



Surgical instruments

SEMMELWEIS EGYETEM
Arc- Állcsont- Szájsebészeti és Fogászati
Klinika
BUDAPEST

- around 1600 surgery and dentistry became an academic profession
- hand-minded profession



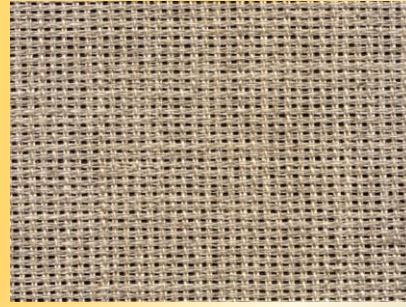
Louí the 14th



butterbur



cobweb



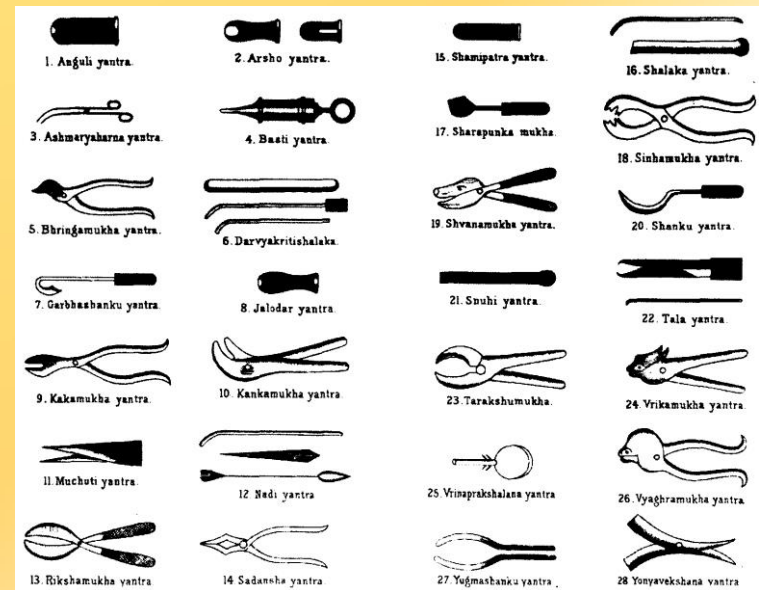
linen

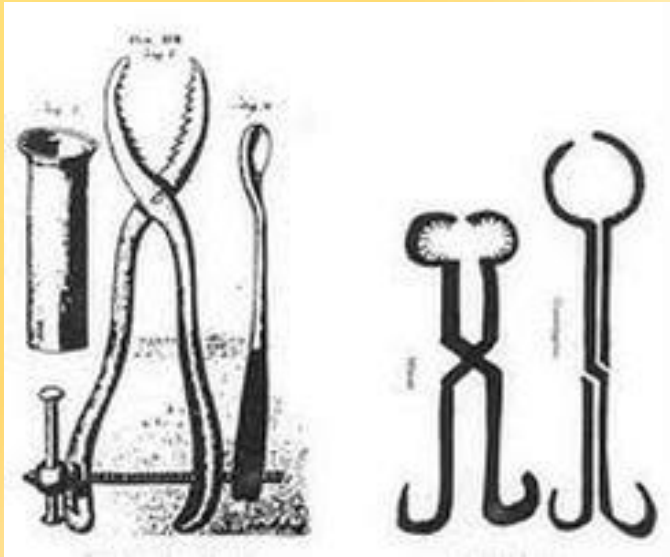


fire ant

- foreign body / removal of painful teeth
- haemostasis
 - wound closure
 - haemostatics

- BC 600, **INDIA** – Sushruta's book





serrated working end



- Abu Al-Qasim (CE 936-1013)

- the instruments maintain the style of the certain age
 - mussel, horn, obsidian stone
 - wood + hardware
 - pearly handle
 - ivory handle
 - ebony + hardware
 - metal
 - stainless steel
 - hard
 - elastic
 - non-reflecting surface

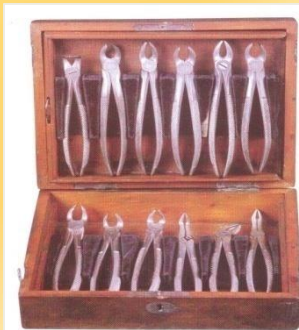
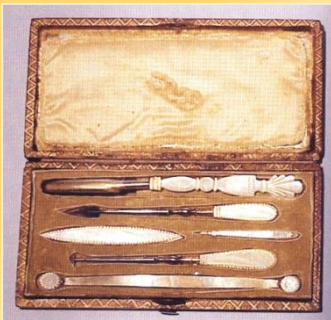
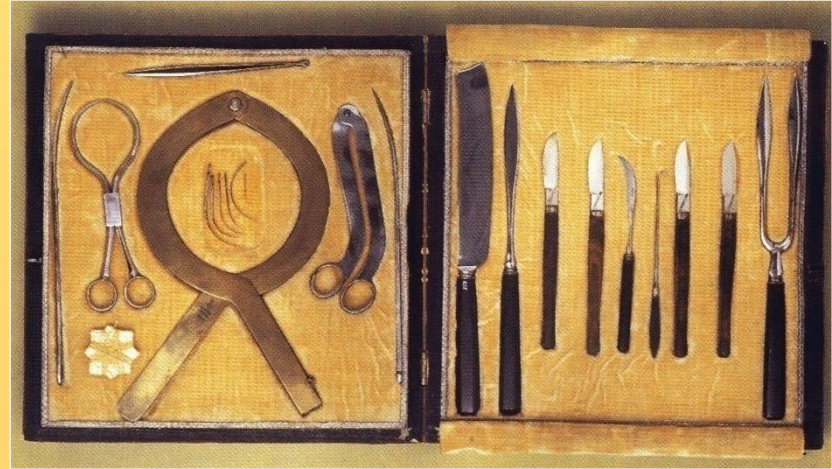


*obsidian
stone*

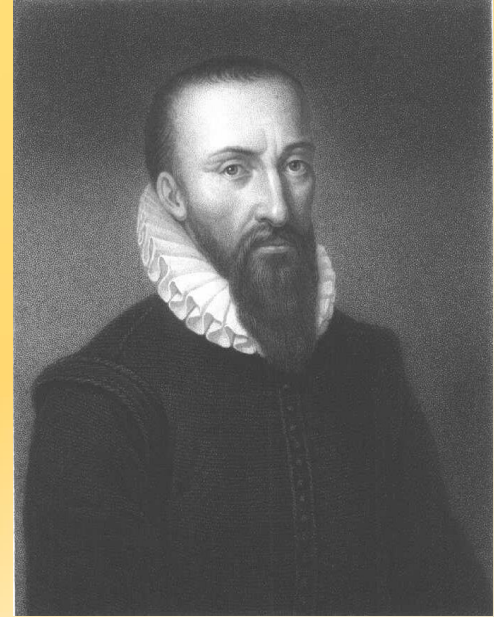
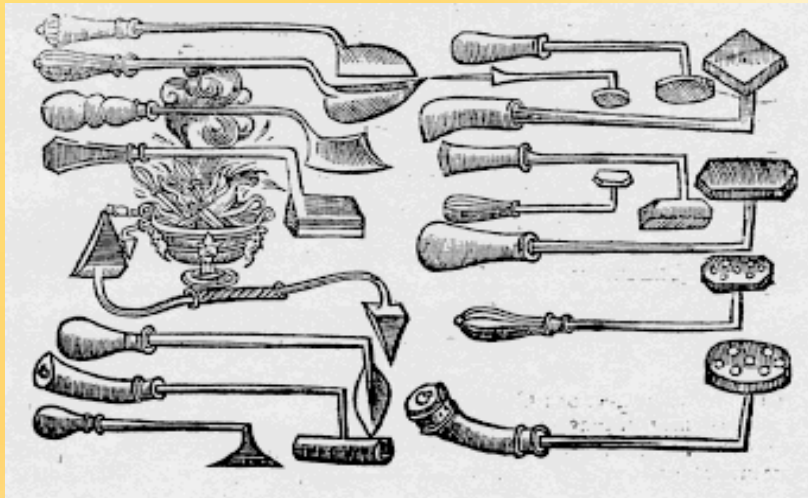


ebony

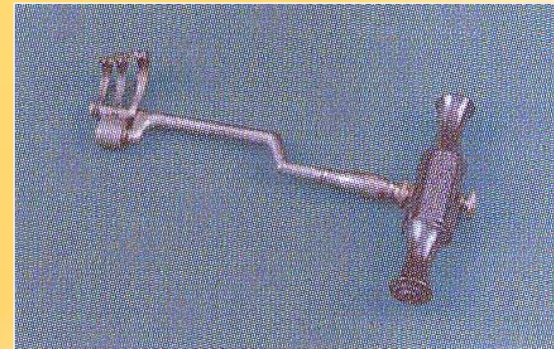
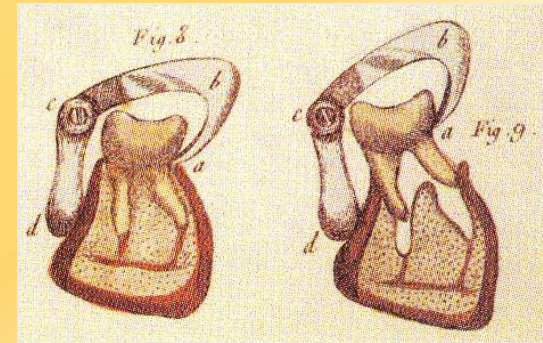
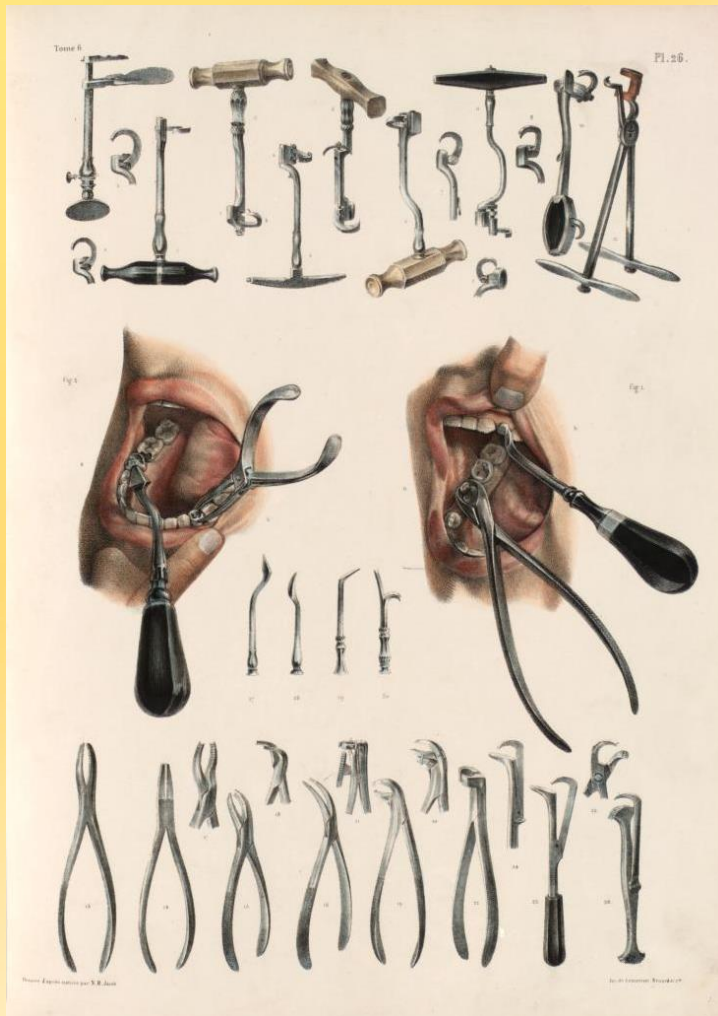
- more instruments
- storage



- Ambroise Paré
 - barber and surgeon
 - first tooth reimplantation
 - heated instruments

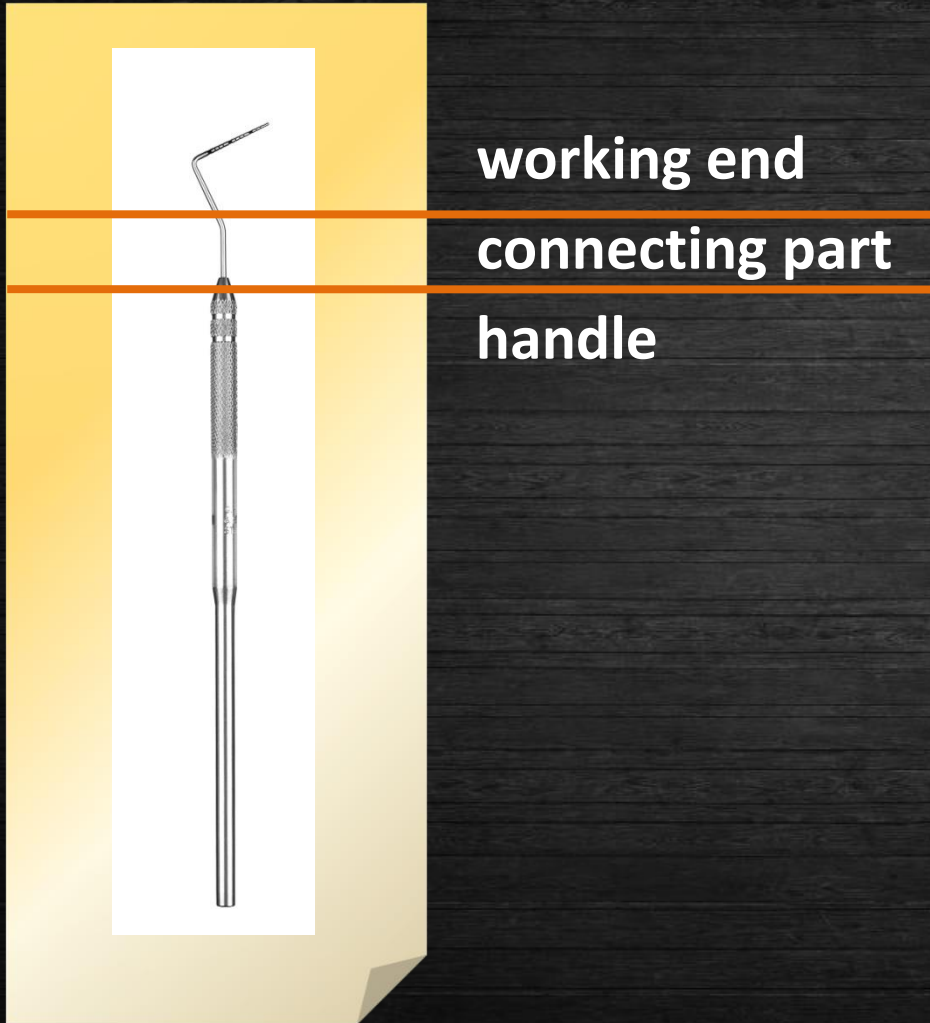


(1510-1590)



- **Definition:** mediate the movement of the human hand, and modify the force and direction of the hand's movement.

Parts of the manual (hand) instruments



Formal **characteristics** of instruments



Classification of instruments according to their usage:

1. Diagnostic instruments
2. Operating instruments
 - to separate tissues
 - to grab tissues
 - to expose the operation area
 - to unite the wound
3. Other instruments



mirror



chisel



scissor



blunt
probe



raspatory



bone
rongeurs



tweezer



mallet



crown
forceps



spoon



root
forceps



haemostat



probe



retractor



scalpel

DIAGNOSTIC INSTRUMENTS

- mirror
- retractor
- reflektor



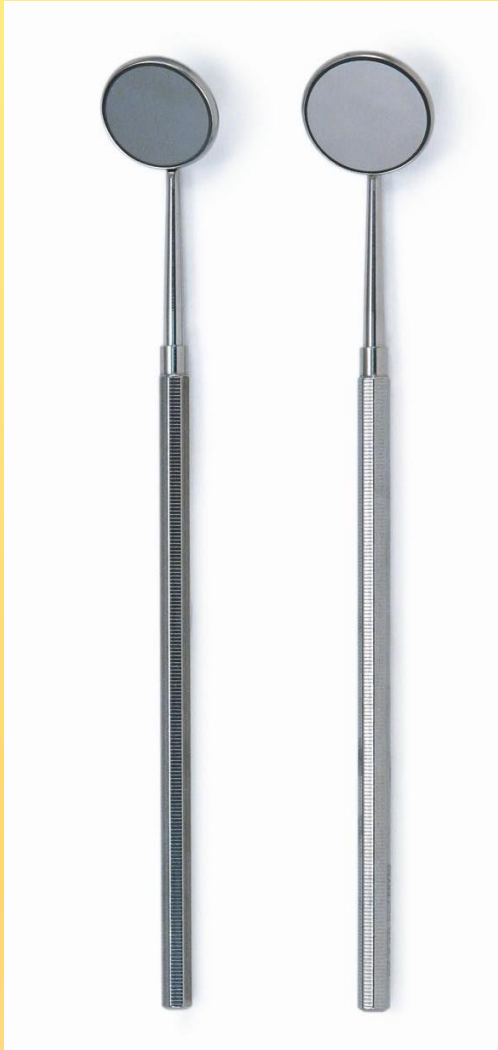
*dental
mirror*

Handle (anatoformity)

- hexagonal or round
- serrated or smooth
- for single use

Mirror (working end) 22 – 24 mm

- plane or concave
- changeable



dental mirror



dental mirror

DIAGNOSTIC INSTRUMENTS



probe



blunt probe

- for single use and multiple use
- used for the palpation of fine parts of hard tissues
- one or double ended



probe

INSTRUMENTS FOR TISSUE SEPARATION

INSTRUMENTS FOR TISSUE SEPARATION

- Surgical scalpel
- Scissors
- Raspatories
 - Balogh gum separator
 - Williger raspatory
 - Freer raspatory
- Chisels
 - Móczár
 - Partsch
- Mallet
- Spoons (curettes)
 - Volkmann
 - Kerpel
 - Lucas

INSTRUMENTS FOR TISSUE SEPARATION



scalpel

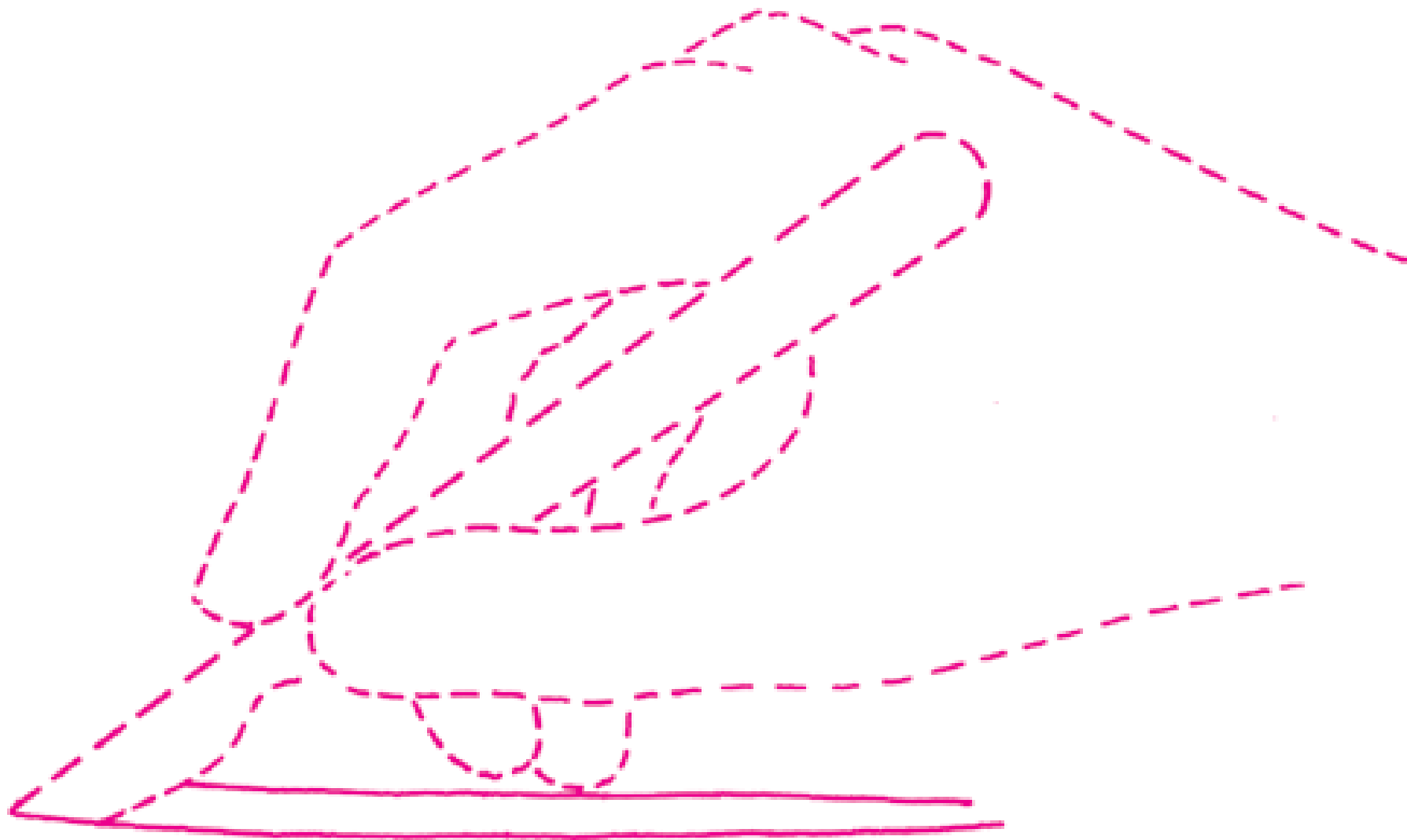


INSTRUMENTS FOR TISSUE SEPARATION



scalpel





KOMLÓS

INSTRUMENTS FOR TISSUE SEPARATION

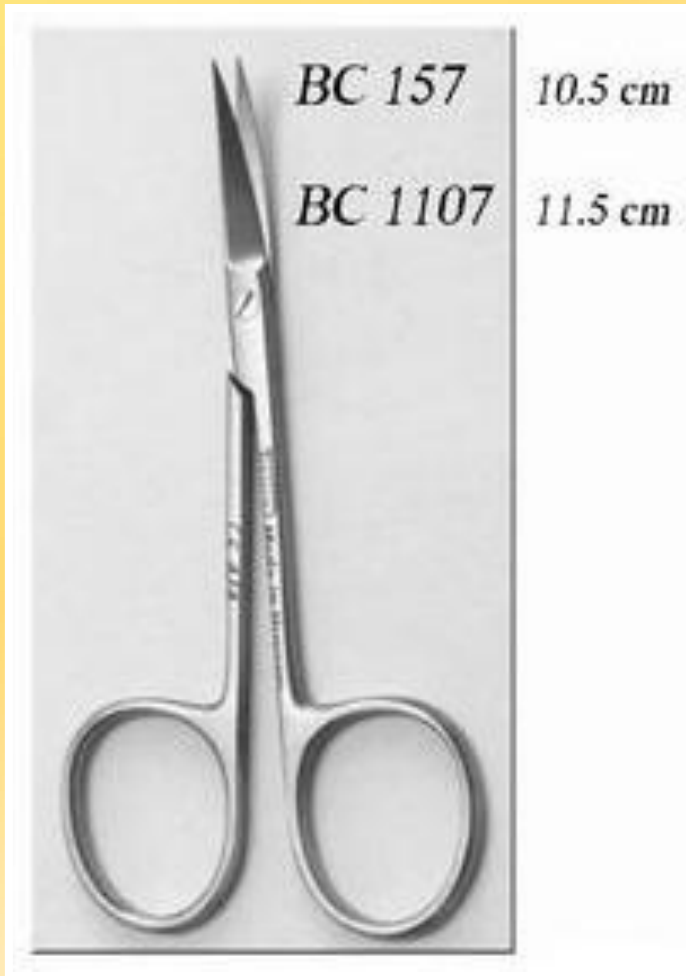
- Straight or bent
- Based on its tip:
 - blunt-blunt
 - blunt-pointed
 - pointed-pointed



scissor

In oral surgery the 11 cm pointed-pointed so-called **Iris scissors** are recommended.

INSTRUMENTS FOR TISSUE SEPARATION



Iris- scissor



scissor

INSTRUMENTS FOR TISSUE SEPARATION



LA GRANGE
11 cm
BC 1000



DO 1210
FOGHÚS OLLÓ 12 cm
ZAHNFEISCHSCHERE
GUM SCISSORS



BC 1851 14.5 cm
BC 1852 18 cm
BC 1853 20 cm
KÖTSZEROLLÓ
VERBANDSCHERE
BANDAGE SCISSORS



scissor

INSTRUMENTS FOR TISSUE SEPARATION



scissor

INSTRUMENTS FOR TISSUE SEPARATION



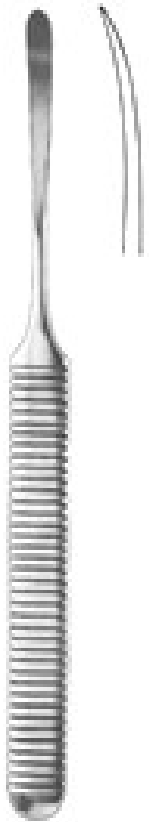
the usage of the raspatory



raspatory

- separation of soft and hard tissues
- PERIOSTEAL ELEVATOR

INSTRUMENTS FOR TISSUE SEPARATION



Williger



Freer



raspatory

INSTRUMENTS FOR TISSUE SEPARATION

Balogh- gum separator

About 180 mms long, double ended paired instrument with a hexagonal handle

It is used to separate marginal gum from the neck of the tooth.



raspatory



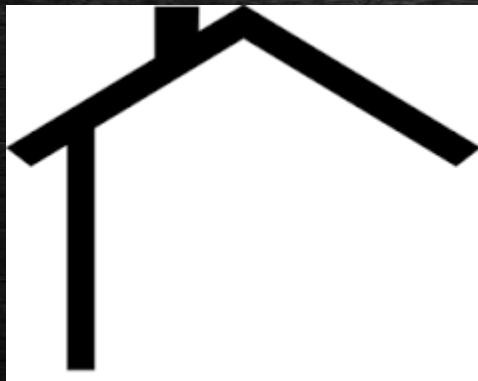
Balogh raspatory

INSTRUMENTS FOR TISSUE SEPARATION

- separation of hard tissues
- elevator
- gum separator
- bone removal (+ mallet)
- bone scraper

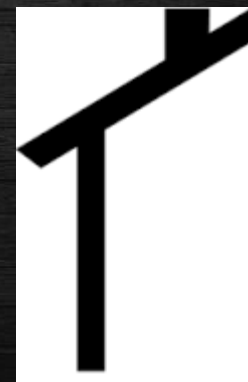


chisel



MÓCZÁR


KOMLÓS



PARTSCH


INSTRUMENTS FOR TISSUE SEPARATION

LAPOS VÉSŐK -
FLACHMEISSEL -
BONE CHISELS




Partsch
17 cm / 6 3/4 "

FL 1183 3 mm
FL 1184 4 mm
FL 1185 5 mm
FL 1186 6 mm




Partsch
14 cm / 5 1/2 "

FL 1173 3 mm
FL 1174 4 mm
FL 1175 5 mm
FL 1176 6 mm



Lambotte


FL 1101 4 mm
FL 1102 6 mm
FL 1104 8 mm
FL 1106 10 mm



Moczár

DD2 2 mm
DD3 3 mm
DD4 4 mm
DD5 5 mm
DD6 6 mm

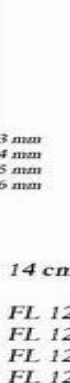
VÁJT VÉSŐ
HOHLMEISSEL
GOUGES CHISELS



17 cm / 6 3/4 "

FL 1223
FL 1224
FL 1225
FL 1226

3 mm
4 mm
5 mm
6 mm



14 cm / 5 1/2 "

FL 1213
FL 1214
FL 1215
FL 1216



chisel

INSTRUMENTS FOR TISSUE SEPARATION



mallet

- plumbic lining



bone harvesting (Piezo surgery)



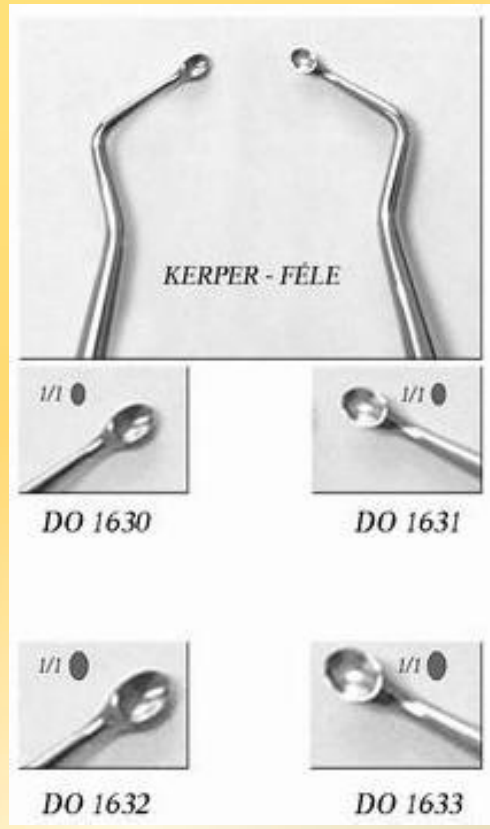
bone block removal with chisel

INSTRUMENTS FOR TISSUE SEPARATION

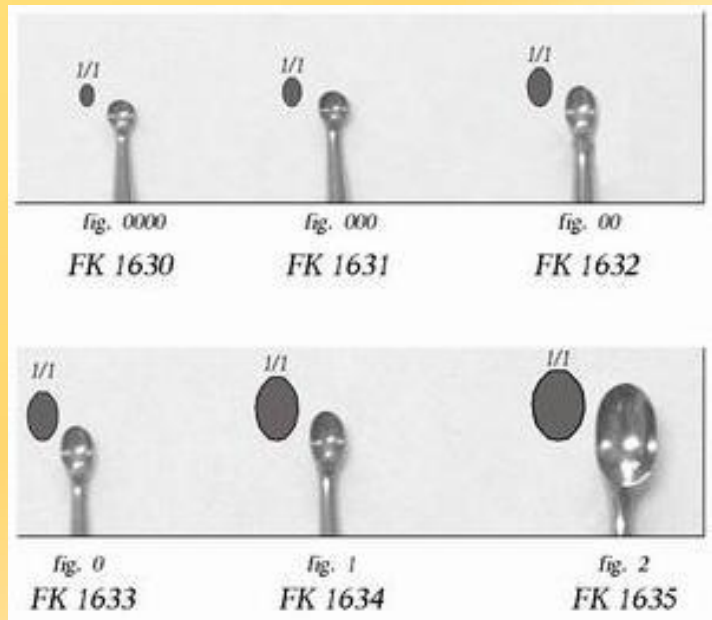
- curette spoons (soft tissue protection)



spoon



Kerpel



Volkmann

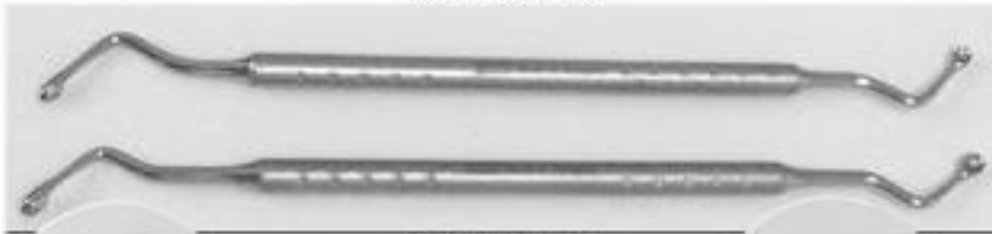
INSTRUMENTS FOR TISSUE SEPARATION



spoon

ÉLESKANALAK - SCHARFE LÖFFEL -
BONE CURETTES

DO 1655



DO 1656



Hemingway

INSTRUMENTS FOR TISSUE SEPARATION



spoon



Lucas

INSTRUMENTS FOR TISSUE GRABBING

INSTRUMENTS FOR TISSUE GRABBING

- Tweezers – dental, surgical, anatomical
- Haemostats
- Crown and root forceps
- Bone rongeurs

INSTRUMENTS FOR TISSUE GRABBING



anatomical



surgical

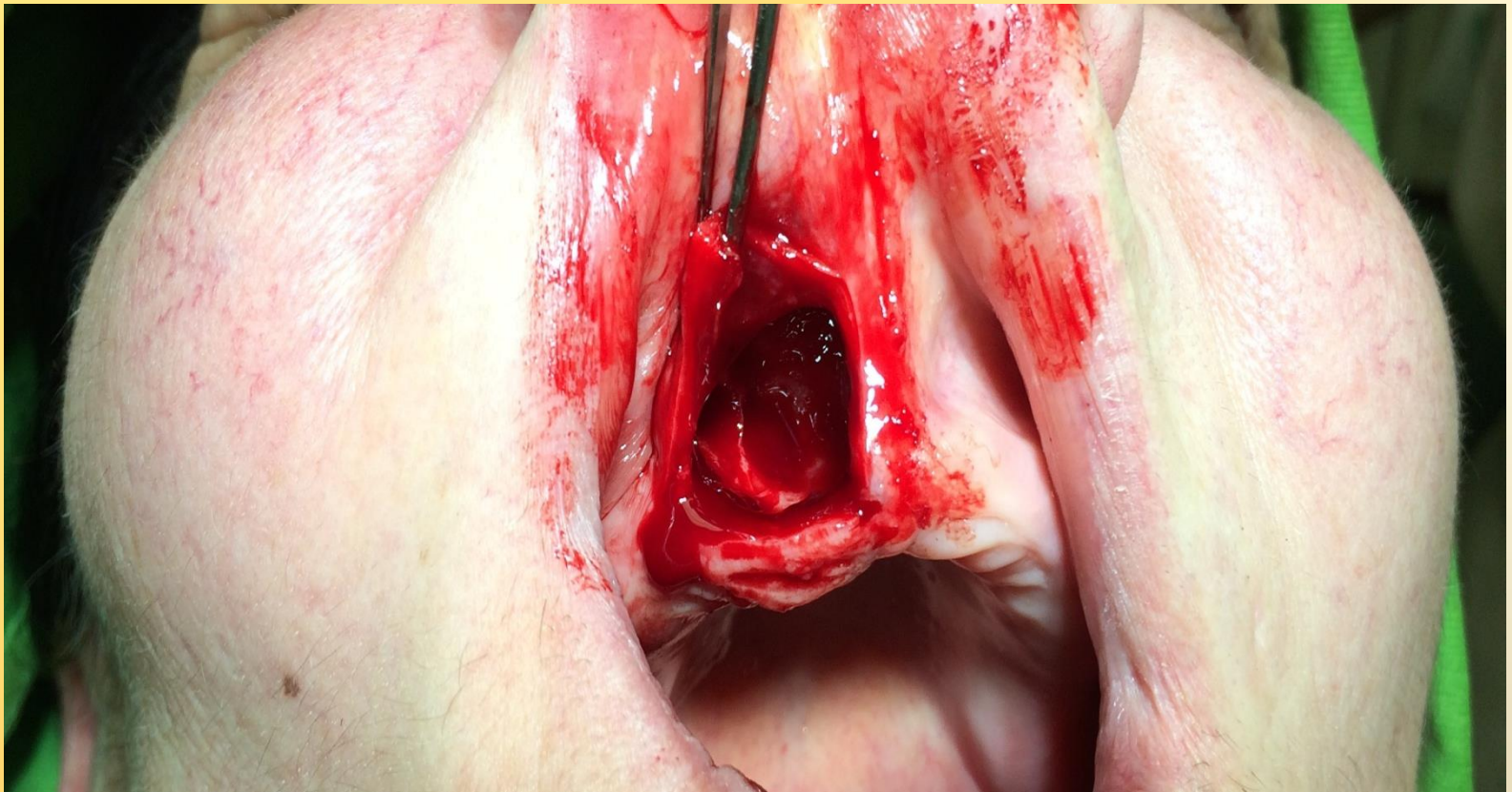


dental



tweezer

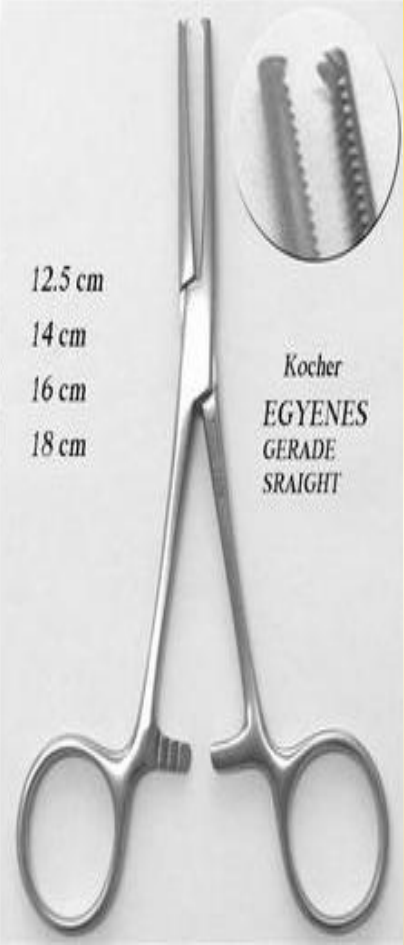




surgical tweezer in use

INSTRUMENTS FOR TISSUE GRABBING

BH 1612	12.5 cm
BH 1614	14 cm
BH 1642	16 cm
BH 1644	18 cm



Kocher
EGYENES
GERADE
STRAIGHT

Kocher

BH 1420	10 cm
BH 1422	12.5 cm
BH 1424	14 cm
BH 1442	16 cm
BH 1444	18 cm



Pean
EGYENES
GERADE
STRAIGHT

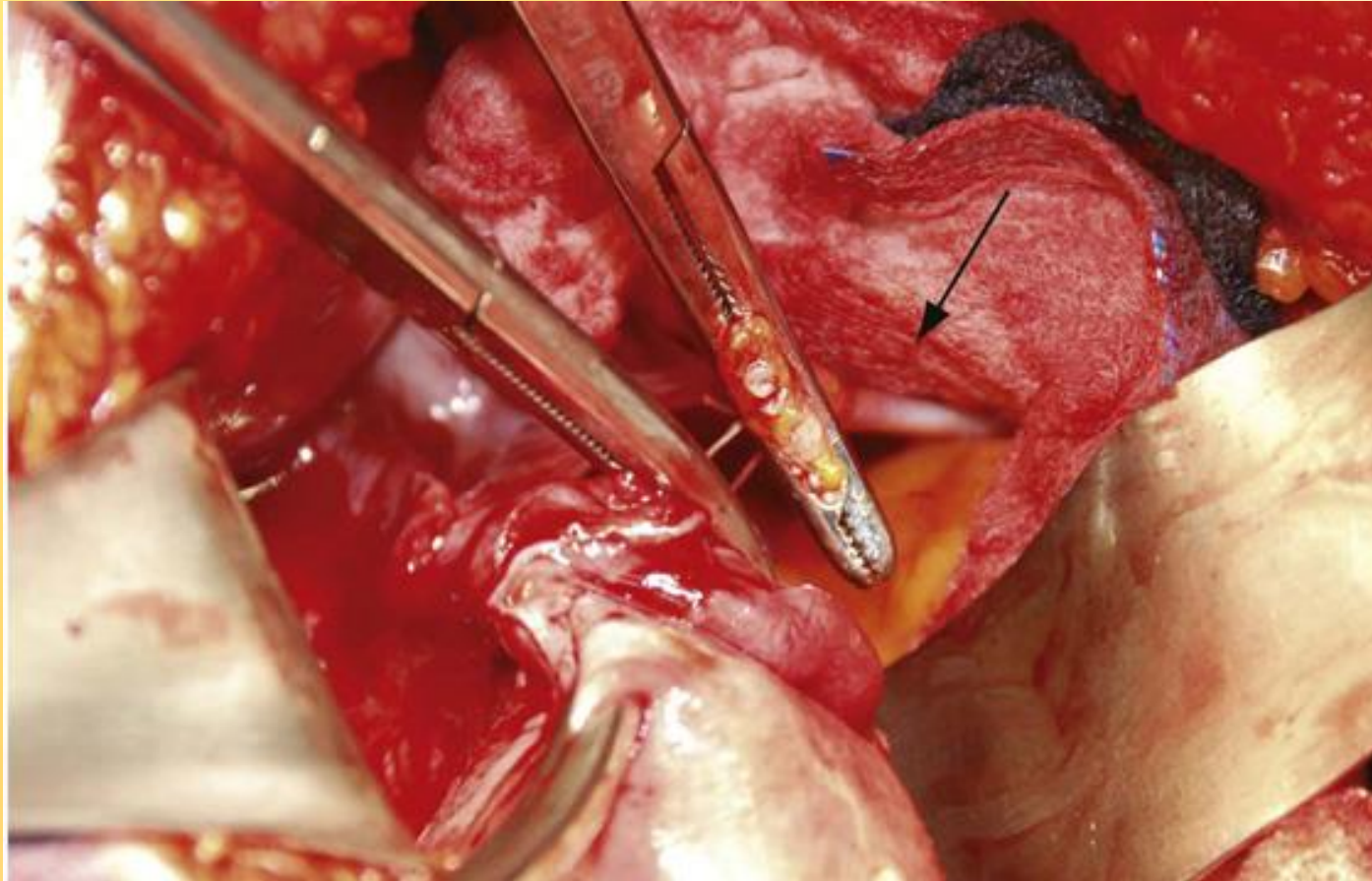
Pean

KOMLÓS



haemostat

INSTRUMENTS FOR TISSUE GRABBING



haemostat in use (hysterectomy)

TOOTH FORCEPSES

INSTRUMENTS FOR TISSUE GRABBING

Crown forceps

3 2 1 | 1 2 3

5 4 | 4 5

8 7 6 | 6 7 8

5 4 3 2 1 | 1 2 3 4 5

8 7 6 | 6 7 8



crown forceps



root forceps

Root forceps

3 types

1 type

INSTRUMENTS FOR TISSUE GRABBING

- differentiation



crown forceps



root forceps



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INSTRUMENTS FOR TISSUE GRABBING



EXCEPTION

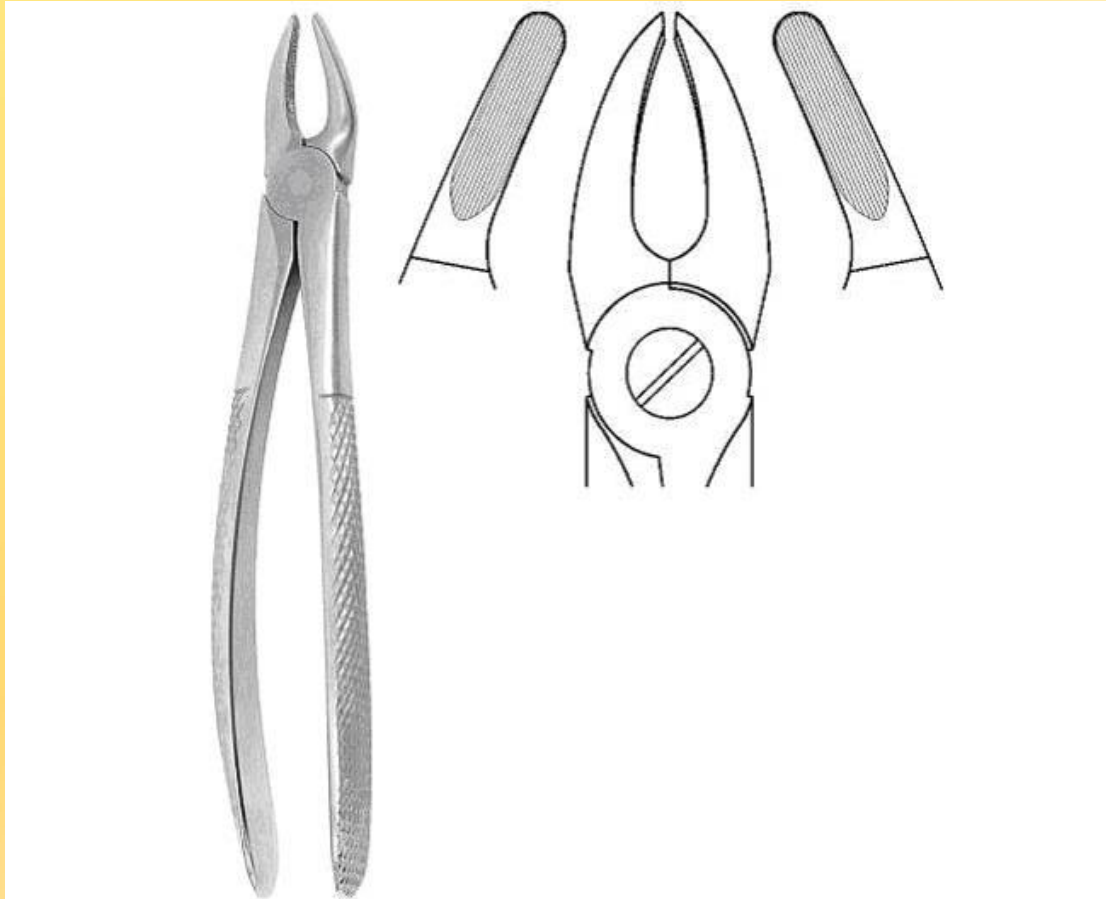


upper front forceps



crown forceps

INSTRUMENTS FOR TISSUE GRABBING

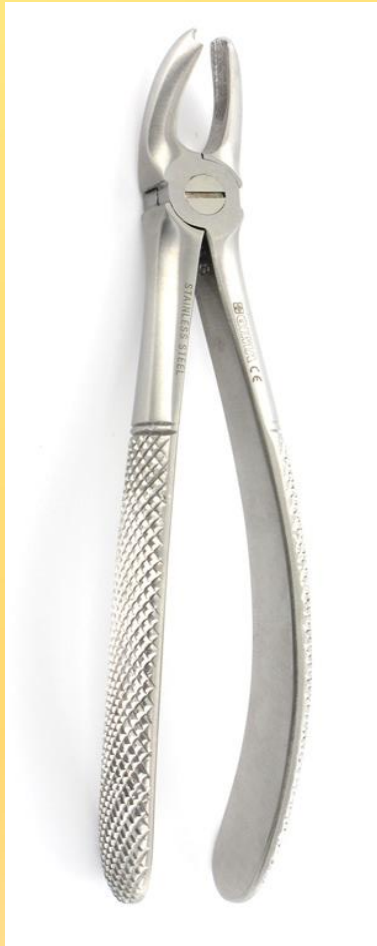


upper premolar forceps



crown forceps

INSTRUMENTS FOR TISSUE GRABBING



upper molar forceps



crown forceps

INSTRUMENTS FOR TISSUE GRABBING



upper wisdom tooth forceps



crown forceps

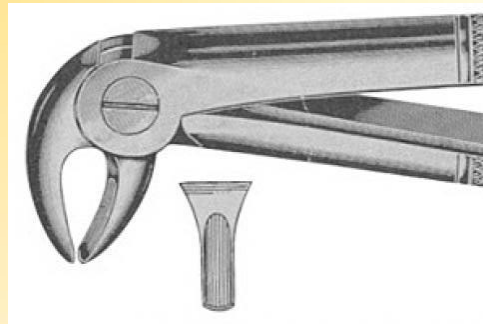
POSITIONING



INSTRUMENTS FOR TISSUE GRABBING



crown forceps

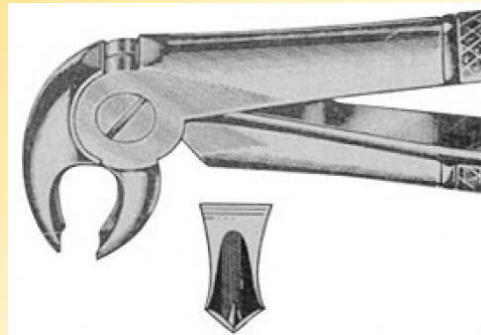


lower front and premolar forceps

INSTRUMENTS FOR TISSUE GRABBING



crown forceps



lower molar forceps

INSTRUMENTS FOR TISSUE GRABBING



EXCEPTION



lower wisdom tooth forceps



crown forceps

INSTRUMENTS FOR TISSUE GRABBING



upper root forceps



crown forceps

INSTRUMENTS FOR TISSUE GRABBING

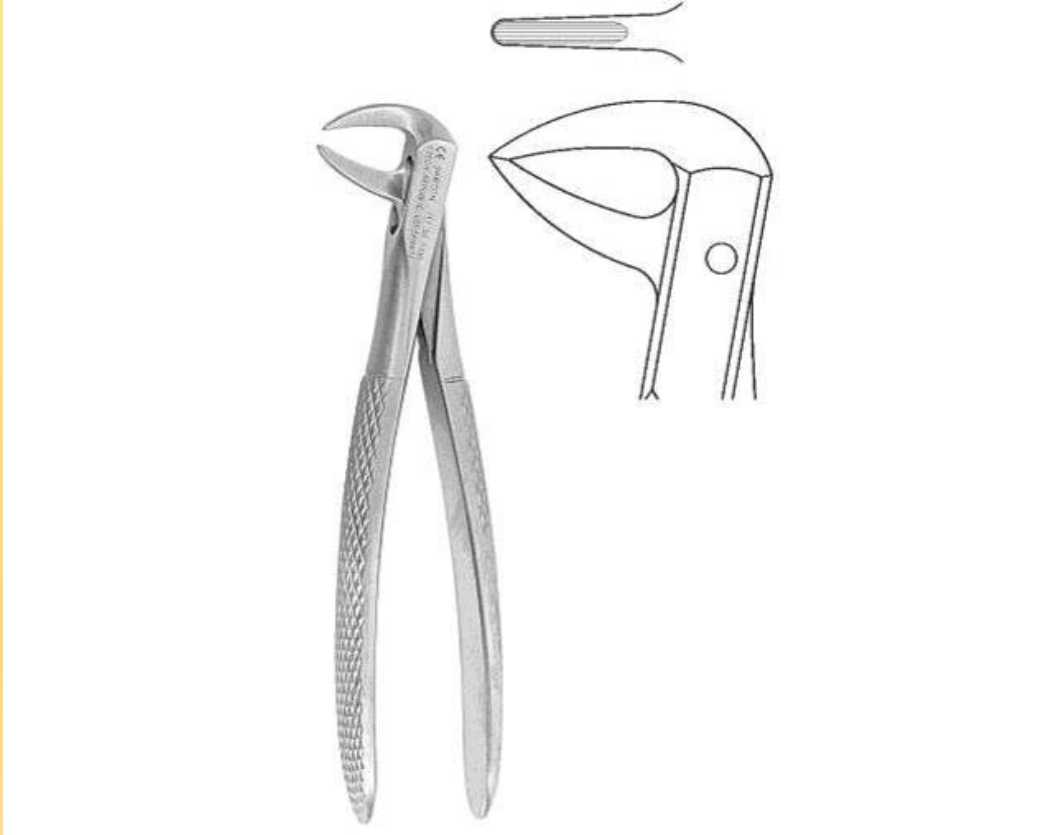


upper root forceps



root forceps

INSTRUMENTS FOR TISSUE GRABBING



lower root forceps



root forceps

INSTRUMENTS FOR TISSUE GRABBING



Alexander



Luer



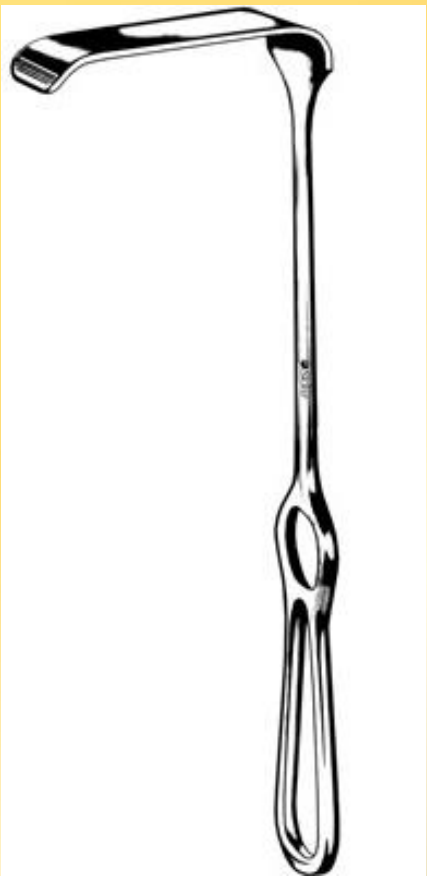
bone rongeur



Jensen

INSTRUMENTS FOR TISSUE RETRACTION

INSTRUMENTS FOR TISSUE RETRACTION



Wound retractor
Langenbeck
French



Buccal retractor
Middeldorf

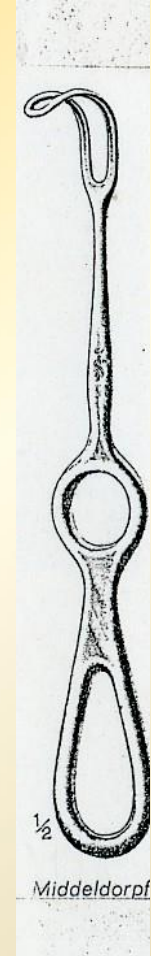
KOMLÓS



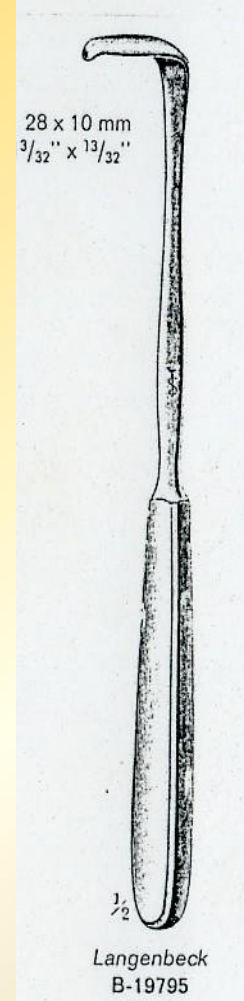
retractors



hook



Buccal retractor in use



French retractor in use

INSTRUMENTS FOR TISSUE RETRACTION



OM 130
Heister
13 cm / 5"



Roser - König
16 cm / 6 1/4"
OM 149
KOMLÓS



mouth gag



metal finger

INSTRUMENTS FOR TISSUE UNITE

INSTRUMENTS FOR TISSUE UNITE

- „G”- type – $\frac{1}{2}$ of the circle
- „B”- type – $\frac{1}{3}$ of the circle

Atraumatic és traumatic.



needle

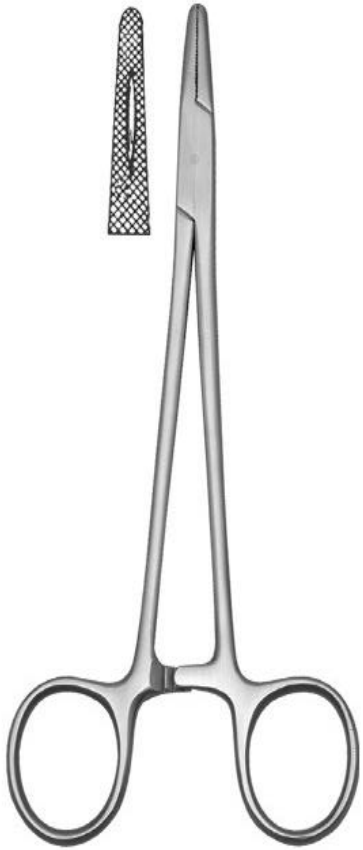


atraumatic



traumatc

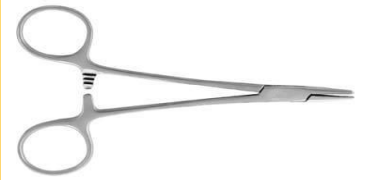
INSTRUMENTS FOR TISSUE UNITE



Hegar- Mayo



Mathieu
KOMLÓS



needle holder

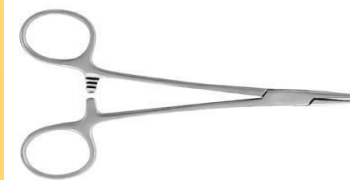
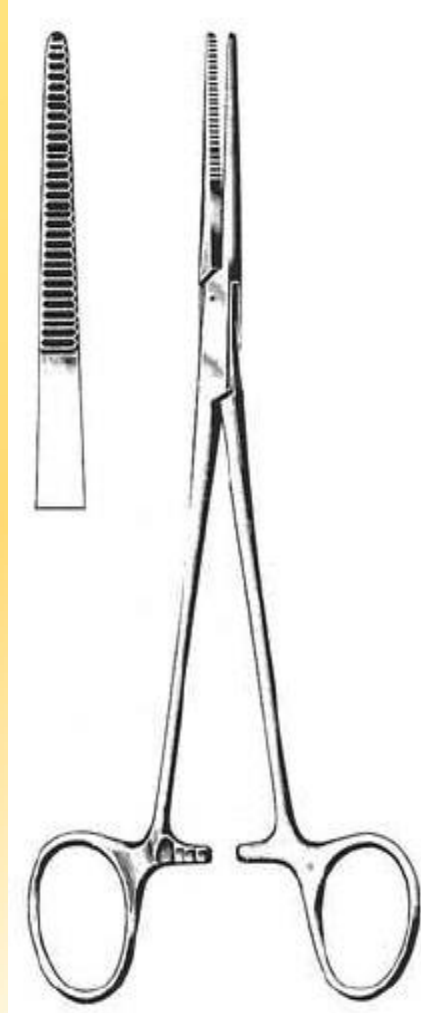


palatinal

MŰTÉTI BEAVATKOZÁS MŰSZEREI- SZÖVETEK EGYESÍTÉSE



≠



needle holder





KOMLÓS