

MF - Radium

CATALOGUE OF

Radium

AND

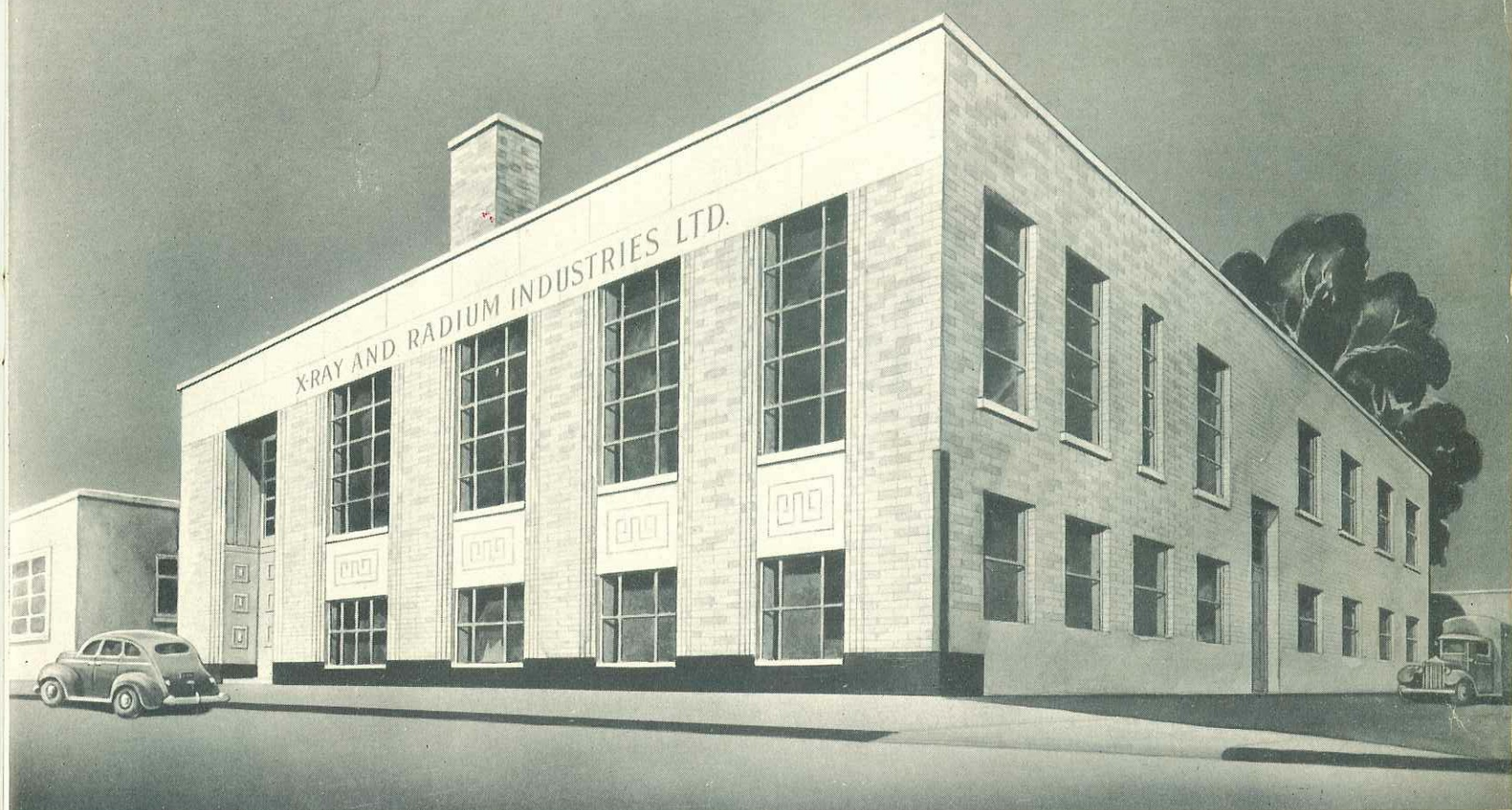
**ACCESSORY
EQUIPMENT**

FOR

Modern Radium Therapy



X-RAY AND RADIUM INDUSTRIES LIMITED
TORONTO CANADA



All the medical radium and associated mineral requirements of the western hemisphere can now be supplied from the Laboratories of X-Ray and Radium Industries, Toronto, Canada.

Through the Head Office and medical radium Processing Laboratories of X-Ray and Radium Industries Limited, high purity radium in standard size containers illustrated herein, and in special types of tubes, needles, cells and plaques, is manufactured to meet the specifications of physicians and hospitals. A complete line of accessory equipment is also available.

A large stock of therapeutic radium is maintained. All radium sold is based on our own certificate of measurement or on the certificate of the Canadian Government's National Research Council, Ottawa, and is guaranteed to be free of mesothorium and all other shortlived radio-active substances.

Outstanding chemists and technicians are employed in the laboratories of X-Ray and Radium Industries Limited, where photographic inspection and leakage tests are also administered. Defective containers are repaired and, when necessary, the radium is recovered from defective containers for processing and conversion into containers of new design or size.

MONTREAL

313 Dominion Square Bldg.

TORONTO

261 Davenport Road

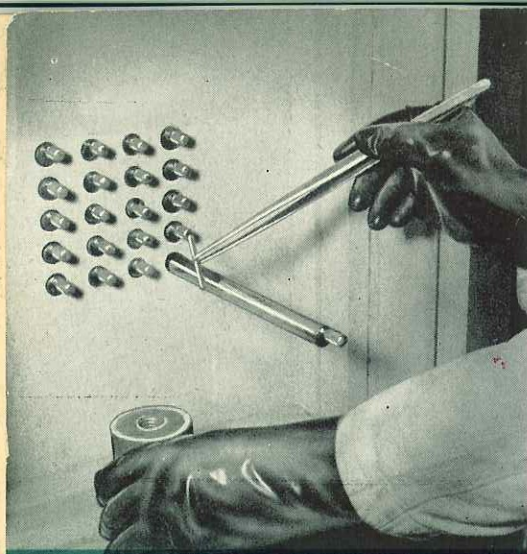
WINNIPEG

705 Lindsay Bldg.

CALGARY

EDMONTON

VANCOUVER

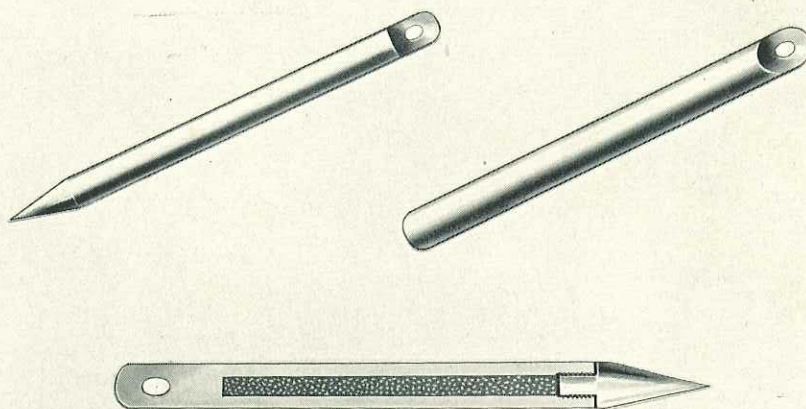


Radium Bromide, in glass tube within a brass container, is removed from lead storage safe to be processed for use in medical containers.

AMERICAN TYPE CONTAINERS

American Type Containers are a comparatively new development. They do not contain inner cells, the radium being fitted directly into the needle or tube and hermetically sealed. Consequently a greater volume for the radium is obtained although maintaining minimum external dimensions. This type of container usually is supplied with threaded end plug for greater safety. These containers can be obtained on a custom-made basis to any special specifications required.

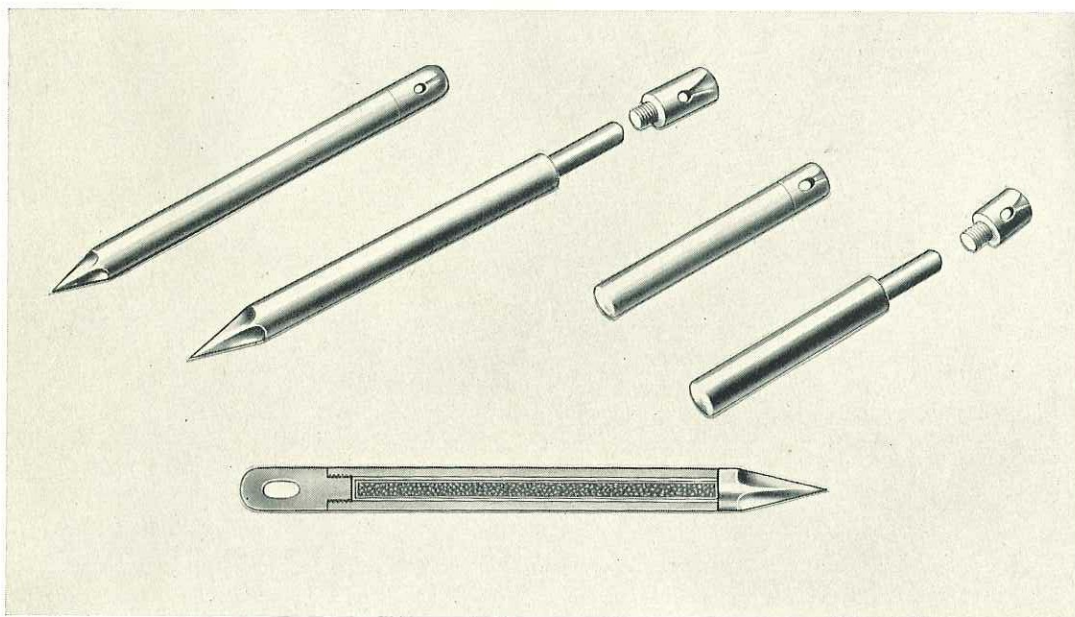
AMERICAN TYPE NEEDLES AND TUBES



DIMENSION CHART

Item Number	CONTENTS	METAL	DIMENSIONS IN M/M				Wall Thickness In M/M	Filtration Equivalent	Weight of Containers In Grams
			External		Internal				
			Length	Diameter	Length	Diameter			
NEEDLES									
AA	0.6 to 1.0 mgm	10% Ir.Pt.	12.0	1.60	5.0	0.60	0.5	0.5	0.50
AB	5.0 mgm	10% Ir.Pt.	16.5	1.65	9.5	0.65	0.5	0.5	0.60
AC	10.0 mgm	10% Ir.Pt.	22.0	1.65	15.0	0.65	0.5	0.5	0.80
AD	12.5 mgm	10% Ir.Pt.	23.0	1.70	16.0	0.70	0.5	0.5	0.90
TUBES									
AE	25.0 mgm	10% Ir.Pt.	15.0	3.50	10.0	1.50	1.0	1.0	2.80
AF	50.0 mgm	10% Ir.Pt.	18.0	4.00	13.0	2.00	1.0	1.0	3.80
AG	100.0 mgm	10% Ir.Pt.	26.0	4.00	21.0	2.00	1.0	1.0	5.80

EUROPEAN TYPE NEEDLES AND TUBES



This is the equipment required for handling and crushing the Radium Bromide tubes shown in the first picture.

EUROPEAN TYPE CONTAINERS

European Type Containers contain an inner cell into which the radium is filled. This cell is hermetically sealed in the container and affords added protection particularly in longer containers. Any desired number of cells may be contained by the tube or needle. These containers can be obtained on a custom-made basis to any special specifications required.

DIMENSION CHART

Item Number	CONTENTS	METAL	DIMENSIONS IN M/M				Wall Thickness In M/M	Filtration Equivalent	Weight of Containers In Grams
			External		Internal				
			Length	Diameter	Length	Diameter			
NEEDLES									
EA	One Cell	10% Ir.Pt.	23.5	1.70	16.5	1.10	0.3	0.5	0.80
EB	Two Cells	10% Ir.Pt.	40.0	1.70	33.0	1.10	0.3	0.5	1.30
EC	Three Cells	10% Ir.Pt.	56.5	1.70	49.5	1.10	0.3	0.5	1.70
CELLS									
EX	1.0 to 6.66 mgm	10% Ir.Pt.	16.0	1.0	14.0	0.6	0.2
TUBES									
ED	One No. BX Cell	10% Ir.Pt.	21.5	2.75	16.5	1.15	0.8	1.0	2.30
EE	One No. CX Cell	10% Ir.Pt.	21.5	2.85	16.5	1.25	0.8	1.0	2.50
EF	One No. DX Cell	10% Ir.Pt.	22.5	2.95	17.5	1.35	0.8	1.0	2.60
CELLS									
BX	5.0 mgms	10% Ir.Pt.	16.0	1.0	14.0	0.6	0.2	...	0.2
CX	10.0 mgms	10% Ir.Pt.	16.0	1.15	14.0	0.75	0.2	...	0.3
DX	15.0 mgms	10% Ir.Pt.	17.0	1.25	15.0	0.85	0.2	...	0.3



When the glass tube has been crushed and the Radium Bromide dissolved, it is further filtered to remove the glass and is processed to become a sulphate.

X10 RADIUM APPLICATORS AND NEEDLE INSERTING FORCEPS

Constructed from highest quality forged steel; can be supplied either curved or straight with any of the points indicated. Available in lengths from 6 inches to 9 inches.

X11 MULTIPLE-GROOVE NEEDLE-INSERTING FORCEPS

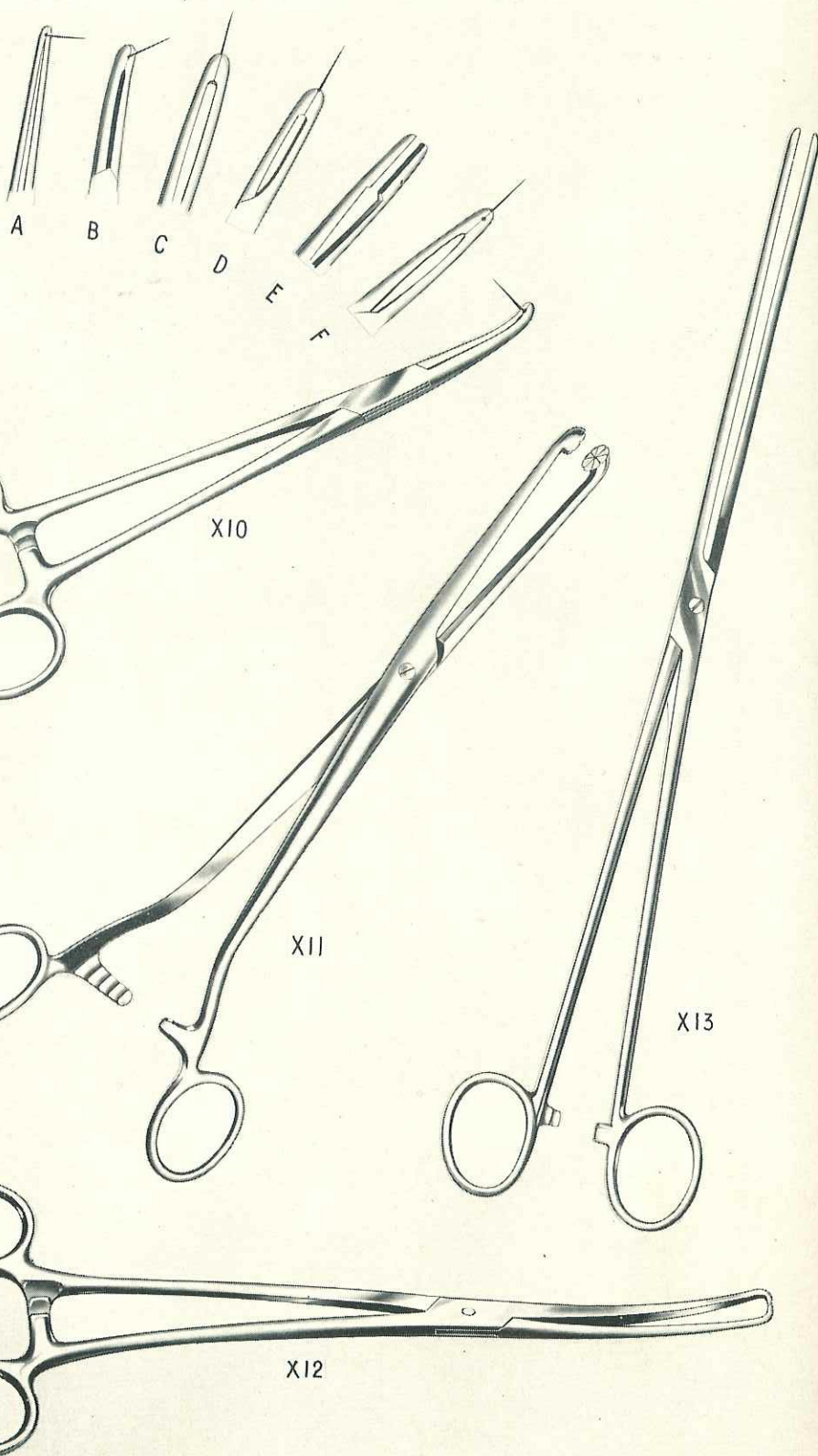
Expertly forged from best quality low carbon steel. These forceps are in popular demand as they insure accurate placement of containers from any angle.

X12 L-TIPPED FORCEPS

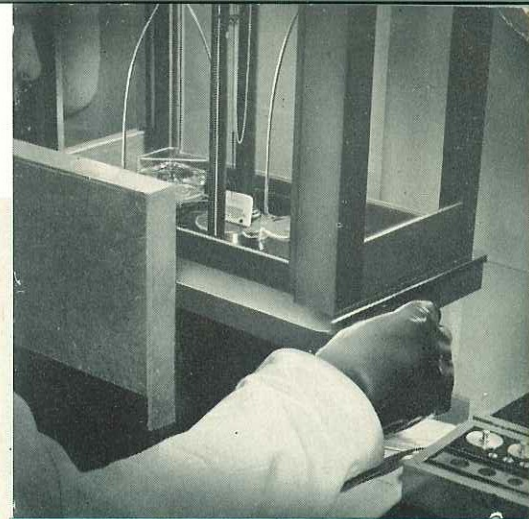
These forceps are specially designed for gripping grooved Cervical Applicators.

X13 NEEDLE INSERTING FORCEPS, 12 INCHES LONG

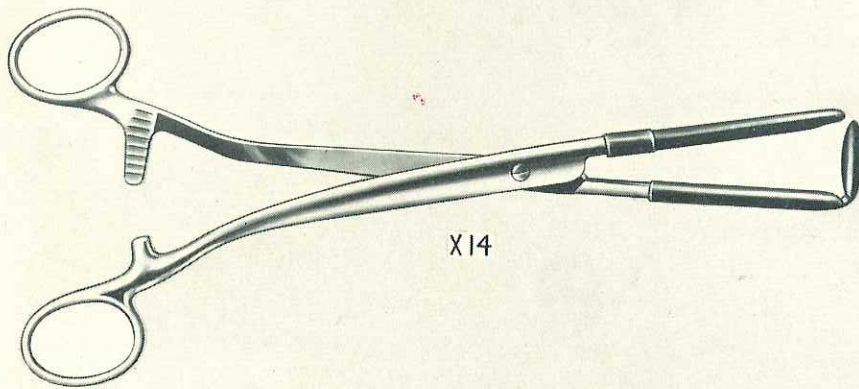
These forceps have been developed for proctostatic use and the extreme length of the points enable proper placement of radium containers to be made.



ACCESSORY EQUIPMENT



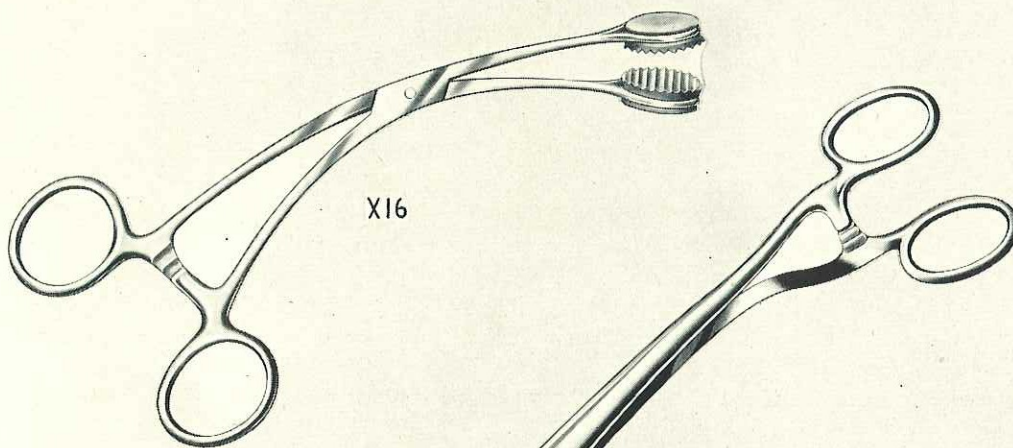
In a dustproof micro-balance the Radium Sulphate is weighed to ensure the accurate content of each needle.



X14

X14 PICK-UP AND HOLDING FORCEPS

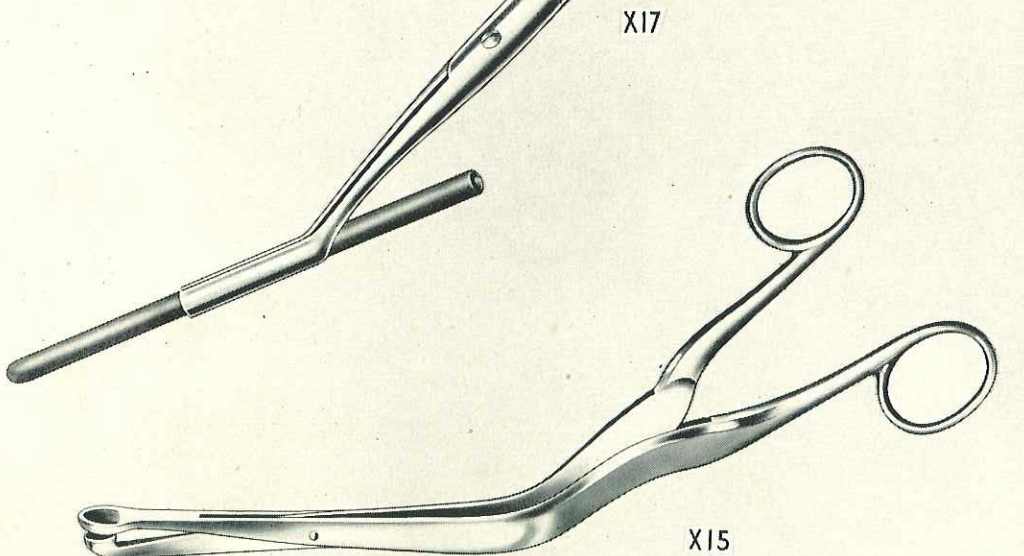
These forceps, with an overall length of 9 inches and improved rubber covered points, safely grip radium containers without fear of mutilation.



X16

X15 BIOPSY PUNCH

This instrument is in great demand for taking samples of suspected cancerous areas.



X17

X16 CURVED HOLDING FORCEPS

These forceps are equipped with spacious jaws of soft serrated rubber and insure maximum safety against slipping of radium containers.

X17 TEPERSON UTERINE FORCEPS

Specially constructed with long points to firmly grasp rubber sacs in intubating operations.



Radium Sulphate is subdivided carefully for packing in needle or tube.

CERVICAL UTERINE APPLICATORS

These applicators are precision made from brass which is chrome plated. Each segment is separated by a diaphragm and easily dismantled for variation of position and sterilizing.

X18 CERVICAL UTERINE APPLICATOR

A very adaptable applicator with four cross arms at right angles and adjustable stem section.

X18A VIEW OF CERVICAL UTERINE APPLICATOR

Showing the ease with which this application may be dismantled for sterilization or loading.

X19 CERVICAL UTERINE APPLICATOR

Similar in construction to X18 but with only a single cross arm.

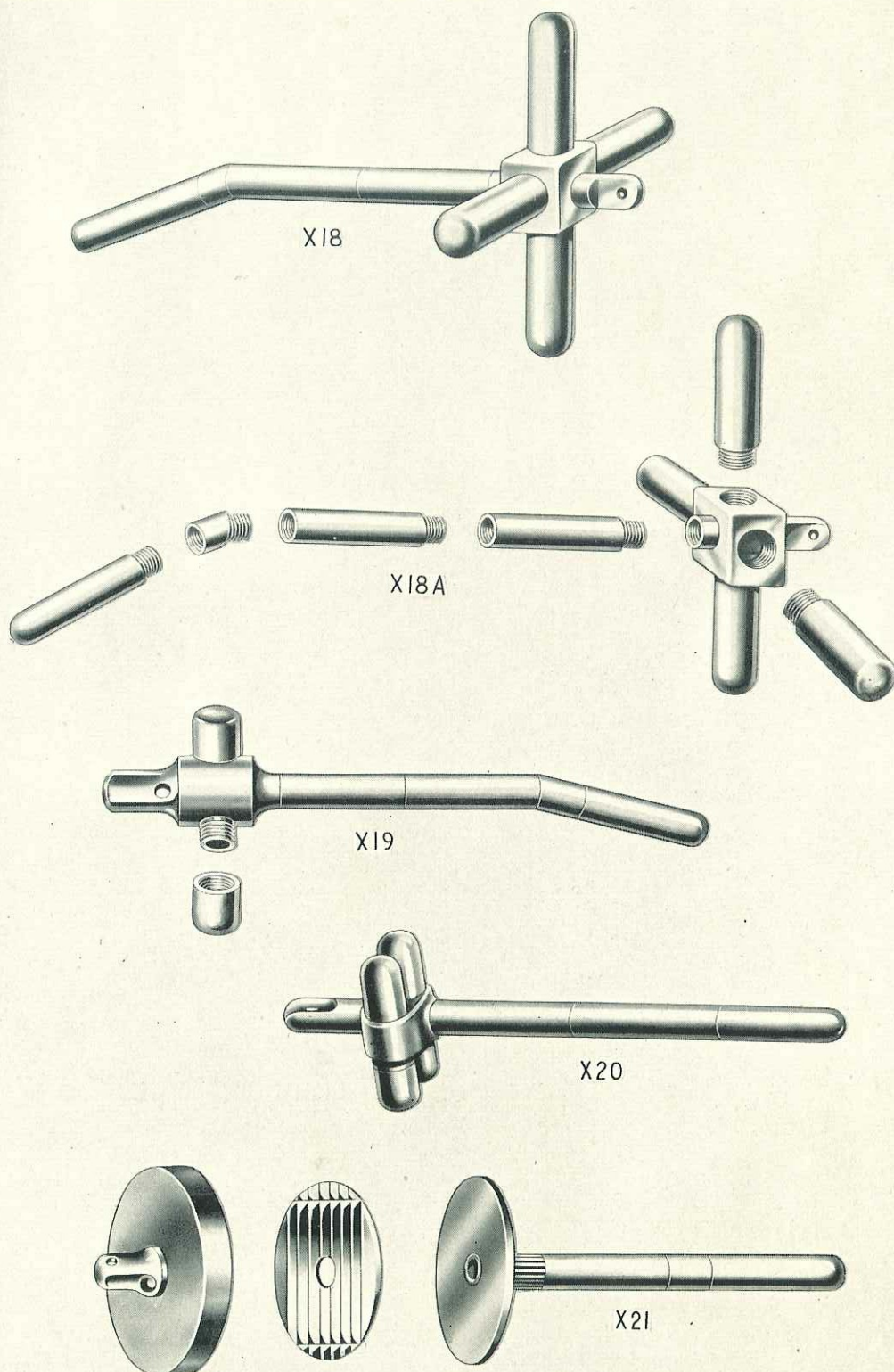
X20 CERVICAL UTERINE APPLICATOR

Equipped with two parallel cross arms. The stem section has three segments for radium containers.

X21 CERVICAL UTERINE APPLICATOR

Has a circular head section into which is fitted a grooved plate which will accommodate a series of radium containers.

RADIUM APPLICATORS AND



ACCESSORY EQUIPMENT



Under glass, radium is fed a grain at a time into needle to make sure needle contains the exact quantity.

X33 A-B-C-D—RADIUM NEEDLE PUSHERS

Set consists of five pushers open at points to accommodate various sizes of needles. Can also be purchased individually.

X33E NEEDLE EXTRACTOR

Rigid tapered point enables a firm grip to be secured in eyelet of radium containers.

X34 LONDON COLPOSTAT

Radium container case is of hard rubber. Metal handle is detachable. Thread hole is provided.

X35 LONDON COLPOSTAT

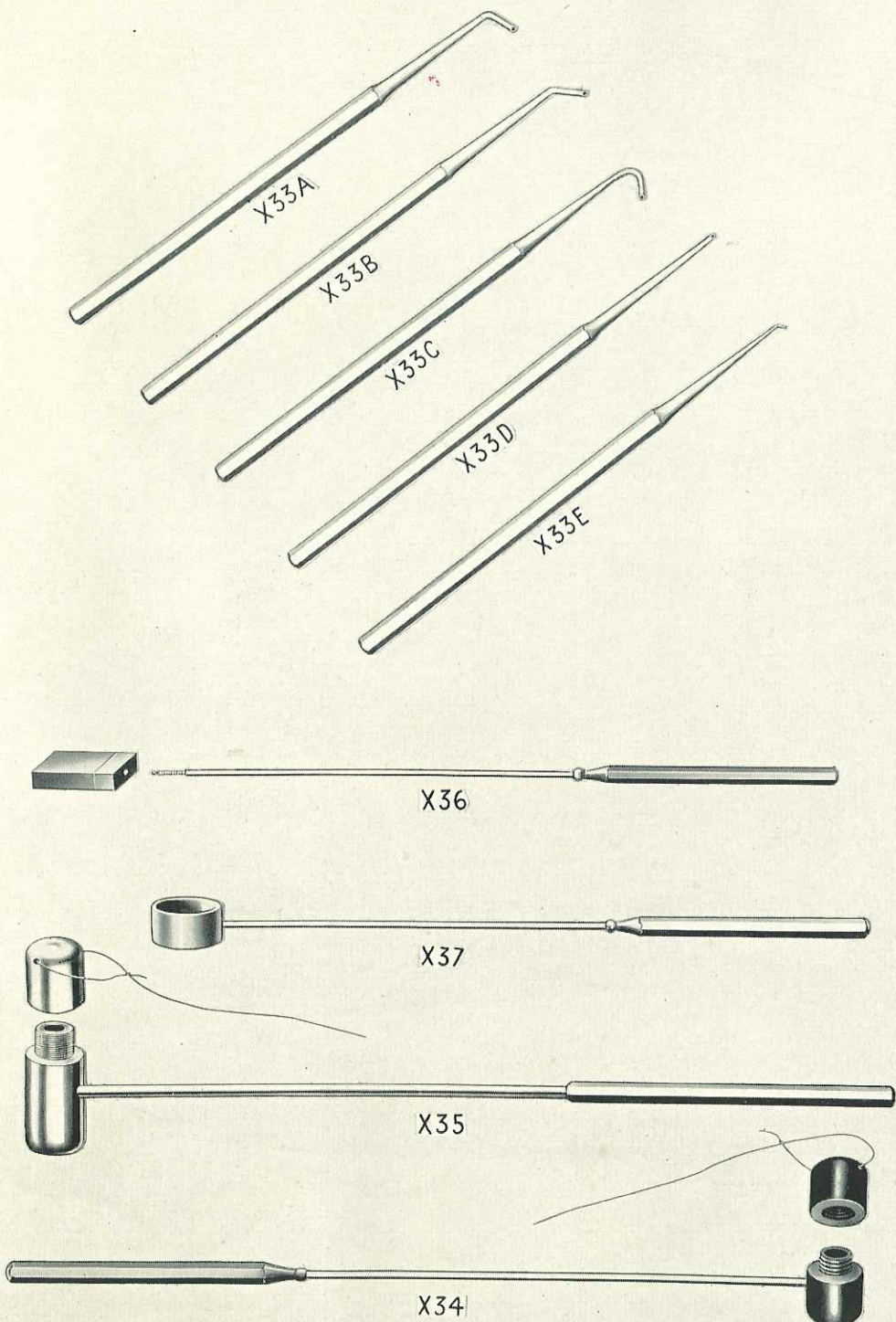
Radium containing head is of lead, chrome plated. The internal diameter will accommodate several needles. Handle is detachable. Thread hole is provided.

X36 FLAT APPLICATOR

All metal. Case is of leaded silver and will accommodate a series of needles or cells. Handle is detachable.

X37 CIRCULAR FLAT APPLICATOR

Designed to serve similar purpose to X36 in cases where a square, flat applicator is not practical.



RADIUM APPLICATORS AND



Radium Sulphate is transferred into funnel of filling apparatus which contains the needle in the jig.

X56 AND A, B, C, METAL SHEATHS

These sheaths are usually constructed to specifications supplied, will be custom made from any required metal to specifications given. The three models shown are respectively; end-screw type with bodkin eyelet; open end sheath with thread hole coinciding with the thread hole of radium container, and center thread sheath with round slotted eyelet.

X27 PROSTATIC NEEDLE APPLICATOR

Overall length is about five inches with threaded chamber to accommodate radium cell at the point.

X28 PICK-UP FORCEPS

Carefully produced from the finest spring steel and equipped with points specially designed to insure safe handling of radium tubes.

X29 LOCK FORCEPS

These forceps are designed for handling radium containers with slotted eyelets. The improved locking device insures a rigid grip.

X30 CROSS-ACTION FORCEPS

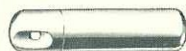
The unique design of these forceps affords rigid grip on radium containers, needles or cells.

X31 PICK-UP FORCEPS

Especially designed for handling radium needles or cells.

X32 PICK-UP FORCEPS 12 inches long

The adequate length of these forceps insures maximum protection in the placement or removal of radium needles, cells or tubes.



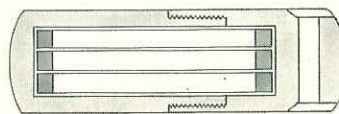
X 56 A



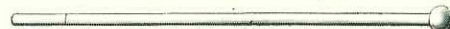
X 56 B



X 56 C



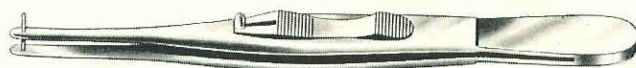
CROSS-SECTION OF SHEATH



X 27



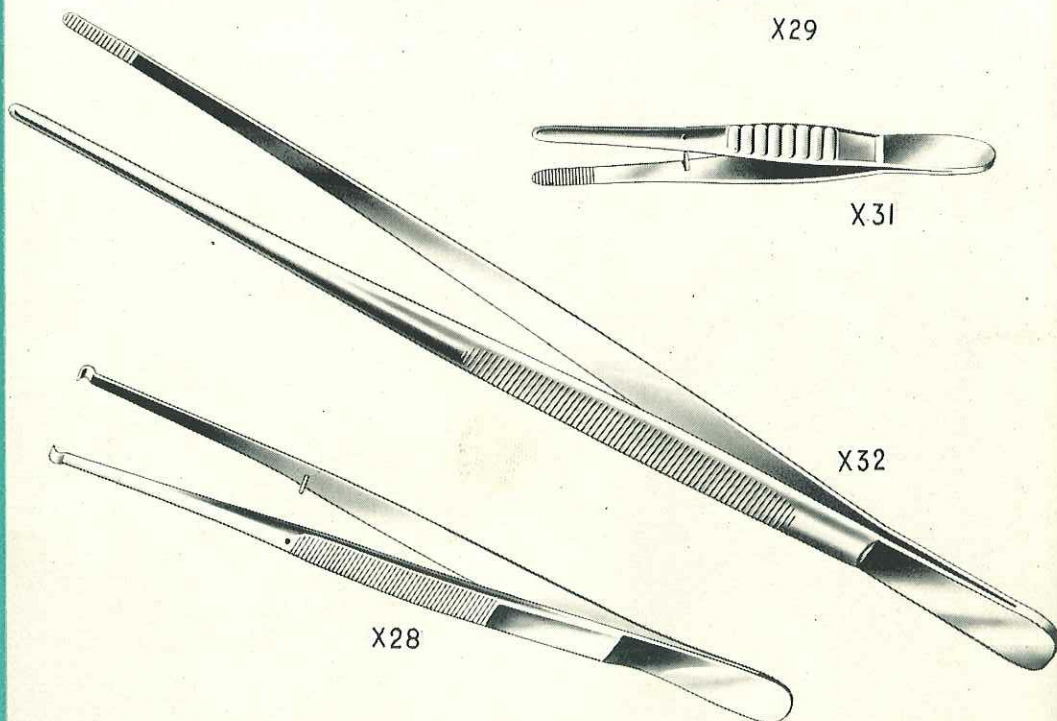
X 30



X 29



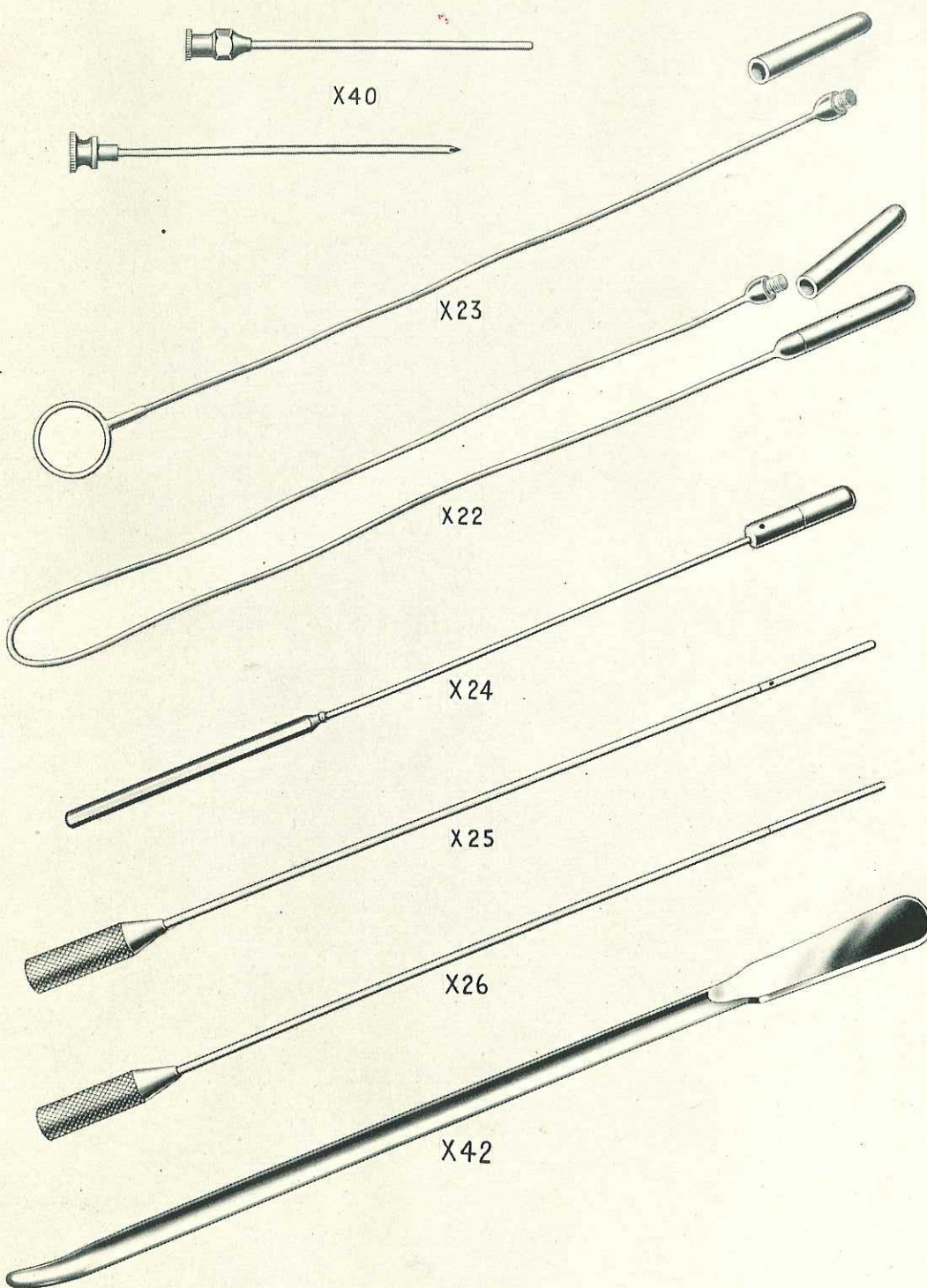
X 31



X 32

X 28

ACCESSORY EQUIPMENT



Needle to be filled is placed in filling jig. Whole operation is performed under glass and behind lead shields for complete protection of personnel.

X22 NASAL APPLICATOR

This applicator is equipped with tandem tubes on a flexible wire handle. Chrome plated throughout.

X23 ANTRUM APPLICATOR

Tube for radium container is fixed to a flexible handle.

X24 UTERINE APPLICATOR

A single tube is attached to a removable handle. Thread holes provide for the withdrawing of the tube.

X25 NASAL APPLICATOR

Similar in all respects to X26 but with detachable flexible handle. Tube is equipped with thread holes.

X26 NASAL APPLICATOR **Burnham Crowe Type**

A comparatively new development found to be of great value in Naso-Pharyngeal Therapy. Tube is constructed of Monel metal with a wall thickness of 0.3 mm. Radio-active length 15 mm, external length 21 mm, and external diameter 2.3 mm. Permanently attached rigid handle.

X40 TROCAR-CANNULA SET

Set consists of one piercing instrument, two plungers and guide tube.

X42 RADIUM SOUND

Constructed of high polished metal that will successfully withstand sterilizing. Available in sets of ten from twelve to thirty Fr. inclusive.

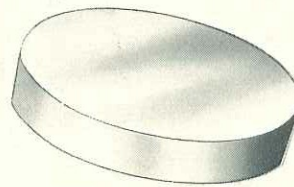
RADIUM APPLICATORS AND



The iridio platinum needle, now filled with Radium Sulphate, is closed with a screw cap and solder sealed with a blow-torch.

X38 CIRCULAR PLAQUE

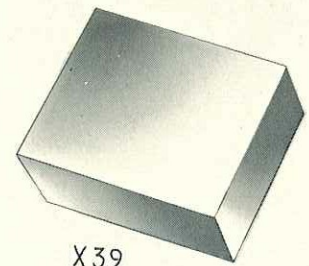
Produced to specified dimensions, strength and metallic construction as specified.



X38

X39 SQUARE PLAQUE

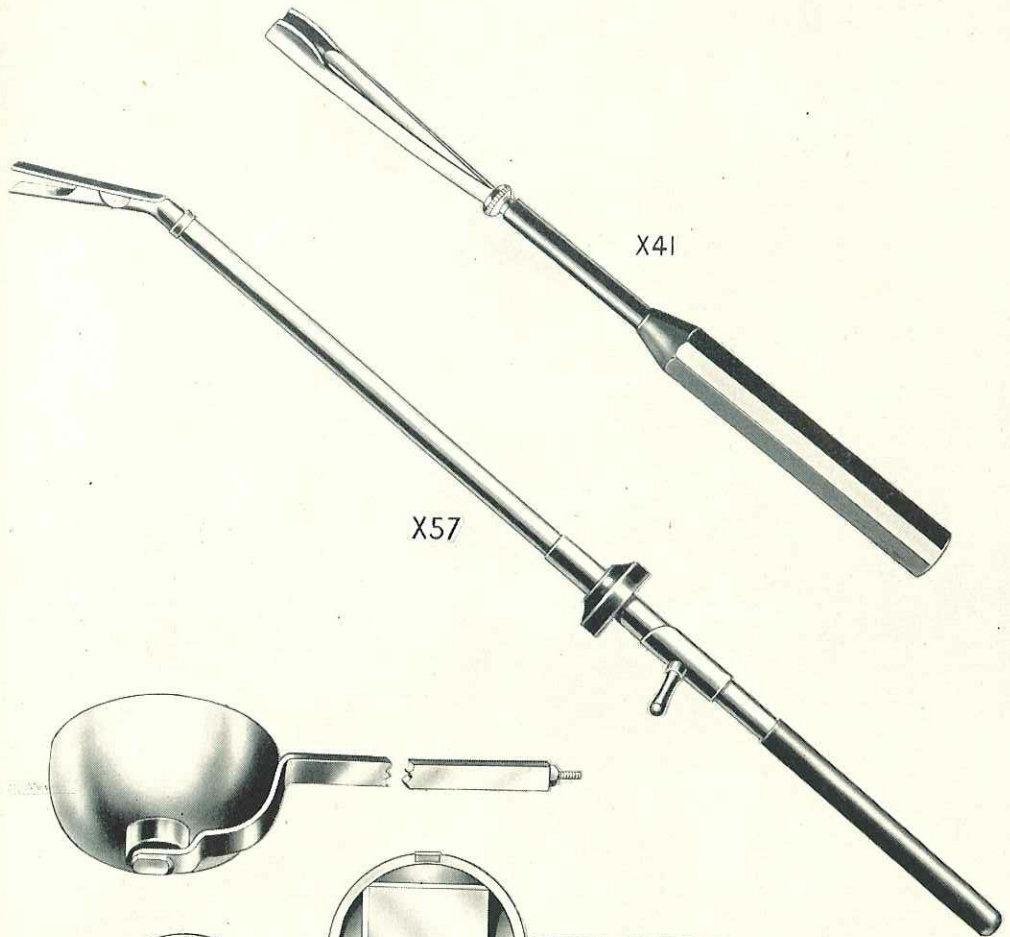
Similar to X38 with the exception of shape.



X39

X41 SCREW CAP SCREEN OPENER

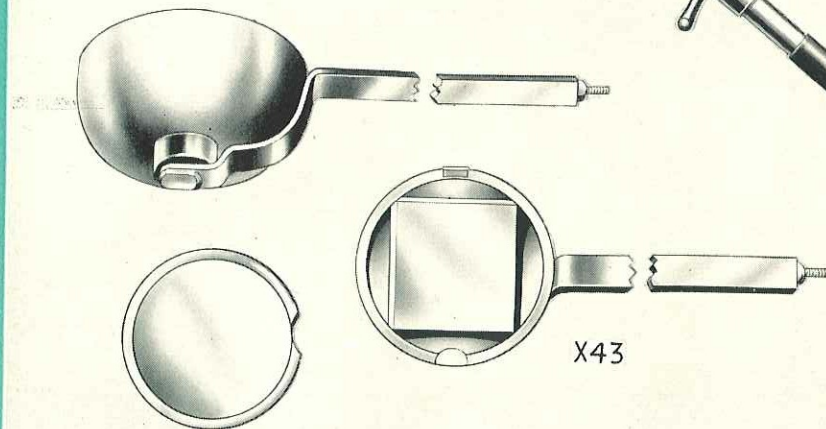
This improved opener overcomes difficulty in opening tightly closed screens.



X41

X43 HEALY VAGINAL BOMB

Constructed of brass throughout with 12-inch handle on which bomb can be placed in two positions; horizontal and vertical. Inner cavity of bomb will accommodate a series of radium containers.

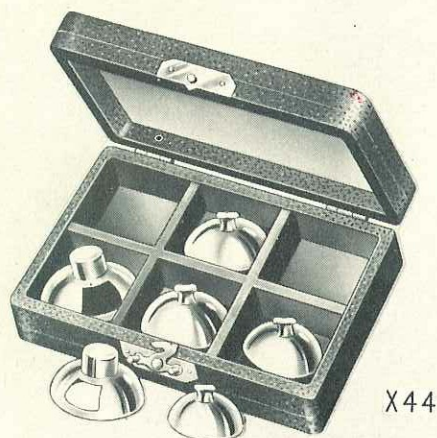


X43

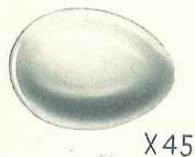
X57 CURTISS PICK-UP FORCEPS

The ingenious design of these forceps insures a positive grip on needles and cells of various dimensions.

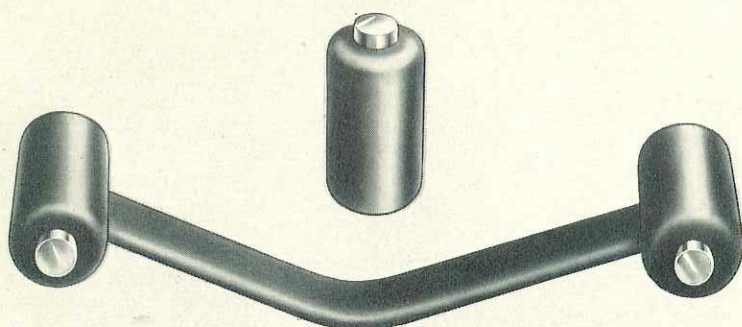
ACCESSORY EQUIPMENT



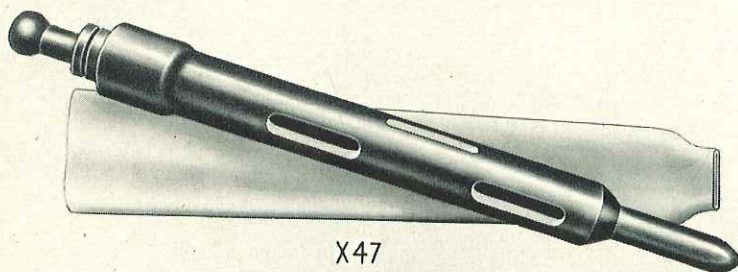
X44



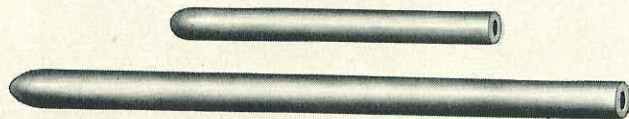
X45



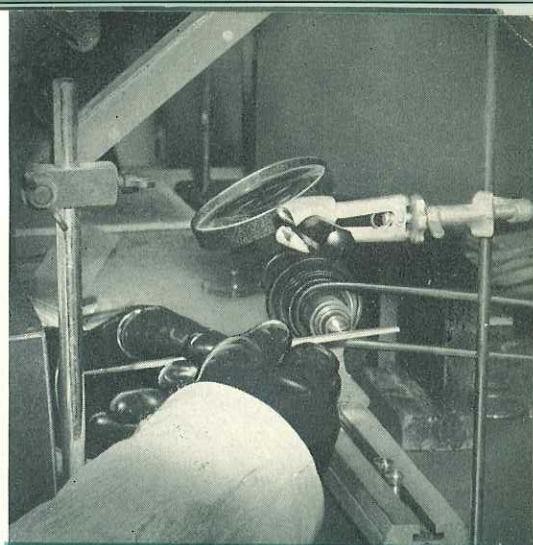
X46



X47



X48



The needle is finished on a lathe, all roughness and irregularity caused by sealing process being removed.

X44 SET OF EYE SHIELDS

Set consists of two pairs of protectors and two outer shields. Neatly packed in leather bound case.

X45 EYE SHIELD

This shield is of brass. Gold plated.

X46 RUBBER COLPOSTATS

Set consists of two rubber corks on a rubber covered spiral separator and a single rubber cork.

X47 RECTAL APPLICATOR

Applicator is of hard rubber with spaced openings. A soft rubber sleeve is provided for protection.

X48 BLIND END RUBBER TUBES

Made of best quality rubber available in the following sizes:

150 mm long x 5 mm inner diameter

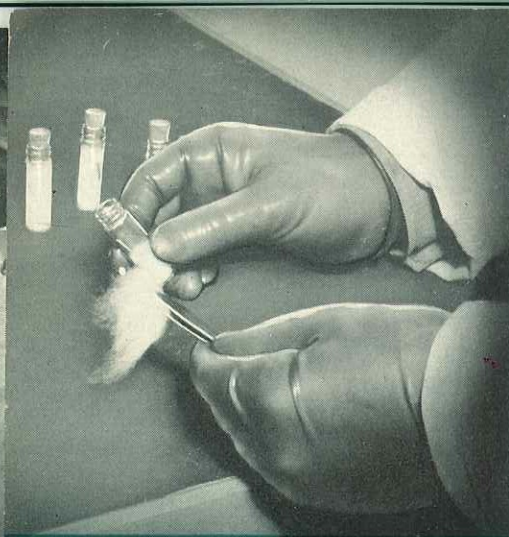
80 mm long x 6 mm inner diameter

55 mm long x 5 mm inner diameter

150 mm long x 7 mm inner diameter

Supplied in thin or medium thicknesses.

RADIUM APPLICATORS AND



The finished needle is sealed for a period of the time in a cotton-filled glass tube. If there is any leakage the radium contaminates cotton.

X49 LEAD CARRYING CASE

This case has proved very popular for transporting small quantities of radium. Lead protection of 1 inch in all directions is afforded and the case is chrome finish throughout.

X50 SINGLE DRAWER STORAGE CABINET

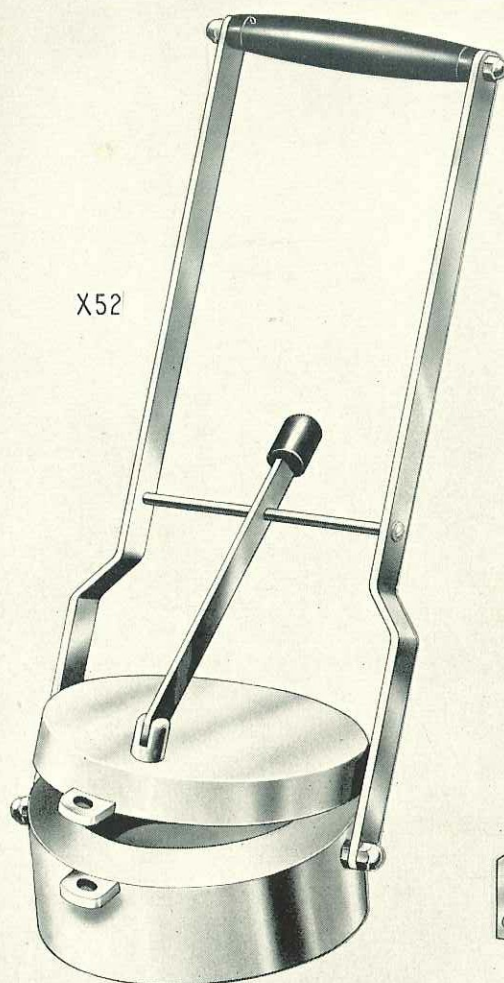
Two inches of lead protection in all directions is provided. Cabinet has chrome face plate and drawer front and is linoleum covered to eliminate danger of secondary radiation.

X51 FOUR DRAWER STORAGE CABINET

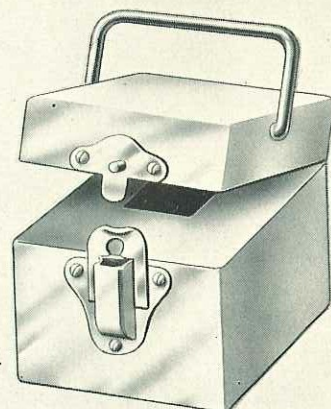
Lead protection of two inches is provided in all directions. The drawer fronts and face plate are chrome plated; cabinet is linoleum covered for added protection.

X52 OPERATING ROOM CARRYING CASE

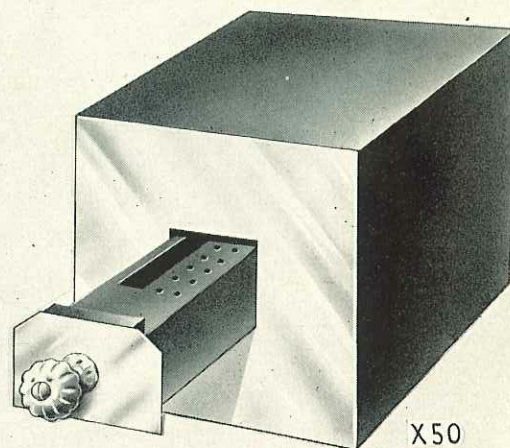
Lead filled case is chrome plated and provides ample protection for transportation of radium from storage vault to operating room. Rigidly constructed with improved opening device.



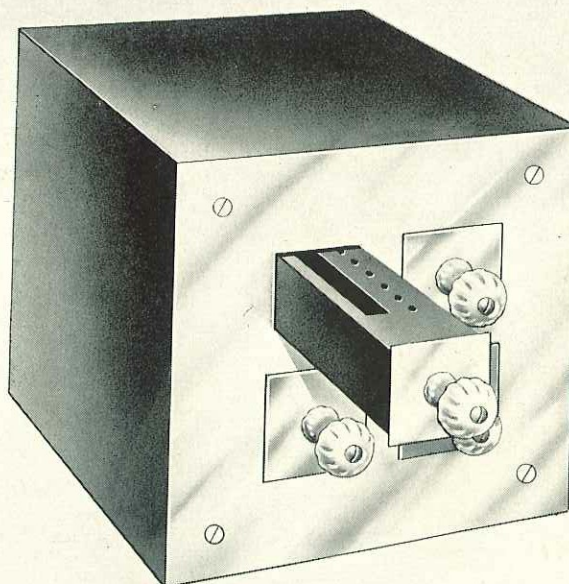
X52



X49

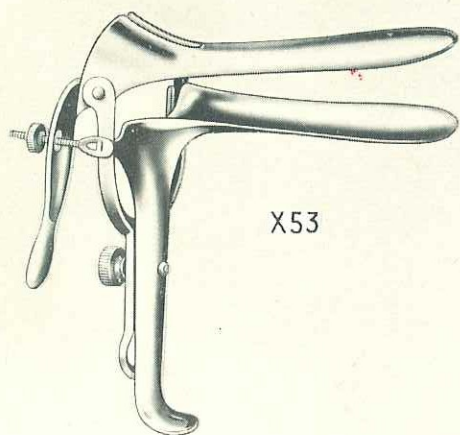


X50

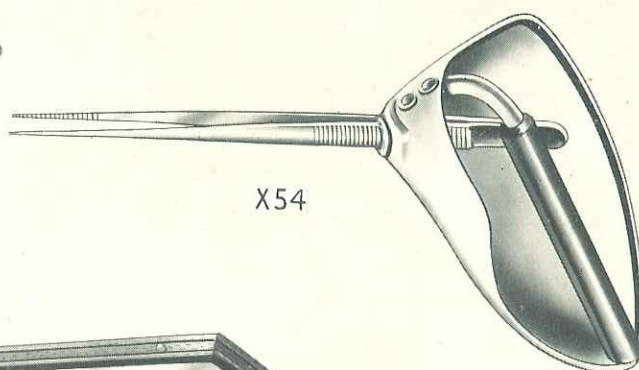


X51

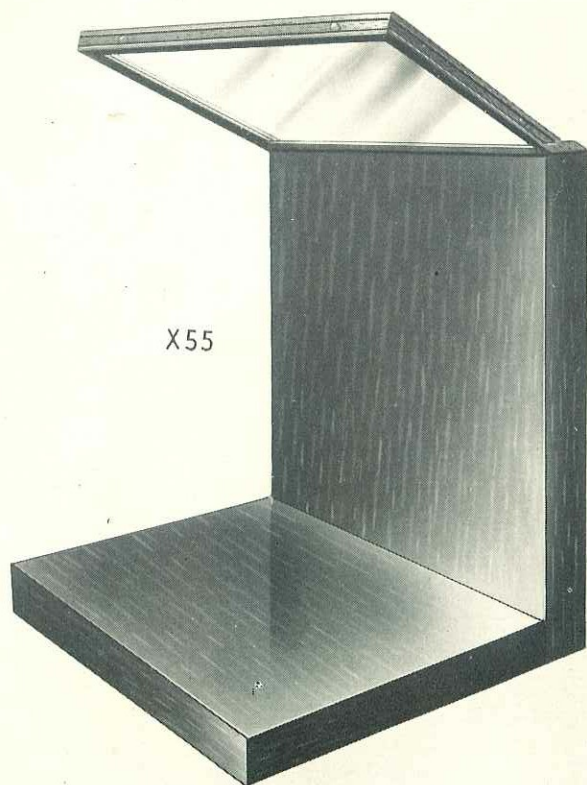
ACCESSORY EQUIPMENT



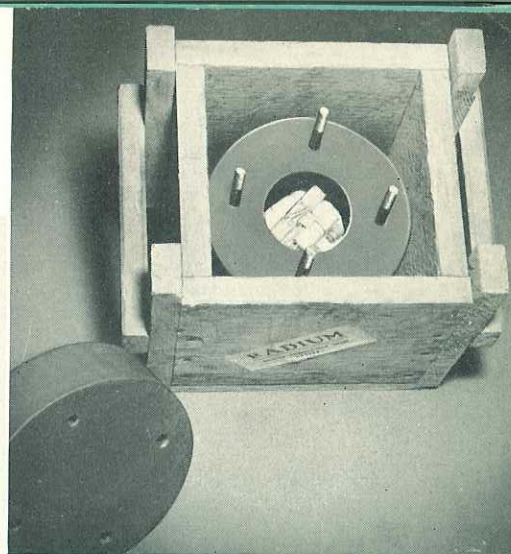
X53



X54



X55



Approximately \$8,000 worth of radium needles in lead cylinder used for shipping. Lead serves as a protection against harmful gamma radiation.

X53 VAGINAL SPECULUM

Accurately machined and of highly polished metal to withstand sterilizing; locking devices are provided.

X54 ARMoured GAUNTLET

The 12-inch forceps are provided with a lead shield for protection of the hands against radiation. While of rugged construction, this protective forcep is extremely light.

X55 LEAD PROTECTOR SHIELD

Moulded from lead of two inches thickness and provided with a leaded glass top; this shield provides maximum protection to the operator. Depth is approximately 12 inches and height 11 inches.

NEEDLE POINTS AND EYELETS

EYELETS

E1—Bulldog Eyelet

E2—Bodkin Eyelet

E3—Rabelgar Eyelet

E4—Standard Rainure Eyelet

E5—Hopwood or Gask Eyelet

E6—Aplati or Flat Eyelet

E7—Aiguille Emanation Eyelet

NEEDLE POINTS

P1—Long Conical Point

P2—Short Conical Point

P3—Long Trocar Point

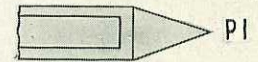
P4—Short Trocar Point

P5—Concave Trocar Point

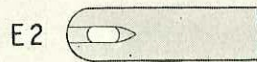
P6—Bullet Point



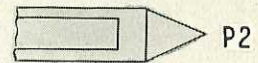
E1



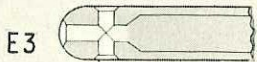
P1



E2



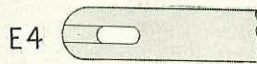
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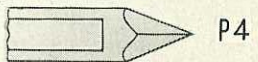
E3



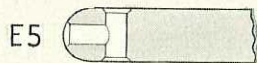
P3



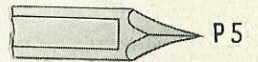
E4



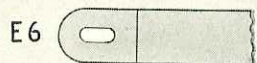
P4



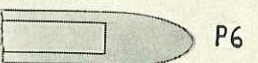
E5



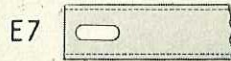
P5



E6



P6



E7

COMPLETE SERVICE FACILITIES FOR ALL X-RAY AND RADIUM EQUIPMENT

X-Ray and Radium Industries Ltd. is now in a position to give prompt competent service on all types of X-Ray and radium equipment for medical use.

This service includes repair and maintenance of machines, supply of spare parts, and complete stocks of X-Ray accessories and supplies including X-Ray Film and Chemicals, and radium container units, protective shields, storage cabinets, etc. are maintained in all the principal cities in Canada.

A technical staff is available for advice and service in Montreal, Quebec City, Toronto, Winnipeg, Calgary, Edmonton, and Vancouver. As leaders in this field, X-Ray and Radium Industries can provide you with everything needed to keep your equipment in first-class operating condition.

Exclusive distributors in Canada for the famous Keleket X-Ray line.

THE LONG SEARCH

In the middle ages there was a rich and active silver mine at Joachimsthal, in Bohemia. The ore from which the silver was extracted was pitchblende. After the extraction of silver the remainder was discarded. It accumulated and lay for centuries around the mines.

About 100 years ago, uranium compounds were found to be valuable as pigments in the ceramics industry, producing brilliant oranges and yellow and a rich black in porcelain, enamel, tile and other products. The pitchblende dumps were then worked again for uranium compounds . . . and the residue again discarded.

A French scientist, Henri Becquerel, doing research into the fluorescent quality of pitchblende, established the fact that it contained some ingredient other than uranium which gave off a radiation. He gave the task of tracking down the source of this radiation to Pierre Curie, electrical engineer and physicist, and to his wife, Marie, a research chemist. They began a long series of ingeniously contrived separations. For four years they worked, reducing the pitchblende until the radioactivity was concentrated in a pinch of salt, a compound of radium practically pure.

Thus, in 1896, the long search was ended and a new one began . . . the discovery of workable quantities of ore. Until 1912 it seemed the only source of radium was the dump heaps of Joachimsthal. Then radium in greater quantities was found in carnotite ores in Colorado and Utah. This brought the price down to \$125,000 a gram . . . but still the search went on. In the Belgian Congo pitchblende was found, sufficiently rich, that combined with new refining methods, the price was reduced to \$70,000 a gram, eliminating American competition. Since then, the latest step in the search has been the discovery of pitchblende in Canada. The development of still more economical methods of processing and the new interest in uranium as a fissionable element has reduced the price of radium still further. Now, no hospital or medical institution need be without the use of this magic mineral.