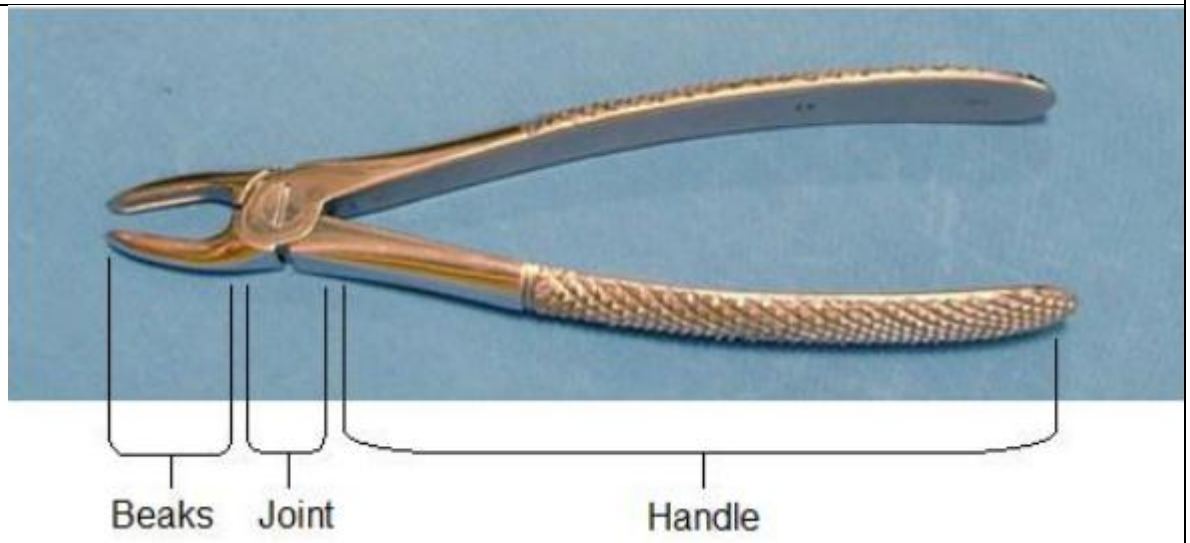
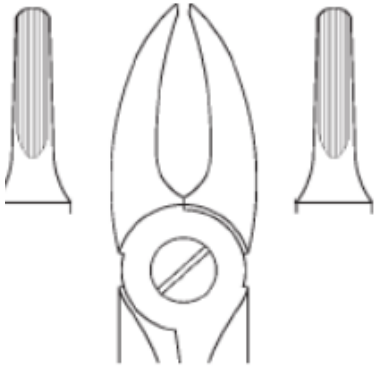
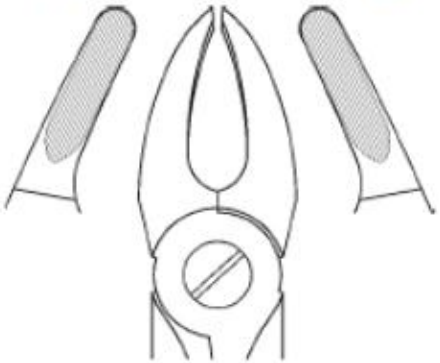
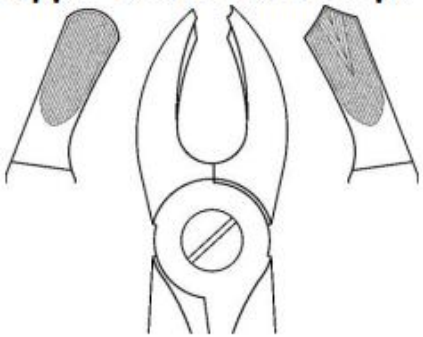
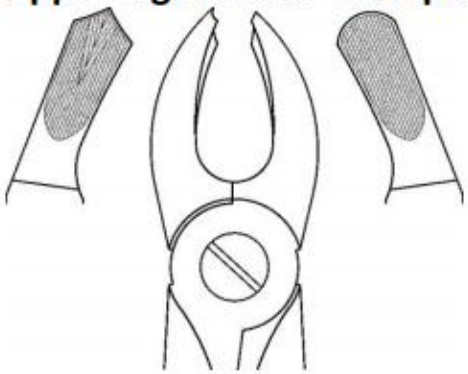
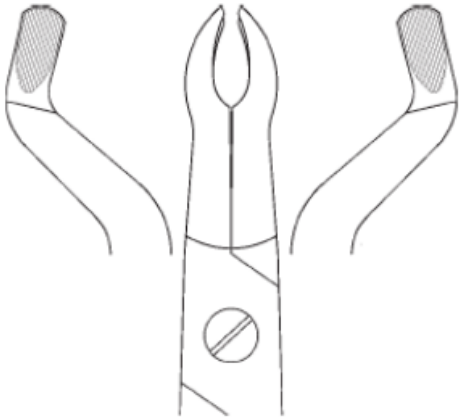
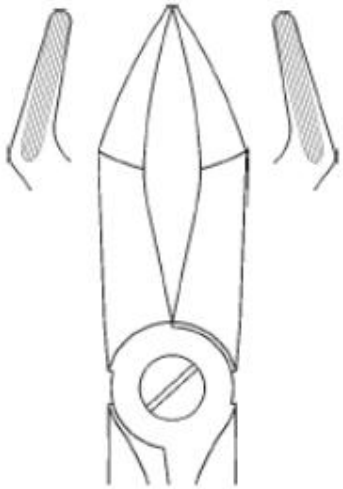
Armamentarium for simple extraction

Extraction forceps

Instrument	Picture
Basic Components of extraction Forceps	
Upper Anterior Forceps 	

Instrument	Picture
Upper Premolar Forceps 	
Upper Left Molar Forceps 	

Instrument	picture
Upper Right Molar Forceps 	
Jockey Forceps (Upper Third Molar Forceps) 	

Instrument	Picture
Bayonet Forceps (Upper Posterior Remaining Root Forceps) 	
Lower Anterior Forceps 	

Instrument	Picture
Lower Premolar Forceps 	
Lower Molar Forceps 	

Instrument	Picture
Cow horn Upper badly decayed Right Molar 	
Cow horn Upper Left Molar 	
Cow horn Lower Molar 	

Forceps Extraction Procedures

Forceps handling:

1. The forceps is hold in the palm of the right hand with the thumb finger supporting at its joint.
2. The little finger is placed inside the handles to open the forceps during its application.
3. When the tooth is gripped properly the little finger is placed outside the handles.
4. The forceps must be gripped as near as possible to the free ends of the handles to apply the maximum force.
5. In the upper premolars and molars forceps the curved side of the handles rest in the palm of the hand.

The forceps application:

The forceps blades are pushed apically along the tooth surface aiming to:

1. Cut the gingival attachment to the tooth surface.
2. Have a deep grip at or below the CEJ of the teeth and to reach the furcation area in the multi rooted teeth.

The aims of the extraction movements:

1. Dilatation of the bony walls of the socket (as the alveolar bone is a plastic tissue that yields under pressure).
2. Cutting the periodontal attachments along the root surface.
3. Dislodgement of the tooth out of the socket.

The principles of extraction movements:

 Generally in all teeth (Maxillary and Mandibular) the initial extraction movement is outwards (Bucally / labially) and then inwards movement (Palataly/Lingualy) to luxate the tooth in the socket. The final or delivery movement should be outwards and occlusaly i.e. outwards and downwards in the maxillary teeth and outwards and upwards in the Mandibular teeth.

 This general rule has two exceptions:

1. In case of extraction of the maxillary central incisor and the Mandibular second premolar (rule of 1/5) the initial movement is rotation (due to the conical shape of their roots).

2. In case of extraction of the Mandibular second and third molars the initial movement is inwards or lingualy because the buccal cortical plate of bone is reinforced by the external oblique ridge while the lingual cortical plate of bone is thinner and less resistant.

The function of the left hand:

1. Retract the tongue, cheeks and the lips from the site of extraction for accessibility and to prevent their injury.

2. Supports the alveolar bone around the tooth to be extracted in mandible and maxilla.

3. Supports and fix the mandible during the extraction of the mandibular teeth to prevent dislocation of the temporomandibular joint.

4. The supporting fingers should feel and monitor the yielding of the alveolar bone during the extraction movement. So the magnitude and the direction of extraction force are adjusted accordingly.

5. Compression of the dilated socket after extraction to decrease the size of the blood clot and help in rapid uncomplicated healing.

The correct handling of extraction forceps

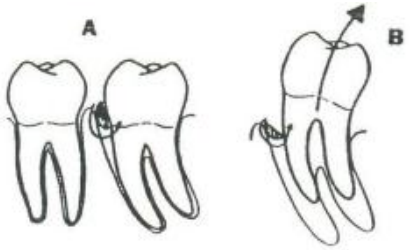
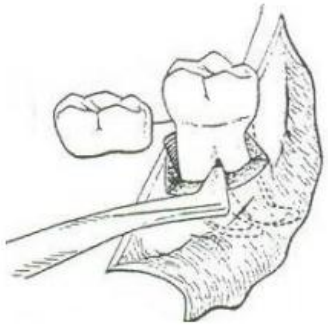
Picture	Comment
	• **Showing the proper forceps handling prior to its application on the tooth.** • **Note the position of the small finger which is used to open and close the forceps handles.**
	• **Showing the proper forceps handling during tooth extraction.** • **Note the removal of the small finger from inside the forceps handles**

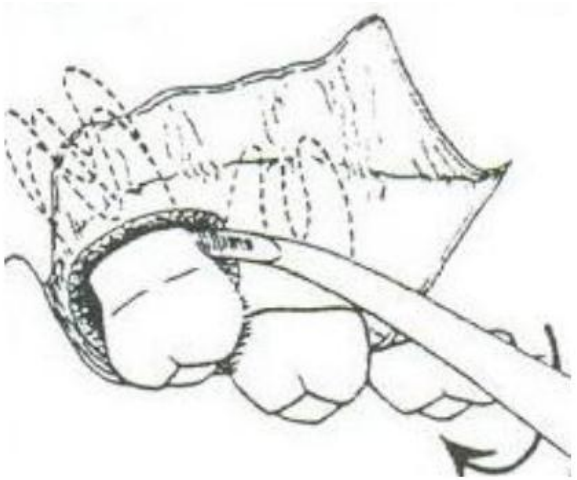
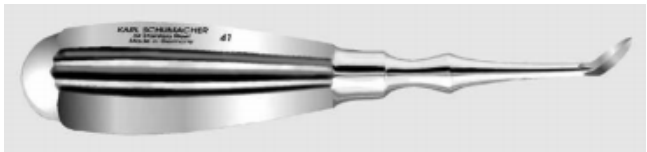
Retraction & Support using the left hand

 Retraction & support in lower left region.	 Retraction & support in lower anterior region.	 Retraction & support in lower right region
 Retraction & support in upper left region.	 Retraction & support in upper anterior region.	 Retraction & support in upper right region.

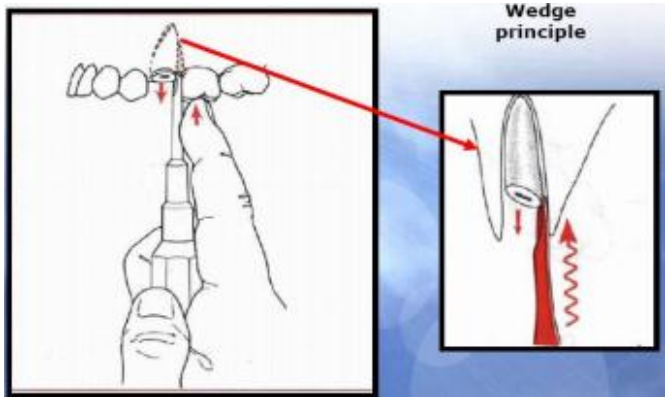
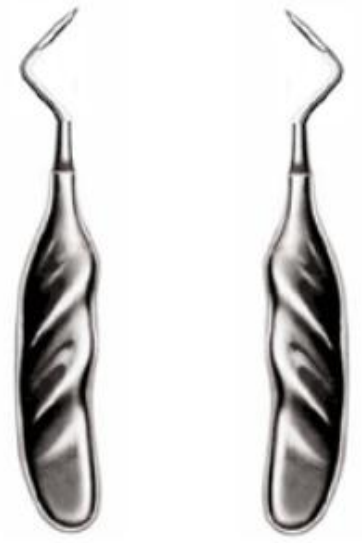
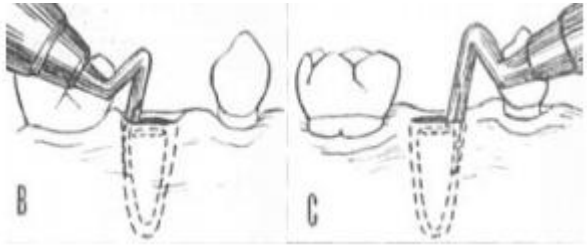
Elevators

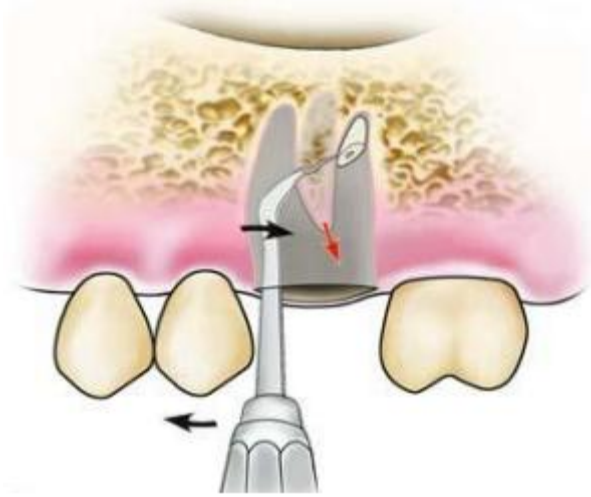
1) Elevators used with Teeth

Elevator	Picture	Use
Straight Elevator • Serrated blade. • Universal (right & left).		• **Used for** luxation and elevation of lower last molar tooth with distally curved roots. • **Mode of action:** wedge and lever principle. • **Point of application:** mesial application of force. • **Fulcrum:** interdental bone. Never use adjacent tooth as fulcrum to avoid its luxation. 
Buccal Applicator • Type of cross bars. • There is an obtuse angle between the shaft and handle. • Blade is triangular in shape.		• Used for luxation & elevation of lower last molar tooth with vertical root. • Mode of action: wheel and axel. • Point of application: buccal application of force where its tip is placed in bifurcation or in perceuse point which is created in trunk of tooth using surgical round bur. • The thick buccal plate of bone could be used as a fulcrum. 

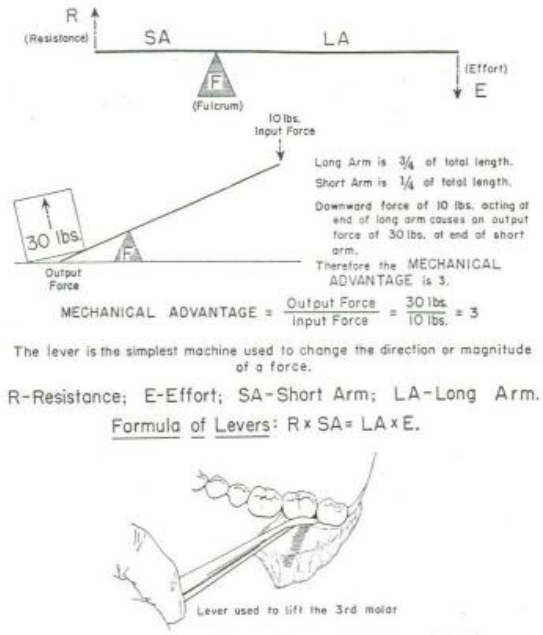
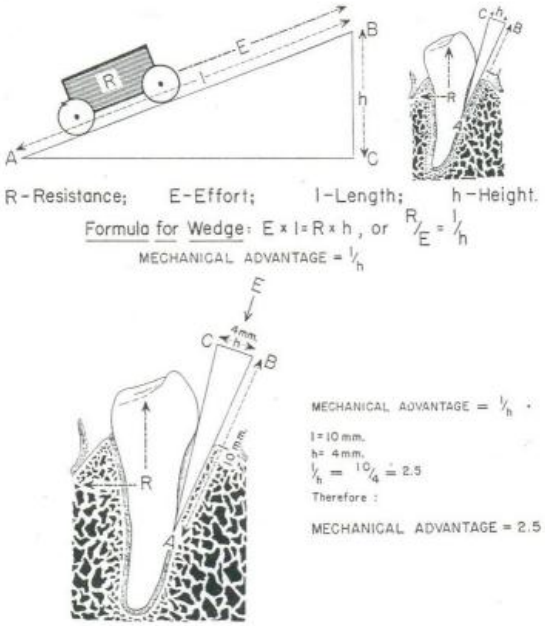
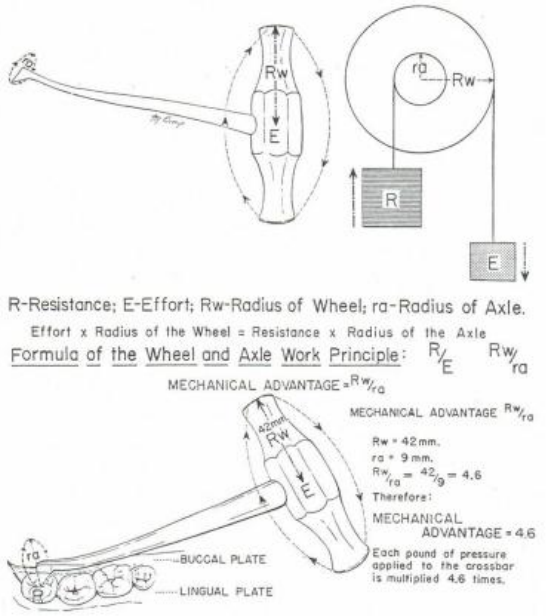
Elevator	Picture	Use
Miller • There is one for left and one for right.	 	• Used for luxation and elevation of upper last molar tooth. • Mode of action: wedge and lever. • Point of application: mesial application of force • Fulcrum: interdental bone. 
Modified miller • The difference between this elevator and curved apexo is that apexo has a groove in its blade.	 	
Potts Elevator	 	
Crane Pick Elevator		• Used for luxation of upper and lower 8 • Mode of action: wheel & axel • Point of application: bifurcation or perceuse point.

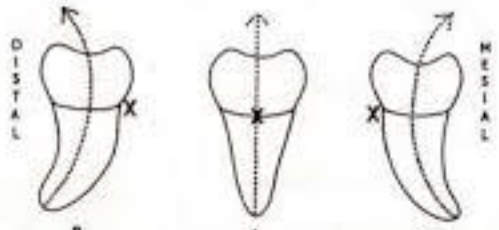
2) Elevators used with Roots & Root Fragments

Elevator	Picture	Use
Straight Apexo (Coupland) • Blade has a groove to accommodate root.		• Used for luxation and elevation of fractured roots of maxillary anterior and premolars. • Mode of action: wedge. They are forced between the root of the tooth and wall of socket. • Point of application: mesial and distal parallel to the long axis of the root. 
Curved Apexo • Used for luxation and elevation of fractured roots		• Used for luxation and elevation of fractured roots of all mandibular and posterior maxillary teeth. • Mode of action: wedge. They are forced between the root of the tooth and wall of socket. • Point of application: mesial and distal parallel to the long axis of the root. 

Elevator	Picture	Use
Socket applicator • It is type of cross bar. • Has right angle between shank and hand.		• Used for luxation and elevation of remaining root of lower molars (multirooted teeth) when only one root is remaining (empty socket exist). Contraindicated in maxilla. • Mode of action: wheel and axel. • Point of application: empty socket. 
Cryer • Has a triangular blade, and hand of apexo.		• Same as socket applicator but it gives lower controlled force. So used in maxilla. 

Principles of Action of Elevators

Lever Principle	Wedging Principle	Wheel & Axle Principle
		



—Buccal views of three right mandibular molars with differing root patterns to show the lines of withdrawal and points of application of an elevator

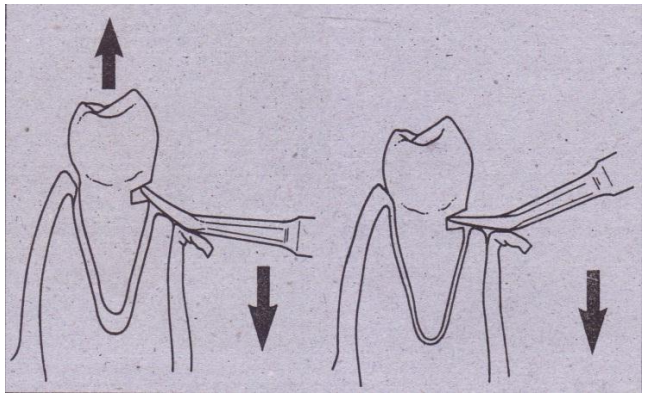


Fig. 5.19: Lever principle of elevation

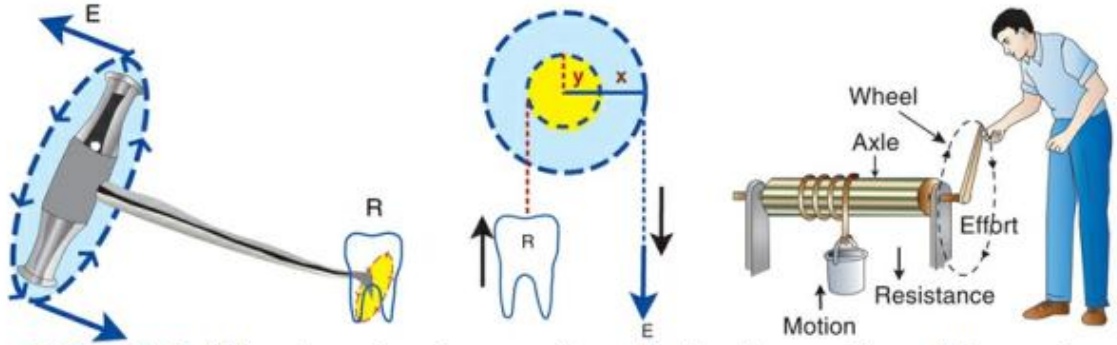
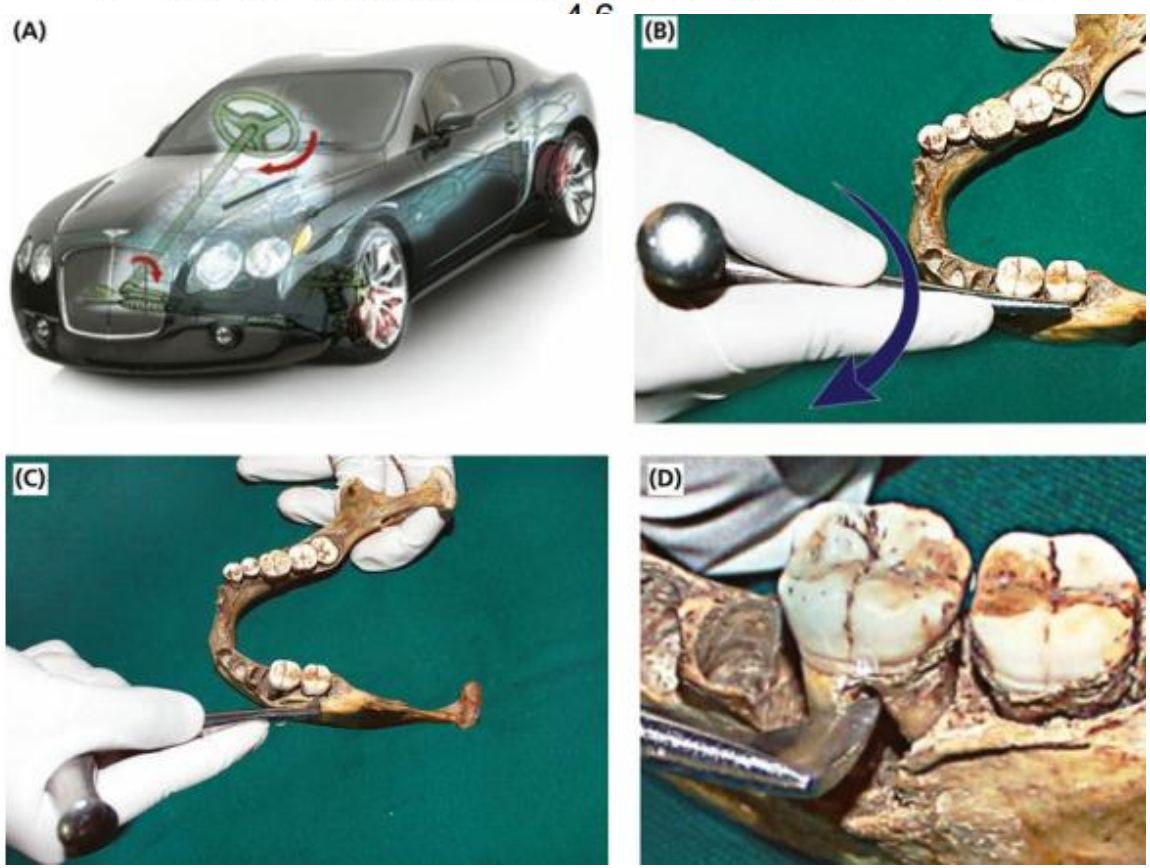


FIG. 17.16 Wheel and axle. *x*-radius of wheel; *y*-radius of the axle, E = effort, R = resistance, mechanical advantage of crossbar is 4.6



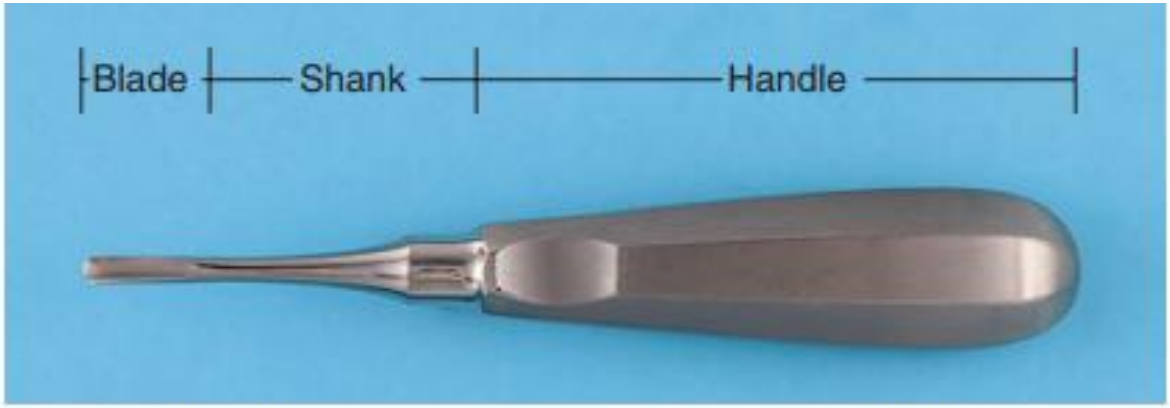
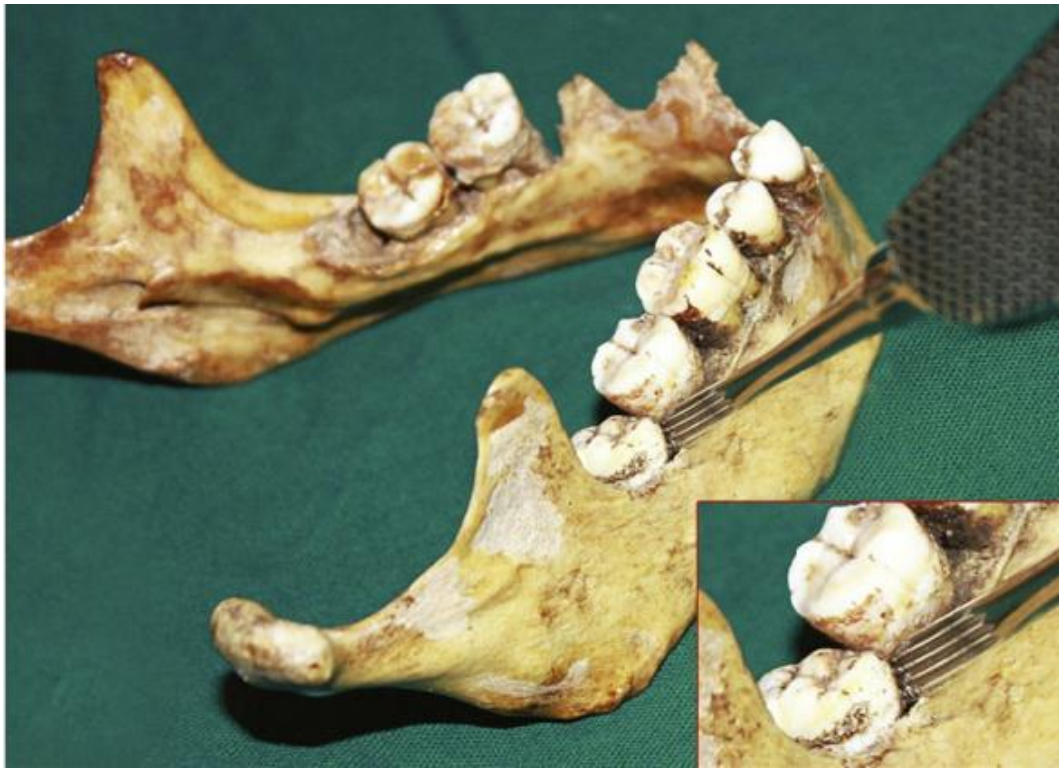


Fig. 7.30 The major components of an elevator are the handle, shank, and blade.



Rules governing the use of Elevators

1) Never use the adjacent tooth as a fulcrum, unless the tooth is to be extracted too.

2) Never use the buccal plate of bone as a fulcrum except in case of removal of lower third molar.

3) Never use the lingual plate of bone as a fulcrum.

4) Always use finger guards to protect the surrounding soft tissues from being injured in case the elevator slips.

5) Be certain that forces applied by the elevator are under control

6) Correct handling of elevator as in picture: