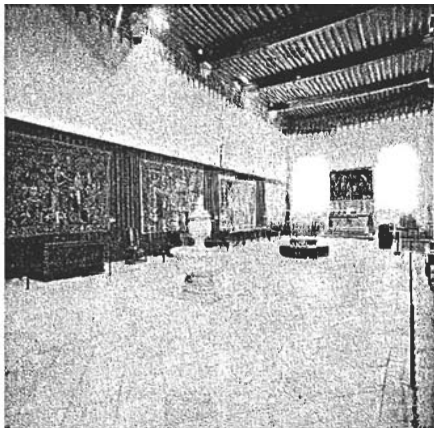
The techniques and colours of this work of art, bring to mind the famous 16th century «Lady with the Unicorn» which is in the Cluny Museum.

This tapestry depicts the legend of Saint Eloi. Eloi was very proud. Once, he cut off the leg of a horse in order to shoe him more rapidly, but he couldn't reattach the leg.

## 9) SAINT LOUIS ROOM

At the instigation of Louis Bétault the Saint Louis room was created in 1661 on the site of a barn which enclosed the Hôtel-Dieu courtyard and served as a wine-fermenting room.

Its extension contained the Hospice ovens where the bread was baked and distributed daily to the poor waiting at the gates. In 1828 an agreement was made with the Beaune bakers who took over the work. The ovens fell into disuse and the room was thus able to be enlarged. This high room with its splendid roof timbers contains some very fine Gothic chests, including a typical piece of Burgundian furniture - the bench chest with tilting back - and a few interesting statues of wood and stone.



The fountain bears testimony to the fact that this room was devoted to the sick.

### The superb tapestries

The largest series of seven tapestries, woven at Tournai at the beginning of the 16th century, tells the parable of the Prodigal Son. Another series of five Brussels tapestries, dating from the end of the 16th century, tells the story of Jacob.

Next to the altar, a cloth from the same period depicts David learning of Absalom's death.

The collection also includes one 17th century tapestry of Aubusson, «Ronde des Jeunes Gens».

*The way out is at the end of this room through the museum shop.*

Thank you for your visit. We look forward to seeing you again soon.

## UNITED STATES PATENT OFFICE

1,932,227

## STETHOSCOPE

Charles J. Pilling, Lansdowne, and Bruno F. Wiegand, Philadelphia, Pa., assignors to The George P. Pilling & Son Company, Philadelphia, Pa., a corporation of Pennsylvania

Application April 11, 1933. Serial No. 665,518

6 Claims. (Cl. 181—24)

This invention relates to improvements in stethoscopes of the general type wherein a rigid tube is provided having at one end thereof a head or body piece for collecting and transmitting sounds, and having, at the other end thereof, a head or ear piece for application to a physician's ear for receiving sounds transmitted from the body piece through the tube to and through the receiving head or ear piece.

10 The invention aims to improve stethoscopes of this type by providing a novel, simple and efficient construction and arrangement of parts whereby the body piece and the ear piece may be adjusted to different positions with respect to the tube and to each other for the more convenient application of the parts to the body of the patient and to the ear of the physician, and whereby the body piece and ear piece may be folded into close relation to one side of the tube and into or near edgewise alinement to flatten the instrument to permit it easily to be carried in the vest or other pocket of the physician.

20 The invention resides in the novel construction, combination and arrangement of parts herein-after described and claimed.

In the accompanying drawing, illustrating the invention,

30 Figure 1 is a side view of a stethoscope embodying our invention, showing the parts in the open position for use, by full lines, and showing the body piece and ear piece in the folded position, by dot-and-dash lines.

35 Figure 2 is a longitudinal section thereof, showing by dot-and-dash lines the body piece and the ear piece, folded substantially into edgewise alinement adjacent to one side of the tube for flattening the instrument.

40 Figure 3 is a sectional view, enlarged, showing the connection between the body piece and the tube.

Figure 4 is a front view of the spring washer.

Figure 5 is an edge view of the spring washer.

Referring to the drawing, 2 designates a straight, rigid tube, 3 a head at one end thereof constituting the body piece of the instrument, and 4 a head at the other end thereof constituting the ear piece of the instrument.

50 The head or body piece 3 is made round and flat and of disc-like formation, having a shallow, tapered sound collecting and transmitting chamber 5 formed therein. Screwed onto the body of the head 3 is an annulus 6 surrounding a sound transmitting diaphragm 7 which closes the outer side of the chamber 5. The diaphragm 7 is held in place by and between an intumed annular

flange on the annulus 6 and the adjacent annular edge portion of the body of the head 3. This annulus is adapted to make contact in the usual manner with the body of the person or patient on whom the instrument is used.

60 Formed on or suitably secured to the central portion of the inner side of the body of the head 3 is an outer member 8 which projects axially from the head, and extending through the inner wall of the head 3 and the adjacent portion of the member 8 is an axial sound passage 9 which opens into the chamber 5.

70 The member 8 has a tapered bore which extends therethrough at right angles to the axis of the head 3, the bore 9 and the tube 2, and located within this bore and fitted thereto for partial rotation therein is an inner tapered member 10 which is carried by the adjacent end of the tube 2. The tube 2 is threaded and screwed into the member 10, and the member 10 has a sound passage 11 extending therethrough at right angles to its axis and in alinement with and forming a continuation of the opening in the tube 2.

80 The inner member 10 is retained within the outer member 8 by a screw 12 which is screwed into the small end of the member 10, and by washers 13 and 14 interposed between a head on the screw and the adjacent side of the outer member 8. The washer 14 is a split spring washer constructed to press against the member 8 in opposition to the head of the screw 12 and thereby yieldably retain the tapered member 10 in close working engagement with the wall of the tapered bore in the member, and thus provide sufficient friction to hold the members 8 and 10 in place against accidental displacement from different positions of adjustment about the axis of the inner member 10.

95 The outer member 8 is provided with a slot 15 through which the tube 2 extends, and the end walls of the slot form stops constructed to engage the tube to limit the turning movement of the member 10 within the member 8, one end of the slot 15 being engaged by the tube 2, when the head or body piece 3 is adjusted or turned on the axis of the member to a position in which the head is in axial alinement with the tube 2, as shown by full lines in Fig. 2, and the other end of the slot 15 being engaged by the tube 2, when the head or body piece is adjusted or turned to a position in which the axis of the head extends at right angles to the axis of the tube 2, as shown by dot-and-dash lines in Fig. 2.

100 The sound passage 11 within the inner mem- 110



Oct. 24, 1933.

C. J. PILLING ET AL

1,932,227

STETHOSCOPE

Filed April 11, 1933

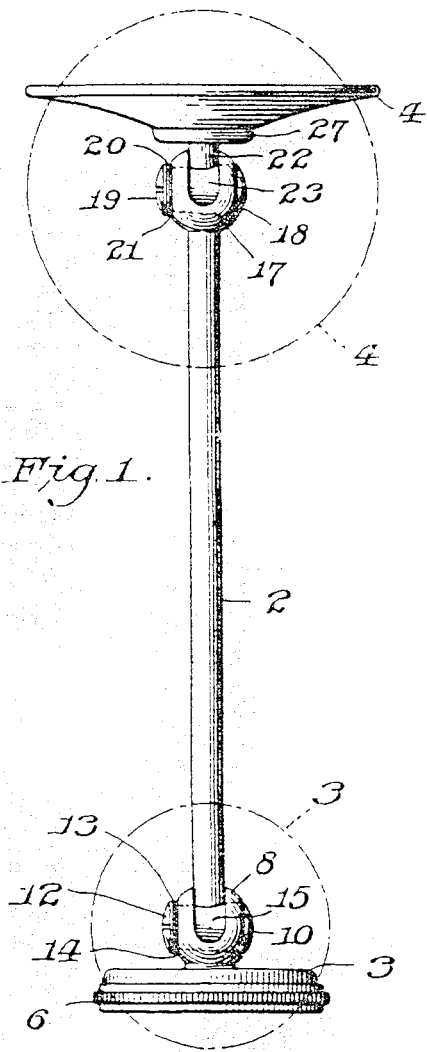


Fig. 1.

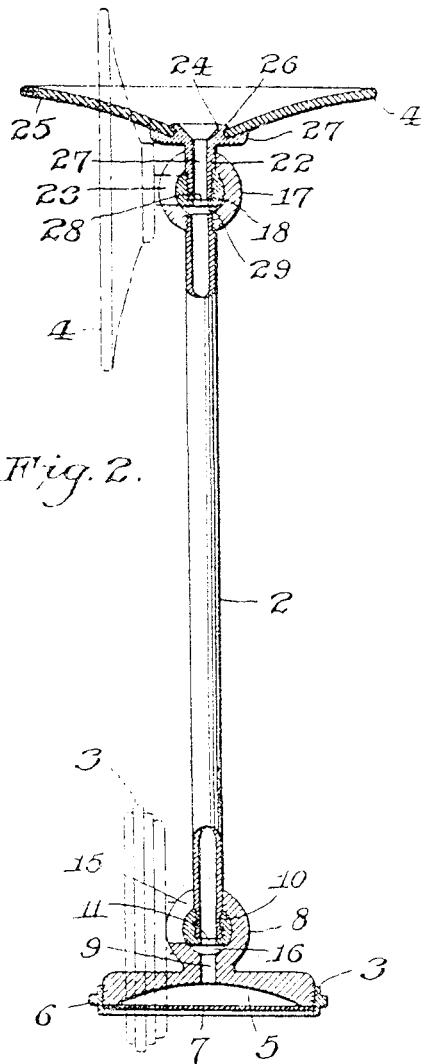


Fig. 2.

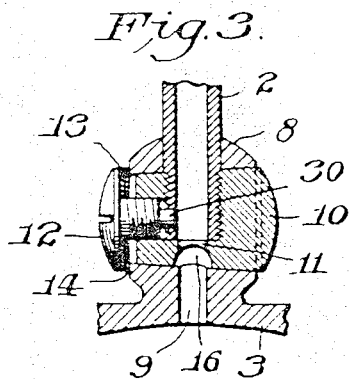


Fig. 3.

Fig. 4. Fig. 5.



Inventors:

Charles J. Pilling  
and Bruno F. Wiegand

By *A. V. Young* Attorney

ber 10 has a lateral extension 16 which causes it to be in communication with the axial passage 9 in the head 3 when the head is in and near the position in which it is axially aligned with the tube 2, the extension 16 permitting the head to be adjusted some distance from the full line position toward the dot-and-dash line position without breaking communication between the tube and the head.

The end of the tube 2 adjacent to the head or ear piece 4 has an outer member 17 secured thereon which is constructed like the member 8 and which has a sound passage therein forming a continuation of the passage in the tube 2. The member 17 has a tapered, inner member 18 fitted to a correspondingly tapered bore in the member 17 for partial rotation therein, the member 18 being constructed like the member 10. The member 18 bears the same relation to the member 17 as the member 10 bears to the member 8, and the member 18 is held in place within the member 17 by a screw 19 and washers 20 and 21 which correspond with the screw 12 and washers 13 and 14, respectively, which hold the member 10 in place.

Screwed into the inner member 18 is one end portion of a short tube 22 which extends from the member 18 at right angles to the axis thereof and which extends out through a slot 23 in the outer member 17. The outer end of the tube 22 carries the head or ear piece 4 which is set in axial alignment therewith. The head 4 comprises a round, shallow, tapered and flared body member 25 preferably formed of hard rubber, and a central, metallic connecting part 24 which is formed on or suitably secured to the outer end of the tube 22. The connecting part 24 extends through a central opening in body member 25, and the member 25 is secured thereto between the large flange-like body 27 of the part 24 which engages the outer surface of the member 25, and a small outwardly turned flange 26 which engages the inner surface of the member 25. The interior of the shallow head 4 provides a sound collecting and transmitting chamber and the flared form of the hard rubber body member 25 provides an ear piece which will fit closely over any desired portion of the ear of the user of the instrument.

The connecting part 24 has an axial passage 27 therein which opens into the ear piece 4 and forms a continuation of one end of the passage in the tube 2, and the member 18 has a passage 28 therein which forms a continuation of the other end of the tube 22 and which is aligned with the tube 2 and forms a continuation of the passage therein when the head or ear piece 4 is in alignment with the tube 2, as shown by full lines in Fig. 2.

The short tube 22 extends through the slot 23 in the member 17 similarly to the extension of the tube 2 through the slot 15 in the member 8, and the head or ear piece 4 is adapted to be adjusted on the turning axis of the member 18 from the position shown by full lines in Fig. 2 to the position shown by dot-and-dash lines therein and back again. When the ear piece 4 is moved to the full line position, the tube 22 engages one end of the slot 23 and stops further movement thereof, and when the ear piece is moved to the dot-and-dash line position, the tube 22 engages the other end of the slot 23 and stops further movement thereof.

The end of the sound passage 28 in the member 18 adjacent to the tube 2 has a lateral ex-

tension 29 by means of which it is in communication with the tube 2 when the ear piece 4 is in and near the full line position shown in Fig. 2. The relationship of the passages is such as to permit the ear piece to be adjusted some distance from the full line position toward the dot-and-dash line position without breaking communication between the tube 2 and the ear piece 4.

It will be observed that the turning axis of the two inner members 10 and 18 are in parallel relation. This relationship causes the relatively flat heads 3 and 4, forming the body piece and ear piece, respectively, to be moved toward and from the same side of the tube 2 when they are adjusted.

The inner end of the screw 12 has a central projection 30 which enters a hole in one side of the tube 2 and thus prevents the unscrewing of the tube from the member 10. This construction permits the tube 2 easily to be removed from the member 10 after the screw 12 has been loosened, and it prevents the accidental turning of the member 8 on the axis of the tube and thereby preserves the parallel relationship of the axes of the members 10 and 18 when the parts are assembled.

It will now be understood that, when the stethoscope is in use, the body piece 3 and ear piece 4 may be adjusted to the complete open position, as shown by full lines in Figs. 1 and 2, in which a continuous sound passage is provided between the interiors of two heads or pieces 3 and 4; and it will also be understood that either the body piece 3 or the ear piece 4, or both, may be adjusted to extend at an angle or angles with relation to the tube 2 within the limits allowed by the lateral extensions 16 and 29 of the sound passages without breaking the continuous sound passage between the two heads or pieces 3 and 4. The lateral extensions 16 and 29 of the sound passages permit a range of adjustment of either or both of the two heads or pieces 3 and 4 to or within an angle of about thirty degrees to the axis of the tube 2 without breaking the continuity of the sound passage. Thus it will be seen that the heads 3 and 4 may be set in different positions relatively to each other and to the tube 2 for the convenient application of the instrument to various parts of the body of the patient and to the ear of the examining physician, permitting the easy application of the instrument to the patient in different positions, and permitting the face of the physician to be directed away from the patient during the examination.

Also, it will be understood that the body and ear pieces 3 and 4, respectively, may be folded down into close relationship with one side of the connecting tube to flatten the entire instrument and thereby permit it to be carried in the physician's vest or other pocket with ease and comfort when it is not in use.

The frictional engagement of the inner members 10 and 18 with their outer members 8 and 17, respectively, caused by the action of the spring washers 14 and 20, not only holds the body and ear pieces firmly in the positions to which they are adjusted but it also holds the parts in firm contact for the elimination of foreign noises when the instrument is in use.

We claim:

1. In a stethoscope and in combination, a head having a sound collecting chamber therein and having a central sound passage opening into the

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chamber and extending axially therefrom, a rigid sound conducting tube pivotally connected to said head on an axis which extends at right angles to its axis and to the axis of said passage, said head and said tube being relatively adjustable on said pivot to and from a position in which the head, its passage and the tube are in axial alignment, and said tube being in communication with said passage when the head and the tube are in and near said position.

2. In a stethoscope and in combination, a head having a sound collecting chamber therein and having a connecting member projecting therefrom and having a central sound passage opening into the chamber and extending axially therefrom, and a rigid sound conducting tube having a connecting member on one end portion thereof, one of said members being pivotally mounted within the other of said members to turn on an axis which extends at right angles to the axes of said tube and said passage, and said head and said tube being relatively adjustable on said pivot from one to the other of a position in which said tube is substantially in axial alignment with said head and a position in which said tube extends substantially at right angles to the axis of said head, said tube being in communication with said passage when the tube is in and near its position in axial alignment with the head.

3. In a stethoscope and in combination, a rigid sound conducting tube, a head pivotally mounted on one end portion of said tube and provided with a sound collecting chamber and having a central sound passage opening into the chamber and extending axially therefrom, and a second head pivotally mounted on the other end portion of said tube and provided with a sound collecting chamber and having a central sound passage opening into the chamber and extending axially therefrom, each of said heads being adjustable on its pivot relatively to the tube to and from a position in axial alignment therewith and having its sound passage in communication with the tube when in and near said position.

4. In a stethoscope and in combination, a rigid sound conducting tube, a head pivotally mounted on one end portion of said tube and provided

with a sound collecting chamber and having a central sound passage opening into the chamber and extending axially therefrom, and a second head pivotally mounted on the other end portion of said tube and provided with a sound collecting chamber and having a central sound passage opening into the chamber and extending axially therefrom, the axes of said pivots being in parallel relation and extending at right angles to the axis of the tube, and each of said heads being adjustable on its pivot relatively to the tube and toward the same side thereof from a position in which its axis is aligned with the tube to a position in which its axis extends substantially at right angles to the tube, and the passages of said heads being in communication with the tube when the head is at and near the position in which its axis is aligned with the tube.

5. In a stethoscope and in combination, an outer member and an inner member fitted for partial rotation in the outer member for relative adjustment of the members on the turning axis of the inner member, the inner member having a tubular extension and a straight sound passage extending through the member and its extension on an axis at right angles to its turning axis, and the outer member having a sound passage adapted to be moved into and out of alignment with the passage in the inner member when the members are relatively adjusted.

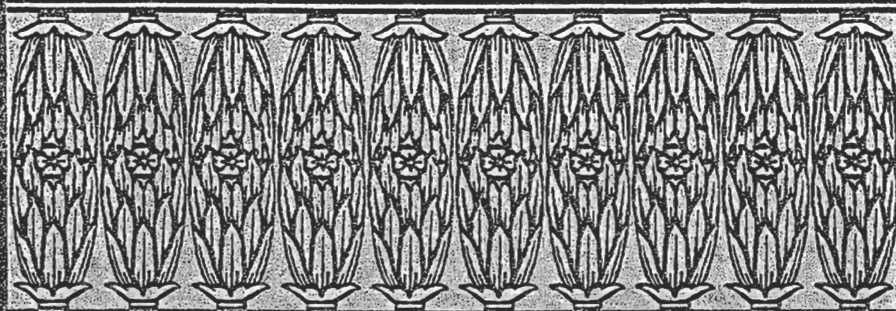
6. In a stethoscope and in combination, an outer member, an inner member fitted for partial rotation in the outer member for relative adjustment of the members on the turning axis of the inner member, the inner member having a tubular extension and a straight sound passage extending through the member and its extension on an axis at right angles to its turning axis, and the outer member having a sound passage adapted to be moved into and out of alignment with the passage in the inner member when the members are relatively adjusted, and friction producing means for retaining the members in relative position of adjustment.

CHARLES J. PILLING.  
BRUNO F. WIEGAND.

Bulletin Thirty-Nine

# Electro-Radiation Company

SUCCEEDING SWETT & LEWIS COMPANY



MANUFACTURERS OF

High Frequency  
X-Ray and  
Electro-Medical  
Apparatus

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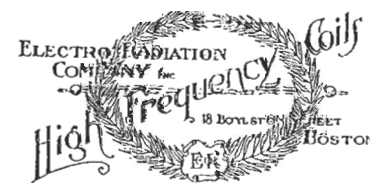
Bulletin No. 39

# ELECTRO-RADIATION COMPANY

SUCCEEDING SWETT & LEWIS COMPANY

IT is with pleasure that we announce the purchase of the business carried on for many years by the Swett & Lewis Company. The office and factory equipments of both companies have been merged and give us unsurpassed facilities. The previous high standard of our apparatus will be maintained. We are the sole manufacturers of the electro-therapeutic apparatus designed by Dr. Frederick P. Strong and by Mr. Thomas B. Kinraide.

Prospective purchasers are warned against infringements.



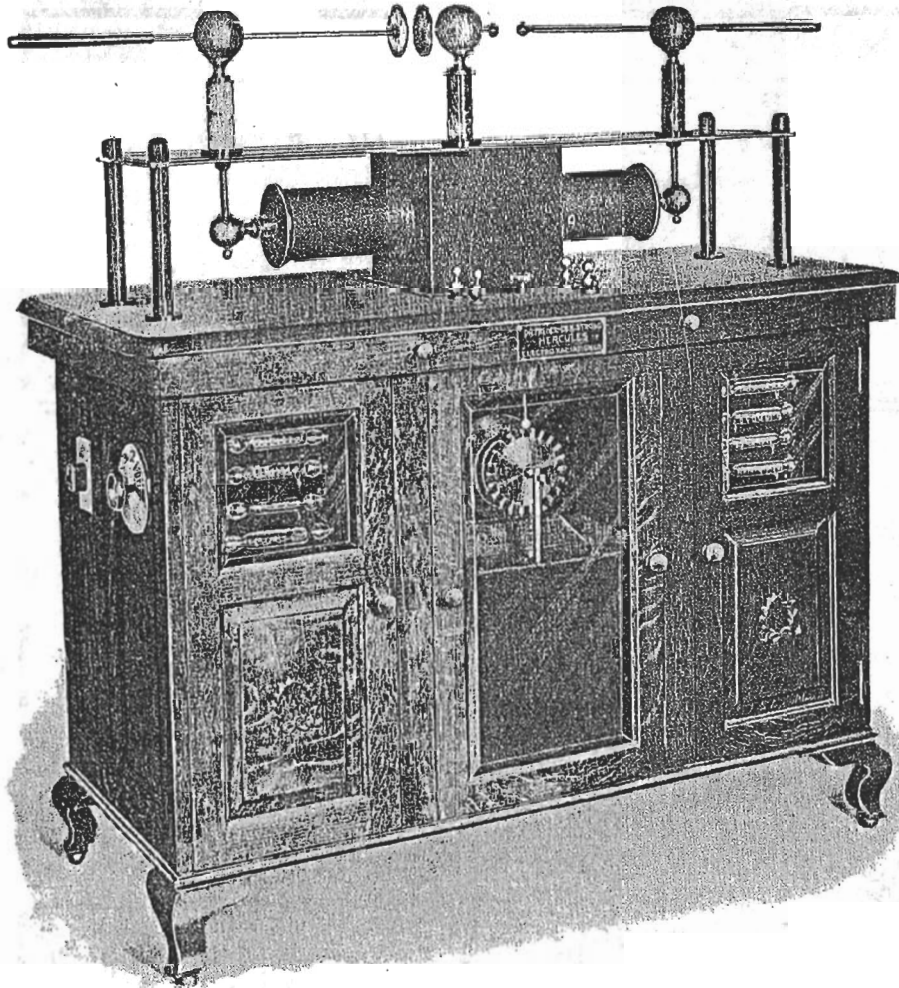
Office and Warerooms:

18 BOYLSTON STREET, BOSTON, MASSACHUSETTS

Factory: 287 ATLANTIC AVENUE

Copyrighted, 1906, by Electro-Radiation Company





The Hercules

## PRICES

THE HERCULES COIL.	For the alternating current	\$450.00
Code word, Hermann.		
THE HERCULES COIL.	For the 110-volt direct current	\$520.00
Code word, Hermanic.		

## The Hercules Coil

The cabinets of these machines are made of oak, panelled on all sides, with French plate-glass doors in front. Two banks of highly colored Geissler electrodes are placed one on each side of the central glass panel, for demonstration and experimental purposes. The spark-gap occupies the central compartment behind the glass; the light from this can be shut off by a velvet curtain if desired. The high-tension coil is mounted on the top of the cabinet, and is entirely enclosed in hard rubber; above this, supported by four heavy pillars, is a table of plate-glass, which in turn supports the three massive terminals, which are mounted upon pedestals of selected Mexican onyx. The hard rubber knob by which the spark-gap is regulated is conveniently located in the centre and near the front of the cabinet. Connecting posts are provided, by which the high-tension coil can be thrown entirely out of the circuit, and the machine can then be used, if desired, to operate any make of Solenoid or Resonator.

## PRICES

OUTFIT NO. 201. For the alternating current.

Code word, Hermanubis.

One Hercules Coil		\$450.00
One Platinum Barium Cyanide Fluoroscope, 5 x 7	\$10.00	{ With this outfit only } 50.00
One Tube Stand	10.00	
One Type H. F. X-Ray Tube	14.00	
One set of Vacuum Electrodes	5.00	
One Ultra Violet Lamp	15.00	
	\$54.00	\$500.00

OUTFIT NO. 202. For 110-volt direct current.

Code word, Hermanar.

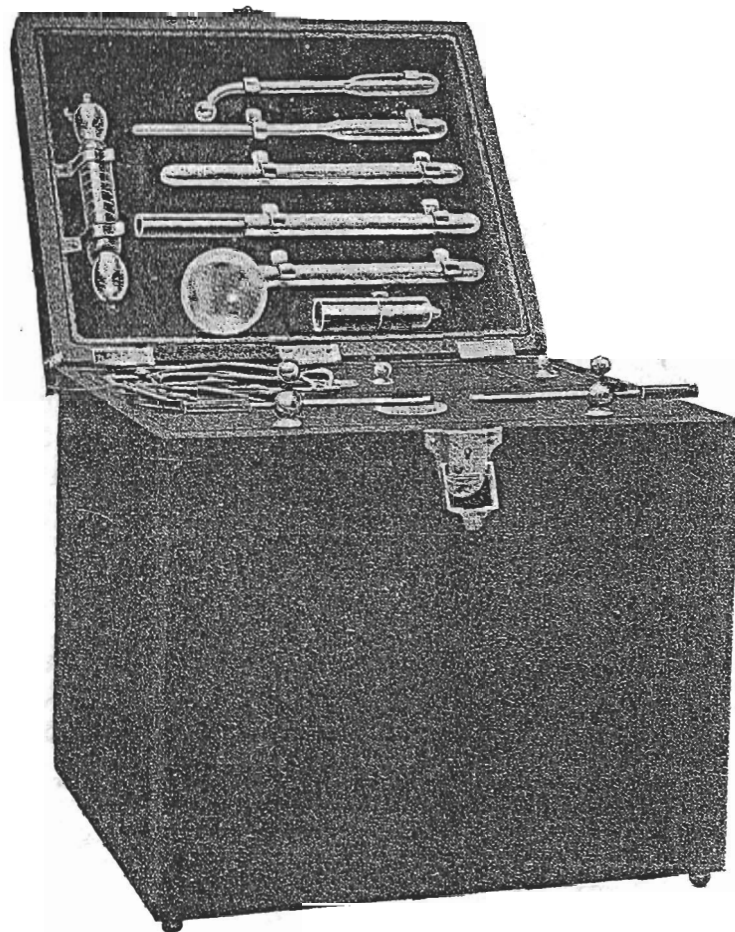
Same as enumerated in Outfit No. 201	\$500.00
Rotary Converter	70.00
	\$570.00

For 220-volt direct current, add \$20.00 to the above.

OUTFIT NO. 203. For the alternating current.

Code word, Hermanaron.

One Hercules Coil	\$450.00
One 8 x 10 Silicate Fluoroscope	14.00
Two X type X-Ray Tubes	34.00
One Tube Stand	10.00
One set of Vacuum Electrodes	5.00
Ten pounds X-Ray Foil	2.50
One High Frequency Milliamperemeter	30.00
Two Mineral Tubes	6.00
One Ultra Violet Lamp	15.00
One Cautery Attachment	25.00
One Handle and Snare	6.00
Eight Cautery Knives	6.00
One pair Cautery Cords	1.50
	\$805.00

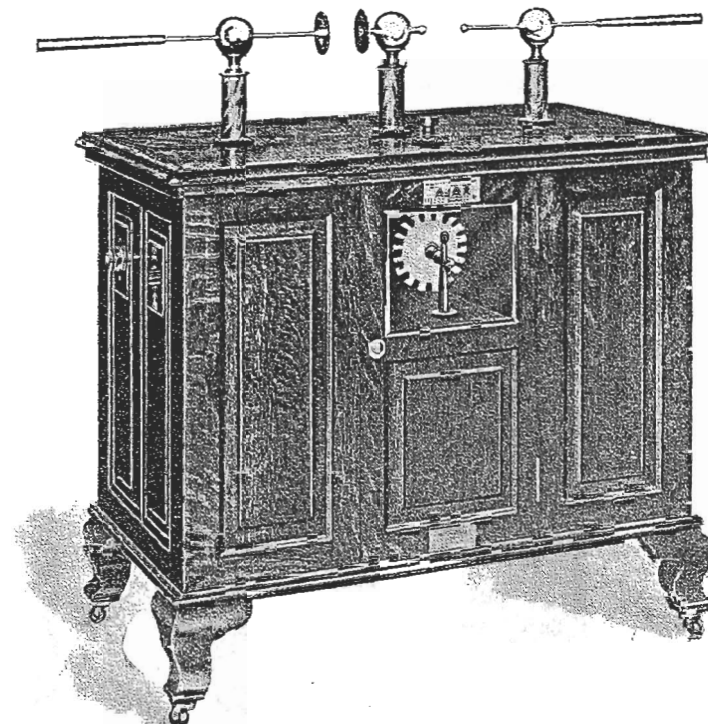


The Junior Portable High Frequency Coil

The only portable Tesla apparatus ever offered to the profession which operates on its own battery power.

PRICES

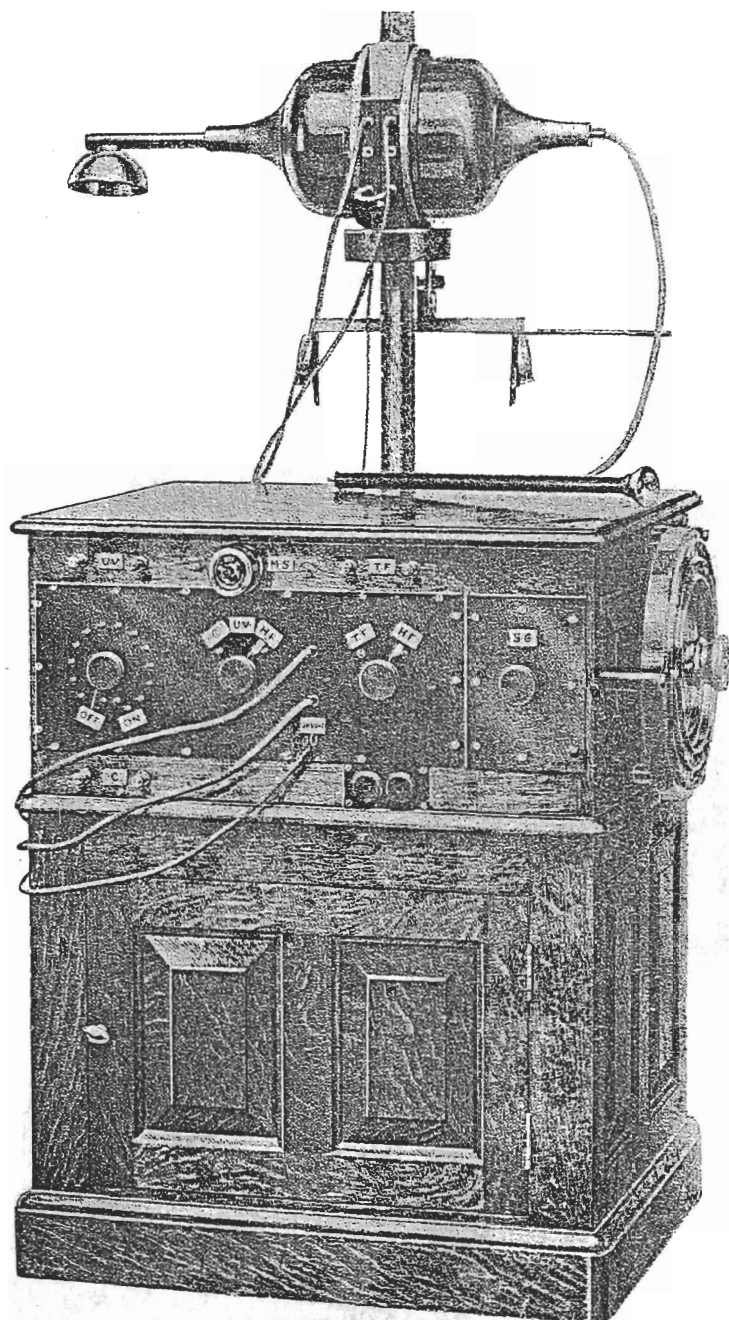
With special set of vacuum electrodes, hand, Geissler electrode and cords, complete with battery.....	\$100.00
Code word, Impious	
Extra battery in case .....	\$20.00
Code word, Impiously.	
Recharging or exchange of battery .....	\$2.25
For recharging or exchange of batteries cash must accompany order.	



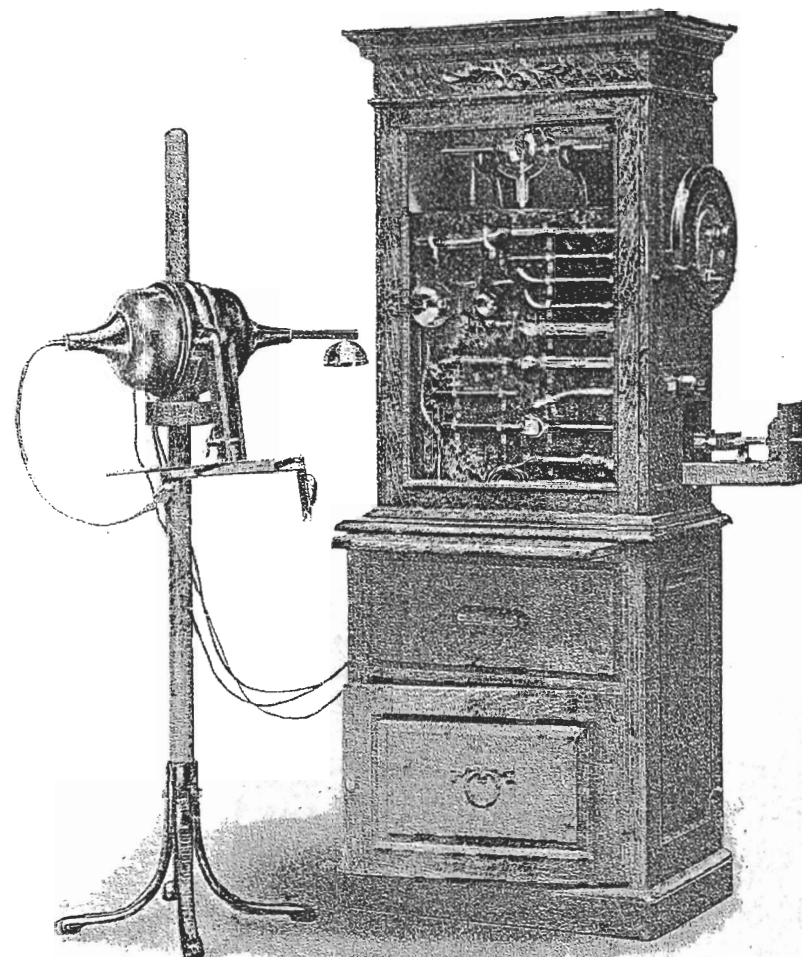
The Ajax Coil

PRICES

THE AJAX COIL. For the alternating current .....	\$200.00
Code word, Turquines.	
THE AJAX COIL. For the 110-volt direct current .....	\$250.00
Code word, Turquoise.	



The Jackson Coil



The Jackson Special Coil

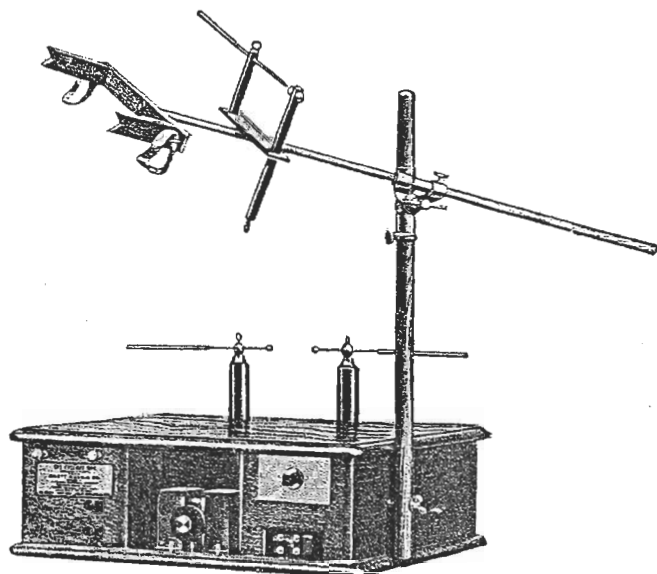
## PRICES

JACKSON SPECIAL COIL. Shown in cut, including all electrodes, cords, and tube stand, for alternating current .....	\$380.00
Code word, Kaiserhut.	
JACKSON SPECIAL COIL. For 110 volts, direct current, as above, including rotary converter .....	\$450.00
Code word, Kaiserin.	
JACKSON SPECIAL COIL. For 220 volts, direct current, as above, including rotary converter .....	\$470.00
Code word, Kaiserling.	

OUTFIT NO. 91. For the alternating current.

Code word, Krepp.

The Cyclone Coil, Portable Type, including tube stand .....	\$185.00
Two Type H. F. X-Ray Tubes .....	28.00
One 5 x 7 Platinum Barium Cyanide Fluoroscope .....	10.00
One set of six Vacuum Electrodes .....	5.00
Eight pounds X-Ray Foil .....	2.00
One set of six Electrodes, No. 17 and No. 18 .....	10.00
One Carrying Case for tubes and electrodes .....	10.00
	<b>\$250.00</b>



The Cyclone Desk Coil

THE CYCLONE COIL. Desk Type, including tube stand and connecting cords, fitted to run on any alternating current ..... \$185.00  
Code word, Gloriavamo.

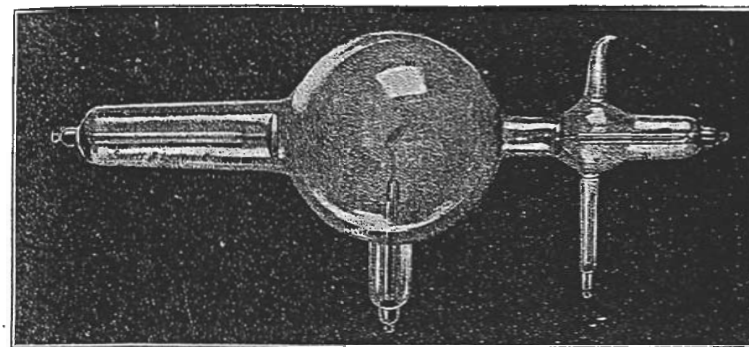
## The Cyclone Portable Coil

THE CYCLONE COIL. Portable Type, including tube stand and connecting cords, fitted to run on any alternating current ..... \$185.00  
Code word, Glorificar.

ROTARY CONVERTER. For changing the 110-volt direct current to alternating ..... \$70.00  
Code word, Hervatting.

ROTARY CONVERTER. For changing the 220-volt direct current to alternating ..... \$90.00  
Code word, Hervimos.

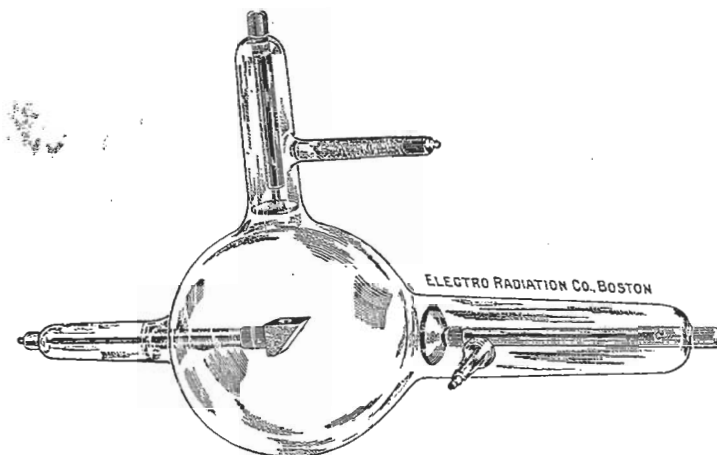
## Tubes



H. F. Type X-Ray Tube

This tube is especially designed for use with high frequency coils. It is the result of many years' experimentation, and will run with good satisfaction. Owing to the position of the terminals the reverse waves are choked back so that the hemispherical effect is obtainable.

Code word, Dejour ..... Price, \$14.00



X. Type X-Ray Tube

This tube is a modification of the type H. F., and has an extremely heavy and re-inforced anode so that a large quantity of current may be used without overheating. It is especially recommended for heavy work.

Code word, Derivant ..... Price, \$17.00