ПОЛТАВСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

Department of Orthodontics

Ukraine NOW ua

3 course

Methods of orthodontic according to the age. Mechanism of the growth and reconstruction of the dento-jaw complex

Poltava 2024

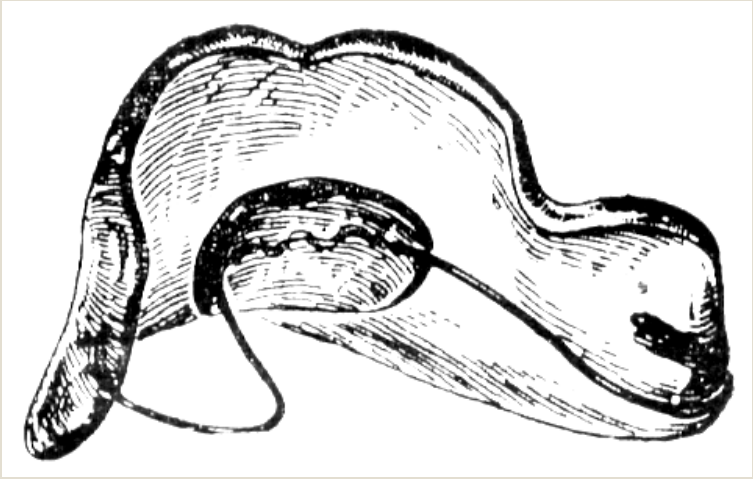
Methods of treatment

- Instrumental (appliances)
- Surgical
- Prosthetic
- Biological
- Combined

Systematization of orthodontic appliance by prof. Golovko N.V.

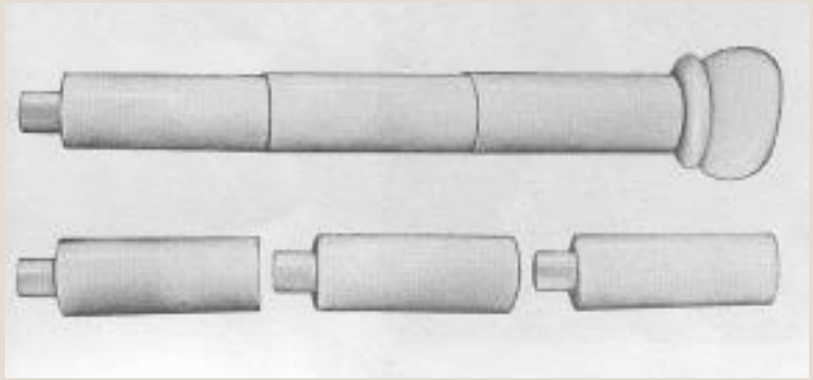
I.According to the method of the made:

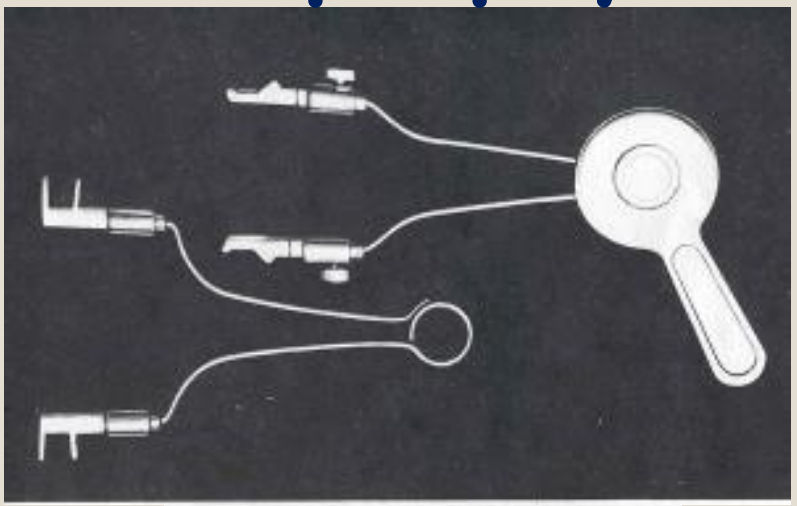
- standard;
- made in the dental technical laboratory.

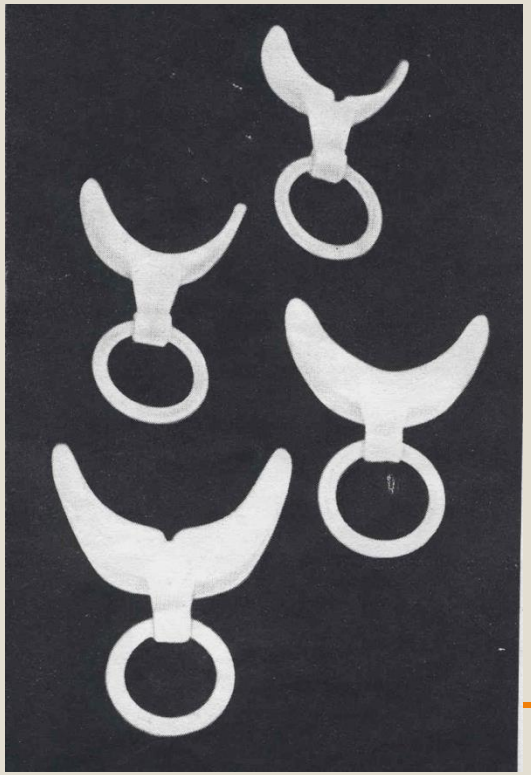


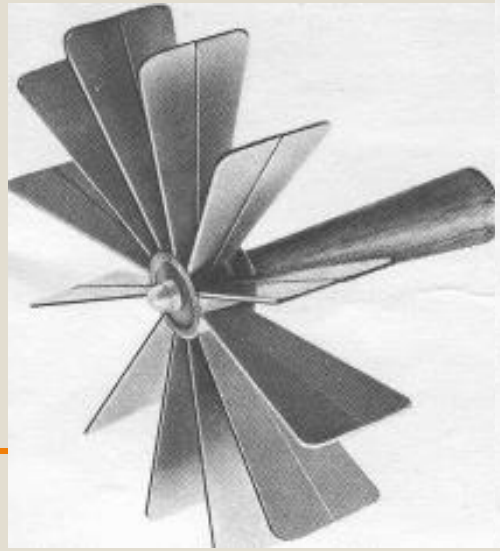
II. According to the purpose:

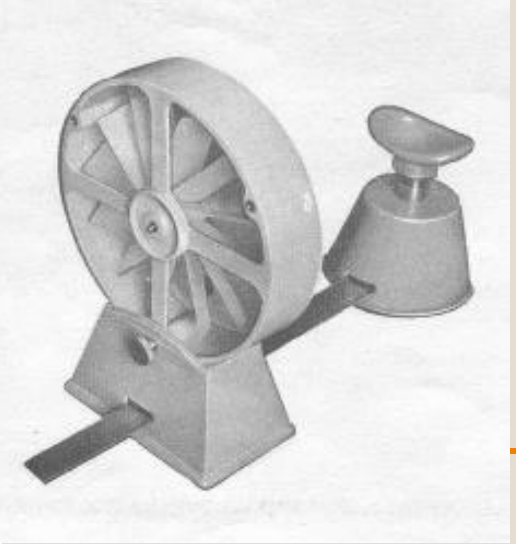
- prophylactic

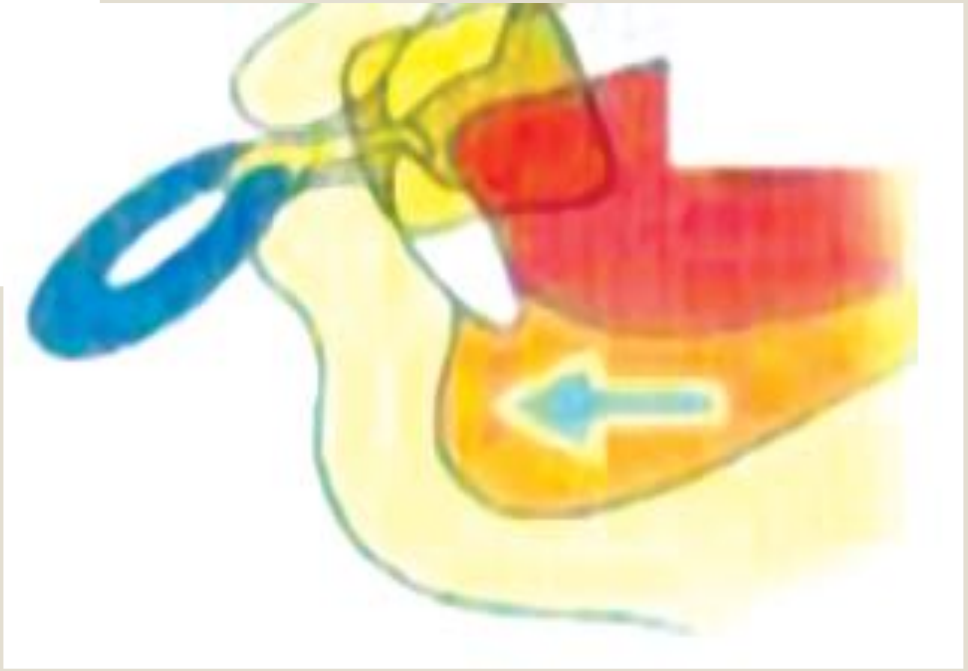




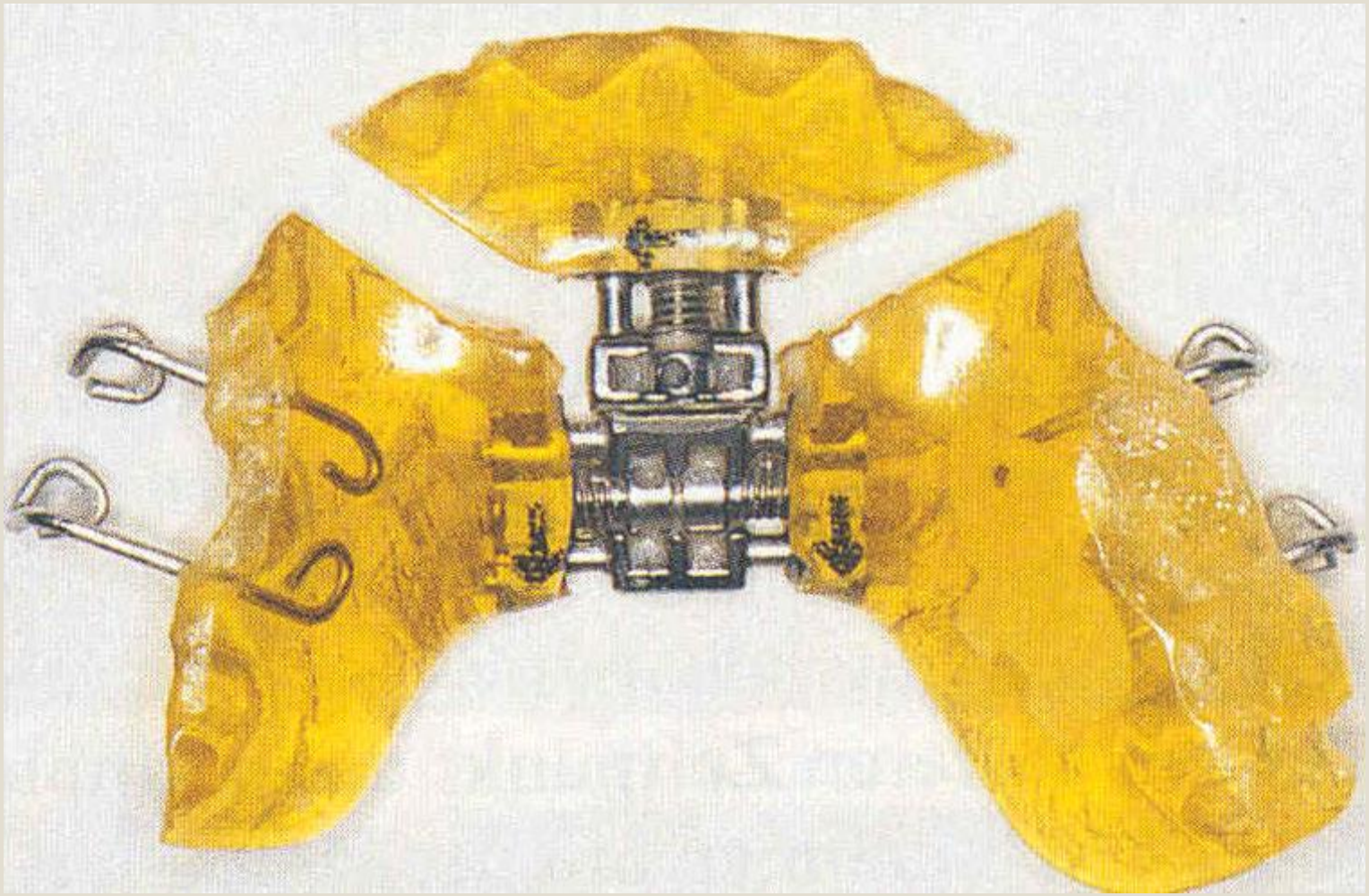




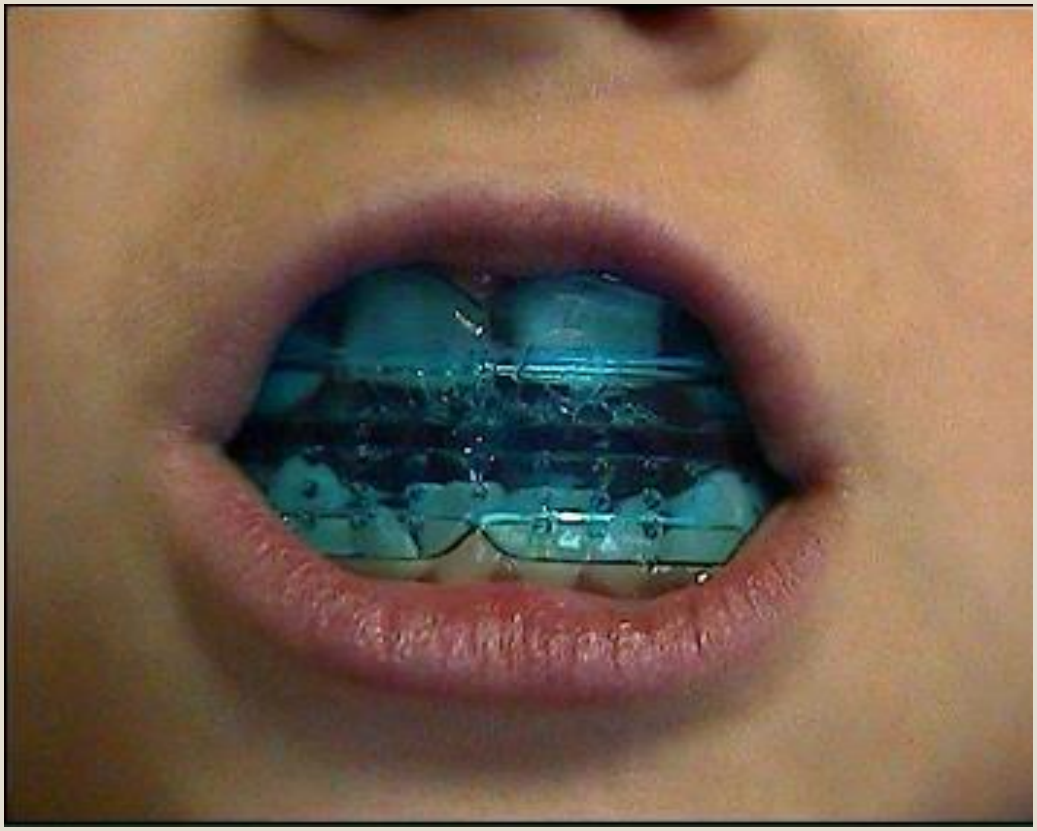




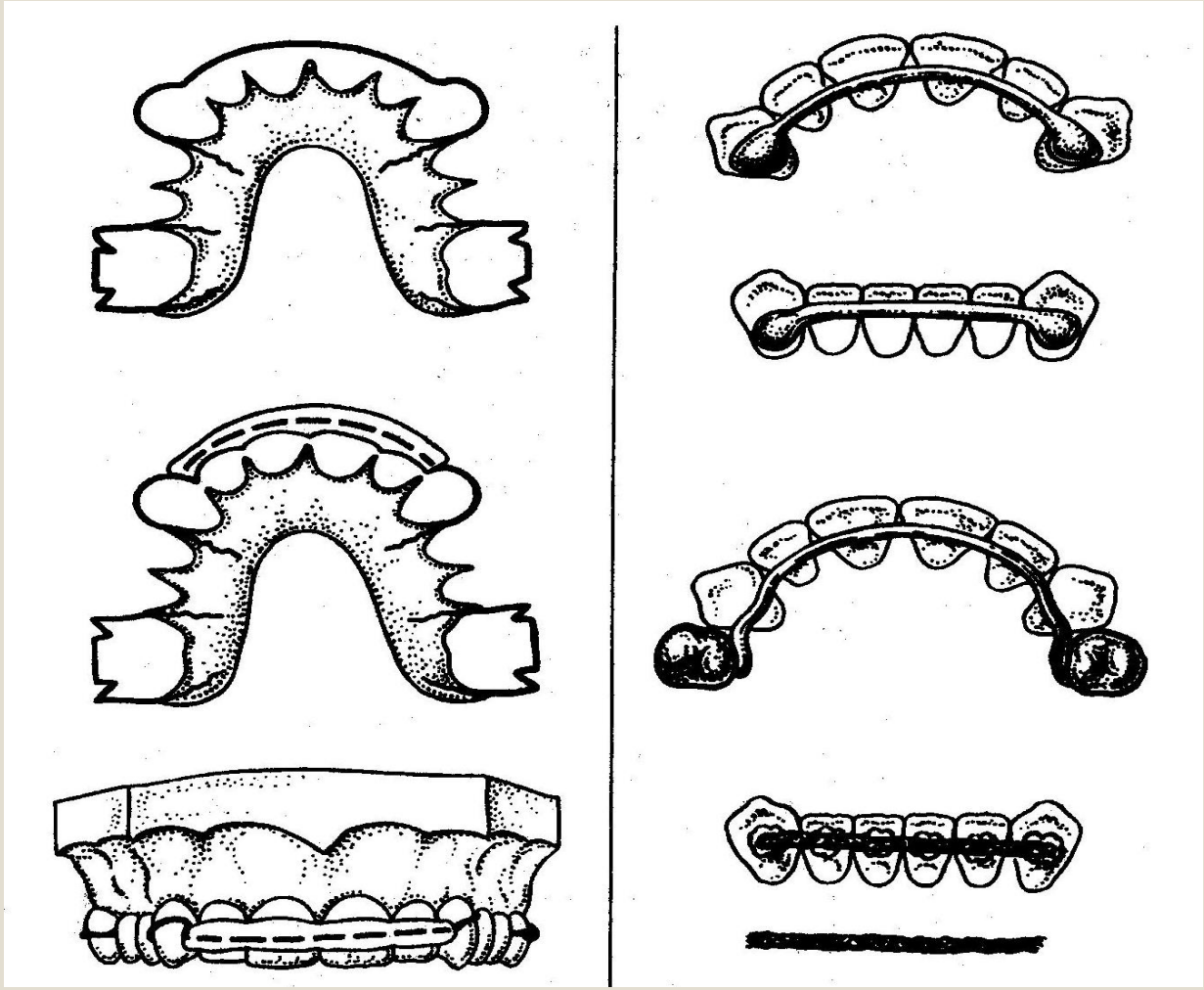
- medical



- medically-prophylactic

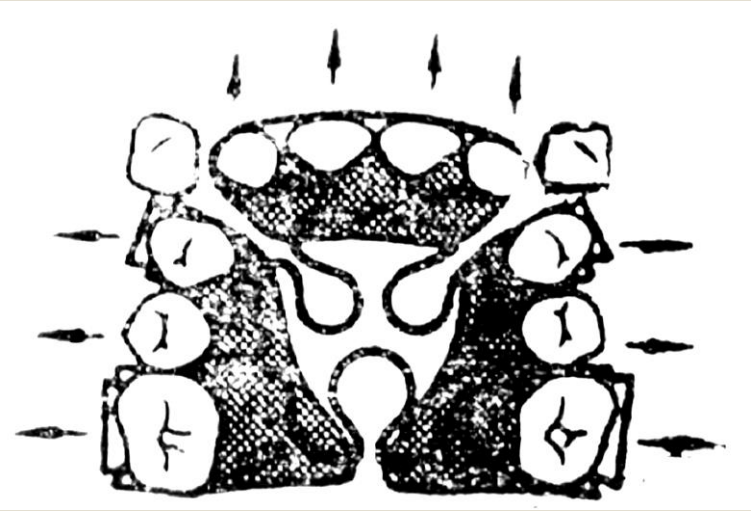


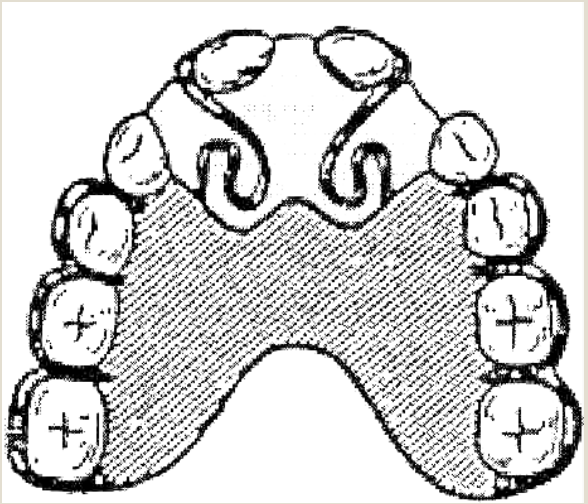
-removable and fixed retentional

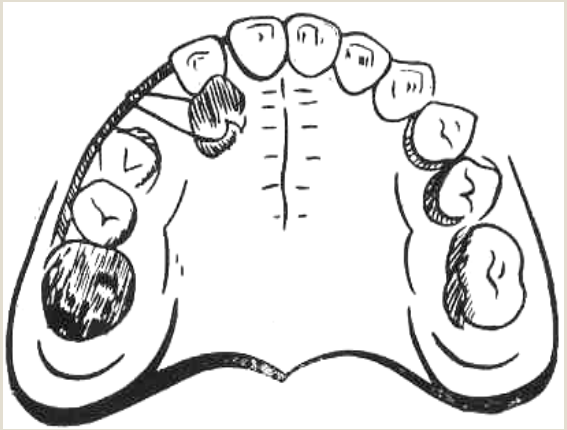


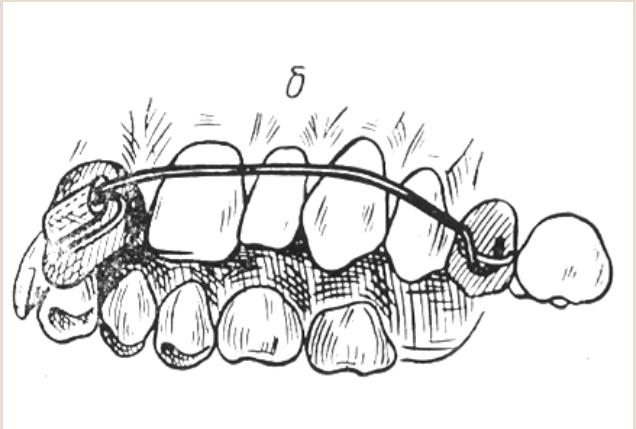
III. According to the mechanism of action:

- mechanical (active)

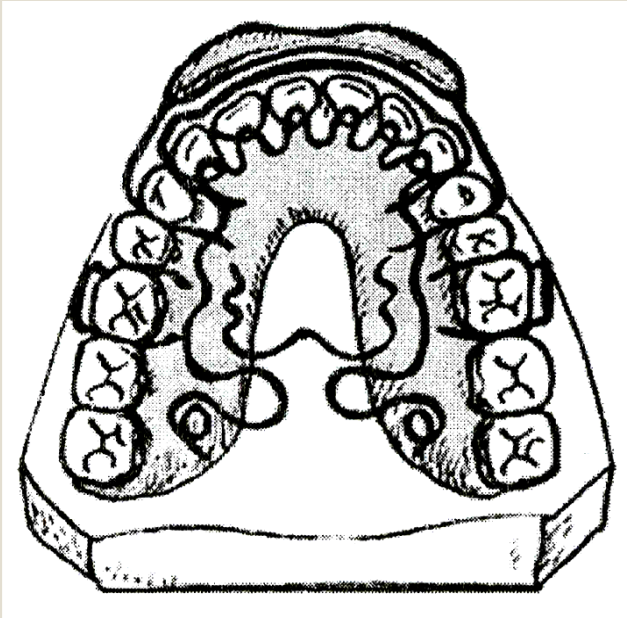


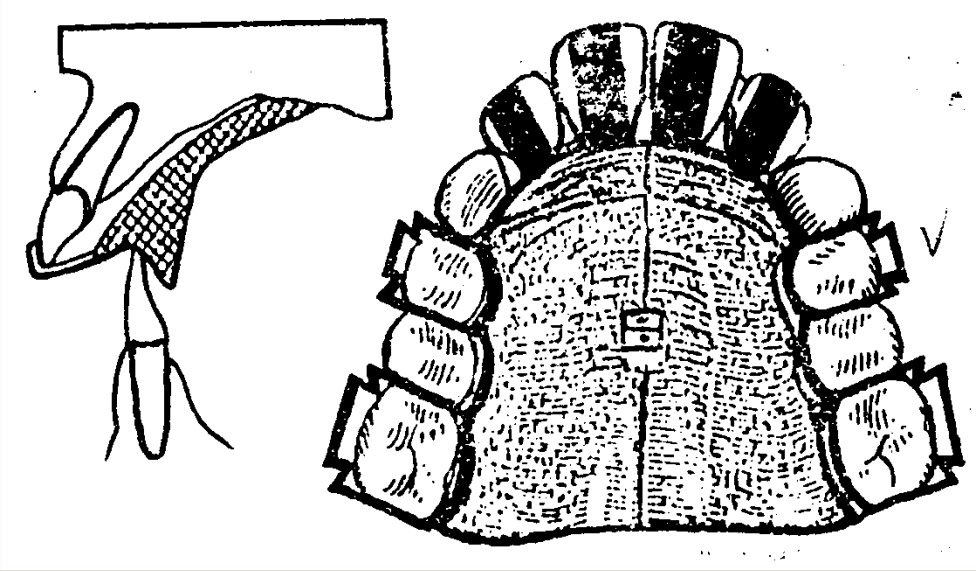




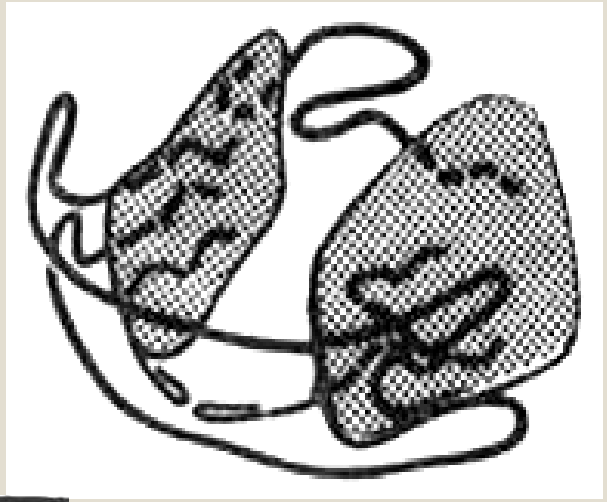


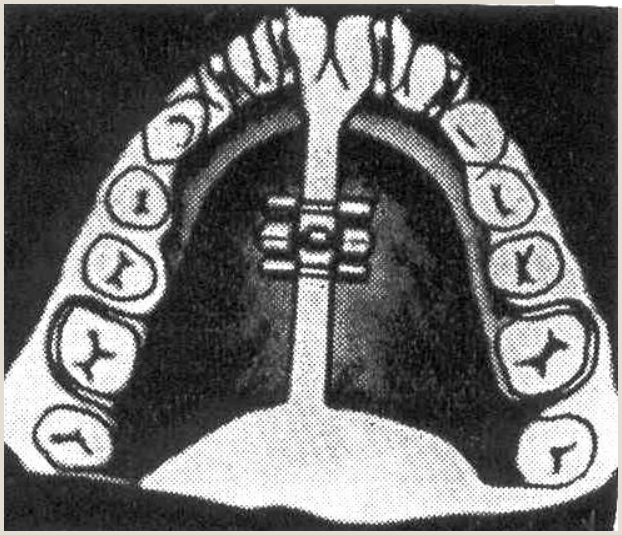
- functionally-acting
- functionally-directing





- combined action





IV. According to the purpose of its use, we define:

- stimulants,
- expansion appliances,
- narrowing appliances,
-appliance that move separate teeth or its groups,
-appliances that change position of the lower jaw,
-appliance that correct the height of the bite,
-functions correctors.

V. According to the method and action places:

1.Extraoral

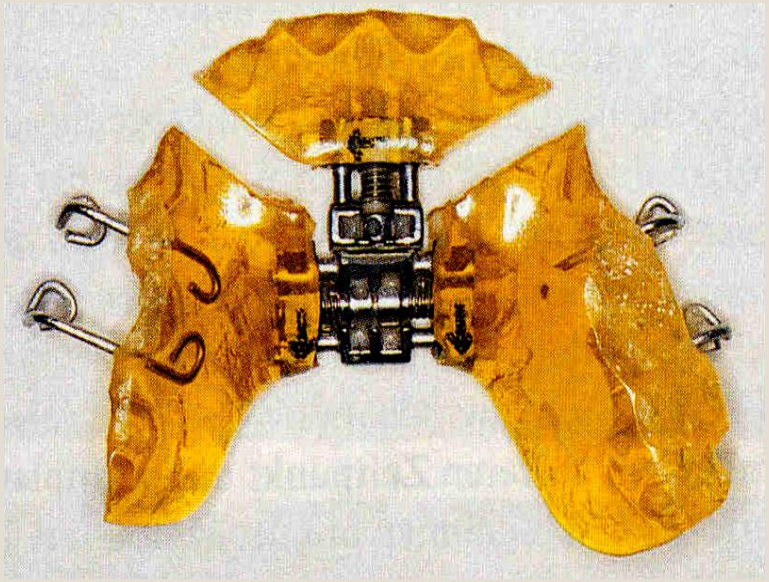
2. Intraoral

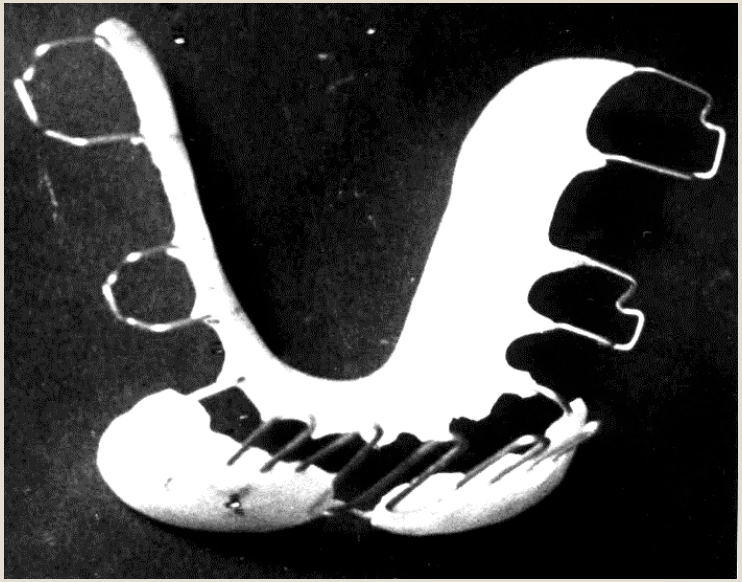
- single jaw appliance
- both jaws appliance
-single jaw appliance, interjaw action

3. Combined.

VI. According to the type of support:

- Reciprocal or interactive
- Stationary





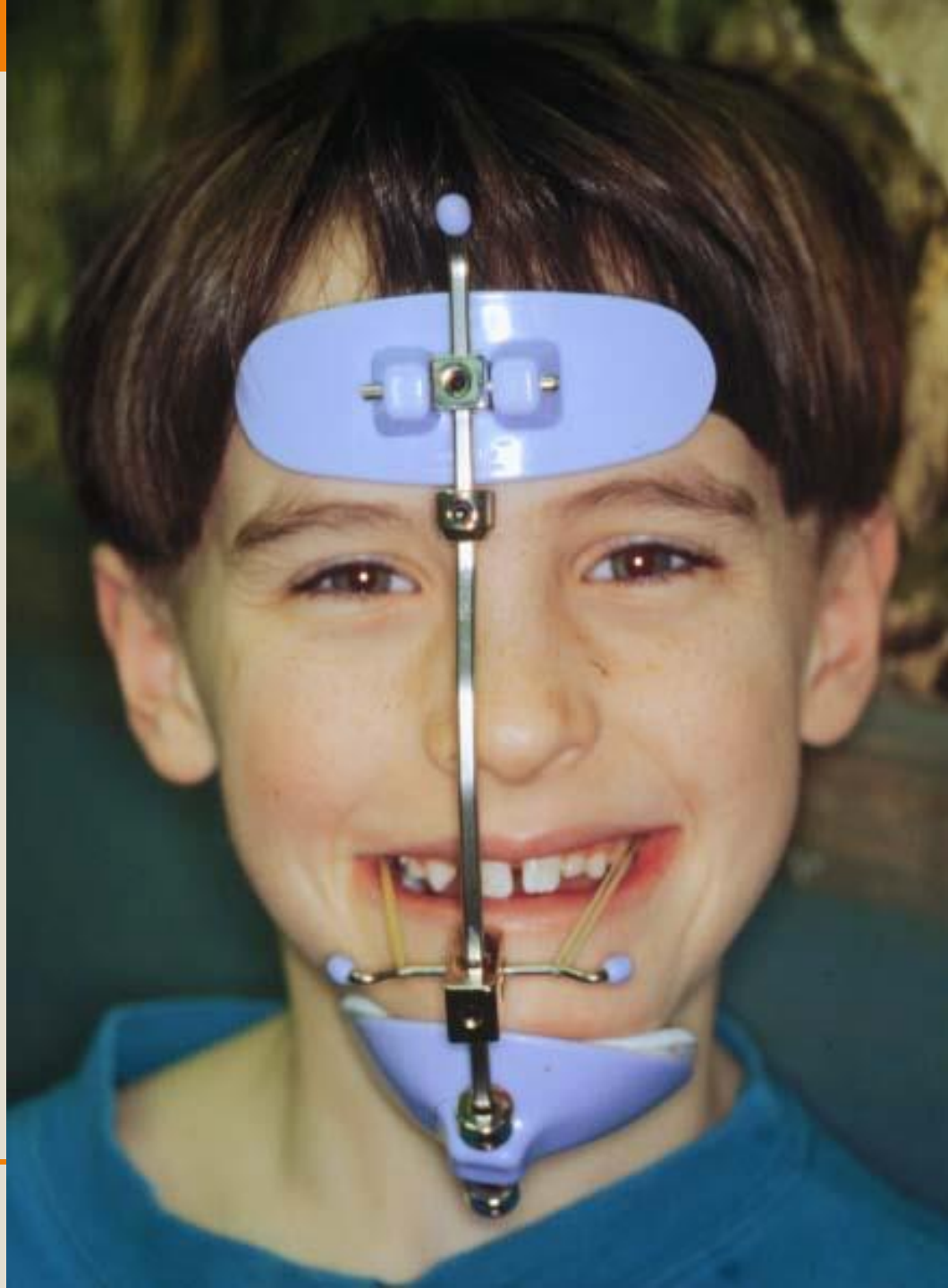
VII. According to the localization of support:

1.In the oral cavity
(teeth, dental arch,
alveolar process, palate)
2. extraoral localization:
- the head
- the neck
- the jaws

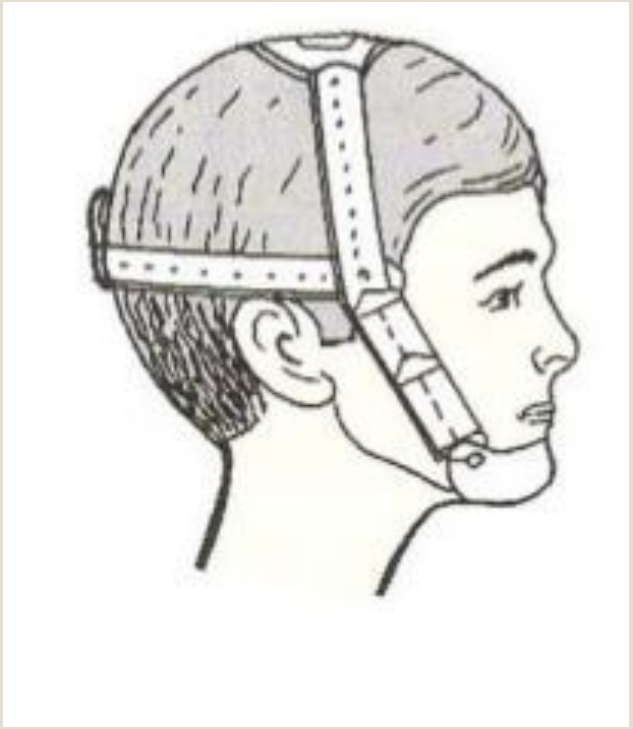
3. Combined support

- MAXILLARY HEADGEAR (DENTAL/SKELETAL)
  Molars DISTALIZING APPLIANCES

PROTRACTION FACE MASK SKELETAL AND DENTAL

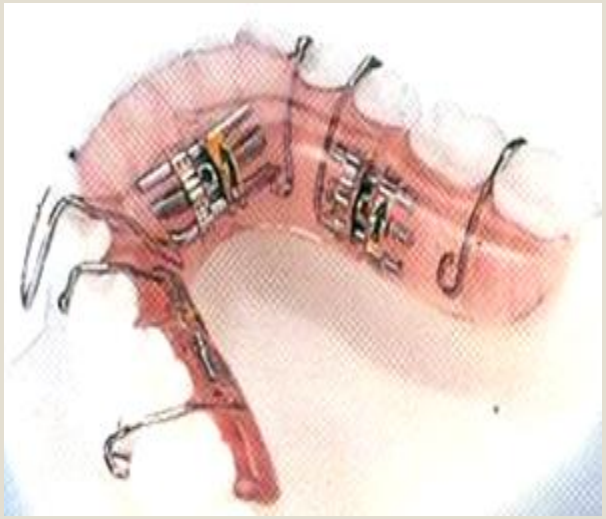


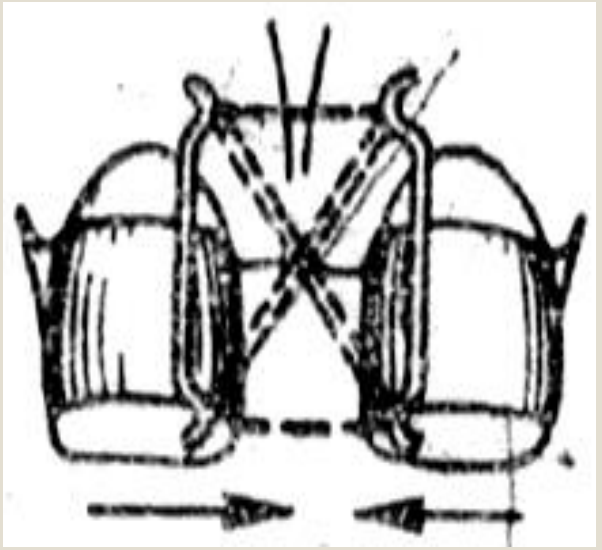
Chin cap appliance



VIII. According to the method of fixing:

1. Removable
2. Fixed
3. Combined





IX. According to the kind of constructions:

- Monoblock
- Base plate
  - Kappa
  - Crowns
- Framework-like
- Arch-like
  - Elastic
  - Shield

X. According to the using:

- Orthodontic

- Preprothesis preparation

- reconstructive surgery

XI. According to the type of force:

1.Longtime applied force:

- on the basis of resilient properties of materials,
- on the basis of elasticity,
- on the basis of effect of the form memory.

2. Irregularly-remittent force:

- on the basis of action of a screw,
- on the basis of effect of the form memory.

XII. According to the size of force:

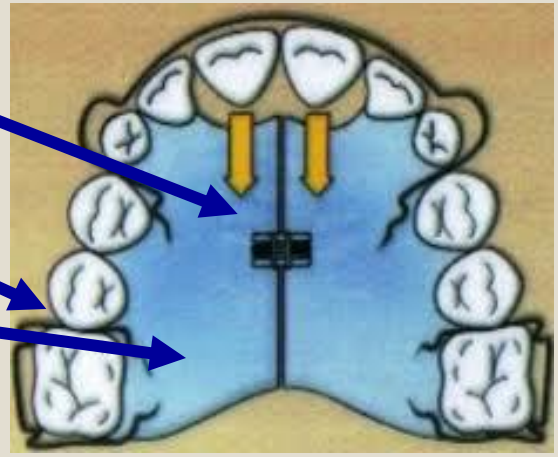
- little forces,
- middle forces,
- big forces.

XIII. According to the method *of activation:*

- activated by doctor or parents (by a patient) in 3-7 days or 1 or 2 times in a weak
- self activated (properties' appliances changing according to it materiales).

Component of mechanical Removable Appliances

- Active component
  - Spring, screw, elastics,….
- Retentive components
- Acrylic base plate

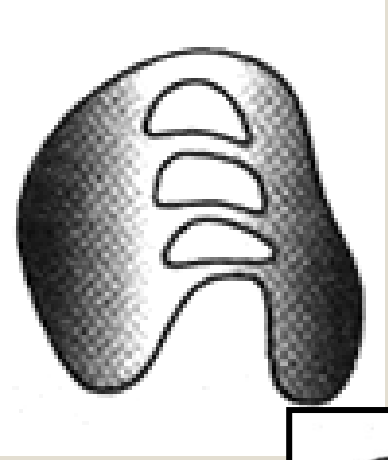


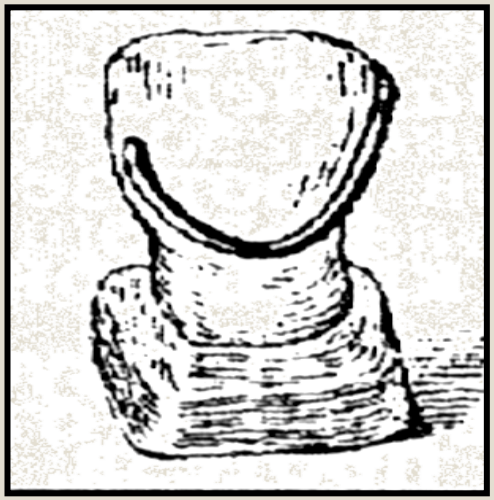
Retentive components
Clasps' classification

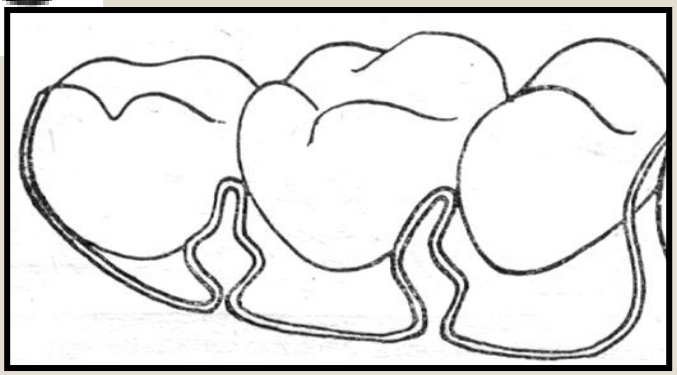
According to the localization:

- dental

- dentoalveolar



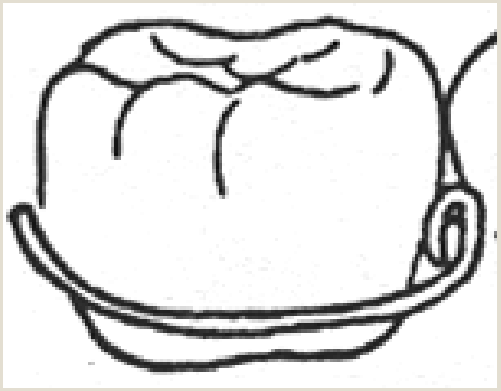




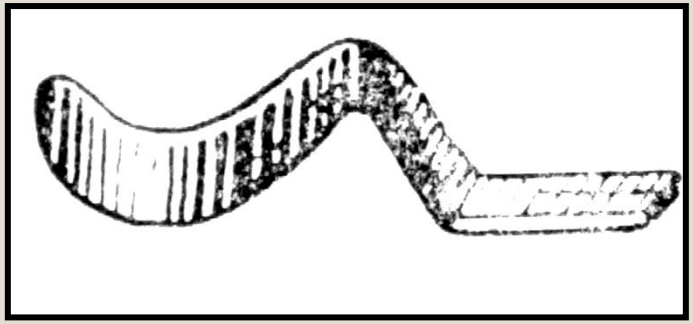
Clasps' with the use of subequator dental space:

-One-"shoulder" round bent clasp

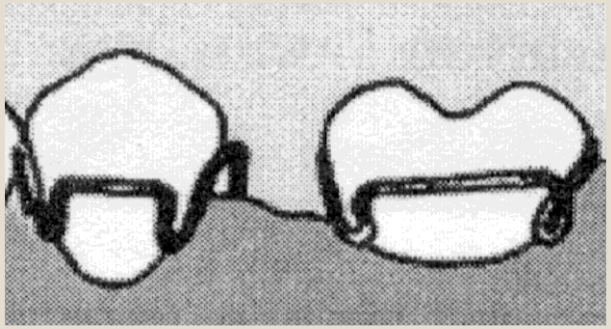
- Band clasp



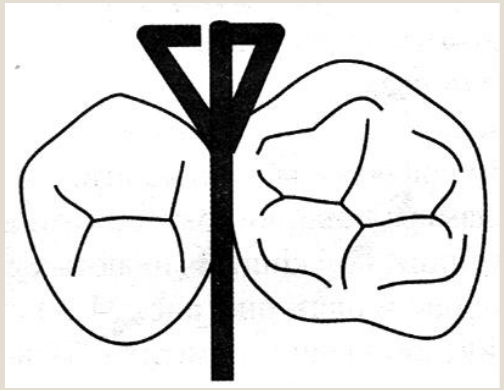
Frame clasp



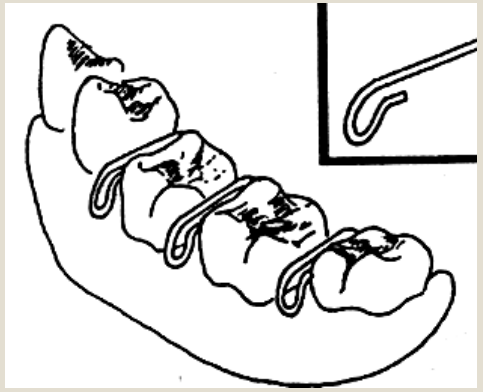
-Adams clasp



Clasps with the use of interdental subequator space:



- triangle clasp



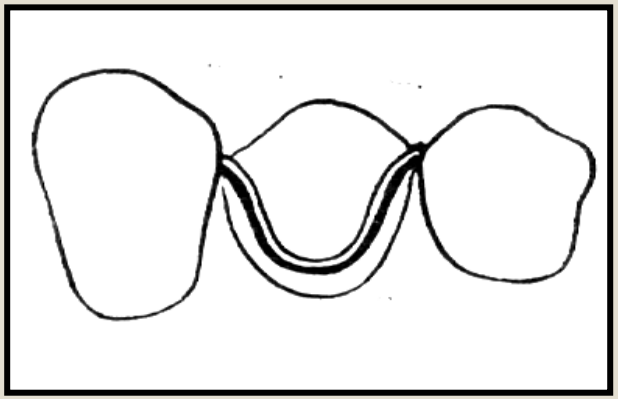
- ear-shaped clasp

- loop-shaped clasp

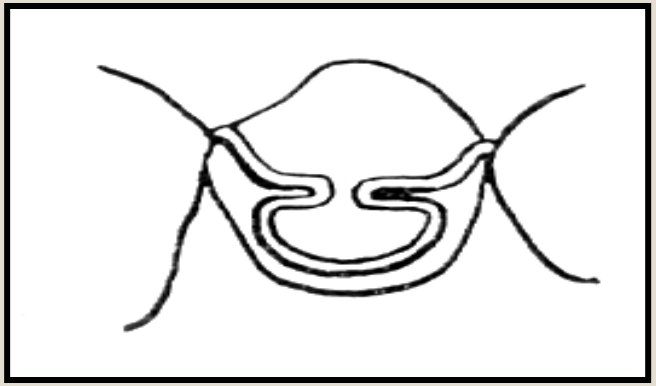
button-shaped clasp

Clasps with the use of vestibular area of dental crown:

- Jackson clasp

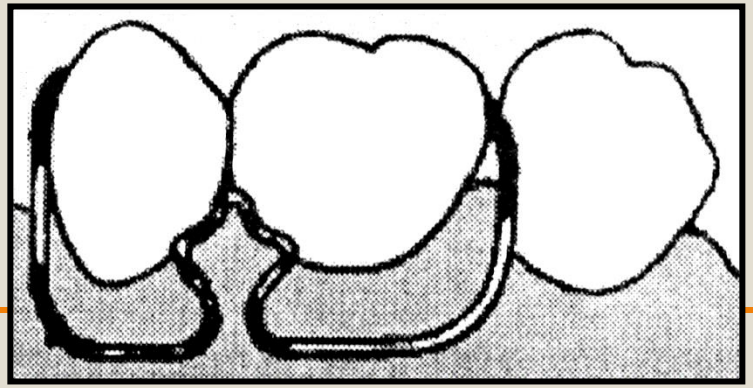


- Dujzings clasp

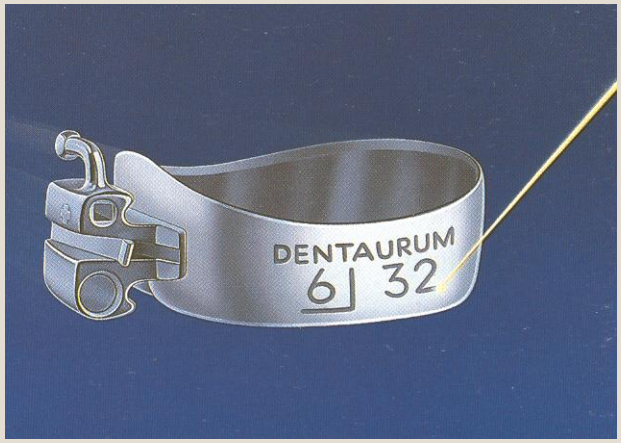


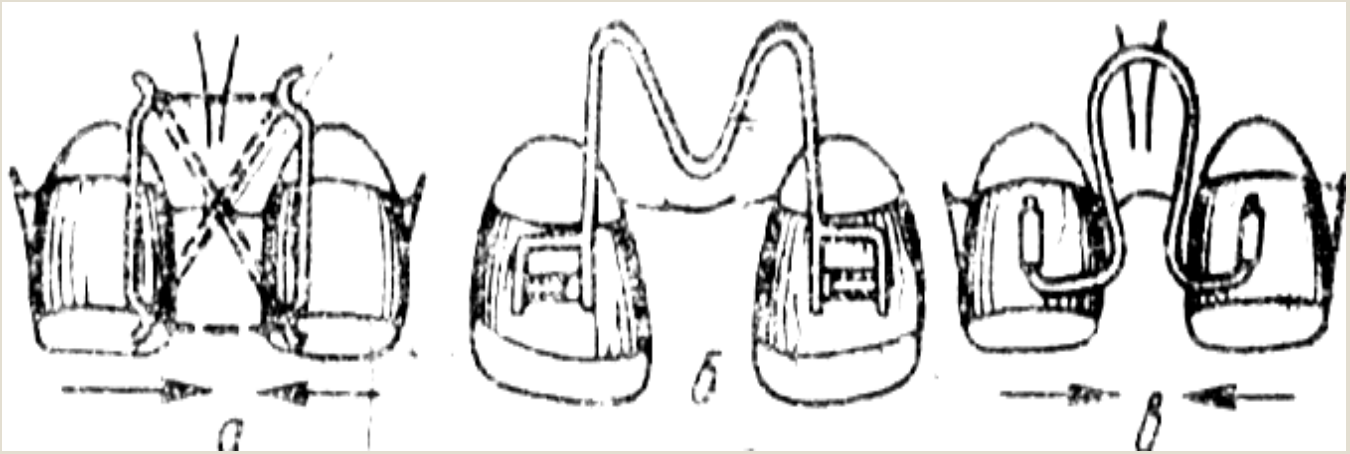
Combined clasps

- Schwarts clasp (arrow-shaped)

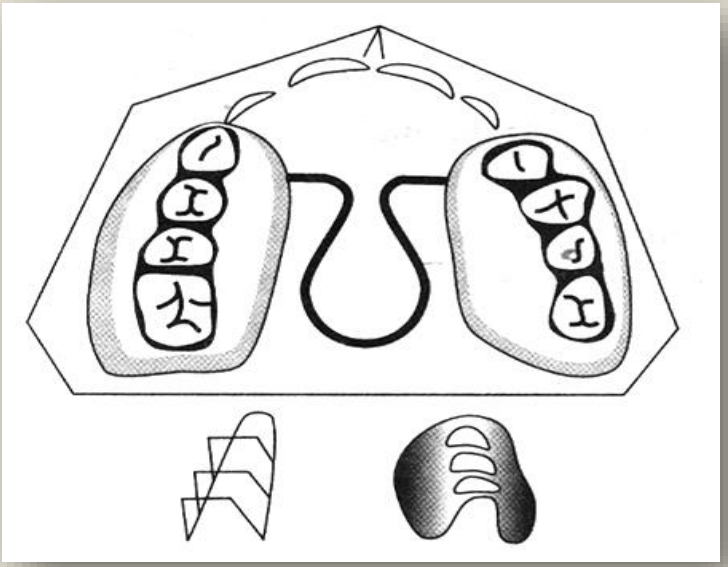


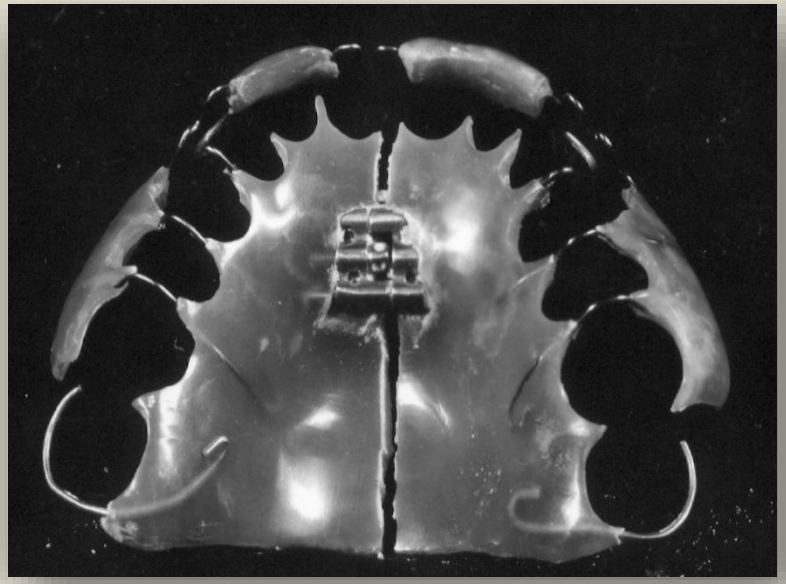
Rings and crowns





Dentoalveolar fixation by Napadov





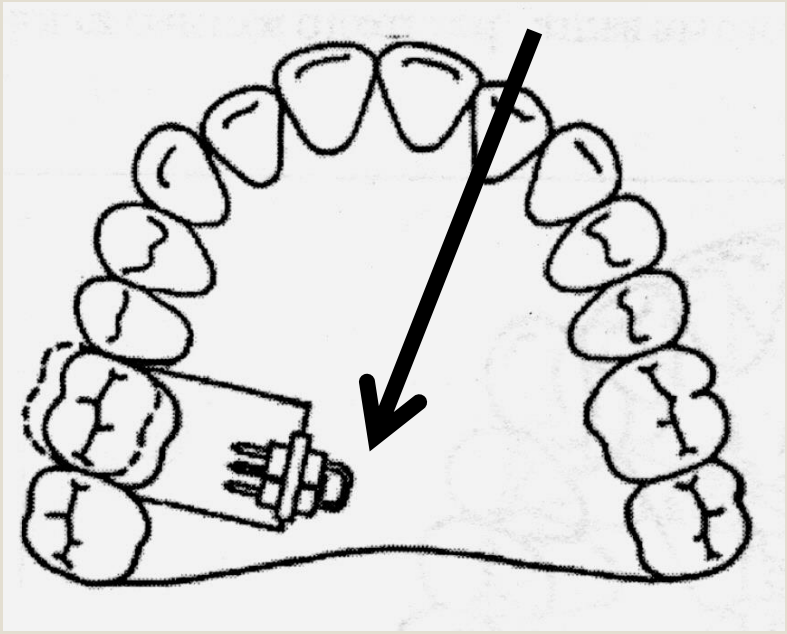
Active (mechanical) component

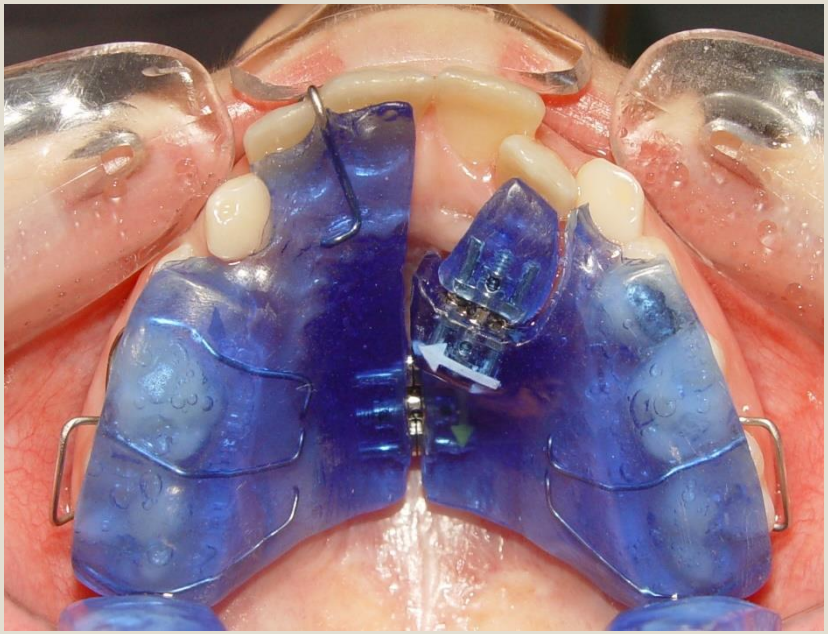
Screws

1) Uni-dimensional screws
2) 2)Bi-dimensional screws
3) Fan Expander

Screws for separate teeth moving

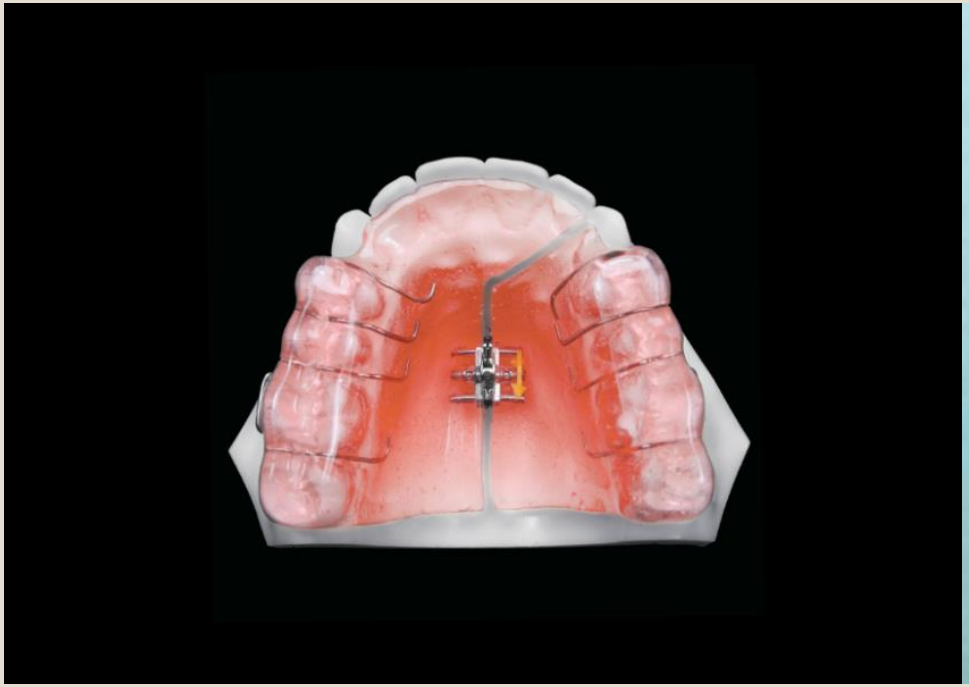
Mini-screw



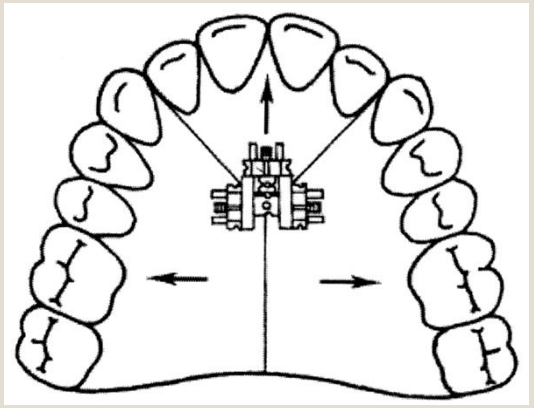


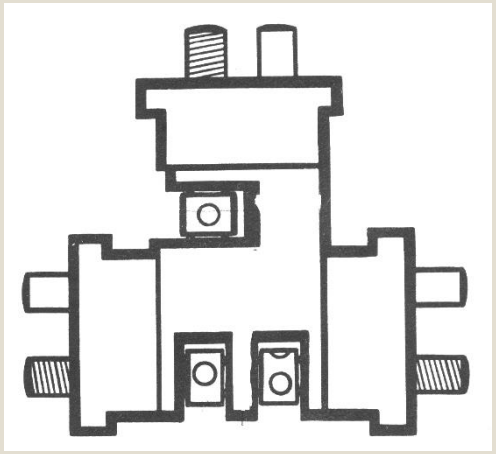
Screws for groups of teeth moving

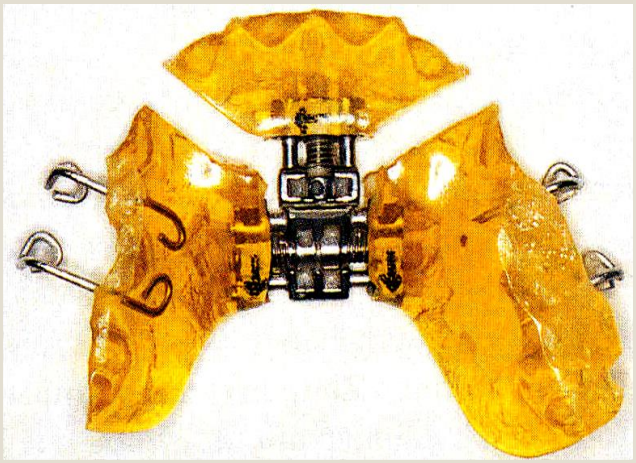
Sectoral cut

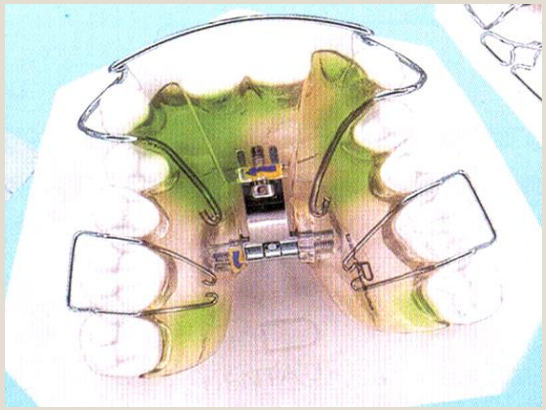


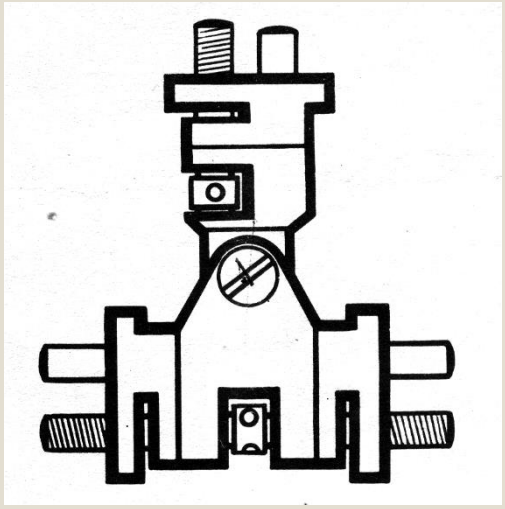
Screws for simultaneously expansions and lengthening of upper dental arch

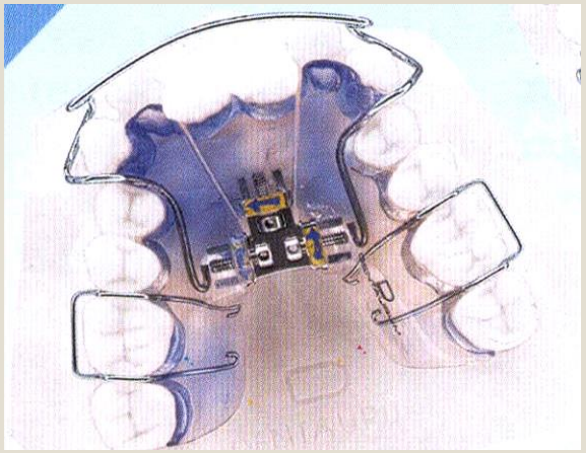




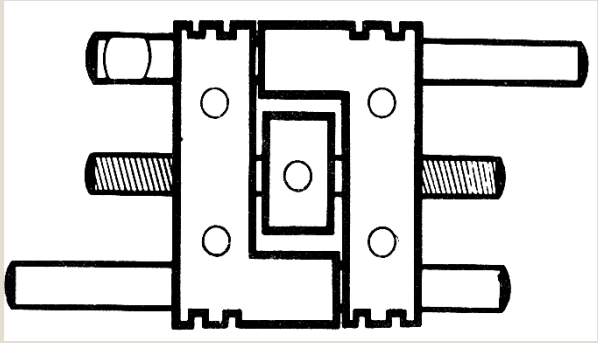


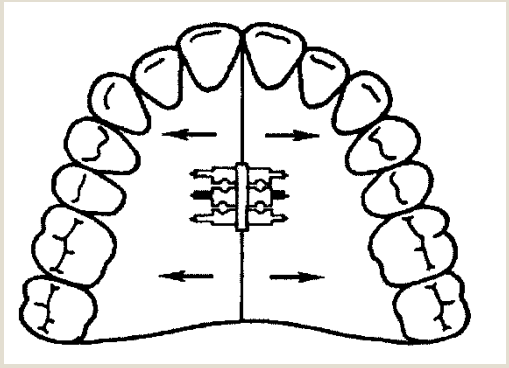


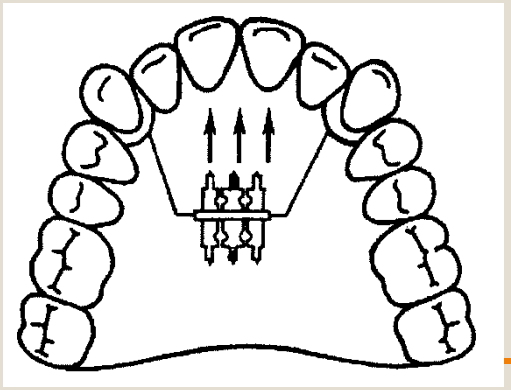


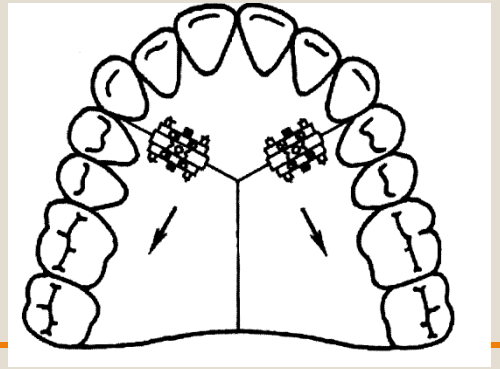


Screws for equal expansions and lengthening of dental arch

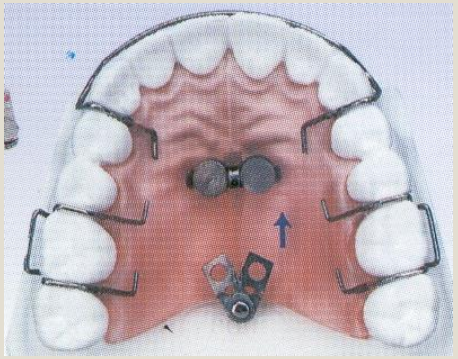


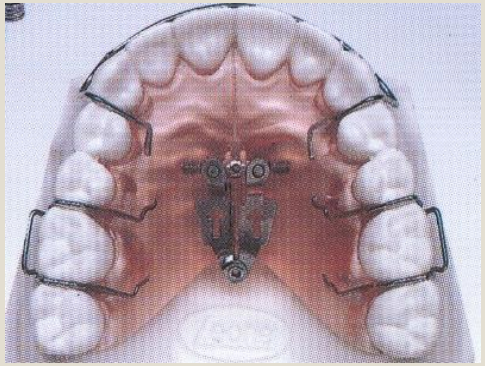


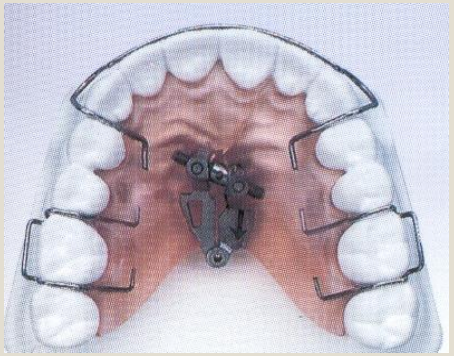


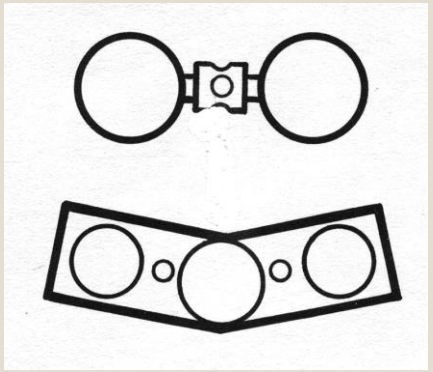


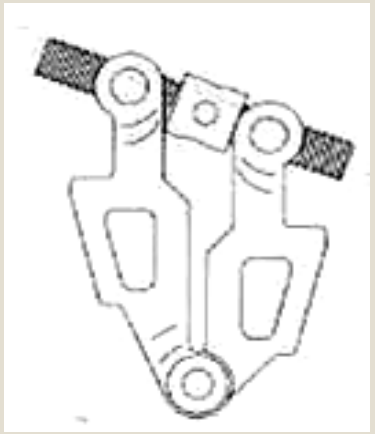
Fan-shaped screws (frontal area expansion: symmetric and asymmetric)



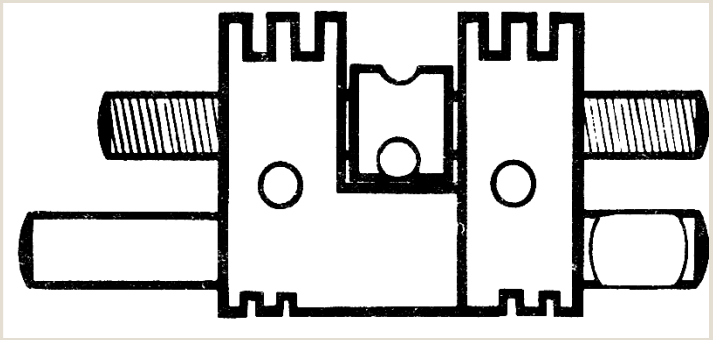


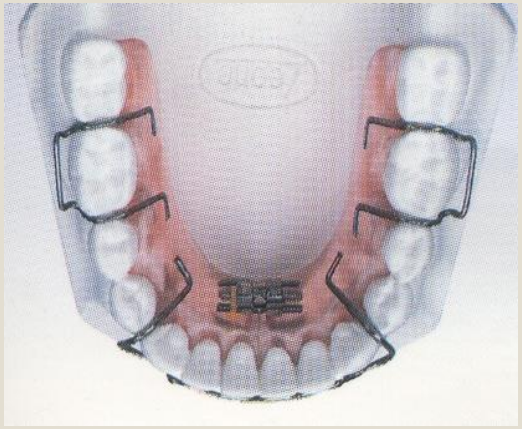




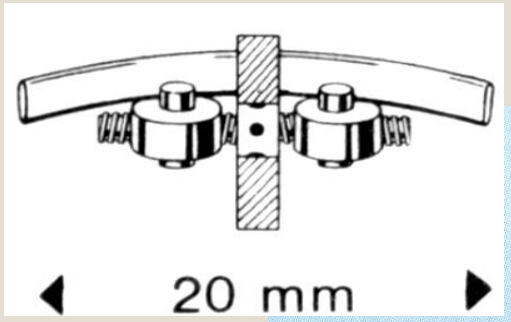


Universal orthodontic screws

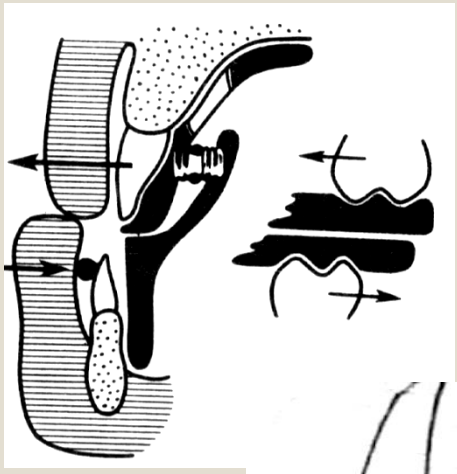


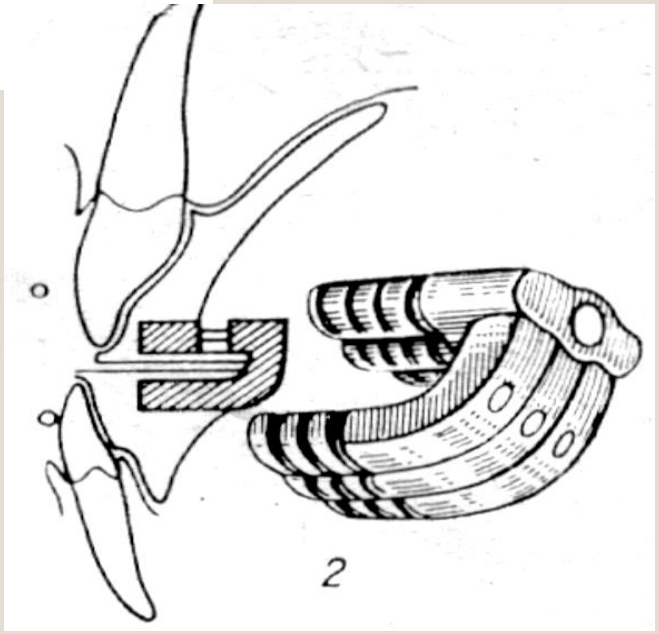


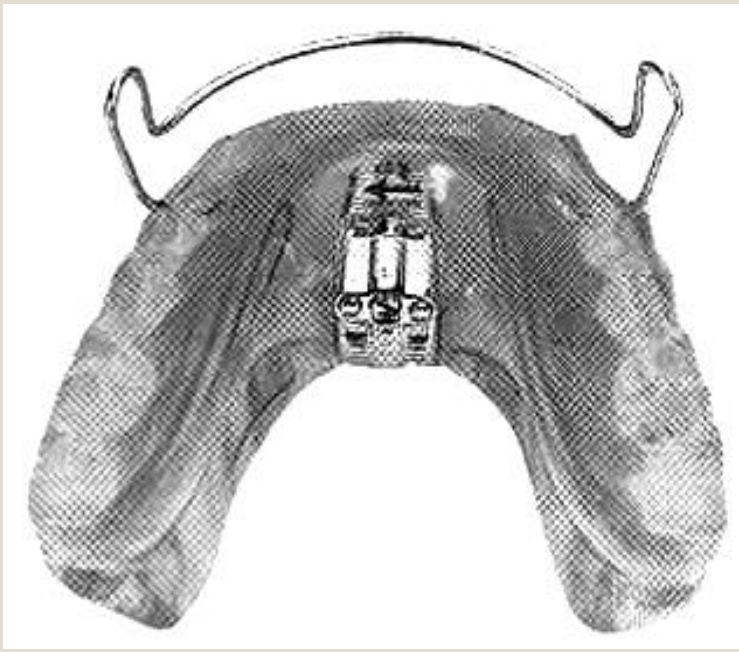
Muller screw for lower dental row expansion



Screws for bite' normalization



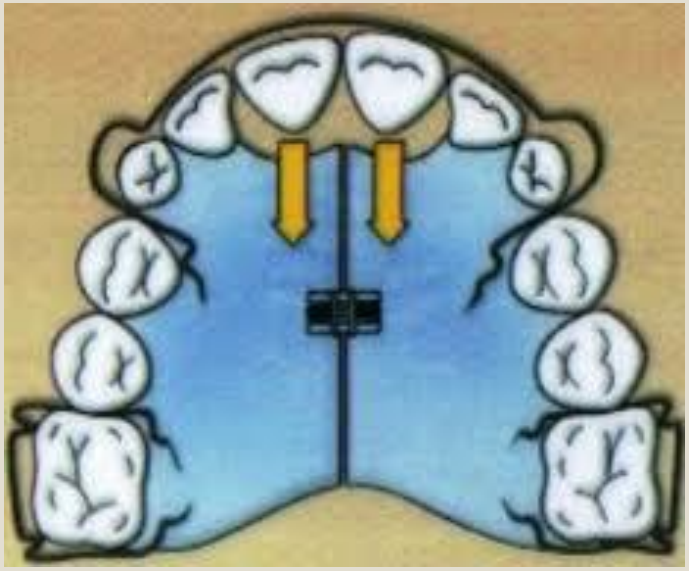


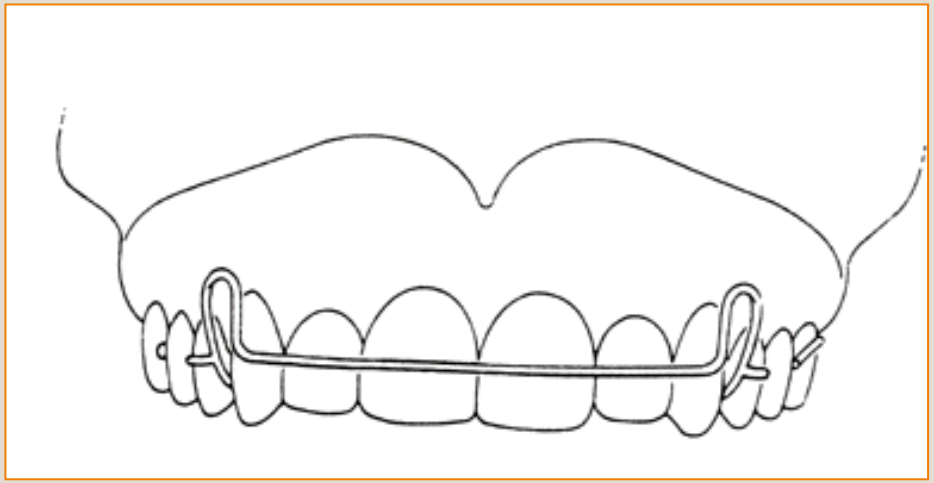


Vunderer activator

Active (mechanical) component

- Vestibular arch



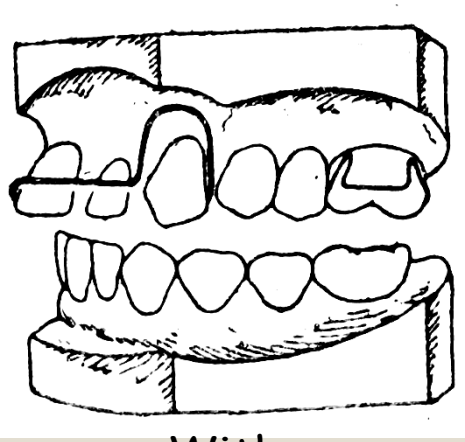


Vestibular arch

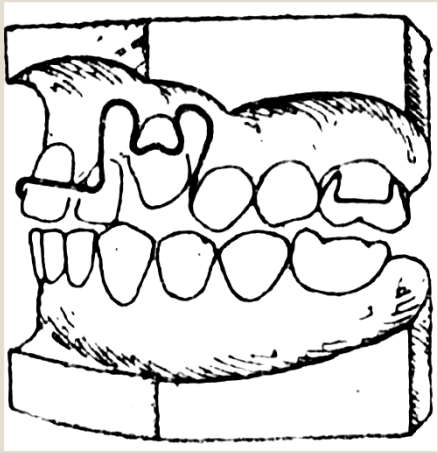
- Accessory springs to guide the eruption of the maxillary lateral incisors.

Active (mechanical) component

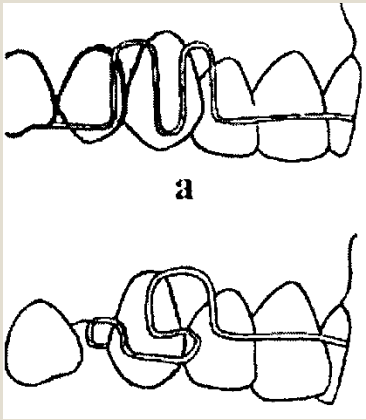
Vestibular arch



With
half-round bends



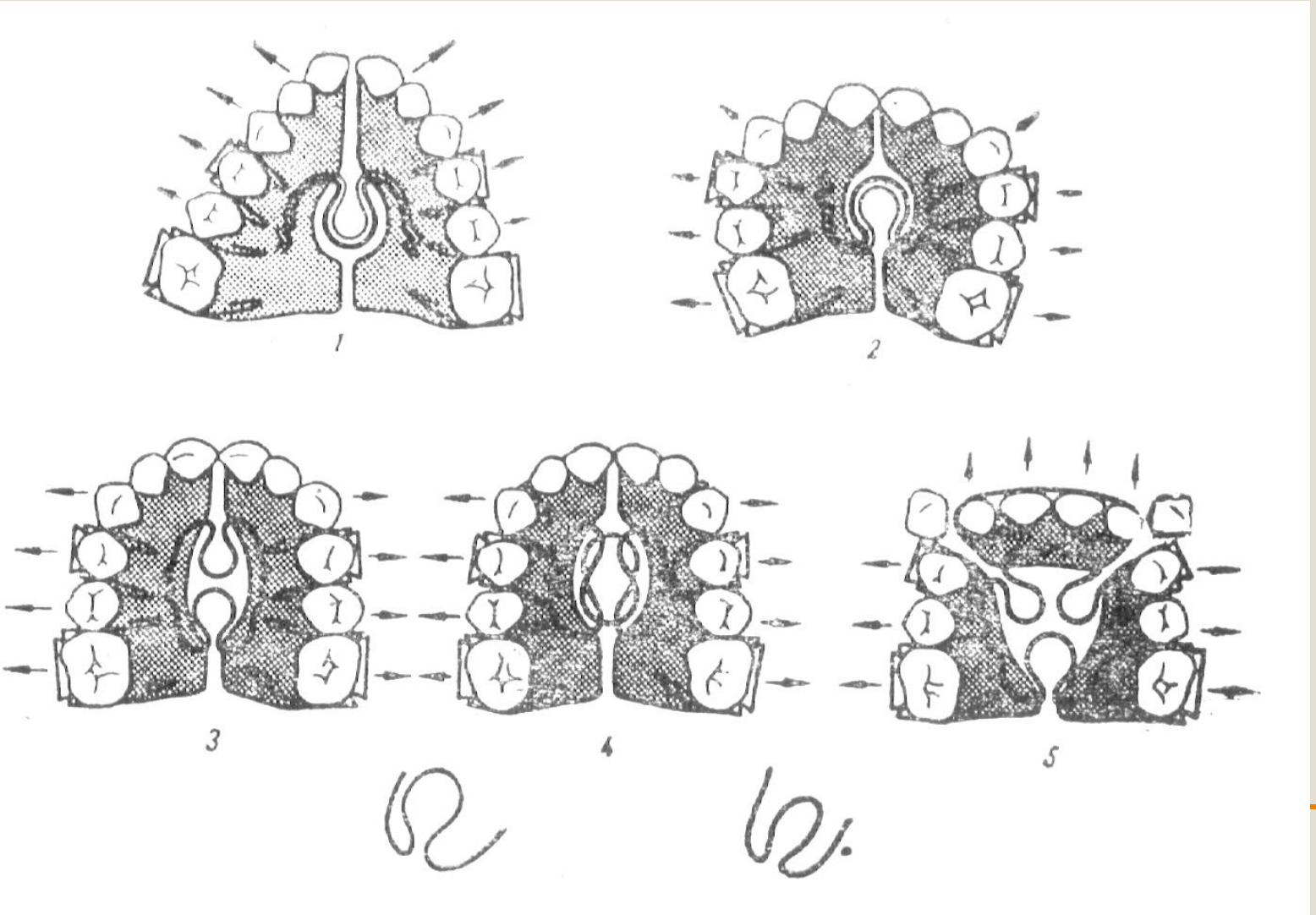
With the M-shaped loops
for canines



With a pressing loop
(horizontal or vertical)

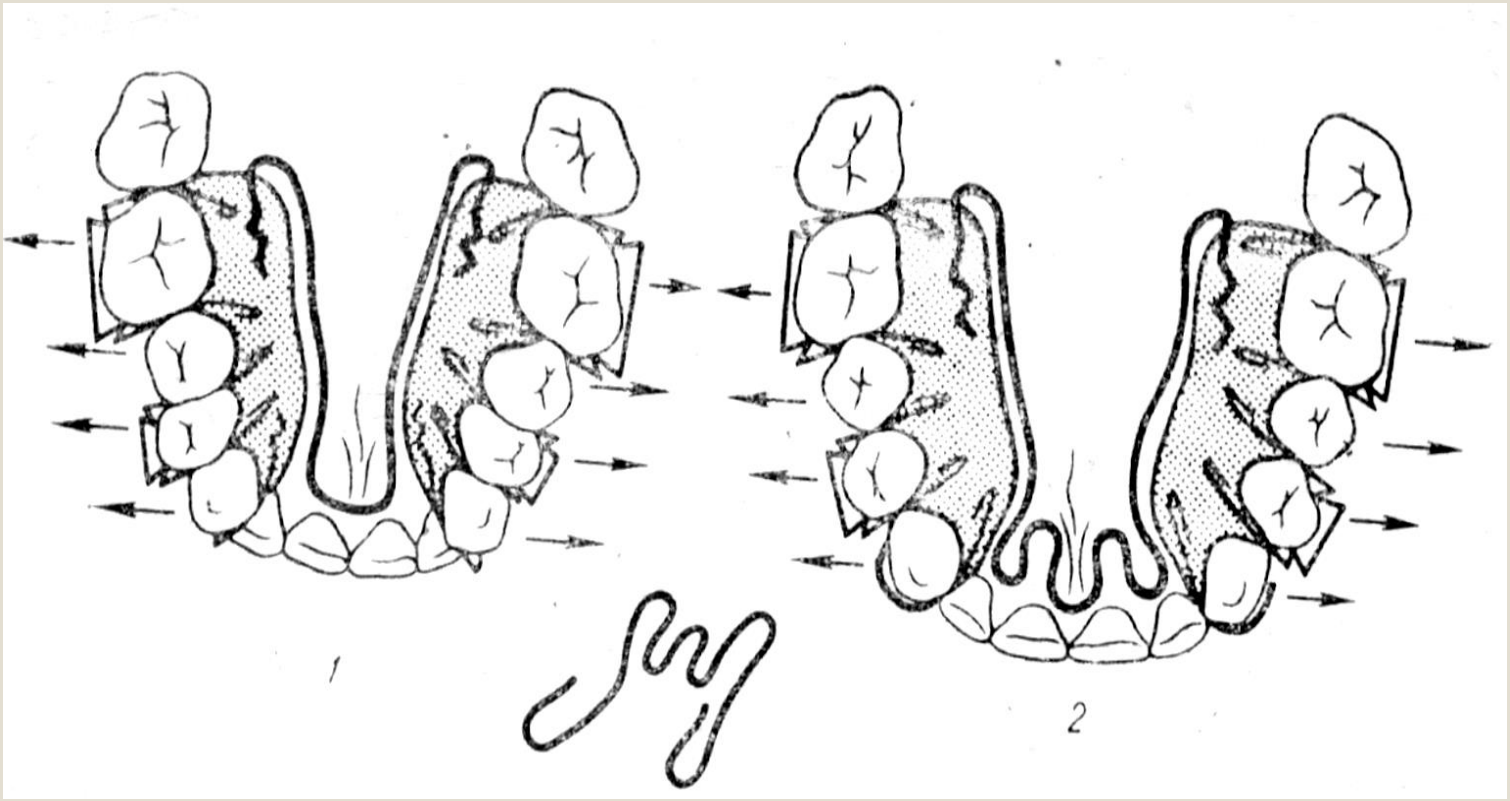
Active (mechanical) component

Springs for expansion of the upper dental row



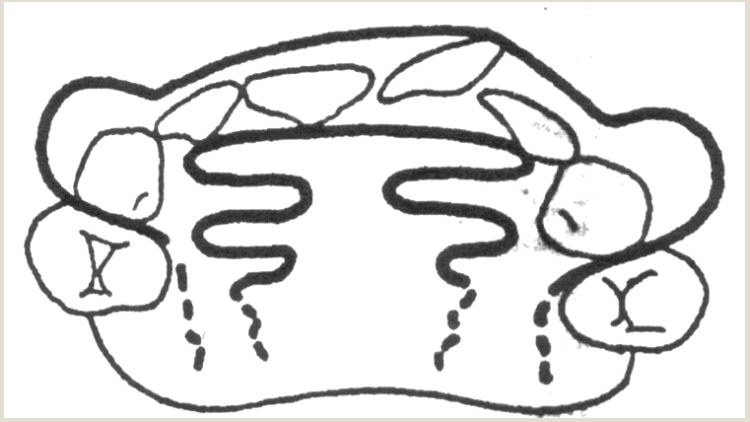
Koffin`spring of

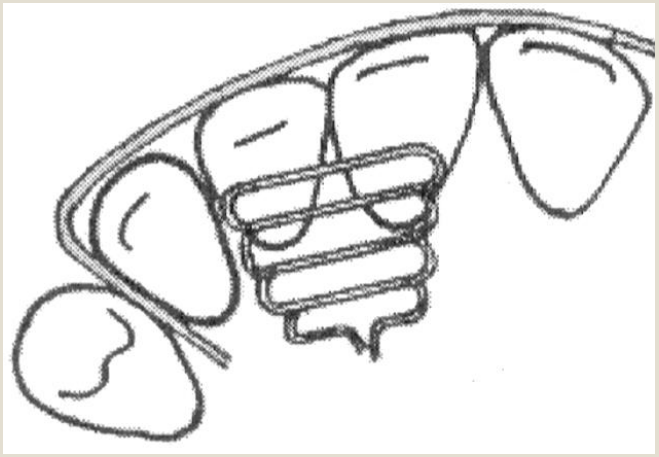
Springs for expansion of the lower dental row

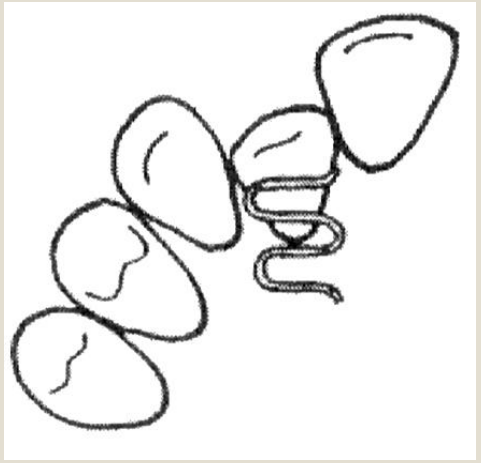


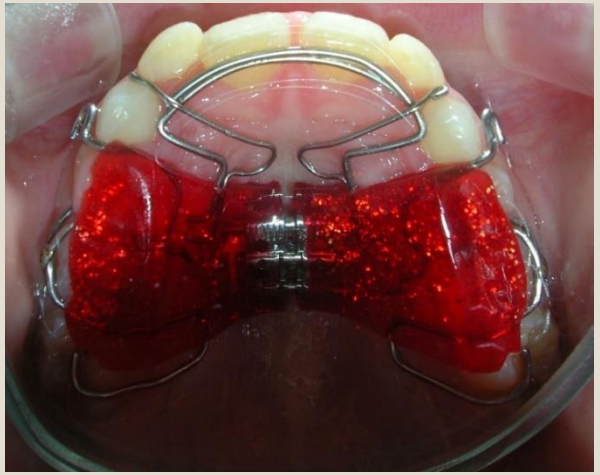
spring of Koller

Springs for teeth protraction



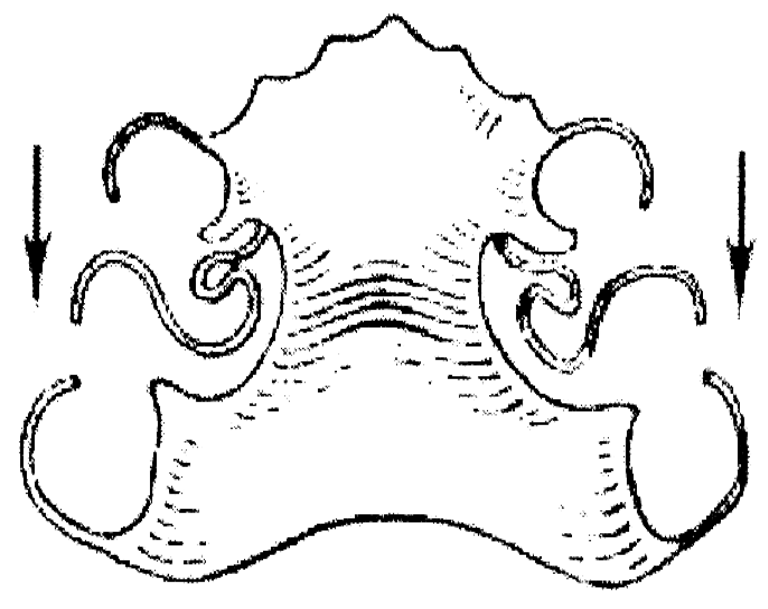


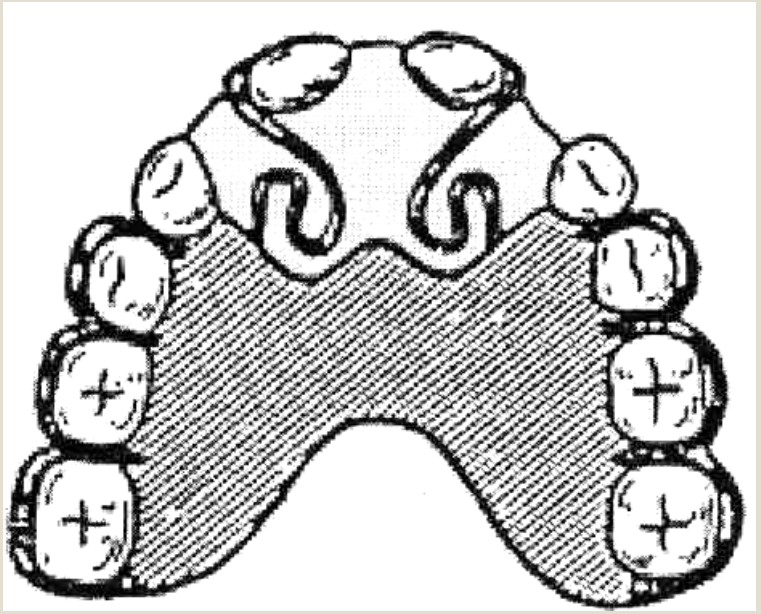




Springs for mesial or distal teeth movement

Finger spring





Elastics

Functional appliance

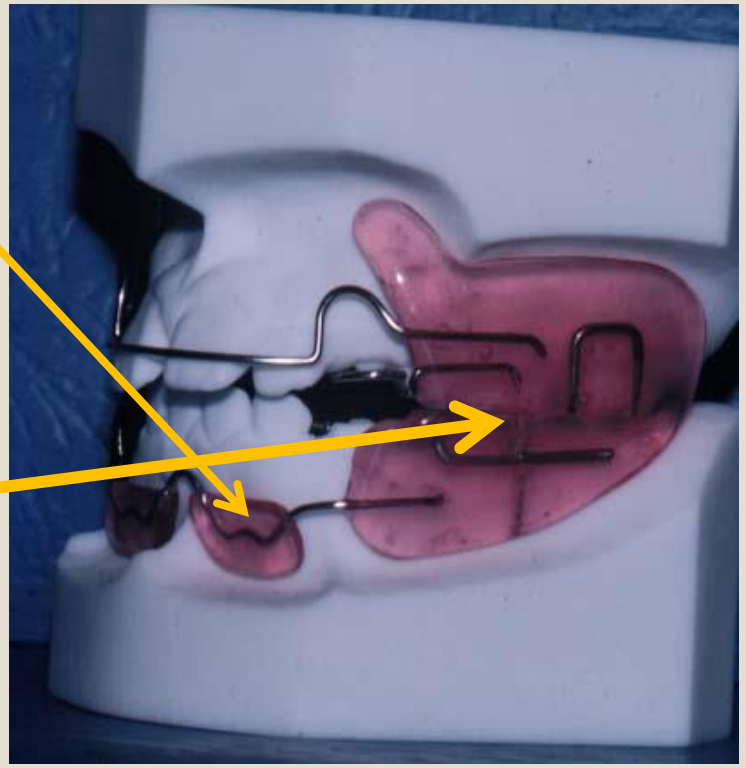
- ADVANTAGES
- Helps to eliminate abnormal perioral muscle function which interferes with muscle growth
- No side effects of mechanotherapy
- Less chair side time
- Easy to maintain oral hygiene
- Acceptable can be worn during night

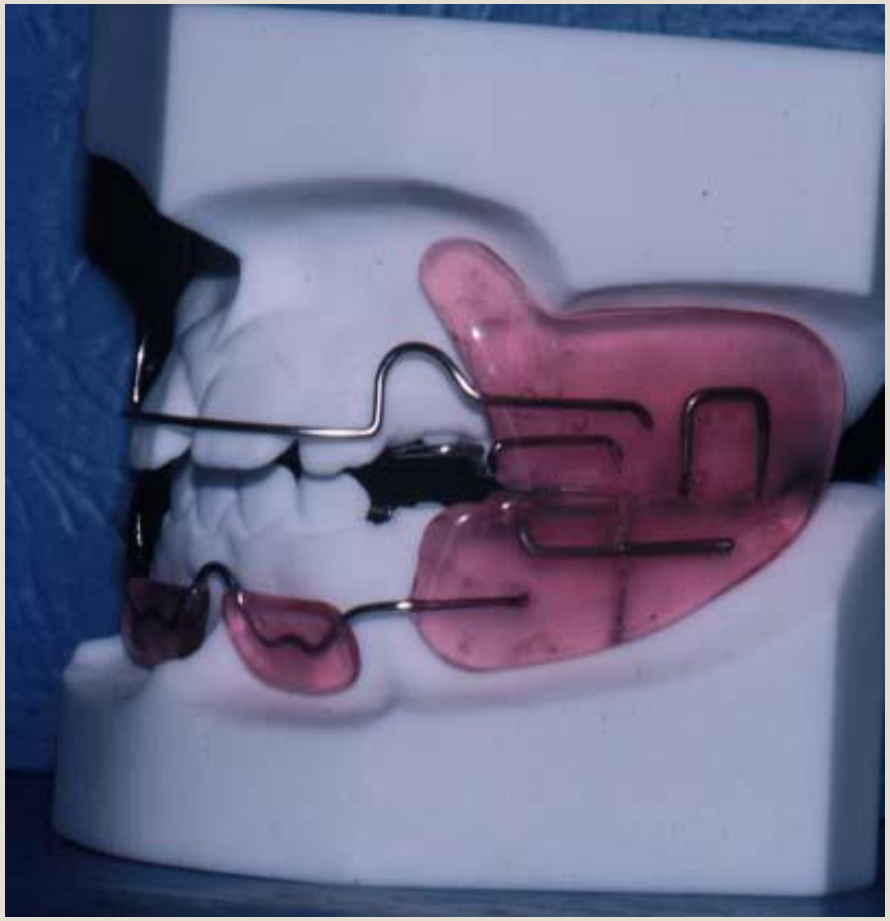
- DISADVANTAGES
- Not useful in adults where active growth completed
- Patient cooperation n wearing appliance important
- Not possible to correct rotation ,crowding etc
- Tendency to increase lower facial height therefore contraindicated in patients with backward rotating mandible

Functional appliances (functionally -acting)

lip bumper

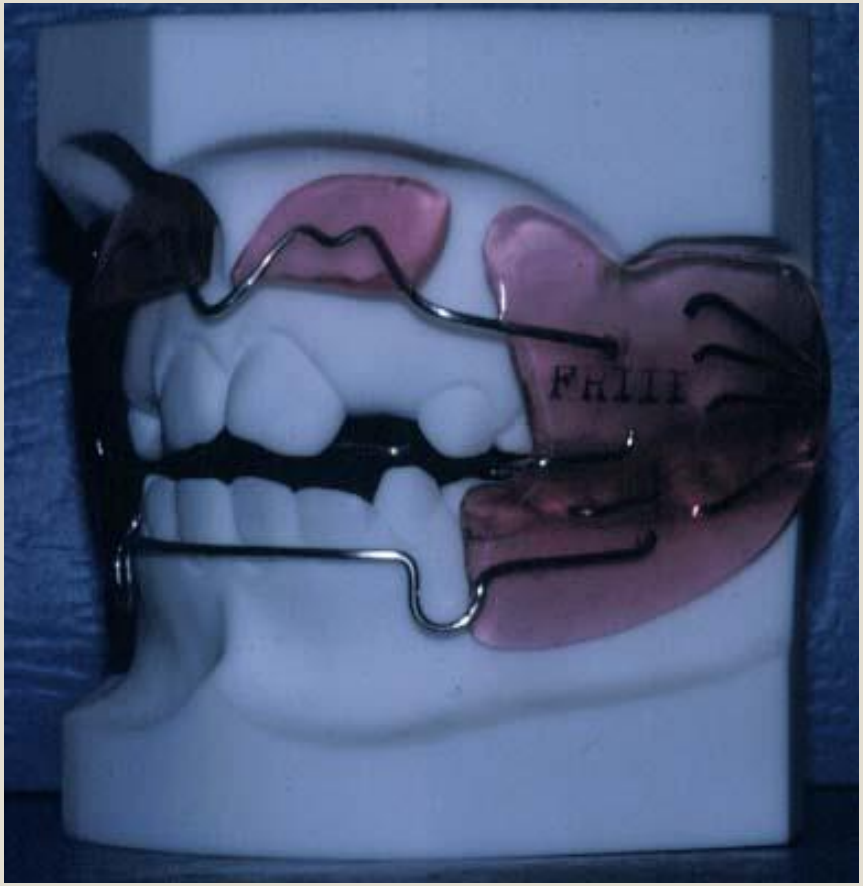
cheeks shield





FUNCTIONAL REGULATOR RF-I, RF-II (FRANKEL APPLIANCE)

CLASS III MALOCCLUSION
FUNCTIONAL APPLIANCE



FUNCTIONAL REGULATOR III
(FRANKEL III)

Bimler apliance

Activator Clammpt

Functional appliances (functionally -directing)

Use the force of masticatory muscles

Biting Plane

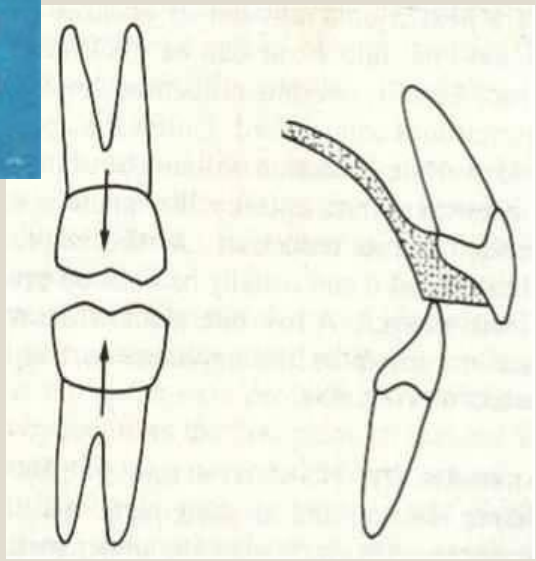
according to place

1) frontal
2) lateral

according to construction

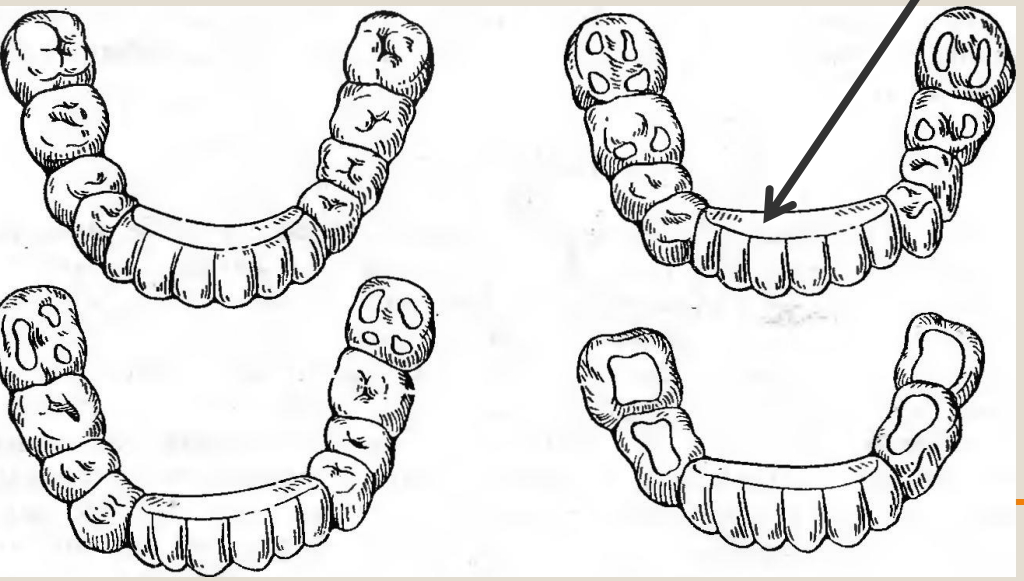
1)flat
2) inclined

Frontal flat biting plane



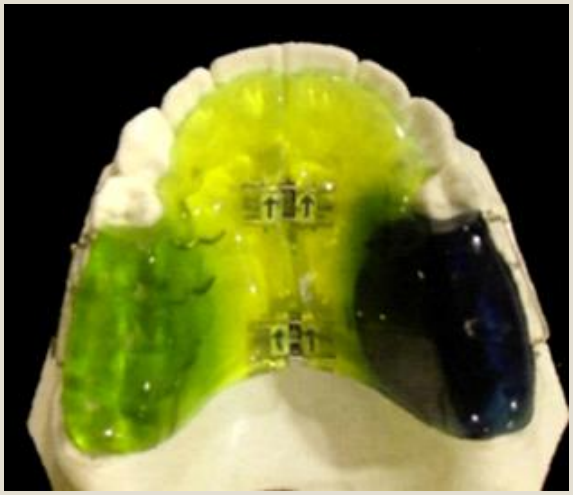
Frontal inclined biting plane

Brukle appliance

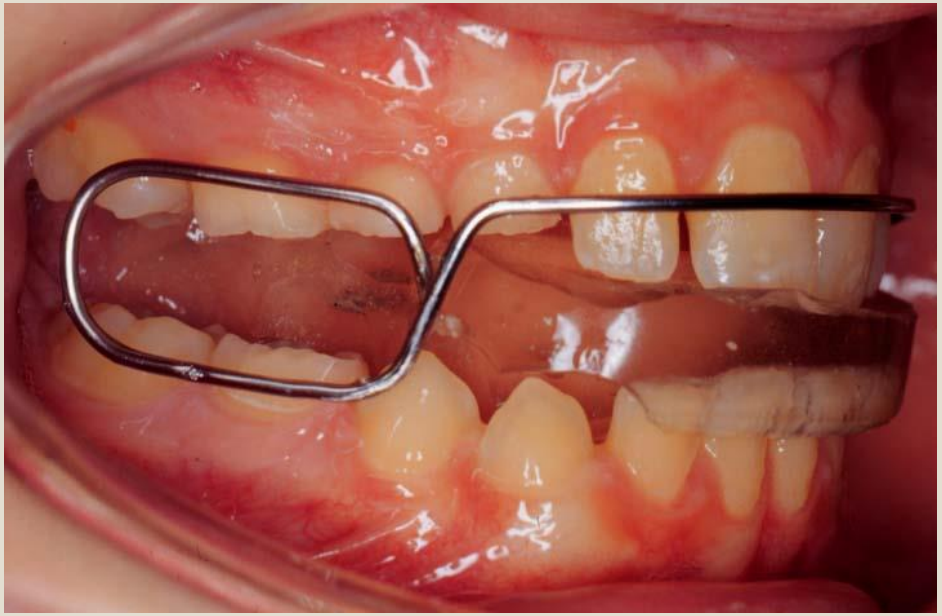


Bynin's gum shield

Lateral biting plane



Bionator Balters



Twin Block removable appliance that pull the mandible forward.

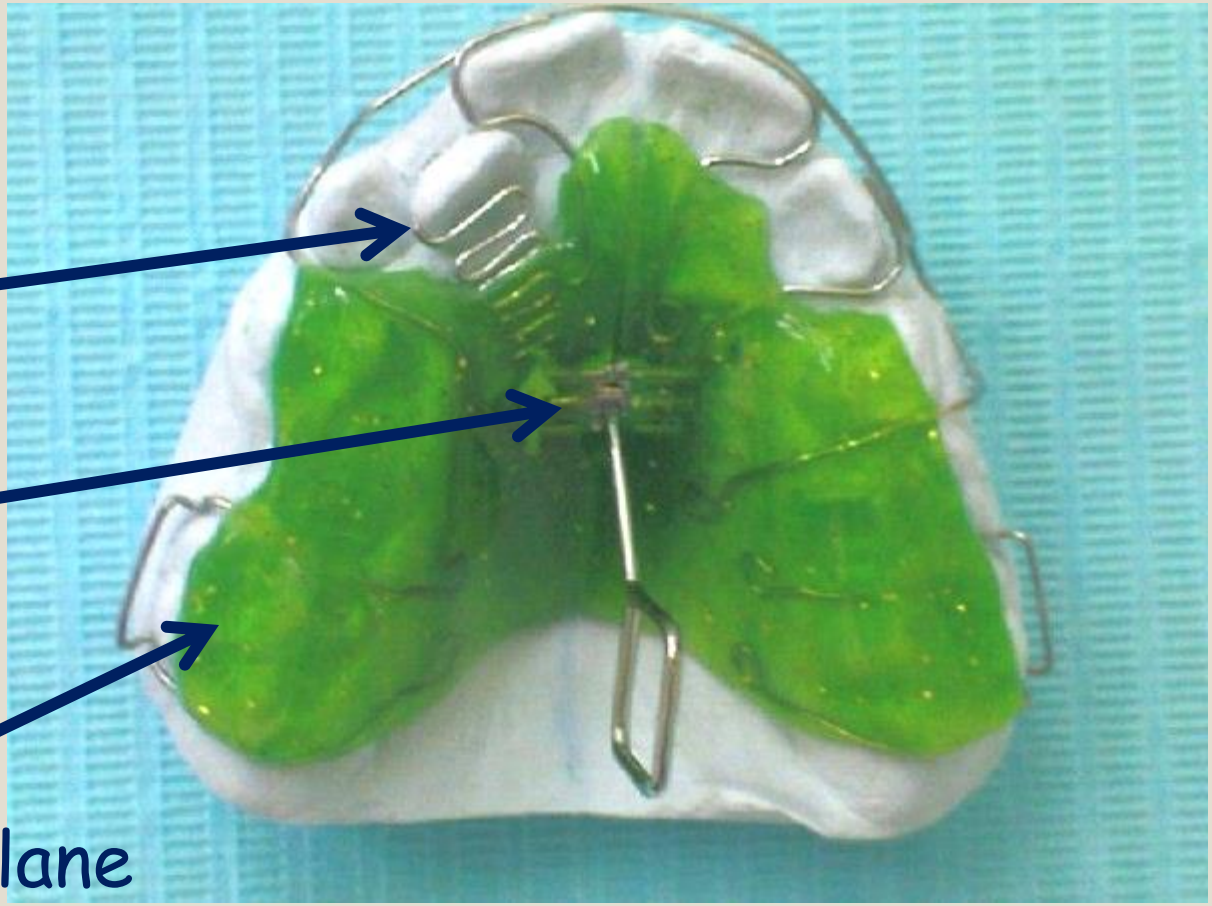
Andresen appliance

COMBINED ACTION APPLIANCES

Z-spring
for lateral incisor protrusion

Mid-line screw
for arch expansion

Lateral biting plane
For bite disjoin



Fixed appliances

Fixed appliances

HERBST APPLIANCE (FIXED) MANDIBLE HELD IN PROTRUSION +OPEN VERTICALLY

PERMANENT DENTITION
CLASS II DIVISION 1

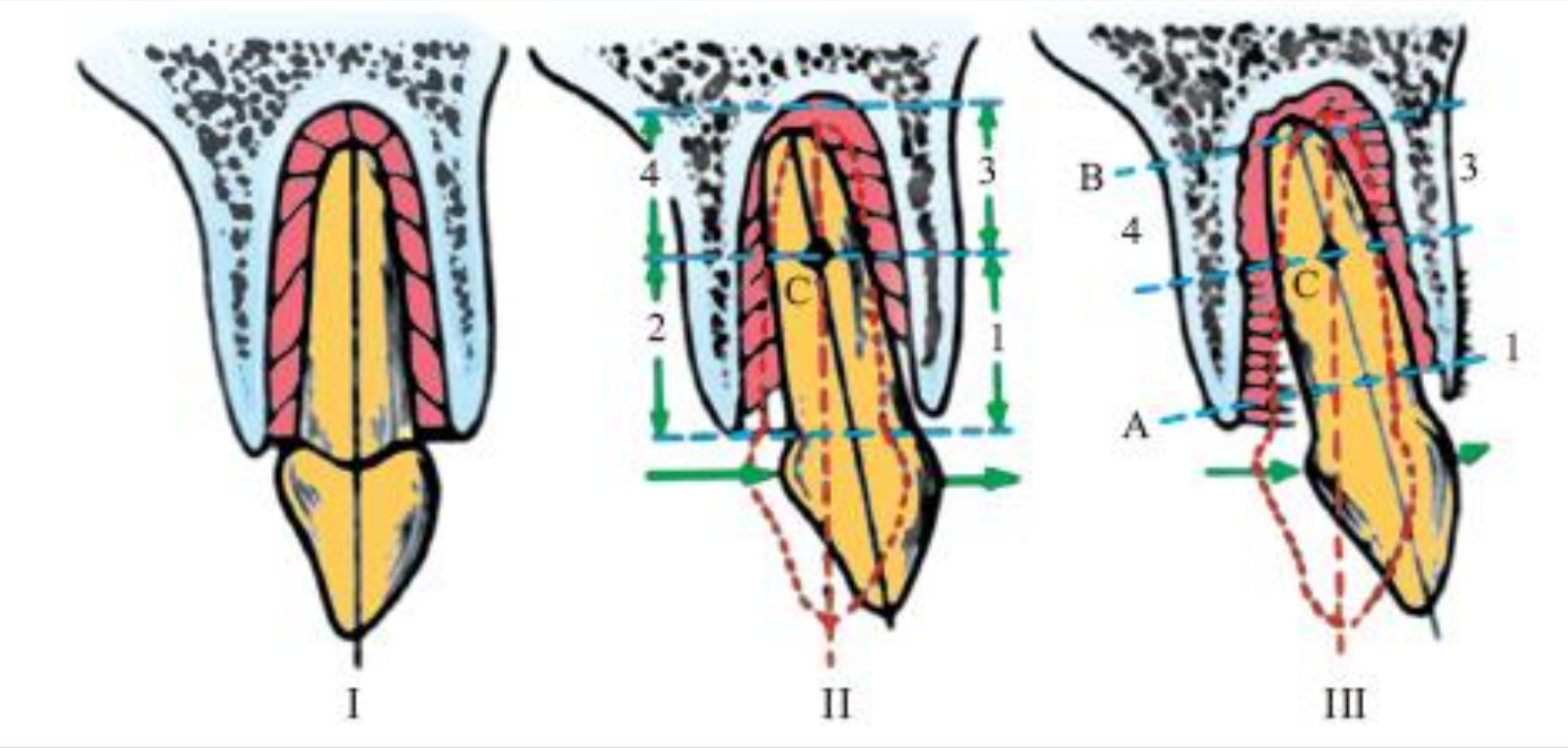



Tissue reaction in orthodontics

I – rest state

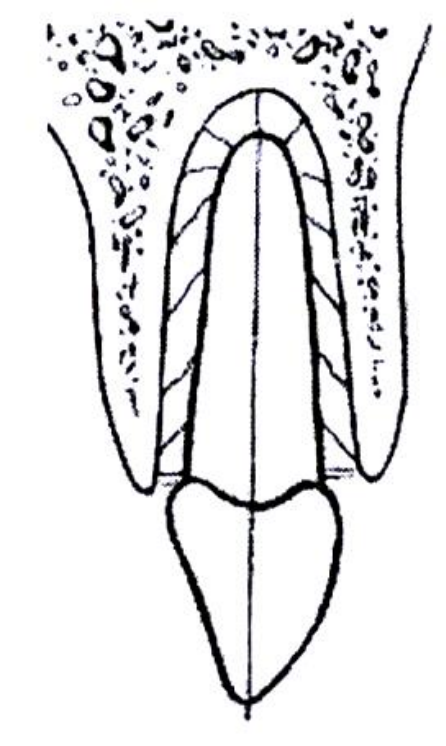
II – 2 pressure areas and 2 traction areas form during tipping

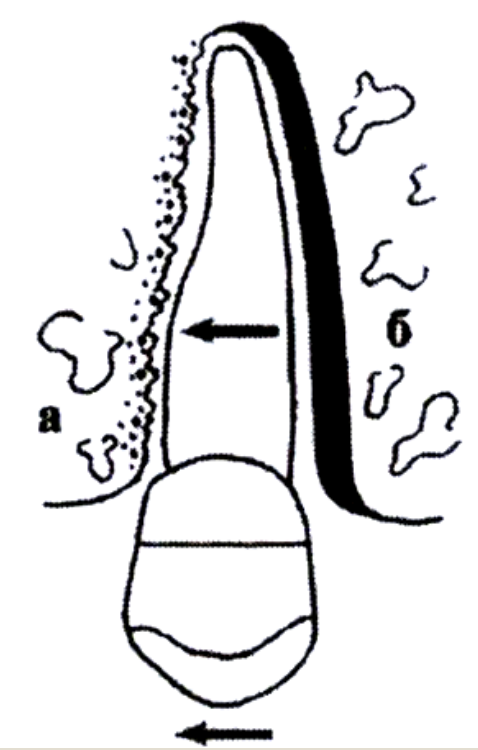
III – bone' resorption in traction areas



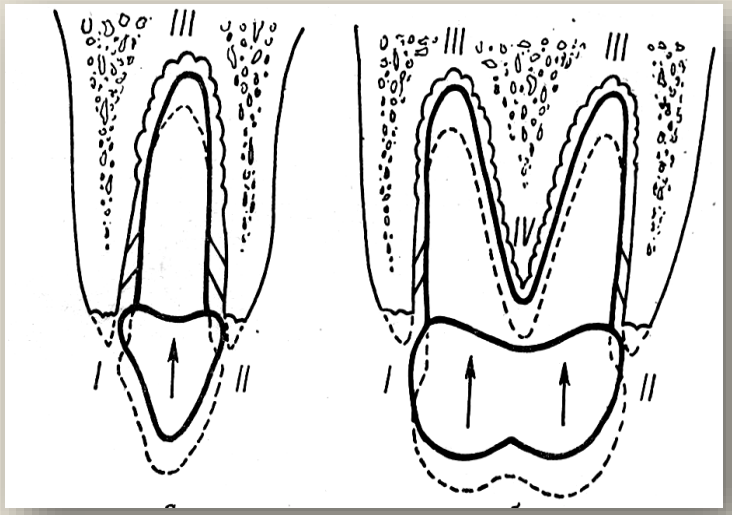
Morphologic changes during bodily tooth movement

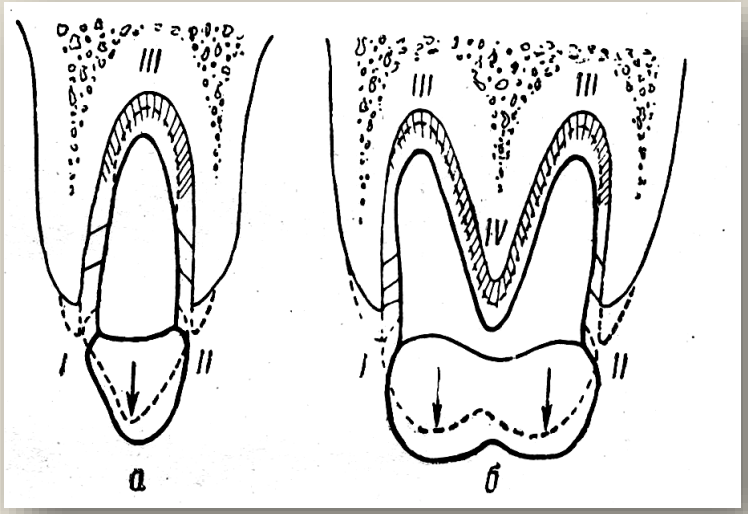
a) Bone resorption on the pressure side
b) Bone deposition along the stretched fiber bundles



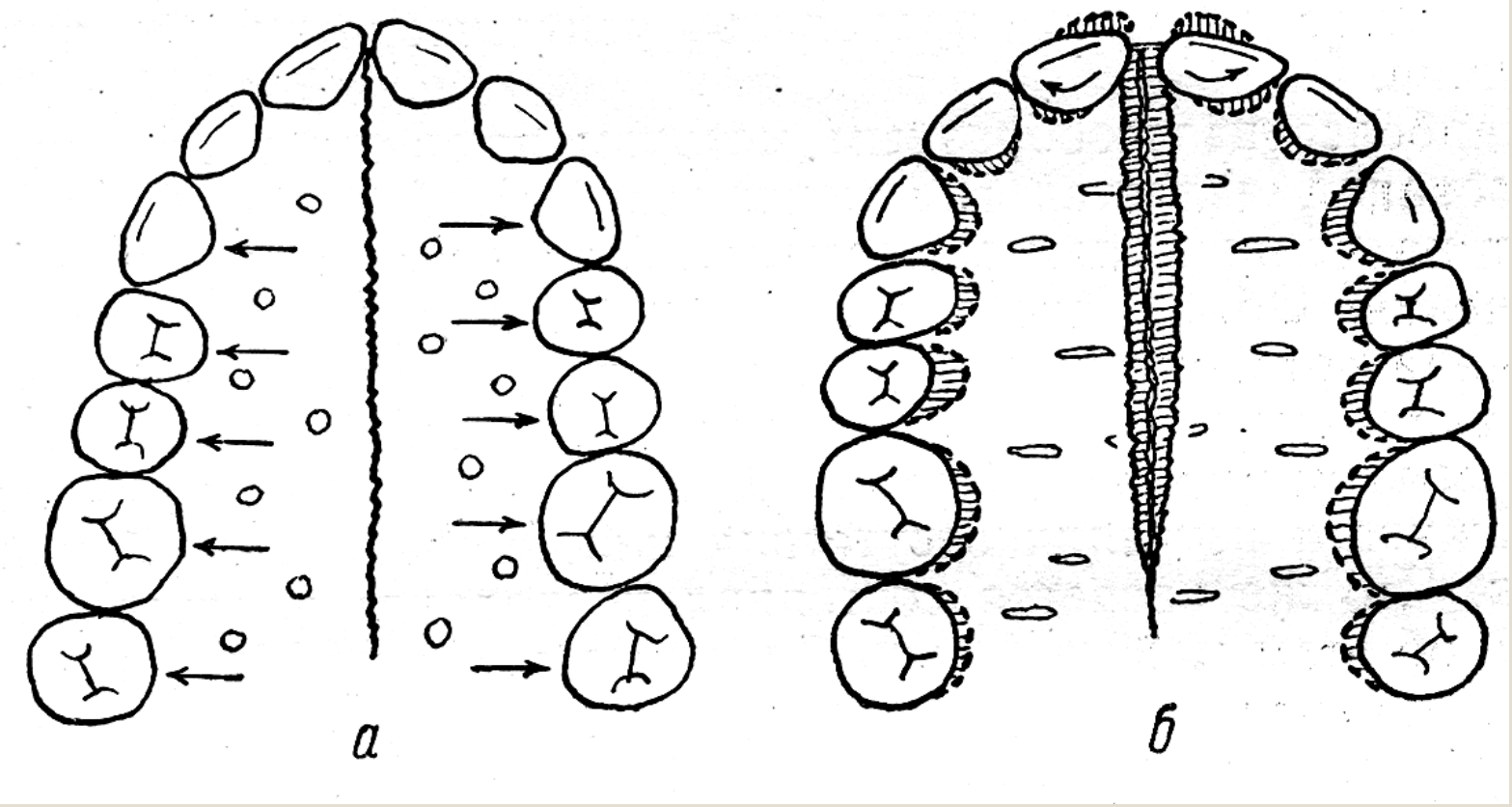


Arrangement of fibers bundles and bone structure during extrusion and intrusion





Palatal stitch changes during its separation










Thank you for your attention!