

Balancing Acts

*The Fingers of the Left Hand, the Mechanics of Pitch
Production, Vibrato and the Holding of the Violin/Viola*

**Peter J. Sacco, Associate Professor of Music and Director of Orchestral
Studies**

**University of Connecticut
Peter.Sacco@UConn.edu**

Research for this presentation was underwritten in part by a Dean's Research
Grant from the School of Fine Arts
University of Connecticut
David Woods, Dean

SUPPOSITIONS AND AXIOMS

- **The oblique alignment and precision posture of the fingers upon the fingerboard becomes, with the adductive support of the thumb, both a means of creating pitch and the fundamental strategy for securing the violin as a platform upon which it is played.**
- **The contact of fingertip and string, and thus pitch creation itself, is a RESIDUAL of the finger's balance on the fingerboard towards the left (player's perspective) side of the string.**
- **The spread of the padded surface of the fingertip to the string is crucial to the production of sound and intonation.**
- **The development of shaping and positional habits in the fingers leads to the creation of a Dynamic Arch. The Dynamic Arch becomes the basis of all finger action, shifting, vibrato and left hand dexterity.**

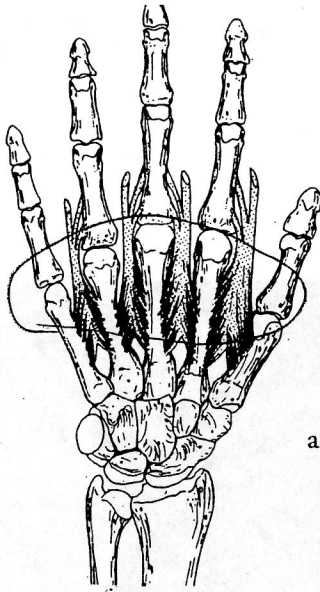
- The balance point in the Dynamic Arch, from the apex of the interphalangeal joint through to the wrist, provides the necessary weight to the fingerboard so that the violin will tend to tilt on its axis, securing it sufficiently, with the help of the jaw and occasionally the shoulder, to provide a platform for the manipulations of playing.
- The journey which enables the student to play without the shoulder pad (or with minimal supplemental support) is an outline of violinistic habits which are at the very core of violin technique.

References:

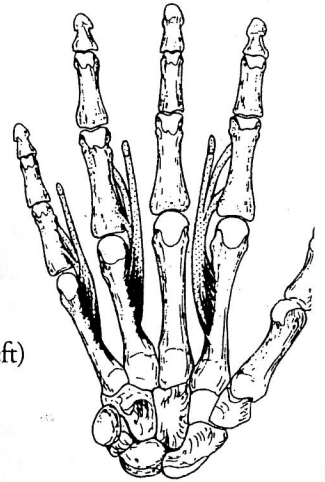
- N. Bernstein: *The Coordination and Regulation of Movements*. London; Pergamon. (1967)
- B. Calais-Germain: *Anatomy of Movement*; Eastland Press, Seattle. (1991)
- D. Hoppenot: *le violon interieur*. Editions Van de Velde; Fondettes, France (1981)
- M. Jeannerod: *The Cognitive Neuroscience of Action*; Cambridge, Mass.: Blackwell Publishers. (1997)
- J. Napier: *Hands*, Pantheon Books, New York. (1980)
- Otto Szende and Mihaly Nemessuri: *The Physiology of Violin Playing*; Collet's, London and Wellingborough. (1971)
- M.T. Turvey: *Coordination*, *American Psychologist*, Vol. 45. No. 8. (August 1990)
- F. Wilson: *The Hand*, Vintage Books, New York. (1999)



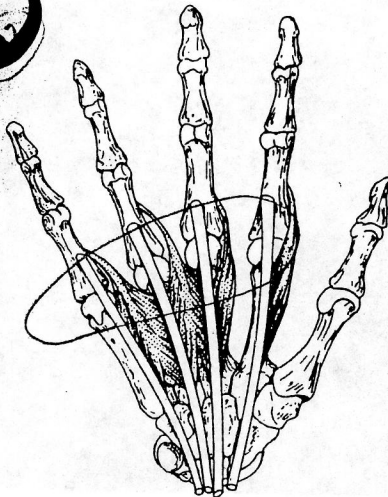
①



The interossei are small muscles originating from the metacarpals and inserting on the phalanges. There are four dorsal (left) and three palmar (right) interossei.



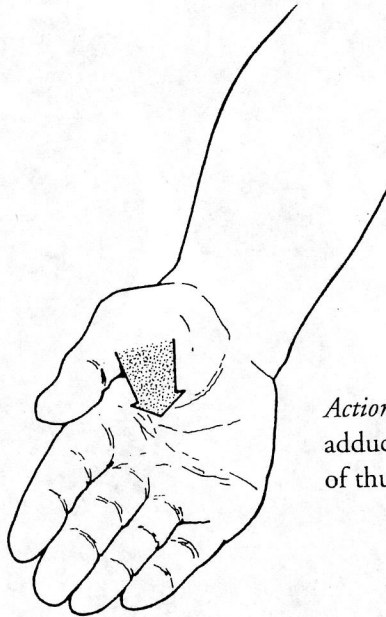
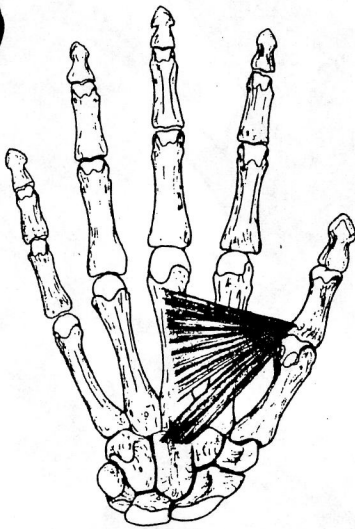
②



The lumbricals originate from the tendons of flexor digitorum profundus, and insert on the tendons of extensor digitorum.

The **thenar muscles** move the thumb and its metacarpal, and their bodies make up the prominent thenar eminence at the base of the thumb. **Adductor pollicis** lies deep to the flexor tendons in the palm and has two origins: one from the shaft of metacarpal III, the other from the capitate bone and adjacent ligaments. It inserts on the medial base of the proximal phalanx of the thumb, and the medial sesamoid bone located at metacarpophalangeal joint I.

3



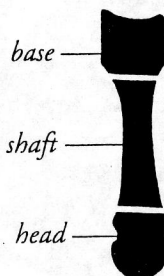
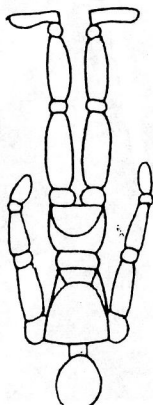
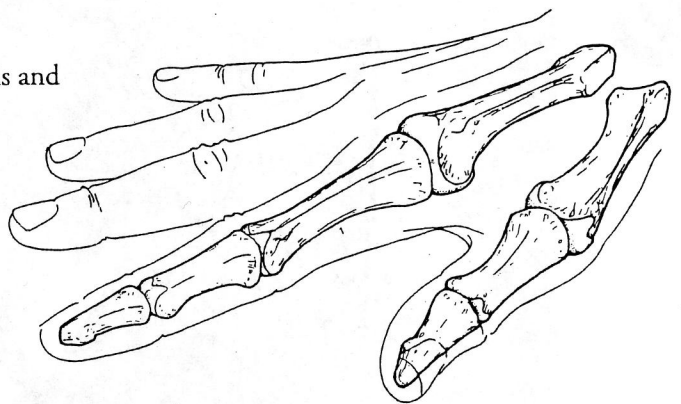
Action:
adduction
of thumb

4

Metacarpals and phalanges

There are a total of five metacarpals and 14 phalanges (the thumb has two phalanges, the other fingers have three each).

Each of these bones has a base (proximal), shaft, and head (distal).

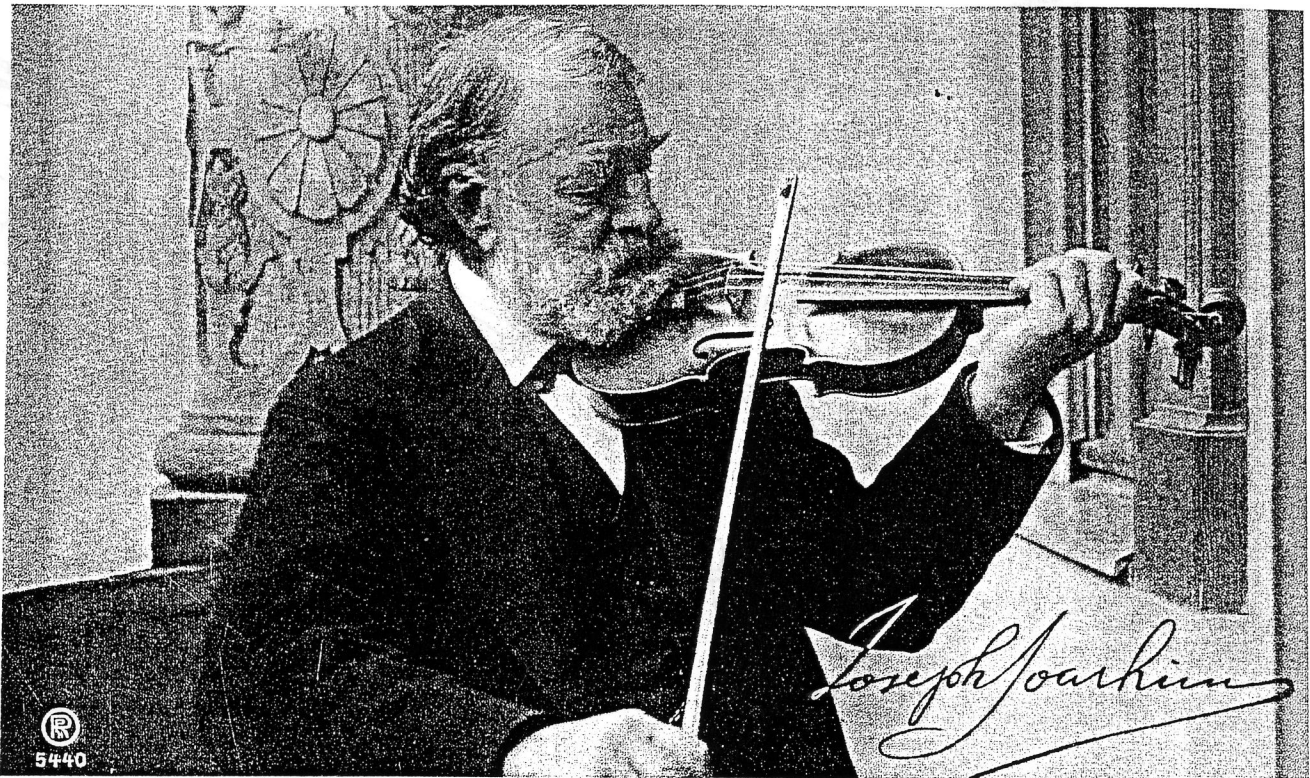


4

5

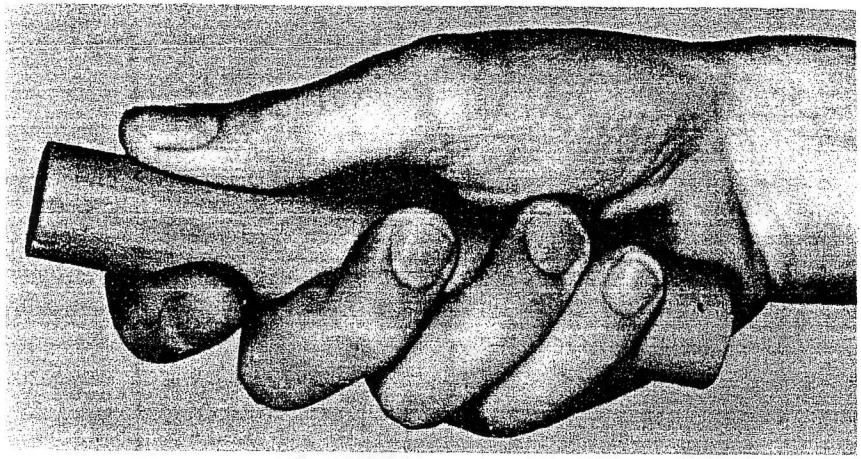


6



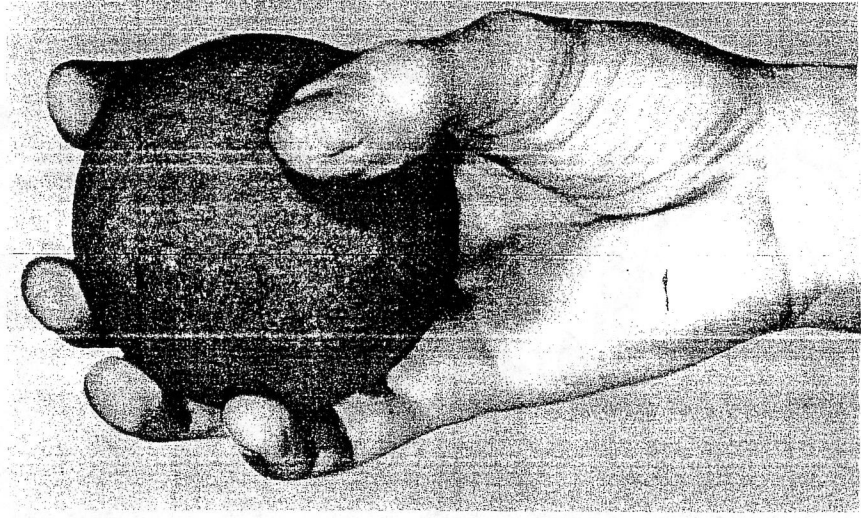
7

a



a

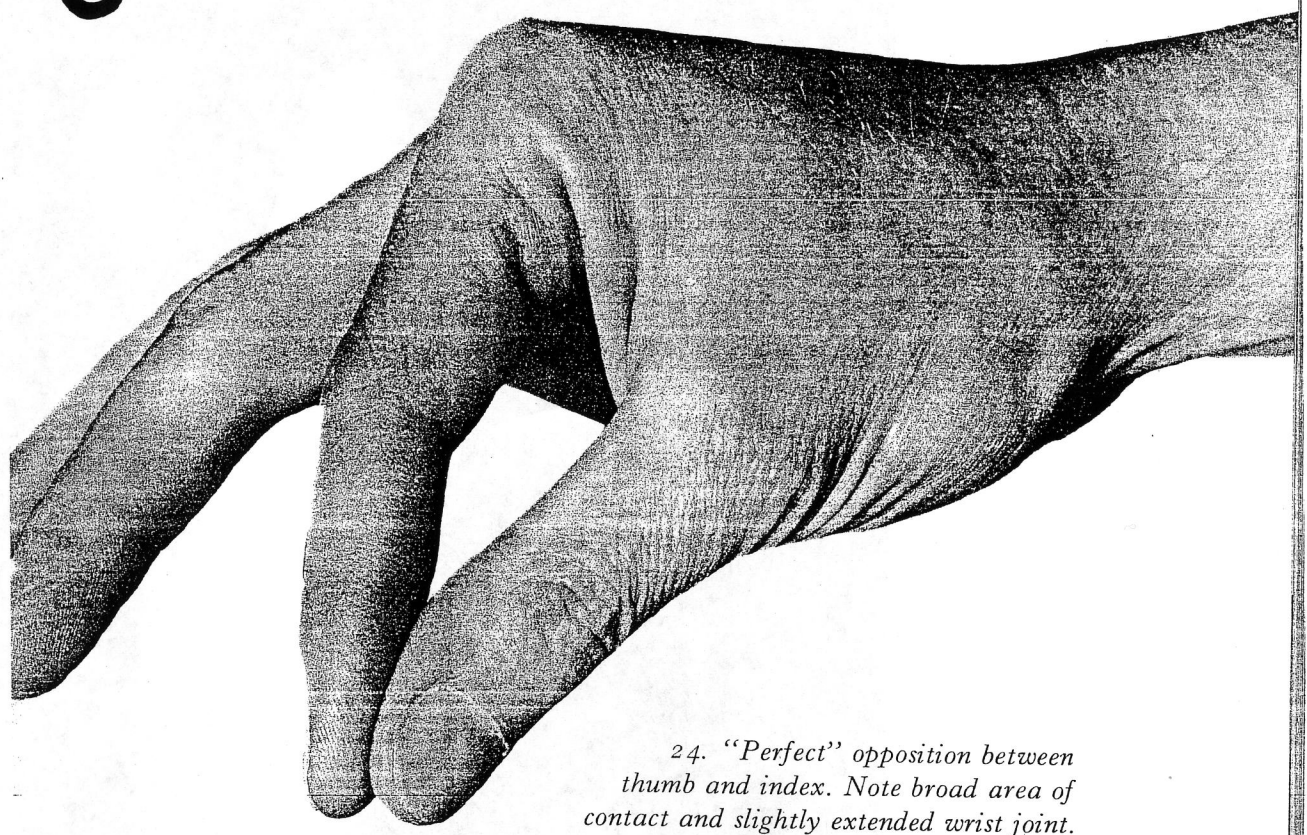
b



b

28. (a) Power and (b) precision grips.

8



24. "Perfect" opposition between thumb and index. Note broad area of contact and slightly extended wrist joint.

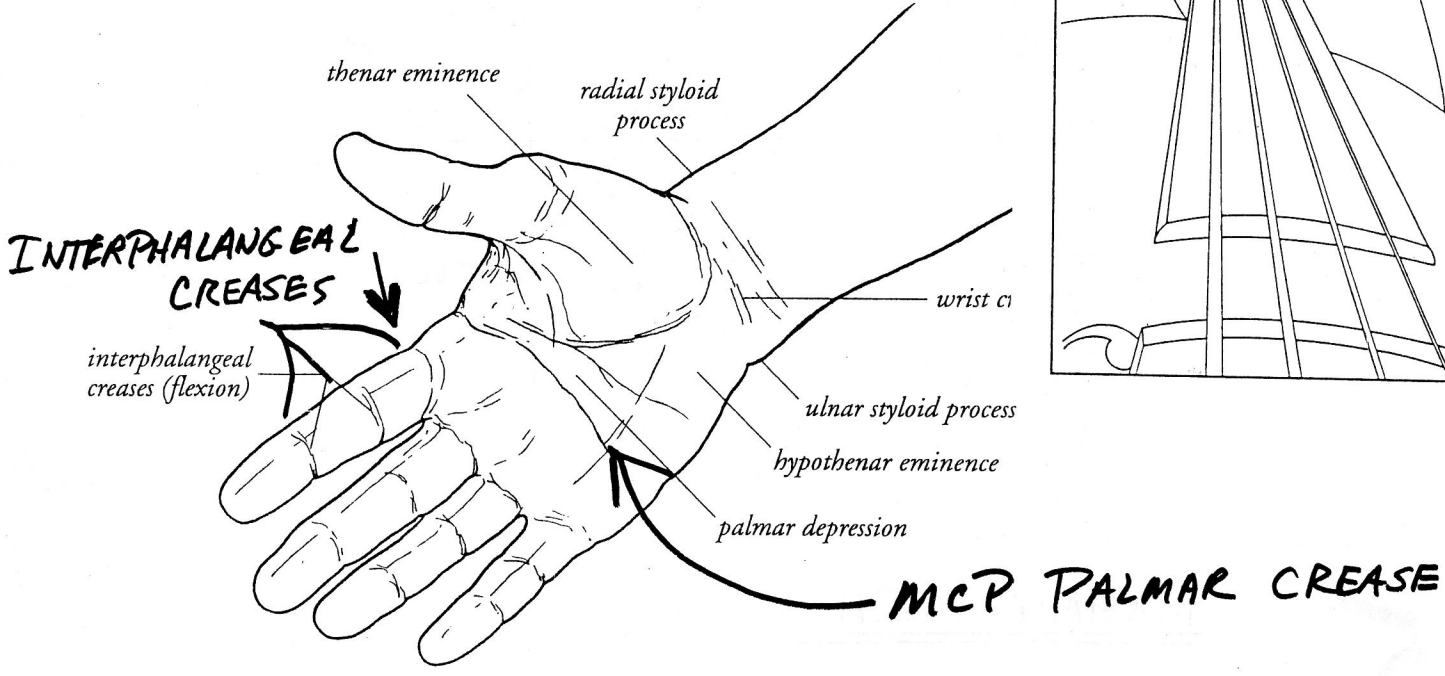


13

Landmarks

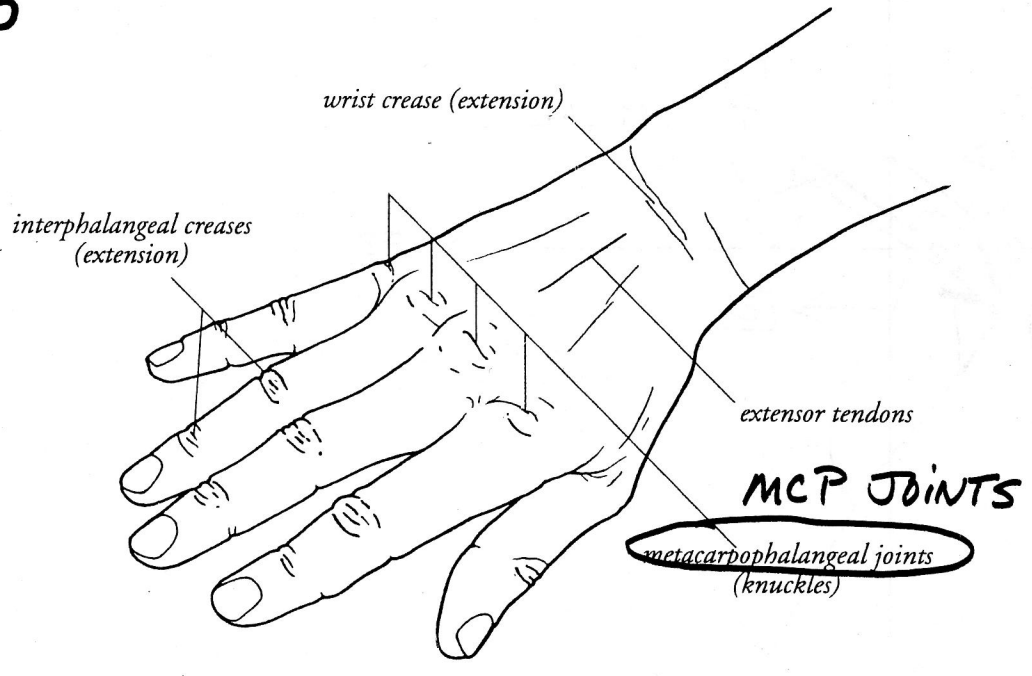
13

ANTERIOR (PALMAR) VIEW:

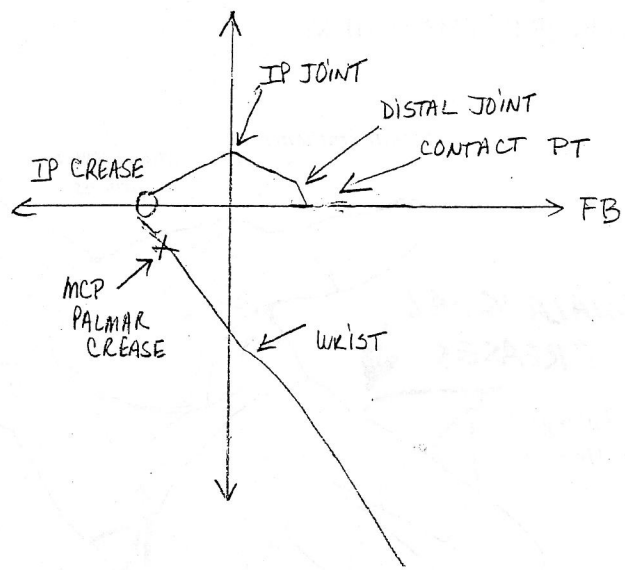


POSTERIOR (DORSAL) VIEW:

13

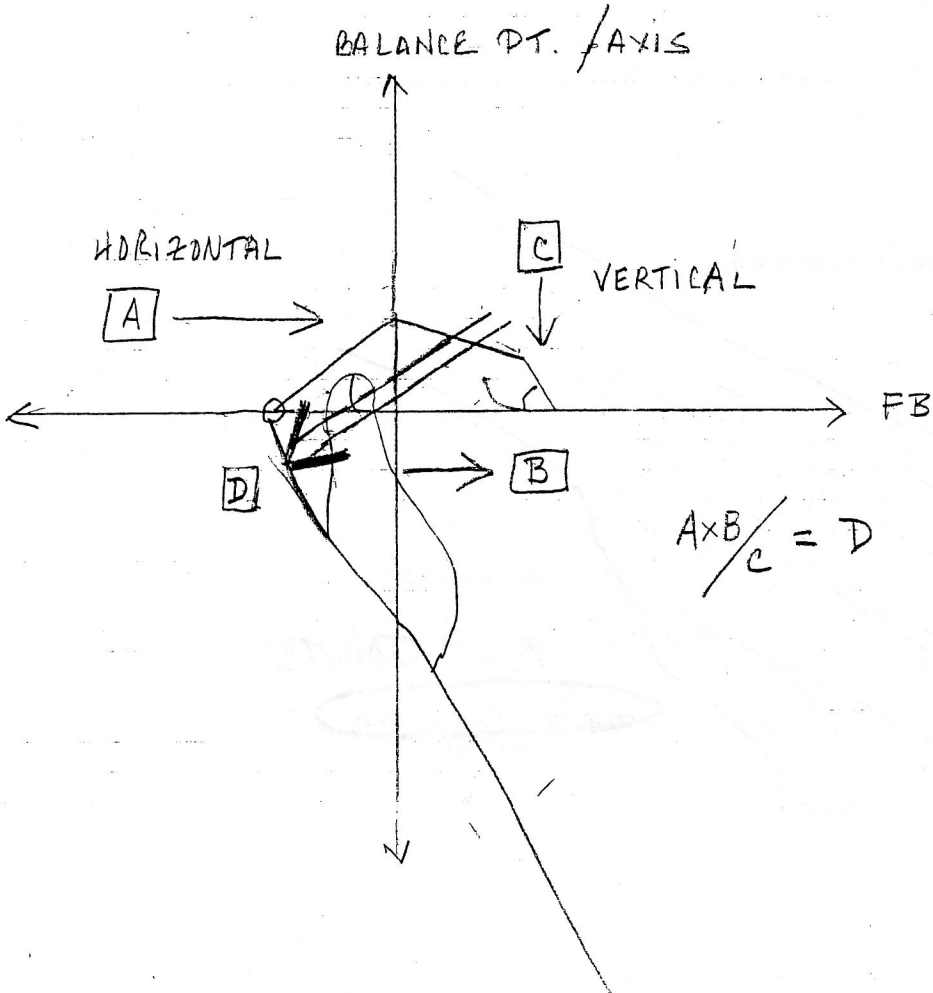


ORIENTATION



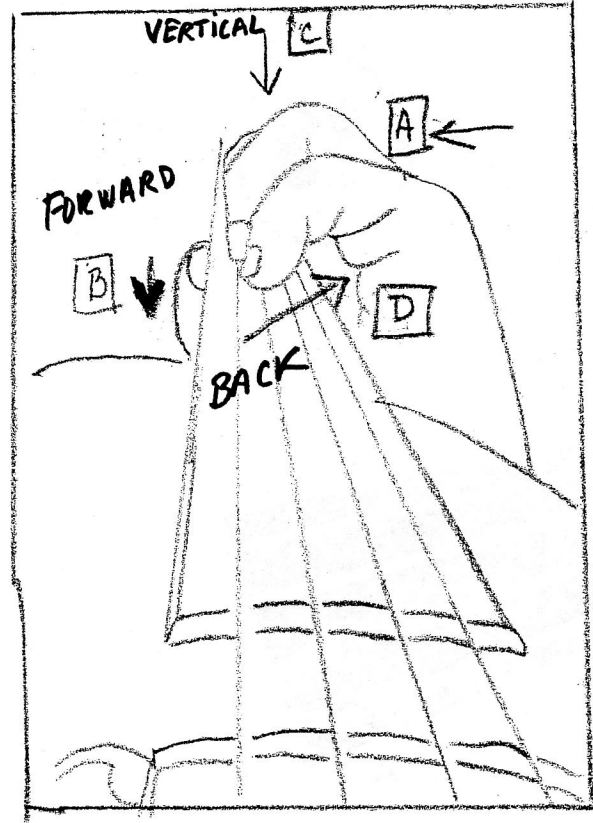
15

DYNAMIC ARCH



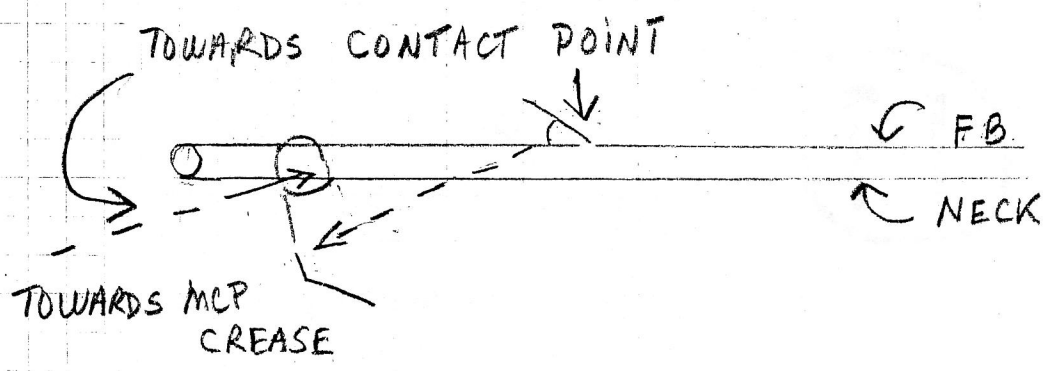
16

DYNAMIC ARCH



17

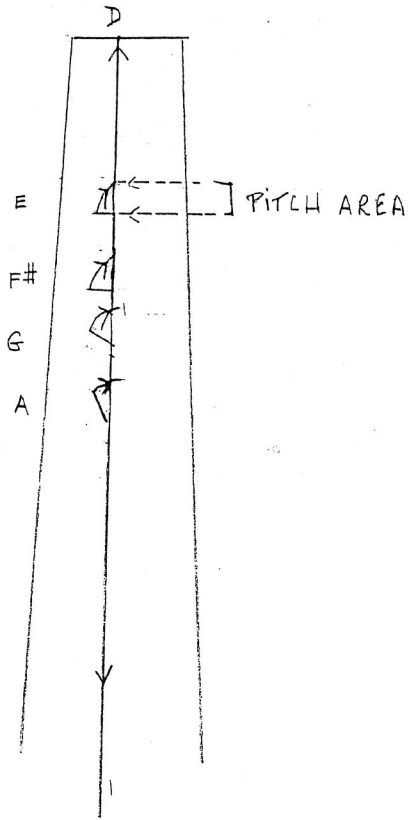
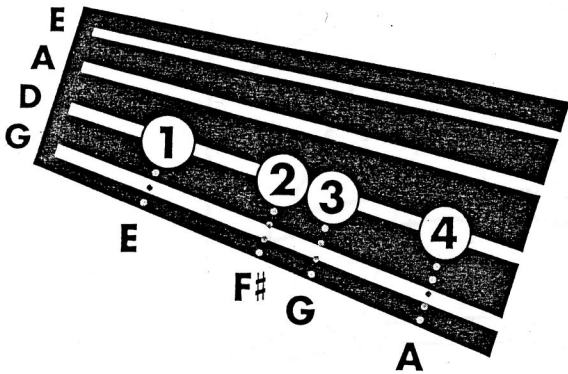
THUMB COUNTER-ACTIVE "FLICK"



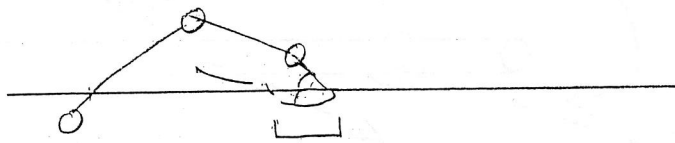
18

FINGER BRACKETING

17 A



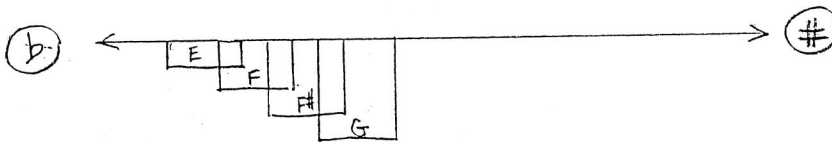
19



PITCH AREA - SIDE VIEW

19 A

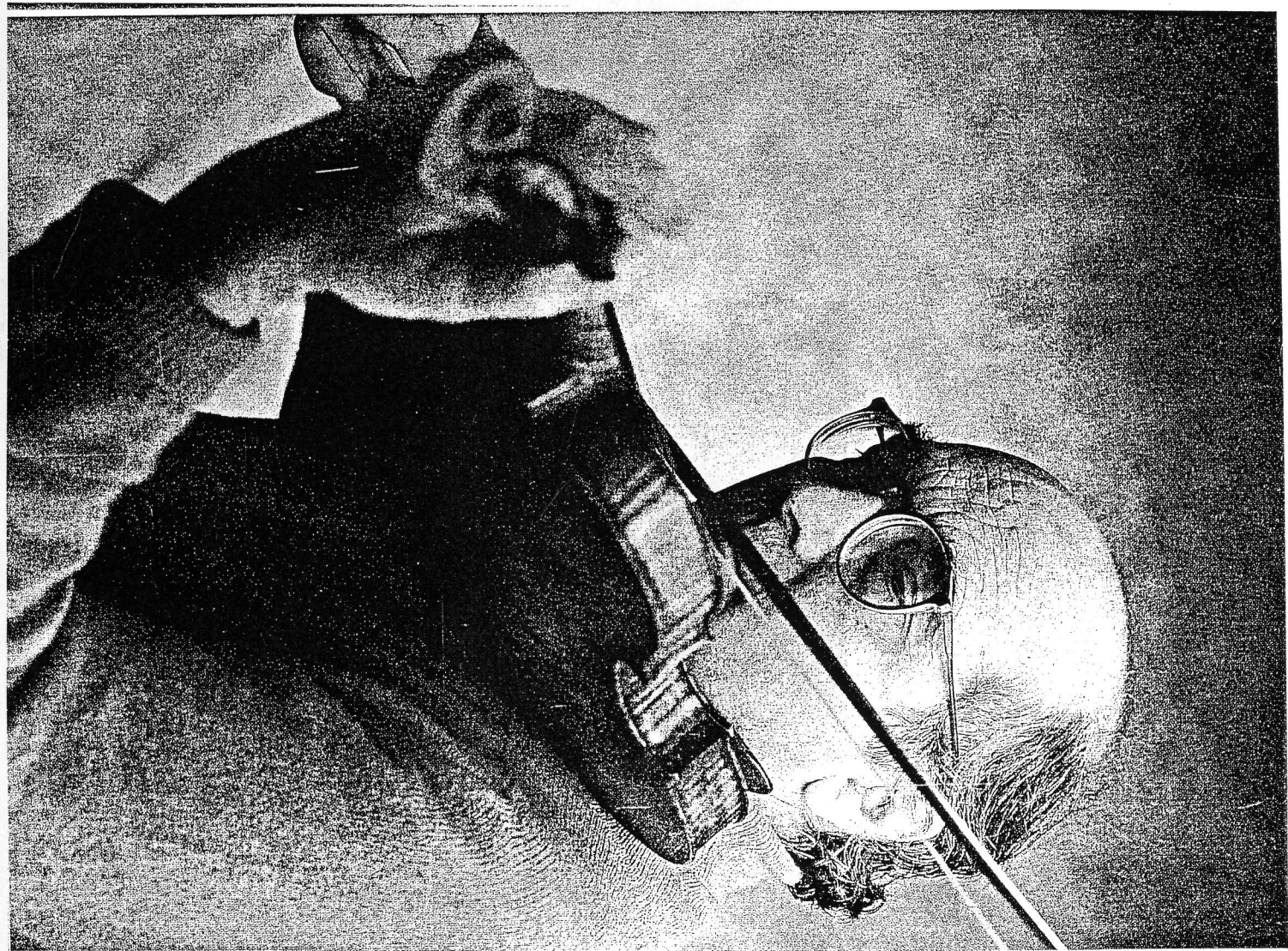
JOINTED ADJUSTMENT



20



21



22

