

# **DENTURE BASE CONSIDERATIONS in RPD**

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## **DENTURE BASE :**

Denture Base Used to designate that part of a Prosthesis that rests on the residual bone covered by soft tissue and to which the teeth are attached

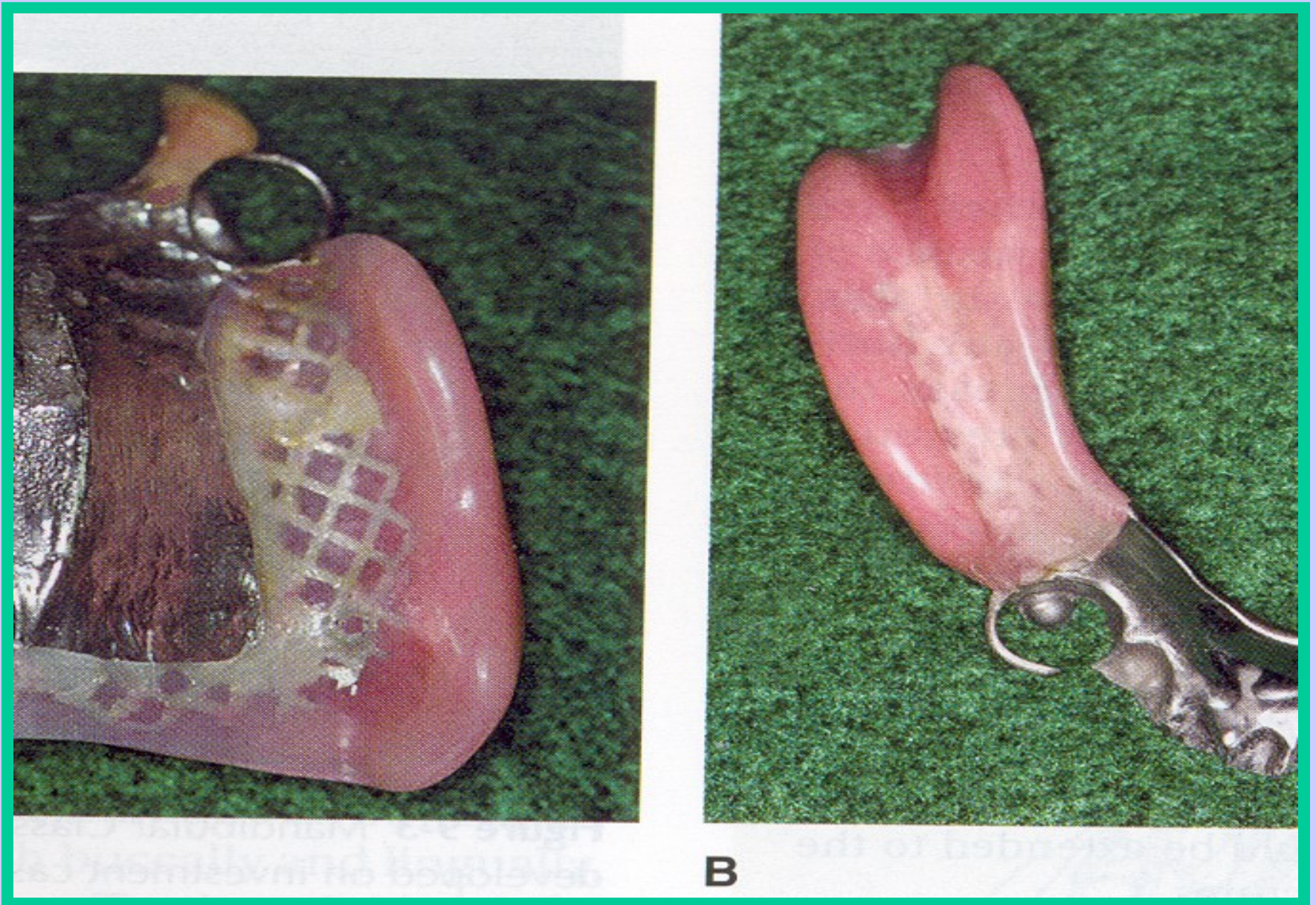
## **BASAL SEAT OR DENTURE FOUNDATION AREA :-**

The oral tissues and structures of residual ridge supporting a denture base are referred to as the Basal Seat or Denture foundation area

# **According to the Design of Denture or Prosthesis Denture Base are Two Types:-**

1. **TOOTH – SUPPORTED PARTIAL DENTURE BASE**
2. **DISTAL EXTENSION PARTIAL DENTURE BASE**

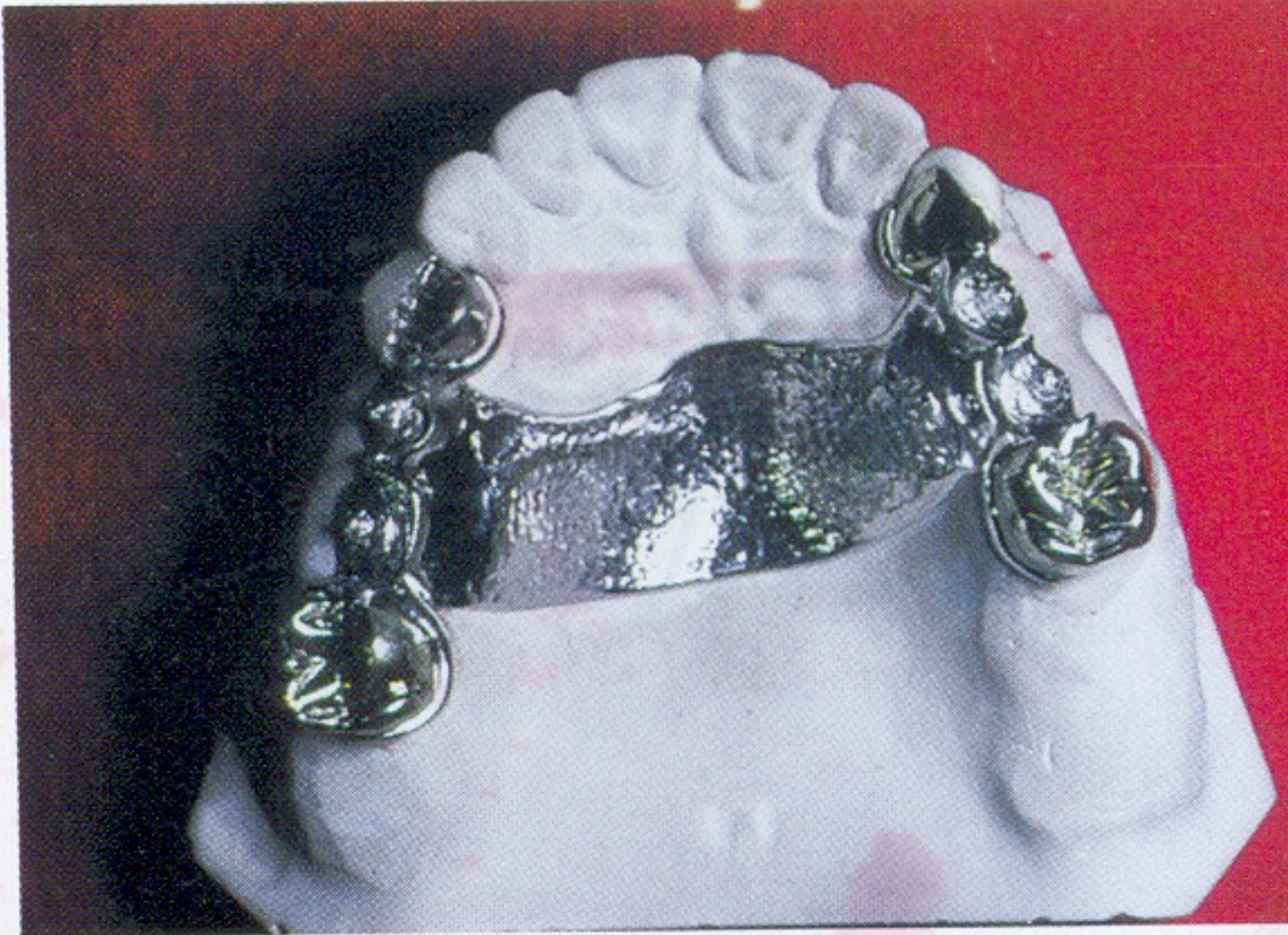
# DISTAL EXTENSION DENTURE BASES



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# TOOTH SUPPORTED PARTIAL DENTURE



B

# **FUNCTIONS OF DENTURE BASES:**

- 1. The Denture base supports artificial teeth and effects the transfer of occlusal forces to supporting Oral Structures**
- 2. Stimulation of the underlying tissues of the residual ridge**
- 3. The denture base also may add to the cosmetic effect of the replacement and reproducing natural – looking contours**

# **IDEAL DENTURE BASE MATERIAL:**

## **Requirements :-**

**Accuracy of adaptation to the tissue,  
with minimal volume change**

- 1. Dense, nonirritating surface capable of receiving and maintaining a good finish**
- 2. Thermal conductivity**
- 3. Low specific gravity; light weight in the mouth**

**5. Sufficient strength; resistance to fracture of distortion**

**6. Easily kept clean**

**7. Esthetic acceptability**

**8. Potential for future relining**

**9. Low initial cost**



# **ADVANTAGES OF METAL BASES**

## **1. Accuracy and permanence of form :**

**Ex: Gold, Chrome, or Titanium alloys used**

## **2. Comparative tissue response :**

**Inherent Cleanliness –**

**Greater Density and the bacteriostatic activity contributed by Ionization and Oxidation of the Metal Base**

## **3. Thermal Conductivity :**

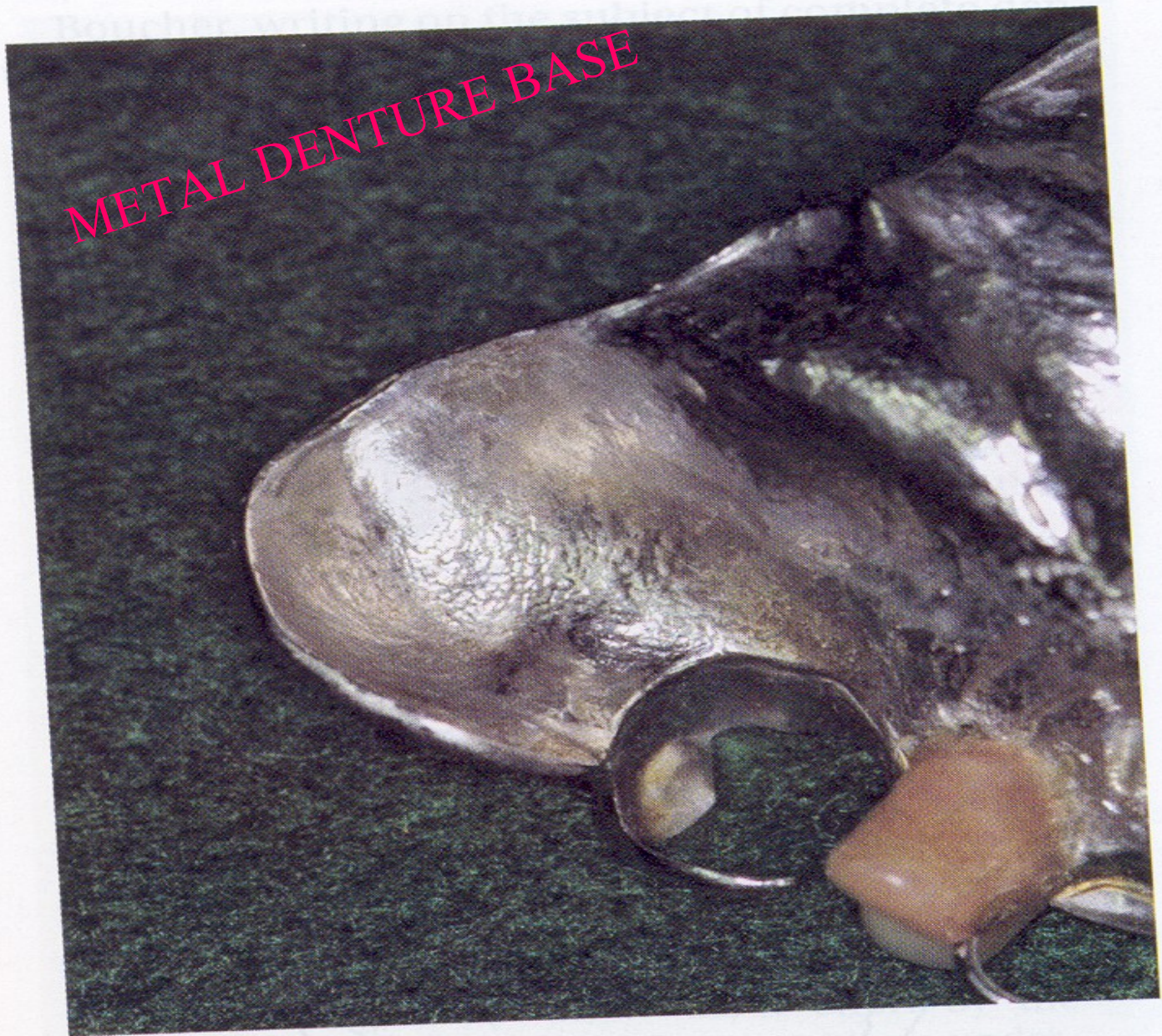
**Temperature changes are transmitted through metal base contributes to the patient's acceptance of a denture**

## **4. Weight and Bulk :**

**Metal alloy may be cast much thinner than acrylic resin and still have adequate strength and rigidity**

## **DISADVANTAGES OF METAL BASES:-**

- 1. Recent extraction ridges metal base is not preferred**
- 2. Difficult to make adjustment and corrections**
- 3. Difficult to Reline**



# **METHODS OF ATTACHING ARTIFICIAL TEETH**

**:**

- 1. With Acrylic Resin**
- 2. With Cement**
- 3. Processed directly to metal**
- 4. Cast with the frame work**
- 5. Chemical Bounding**





A



B



C

# STRESS BREAKER

(Stress Equalizer)

A device that allows some movement between the denture base or its supporting frame work and the direct retainers, whether Intra coronal or Extra coronal in design

# Types:

1. Those having a movable joint between the direct retainer and the denture base

They permit both vertical movement and hinge action of distal extension bases

## Ex:-

Hinges

Ball & Socket Devices

Sleeves & Cylinders

Swiss made Dalbo attachments

Crismani attachment

ASC 52 attachment



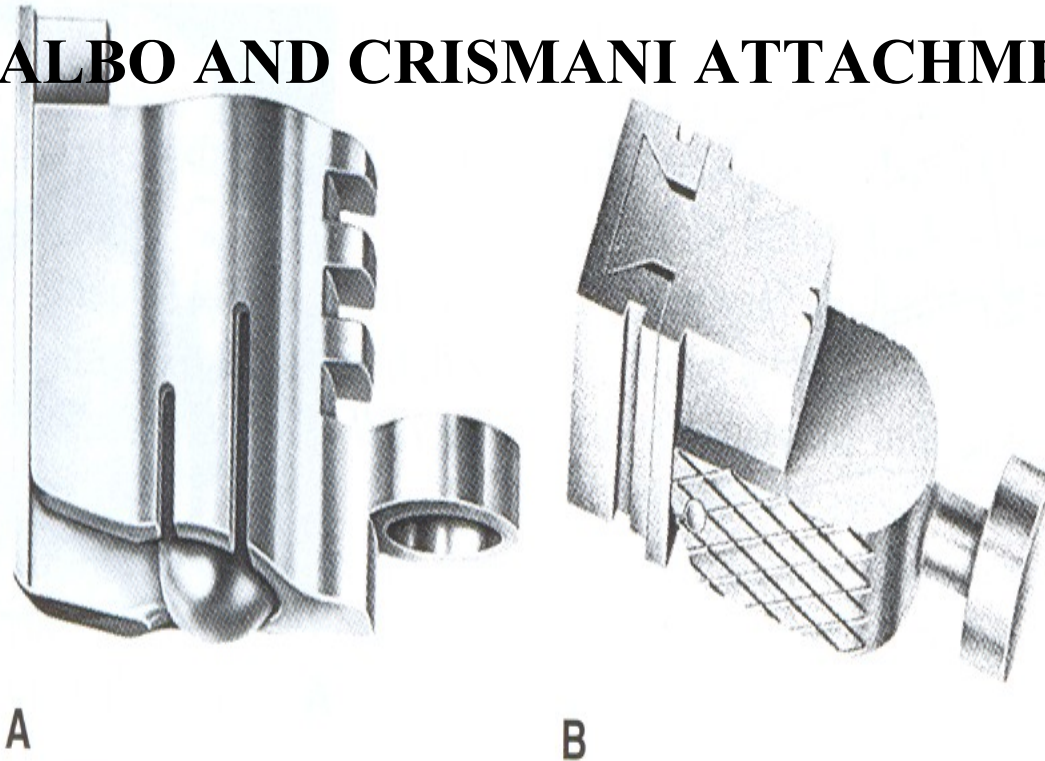
# HINGE - TYPE STRESS - BREAKER



**Figure 9-15** D-E hinge-type stress-breaker using vertical stop to limit movement of denture base away from tissues. Trunion design of stress-breaker also prevents lateral movement. (Courtesy Austenal, Inc., Chicago, IL.)

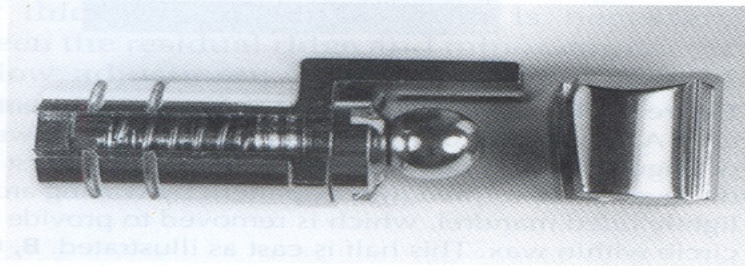


## DALBO AND CRISMANI ATTACHMENTS

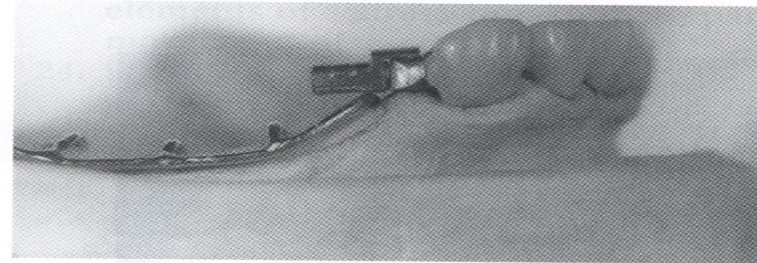


**Figure 9-17** A, *Dalbo* extracoronal retainer. Limited vertical and hinge movements of denture base are permitted by sleeve-and-spring design of retainer. B, *Crismani* intracoronal retainer design permits limited vertical movement of denture base.

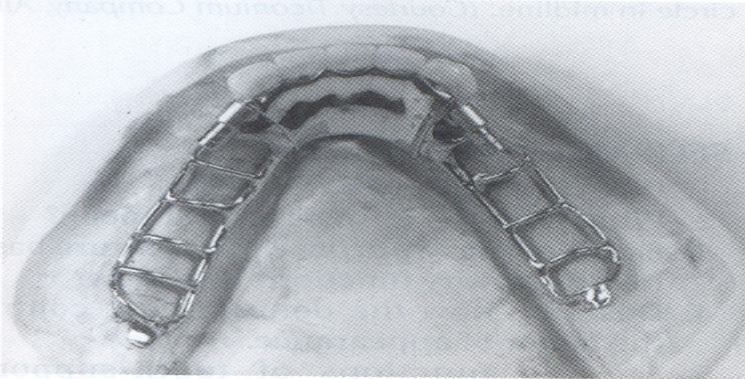
# ASC – 52 RETAINER



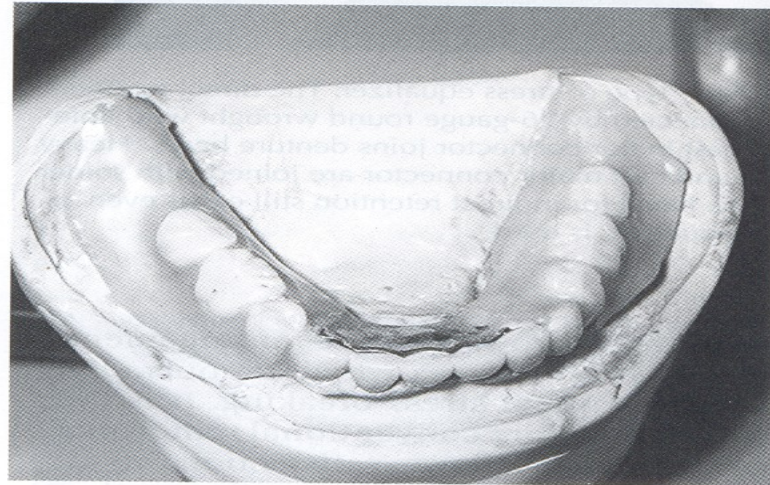
A



B



C



D

**Figure 9-18** Retainers designed to distribute stresses are sometimes selected for use with long distal extension bases. **A**, ASC-52 retainer is illustrated with a cutaway in the cylinder to reveal a spring-loaded shaft that permits flexion and rebound. Ball portion fits into the female receptacle and is movable in all directions. **B**, Assembled ASC-52 retainer. Female portion is cast to the canine abutment. Cylinder will be contained within the resin base. **C**, Occlusal view of framework and abutments on cast. Note that the cylinders are parallel to the alveolar ridge-bearing area so that occlusal stresses will not cause torque on the abutments. **D**, Removable partial denture with wax-up bases and replacement teeth, containing the ASC-52 attachment. Absence of visible clasps enhances esthetics.



## 2. Those designs having a flexible connection between the direct retainer and the denture base

Ex:-

- Wrought – wire connectors
- Divided major connectors
- Flexible devices for permitting movement of distal extension base
- Those having a movable joint between two major connectors

# ADVANTAGES OF STRESS BREAKERS

1. Horizontal forces acting on abutment teeth are minimized, the alveolar support of these teeth are preserved
2. It is possible to obtain a balance of stress between abutment and residual ridge
3. Intermittent pressure of the denture bases massages the mucosa provides physiologic stimulation – minimizes bone resorption
4. If relining is needed but not done, the abutment teeth are not damaged as quickly
5. Splinting of weak teeth by the denture base is made possible



# DISADVANTAGES OF STRESS BREAKERS

1. More difficult to fabricate and therefore more costly
2. Vertical and horizontal forces are concentrated on residual ridge, resulting in bone resorption
3. Effectiveness of indirect retainer is reduce or eliminated
4. Less tolerance by patient
5. Careless handling leads to bending and distortion of flexible connectors

# METHODS OF ESTABLISHING OCCLUSAL RELATIONSHIPS FOR R.P.D.

## FIVE METHODS :-

1. Direct apposition of casts  
when there are sufficient apposing teeth that remain in contact. (when only few teeth are to be replaced)
2. Inter occlusal record with posterior teeth remaining :-  
Kennedy's Class III & IV

## EX:-

Inter Occlusal Wax record

Metal – Reinforced wafer strip

### 3. Occlusal Relations using Occlusal rims on record bases :-

Kennedy's Class I & II

**Ex:-** Denture Base – Visible light cured composite, auto polymerizing Resin

### 4. Jaw Relation Records made entirely on Occlusal Rims :-

- When no occlusal contact between remaining Natural Teeth

### 5. Establishing Occlusion by the recording of occlusal path ways

**EX:-** Occluding Template

Functional Occlusal Record