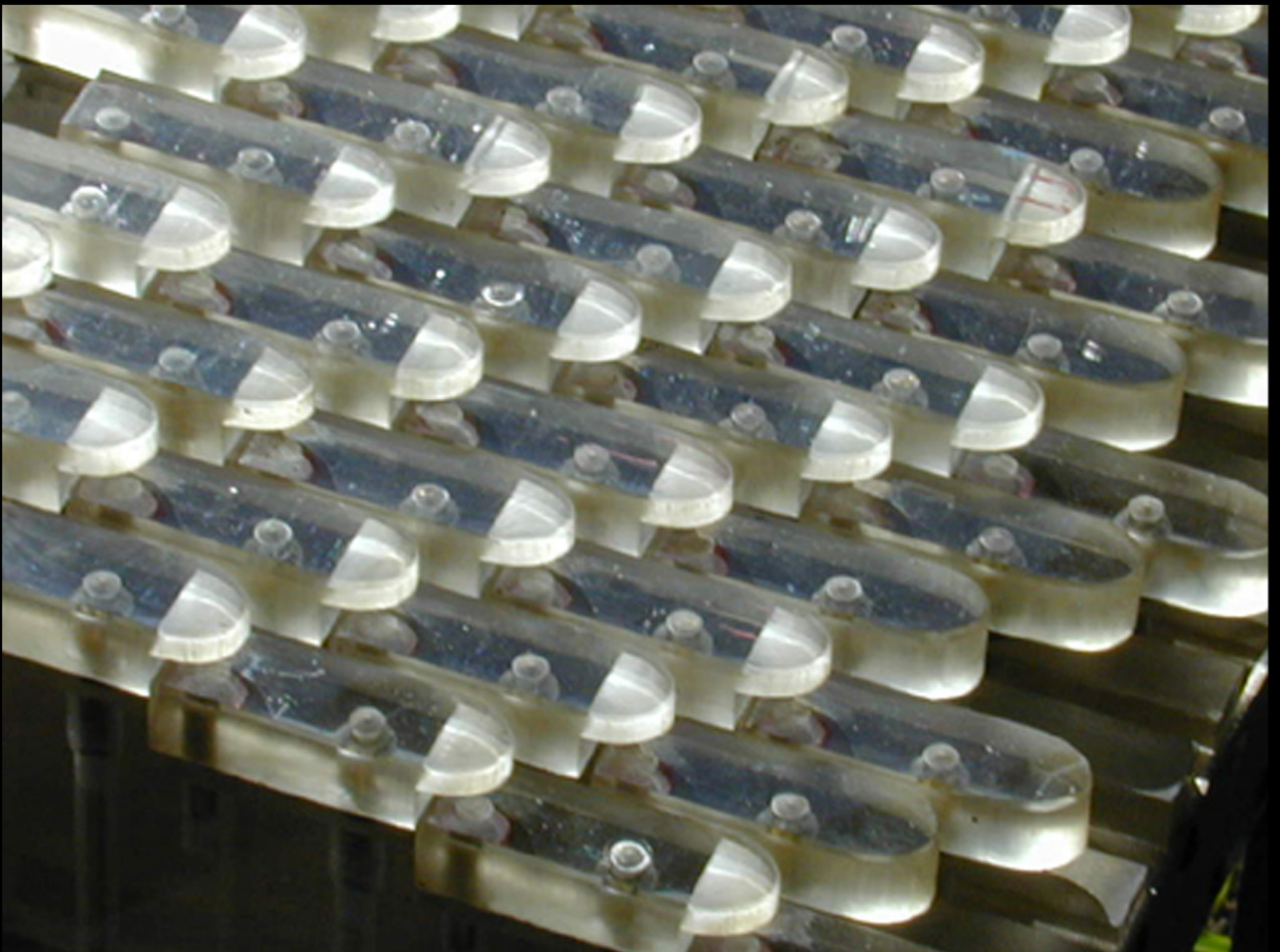


Wilson/Daoud keyboard built by Robert Moog



1219 Poinsettia Drive  
Los Angeles, California  
90046

Feb, 1970

Dear Bob

I, for one, look forward to the successful completion of a performance instrument along the lines of the one you proposed for Gary David. May I encourage you to continue with the design and construction of such an instrument. I'd like to suggest, also, that you entertain the possibility of building further instruments of that type in the future, with minor variations in design.

I am, of course, primarily interested in the correct presentation of the keyboard, and in demonstrating its properties and adaptability to various small numbered systems. This I had anticipated doing in collaboration with Gary David.

The 2 words associated with this type of keyboard are "generalized" and "homogeneous". Generalized keyboards are adaptable to a family of related tunings or systems, in this case to those which can be describe as a series or cycle of Fifths or Quasi-Fifths (any interval between the diminished fifth & The augmented fifth). Homogeneous refers to fingering, and indicates a geometrically consistent configuration allowing identical fingering of any modulation of a given figure (within the limits of the keyboard). These keyboards can be extended indefinitely in either/any direction to accommodate small or large numbered systems.

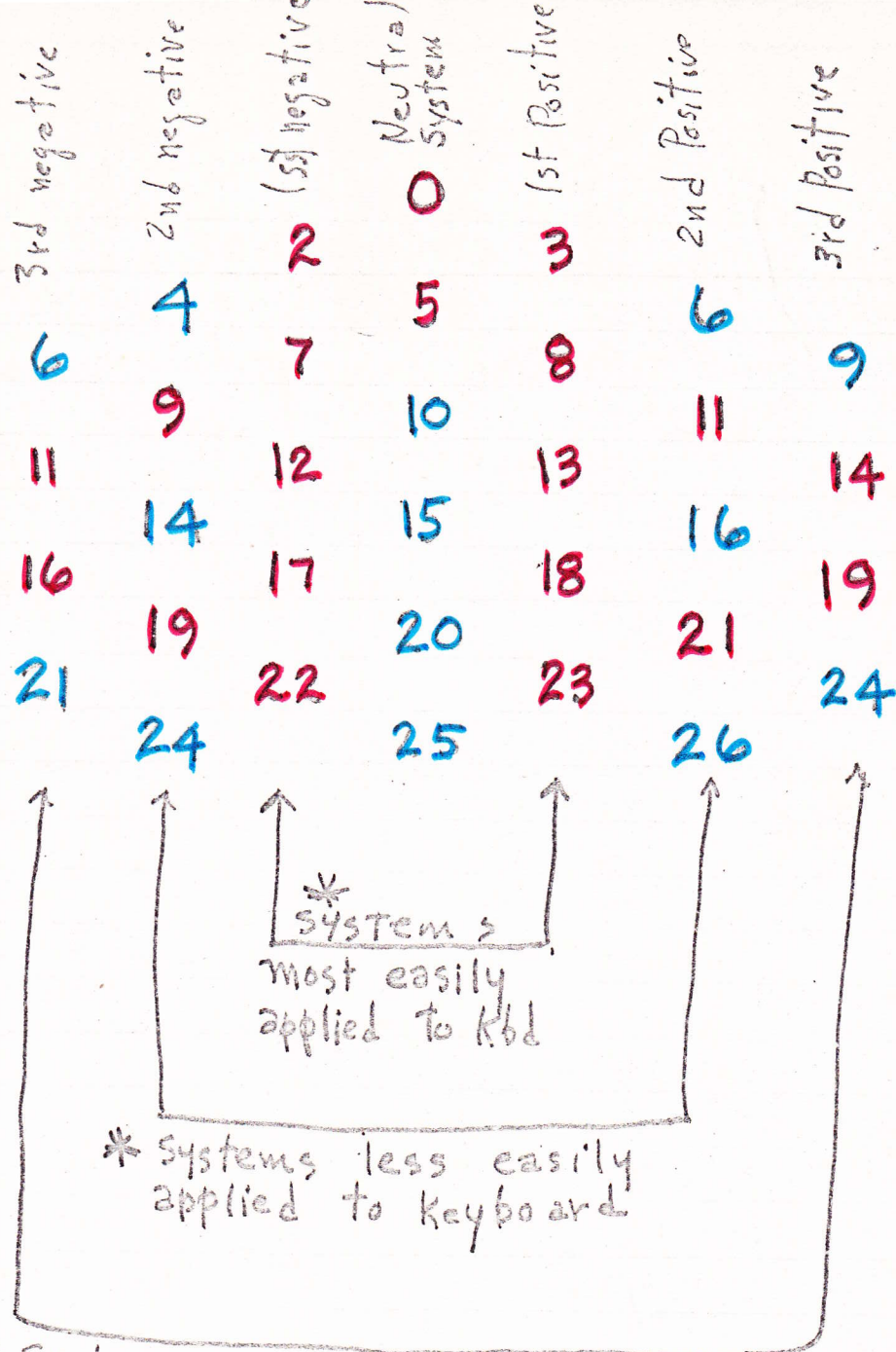
This particular keyboard is designed for optimum efficiency in application to small numbered systems, probably not to exceed 22 or 23 tones. In this context one is allowed the luxury of dramatically decreasing the octave span. On this keyboard with my own hand will span 2 Octaves easily, and  $2\frac{1}{2}$  Octaves with some effort. The aesthetic implications of thus altering the relation of the hand to pitch span are, to me, interesting and stimulating. (I should point out, however, that I have very little reason to anticipate that this keyboard would greatly facilitate the performance of music originally conceived on the 7+5 keyboard.)

Of these small numbered systems, those of the series (2) 7 12 17 22 and (3) 8 13 18 23 are most conveniently embodied on the keyboard. There series 9 19 & 11 21 are less so, but merit consideration. I have enclosed a series of diagrams illustrating various keyboard applications. These point to rather than encompass the possibilities. Without going into the musical implications of the variously numbered systems, I hope this will somewhat clarify my own interest in seeing the keyboard realized, particularly in conjunction with an effective tone-producing system.

Again, let me encourage you to confront the difficulties the design of a first instrument has presented. I understand and sympathize.

Sincerely Yours,

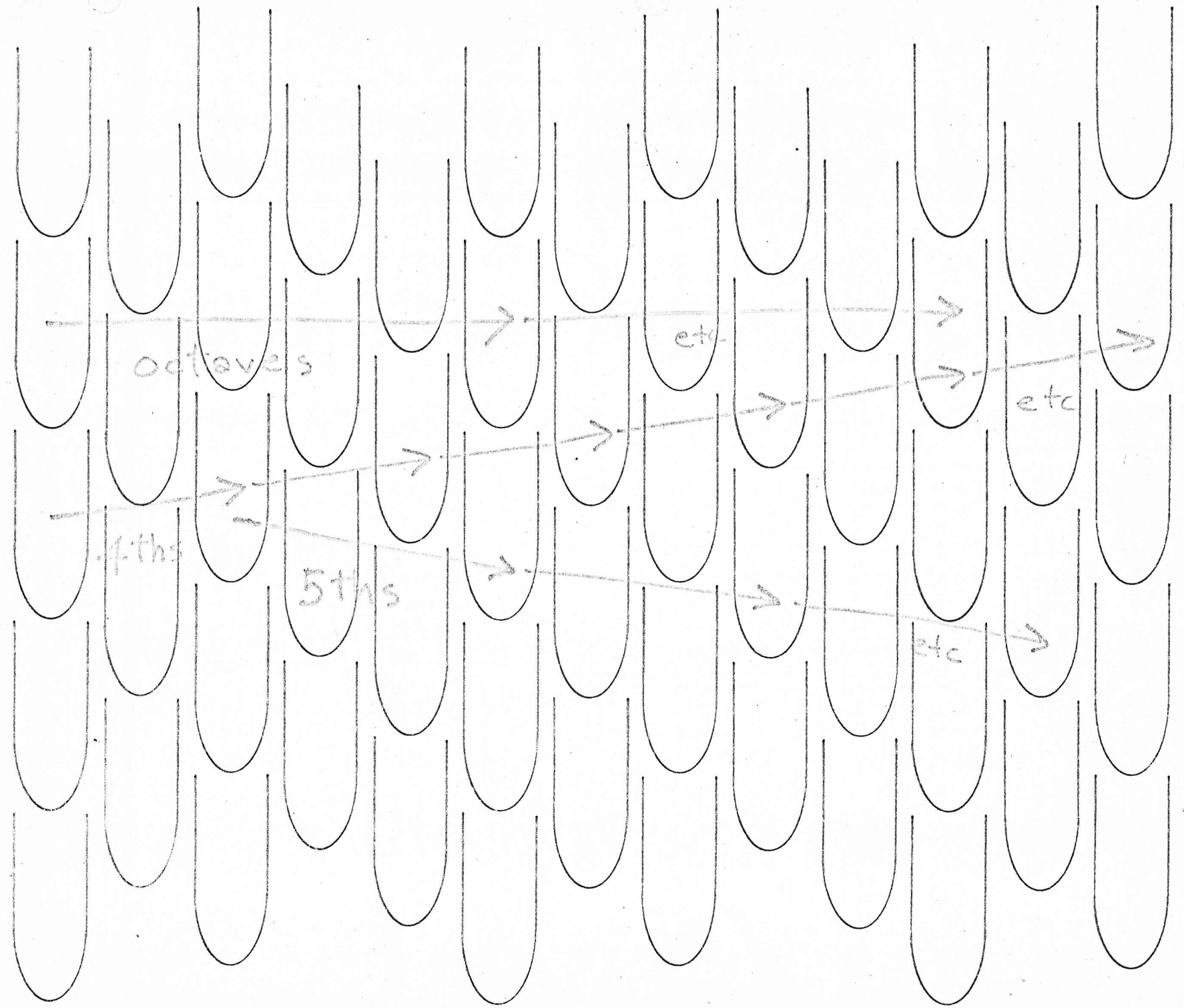
Ervin Wilson



\* Systems possible but somewhat impractical to apply to keyboard

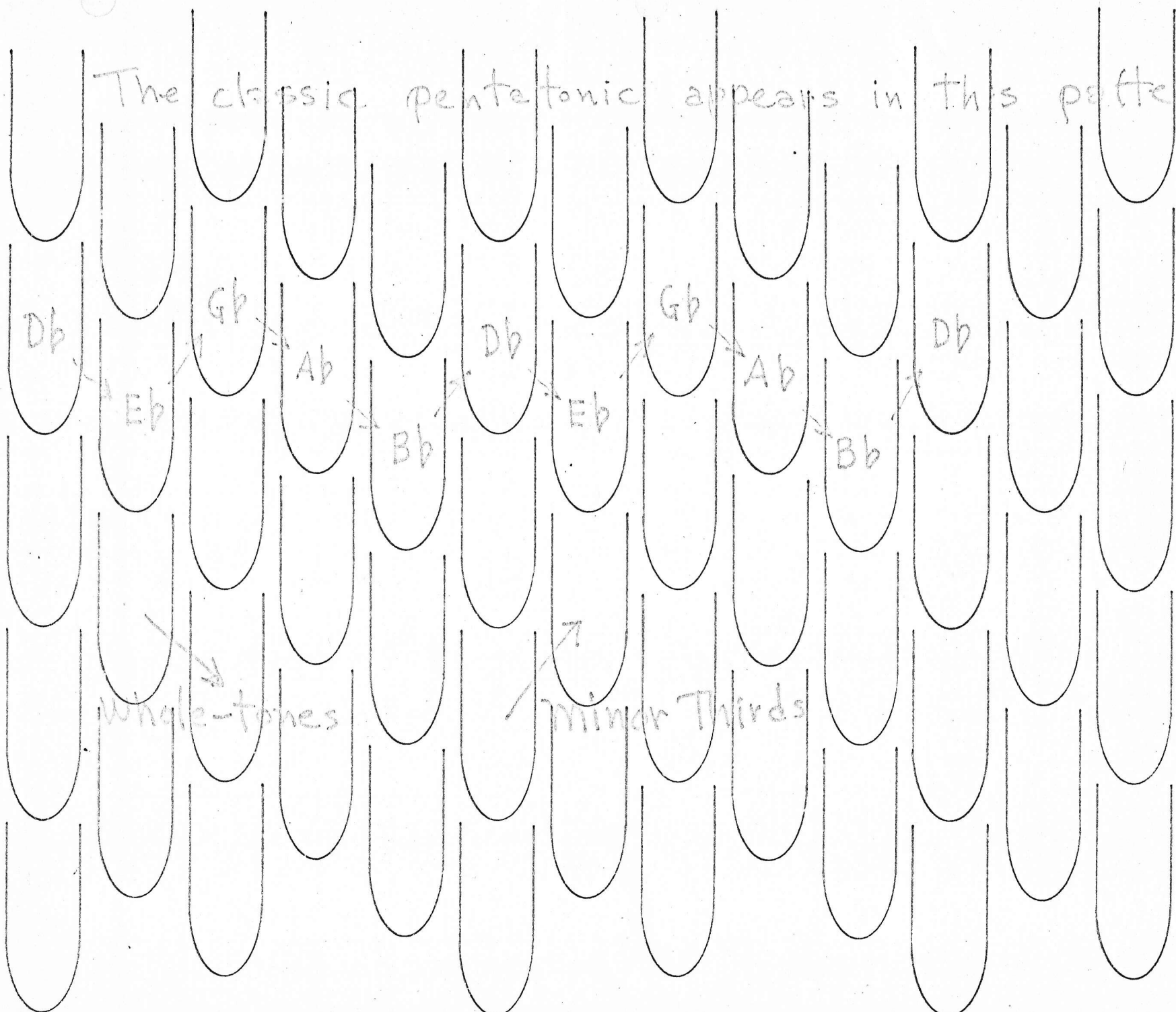
\* Systems in red are applicable to the keyboard. Systems in blue are impossible to apply because the applicable Fifth completes a cycle before traversing all members of the system.

Positive systems have Fifths greater than the equal-pentatonic Fifth (.6 Octave). Negative systems have Fifths smaller than .6 Octave.



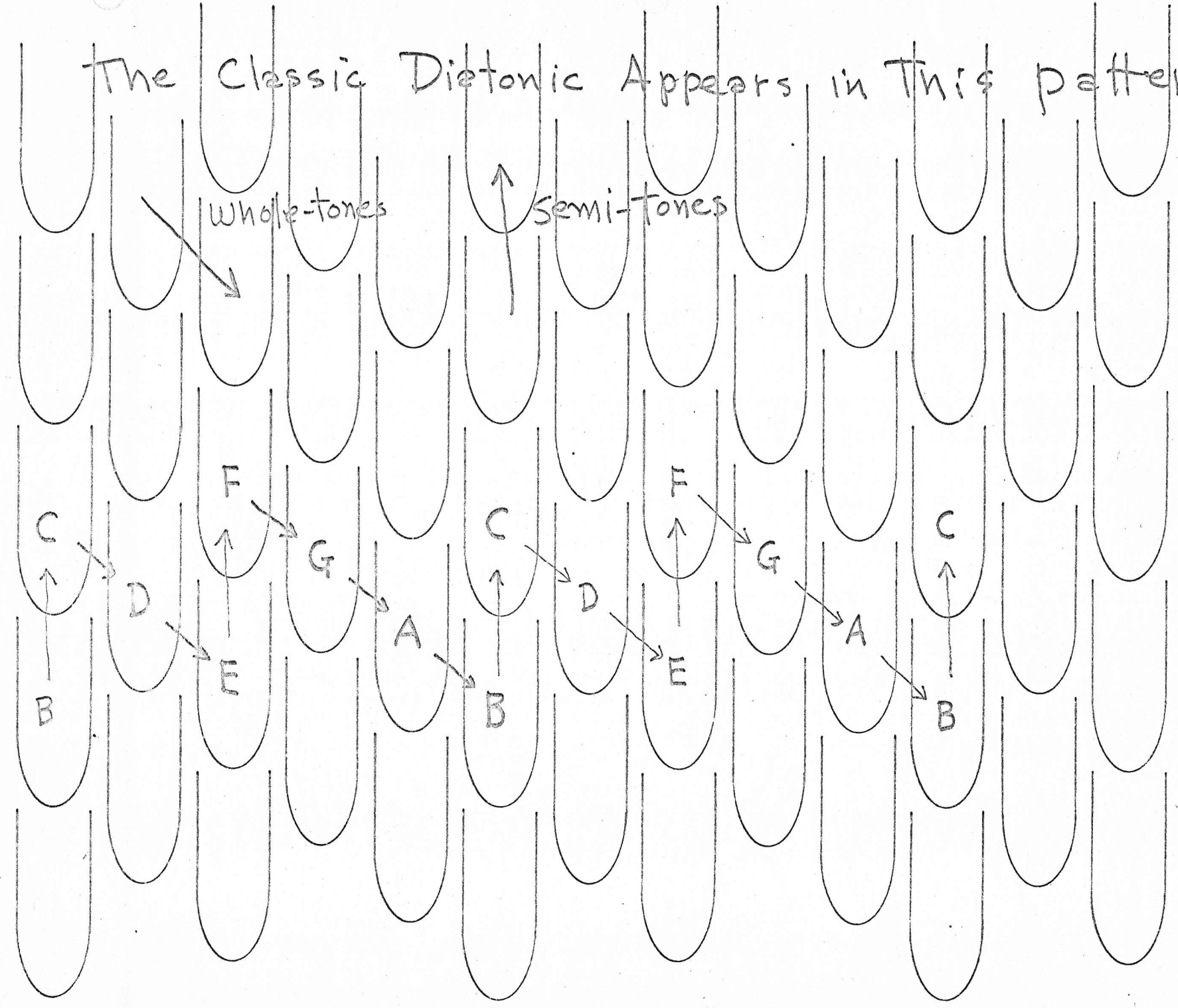
E. W. Stearn, 1964  
Patent Pending

The classic pentatonic appears in this pattern



E. Williams, 1964  
Patent Pending

The Classic Diatonic Appears in This pattern

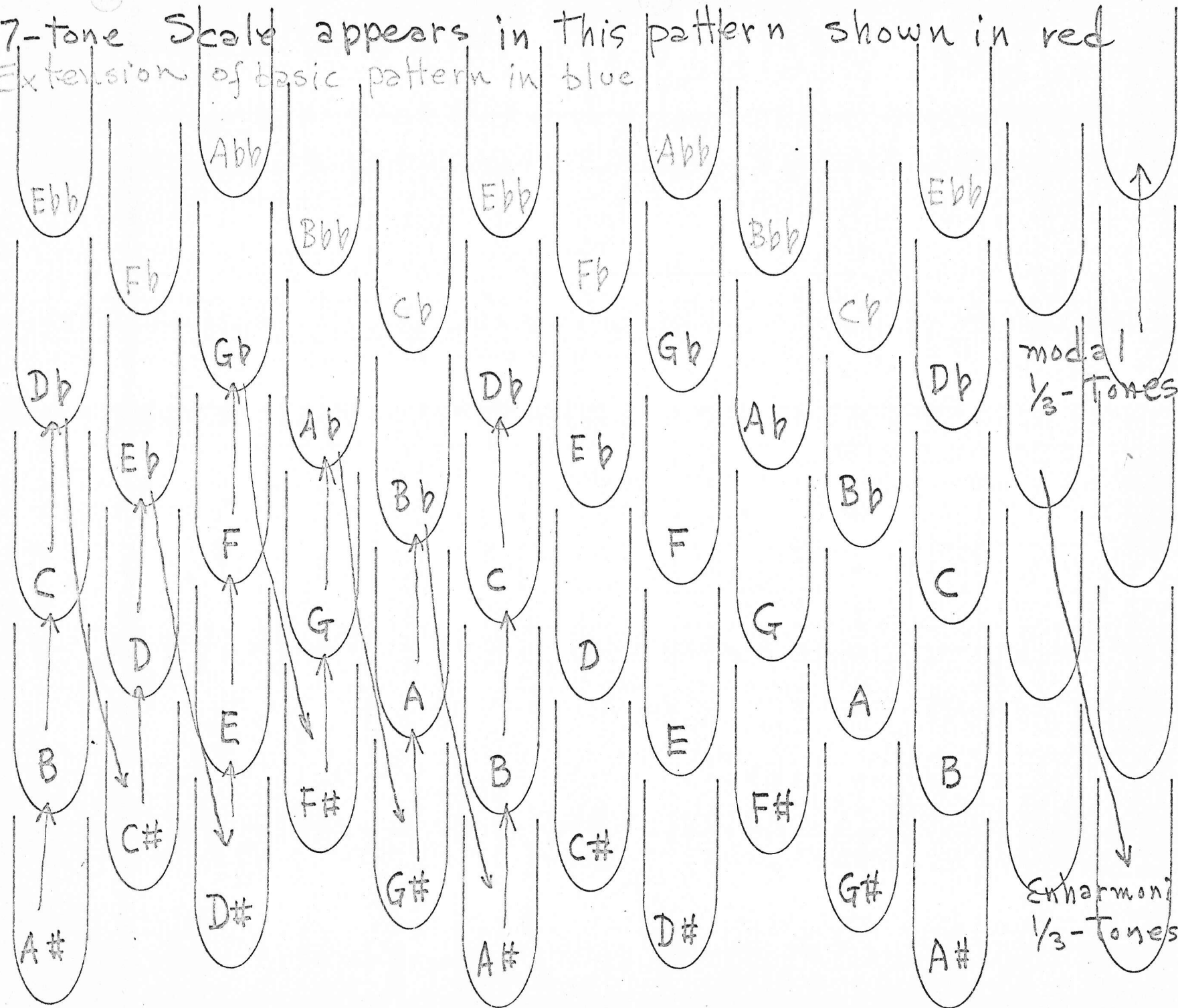


E. Williams, 1960s  
Patent Pending





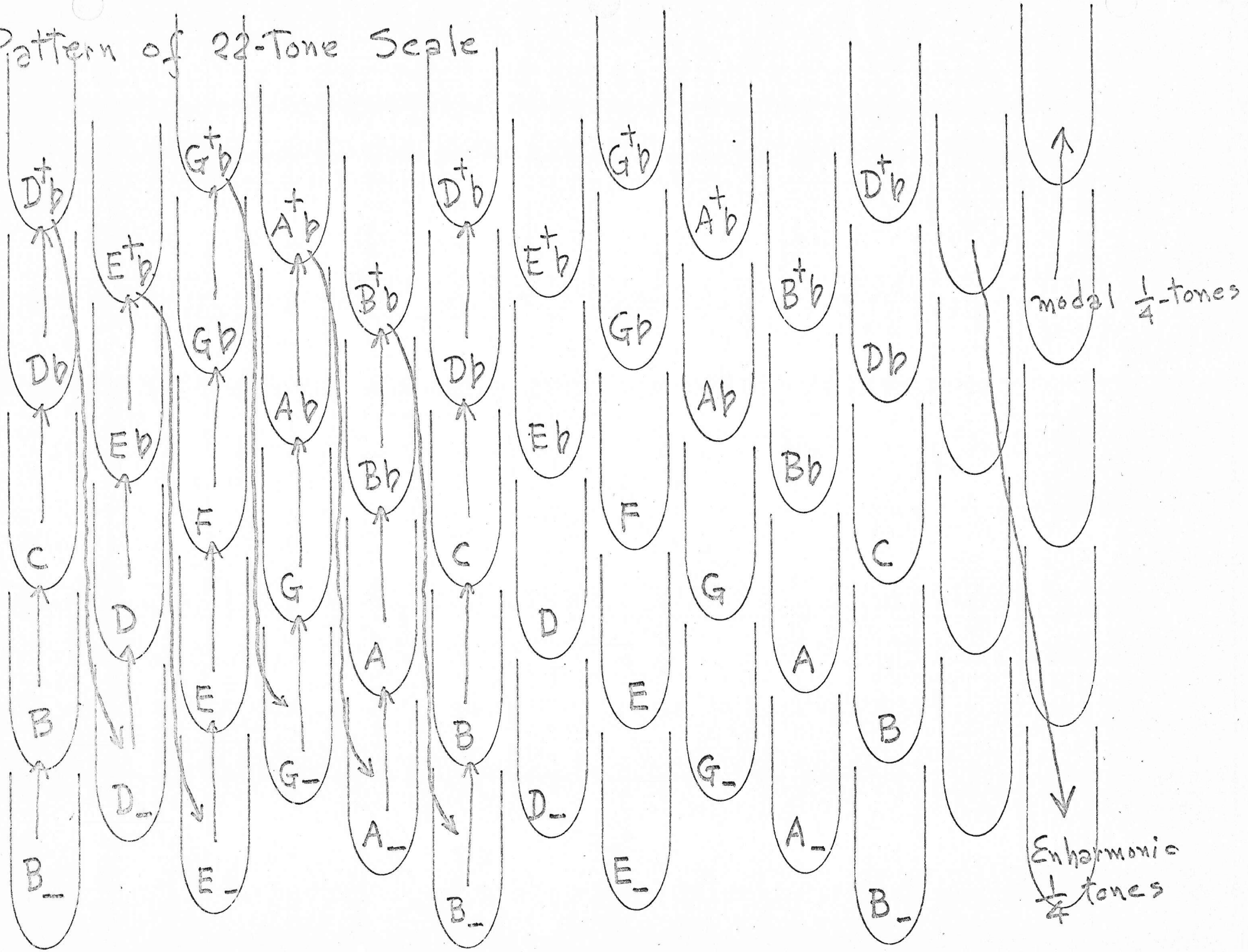
17-tone Scale appears in this pattern shown in red  
 Extension of basic pattern in blue



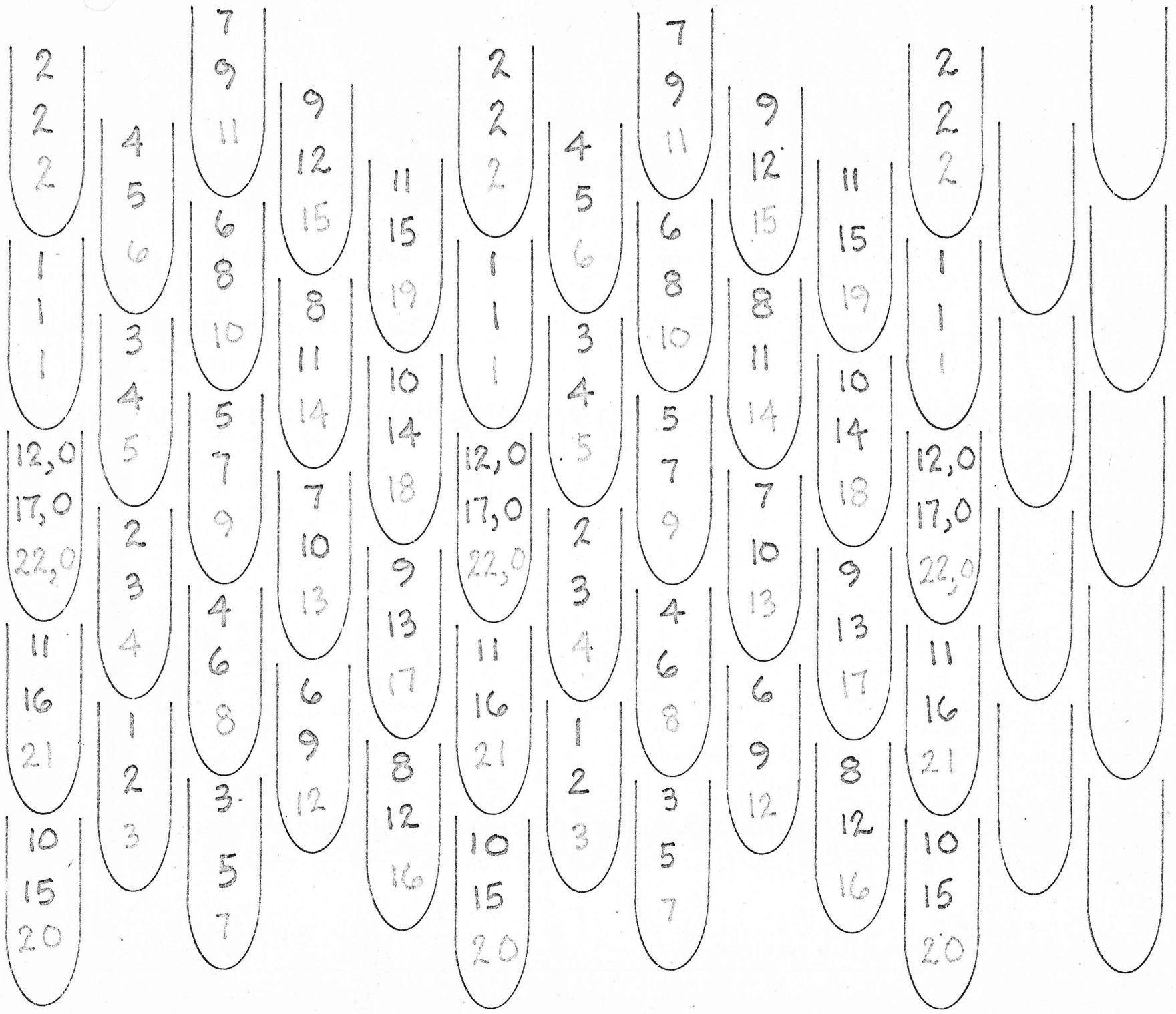
E. Wilson, 1966  
 Robert Fendley

# Pattern of 22-Tone Scale

E. Williams 1964  
Rice University

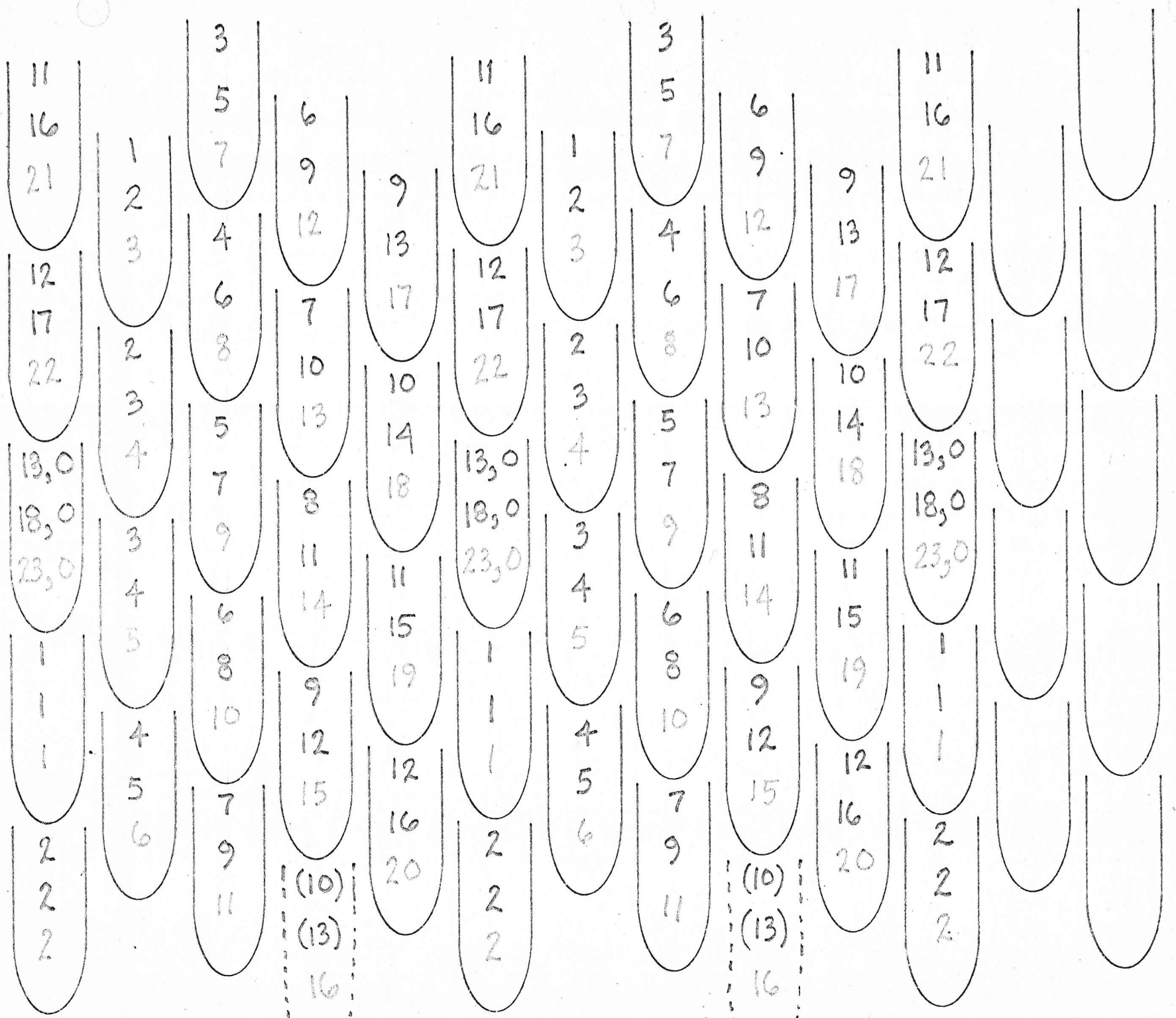


12, 17, & 22-tone systems  
in generalised patterns



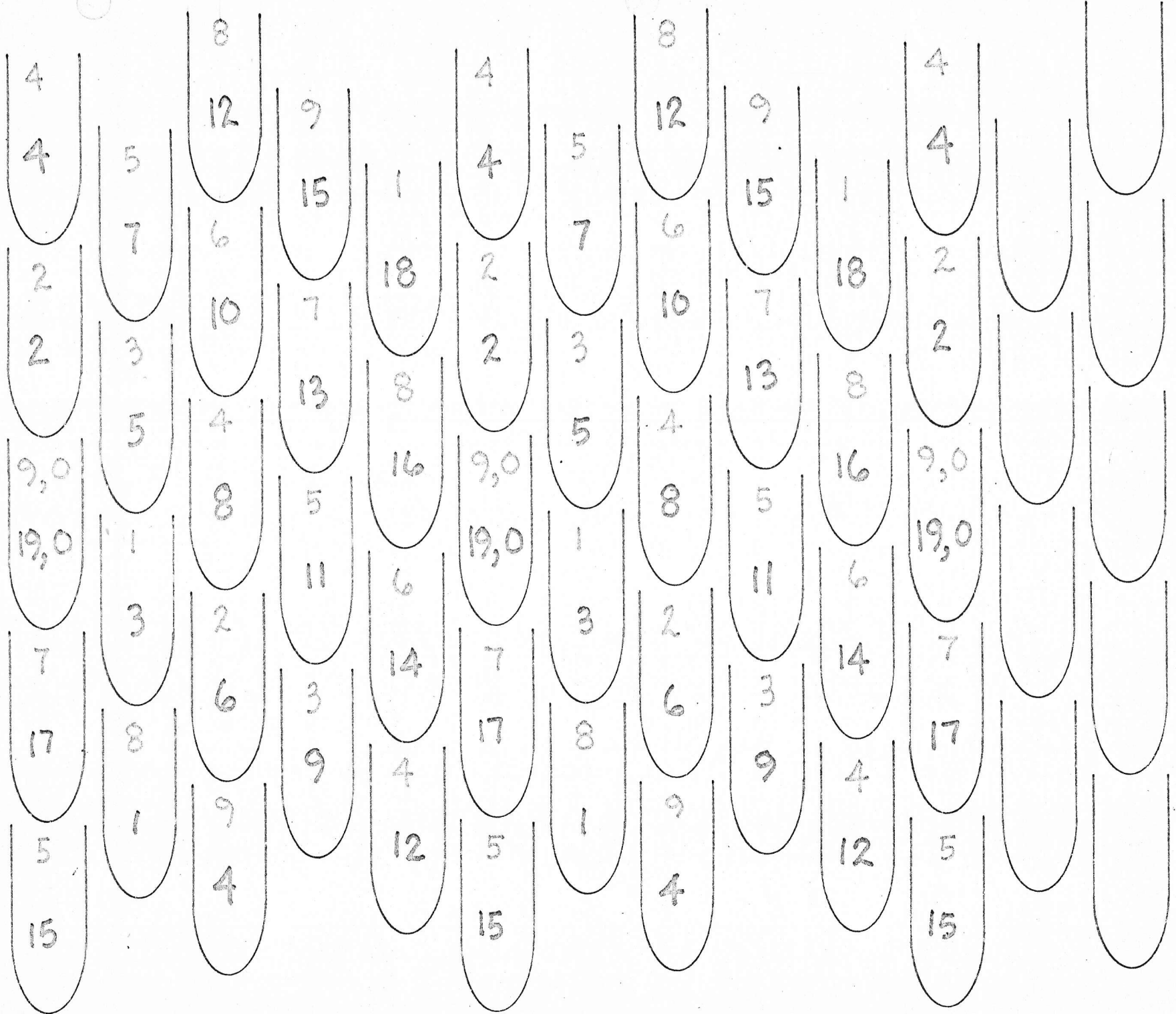
E. Williams, 1966  
Patent Pending

13, 18, & 23 - Tone Systems (non-harmonic)  
 in generalised patterns



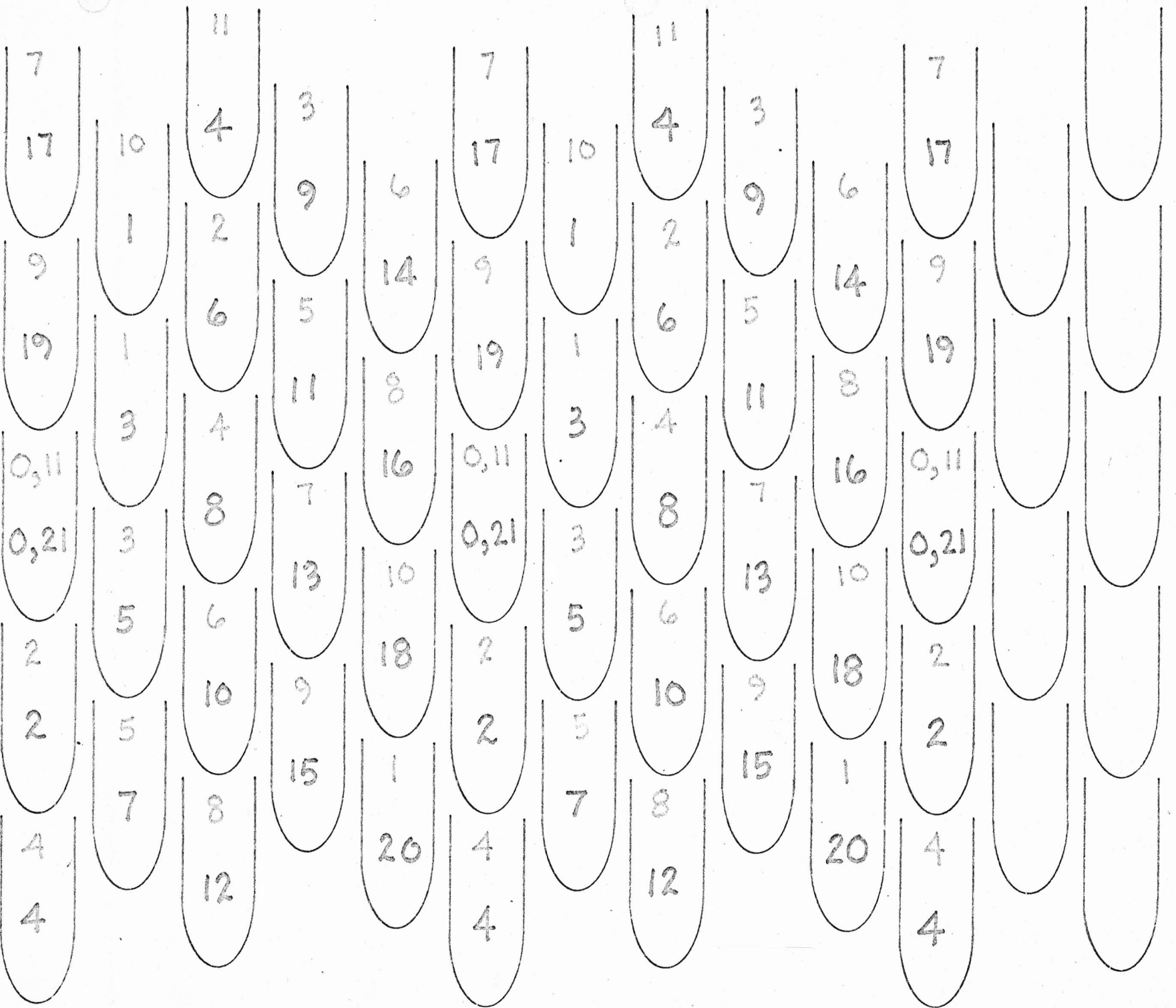
E. Wilson 1964  
 Patient Ranking

9 & 19 Tone Systems  
in generalised pattern



E. Williams 1964  
Robert Funderburg

11 & 21-Tone Systems  
in generalised pattern



E. Williams, 1968  
Patent Pending



Classical Indian Scale of 72 notes  
 Shown in the modern key of "C"

Dr. W. S. Williams, 1966  
 Revised Tuning

2. $\frac{16}{15}$	1. $\frac{256}{243}$	22.0. C   1	21. $\frac{243}{128}$	20. $\frac{15}{8}$
6. $\frac{6}{5}$	5. $\frac{32}{27}$	4. $\frac{9}{8}$	3. $\frac{10}{9}$	
(11.) $\frac{45}{32}$	10. $\frac{27}{20}$	9. $\frac{4}{3}$	8. $\frac{81}{64}$	7. $\frac{5}{4}$
15. $\frac{8}{5}$	14. $\frac{128}{81}$	13. $\frac{3}{2}$	12. $\frac{729}{512}$	11. $\frac{45}{32}$
19. $\frac{9}{5}$	18. $\frac{16}{9}$	17. $\frac{27}{16}$	16. $\frac{5}{3}$	
2. $\frac{16}{15}$	1. $\frac{256}{243}$	22.0. C   1	21. $\frac{243}{128}$	20. $\frac{15}{8}$
6. $\frac{6}{5}$	5. $\frac{32}{27}$	4. $\frac{9}{8}$	3. $\frac{10}{9}$	
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15. $\frac{8}{5}$	14. $\frac{128}{81}$	13. $\frac{3}{2}$	12. $\frac{729}{512}$	11. $\frac{45}{32}$
19. $\frac{9}{5}$	18. $\frac{16}{9}$	17. $\frac{27}{16}$	16. $\frac{5}{3}$	

↑ preferred location