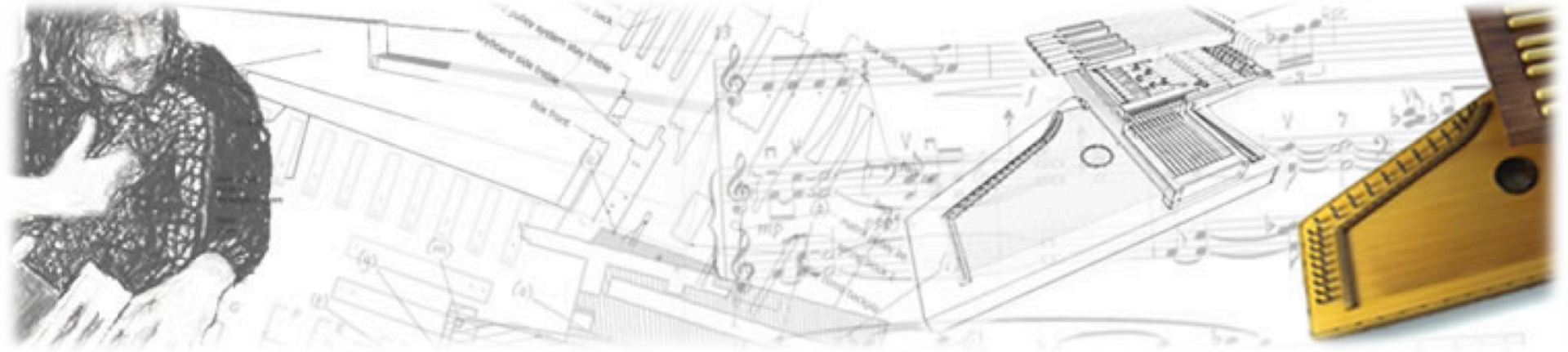

I'll Fly Away

Alison Krauss, Gillian Welch

How does it work…?

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Autoharp by Oscar Schmidt, Model No. 15a dating from 1961 (Harrison, 2004) with permission.

Meinhold Autoharp with secondary crooks for damper bars (Harrison, 2004)

with permission.

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Autoharp by Oscar Schmidt, Model No. 15a dating from 1961 (Harrison, 2004) with permission.

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Type 1 Zimmermann production model (Harrison, 2004).

With permission

The different build sequence allowed some unusual photography – this plate shows the keyboard from the underside. The damping felt is in contact with the strings when completed

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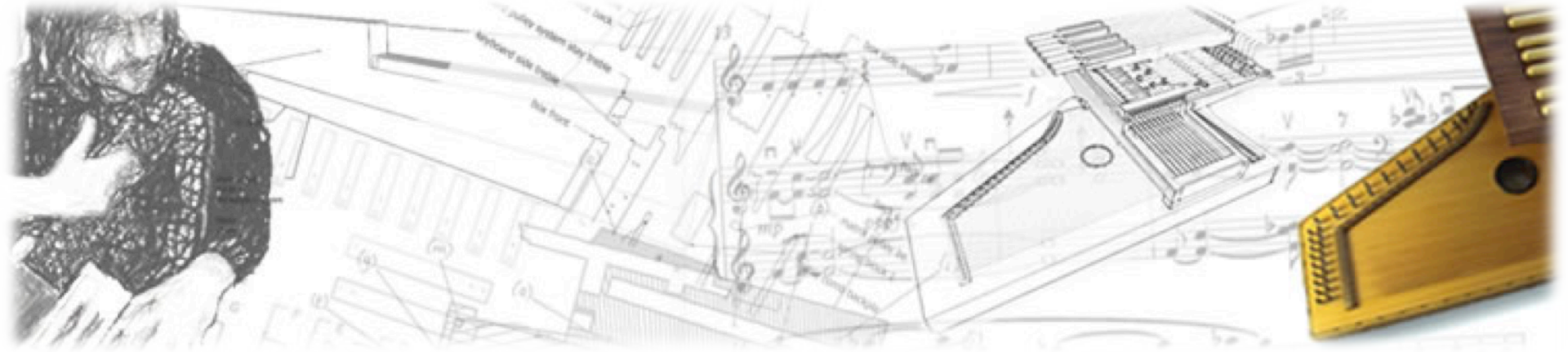
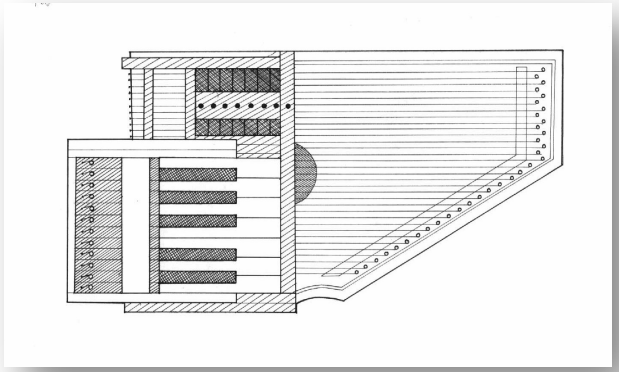


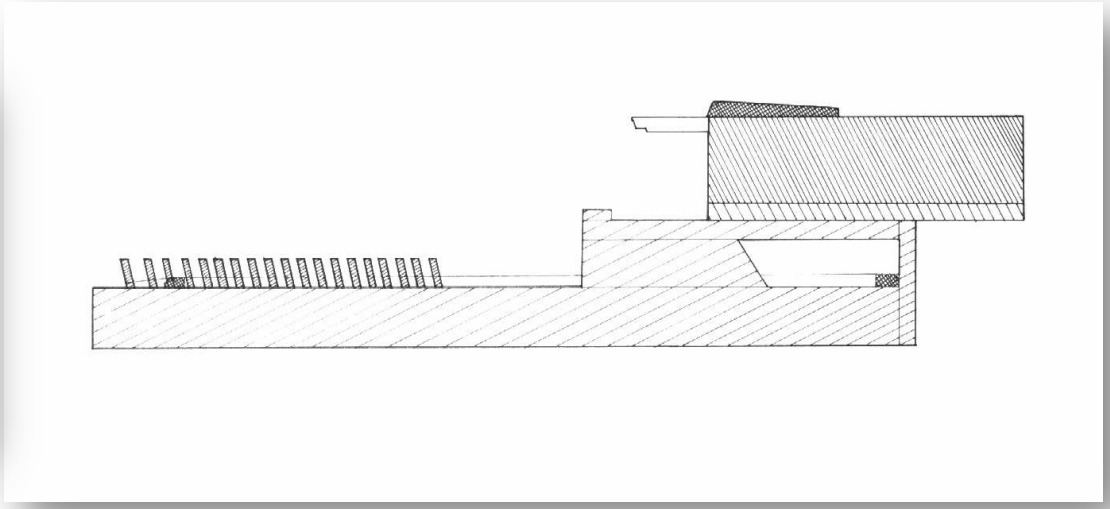
The Little Masquerade

(After the Nic Jones Version)

Original Patent Application:

The development I propose is to replace the autoharp sprung chord bar action, with a reverse action damper bar arrangement that is controlled through a pulley system from one octave of a full sized piano keyboard. The position of the keyboard has been considered to produce a comfortable playing position for both hands…

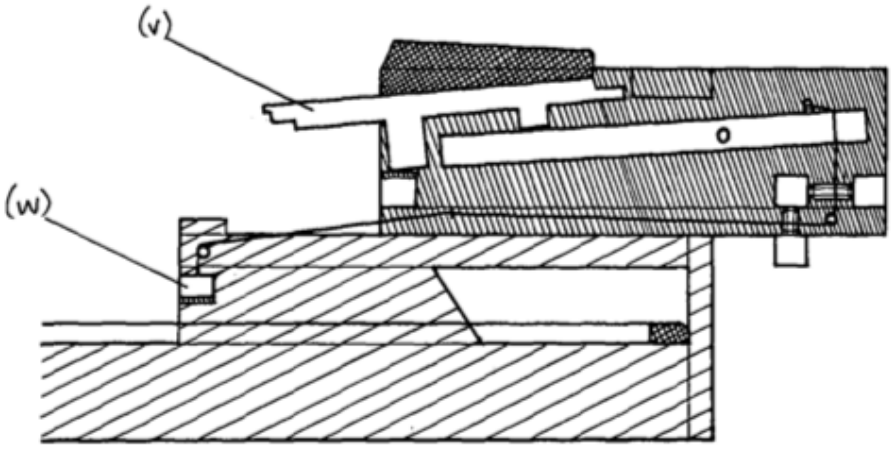




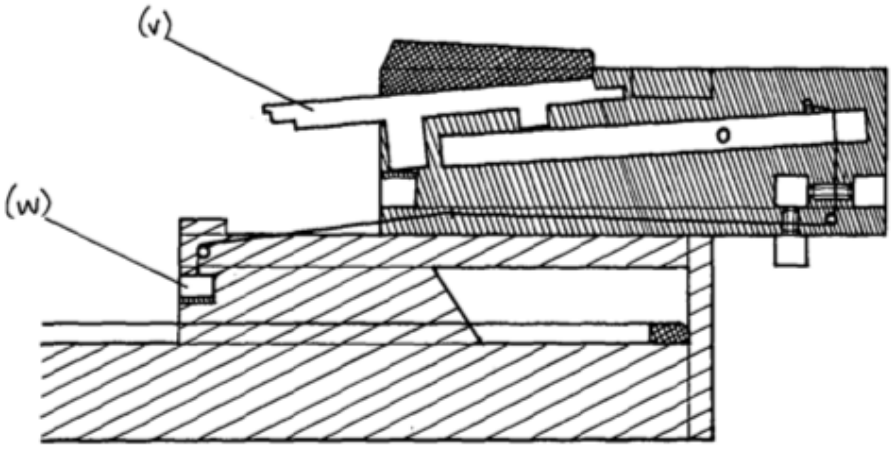
Original Patent Application:

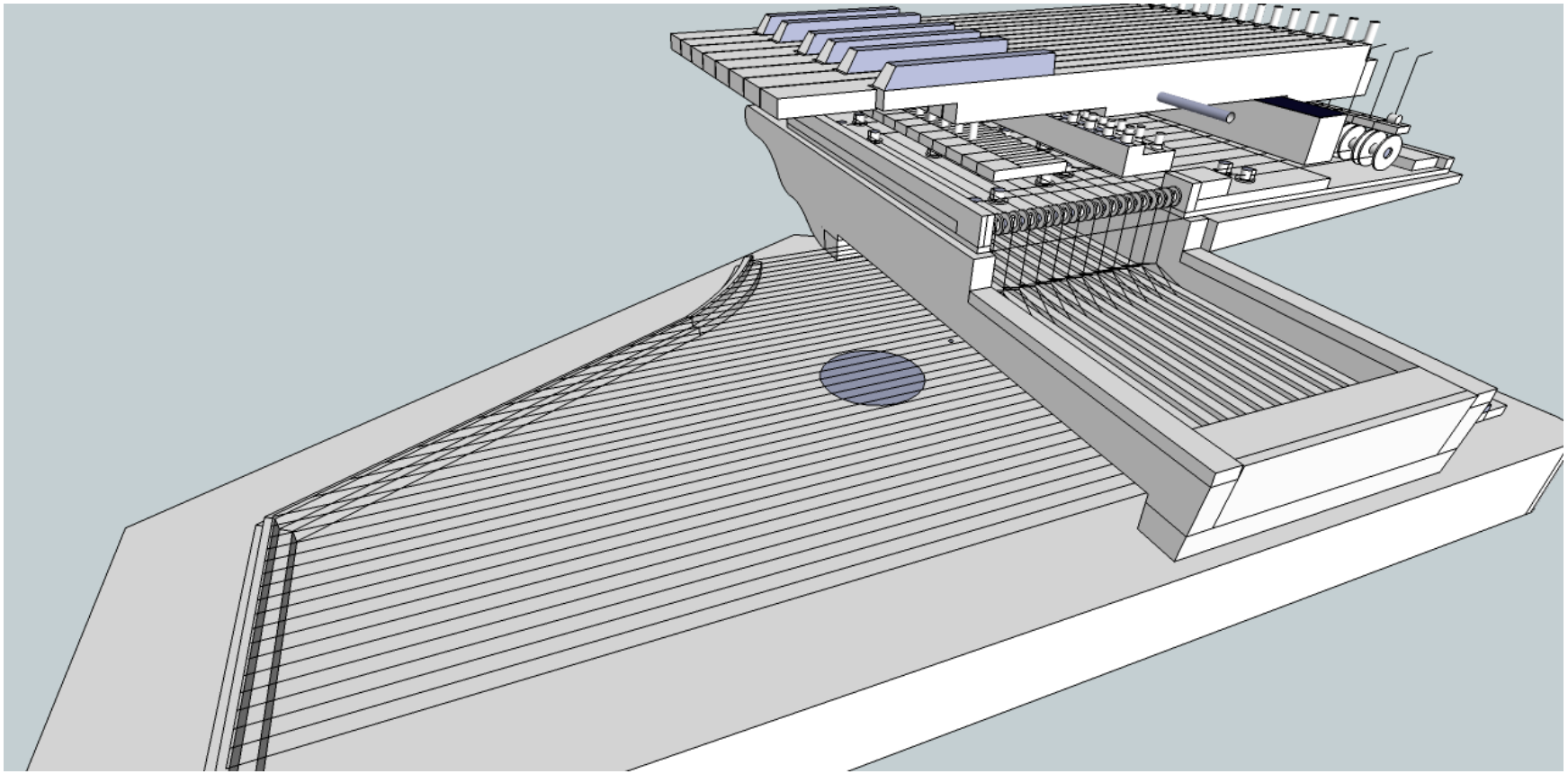
The development I propose is to replace the autoharp sprung chord bar action, with a reverse action damper bar arrangement that is controlled through a pulley system from one octave of a full sized piano keyboard. The position of the keyboard has been considered to produce a comfortable playing position for both hands…

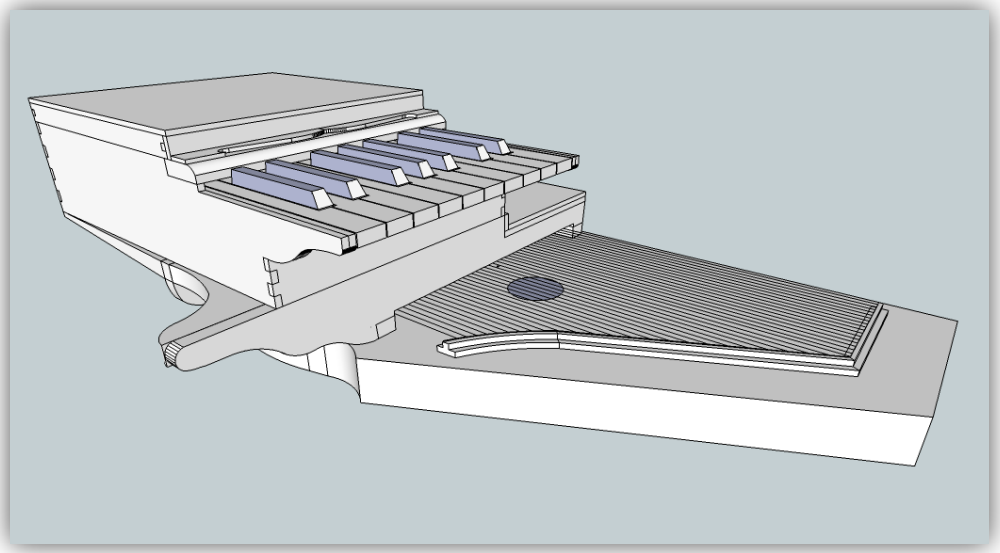
figure 3.2

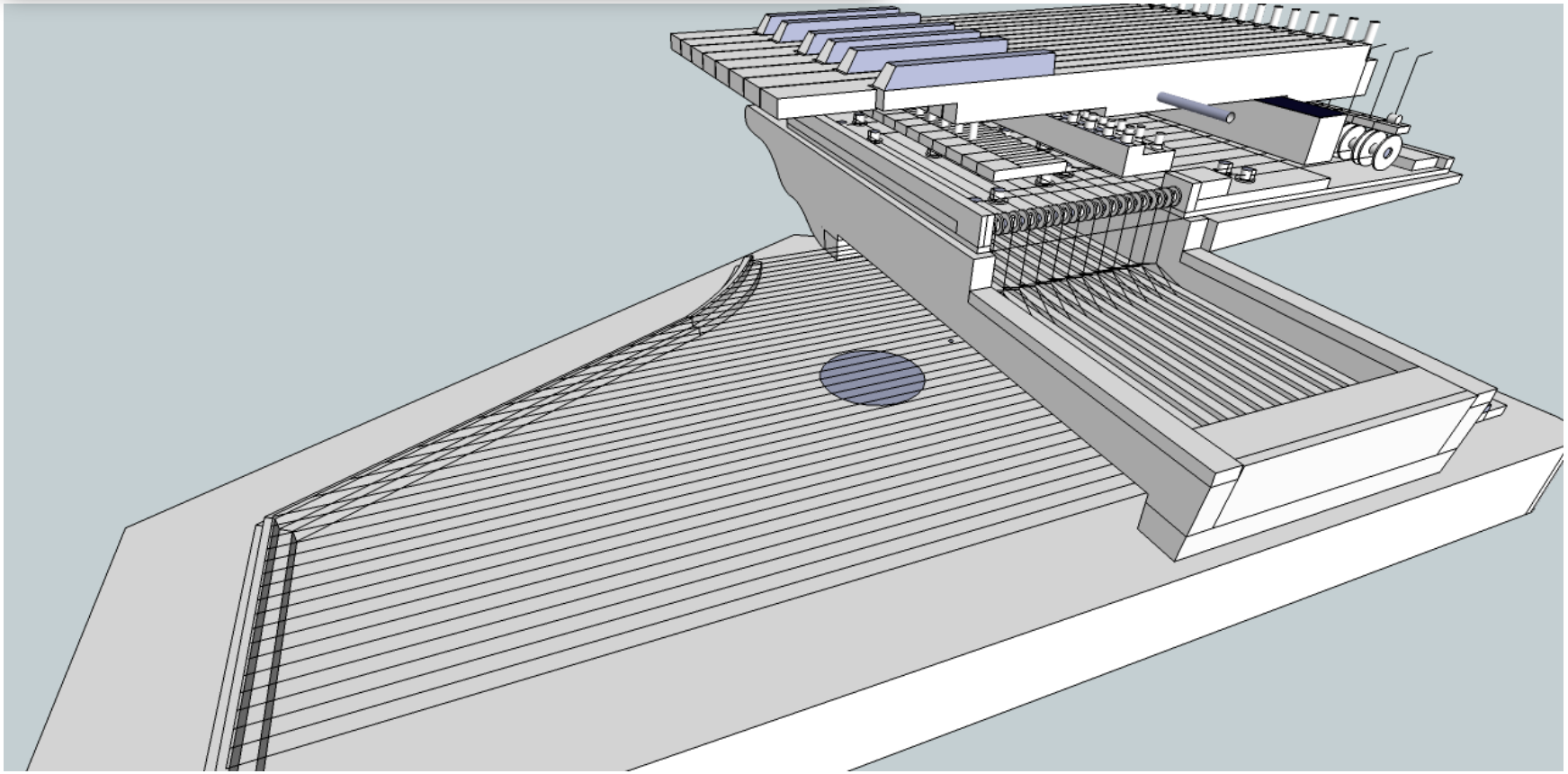


The term “reverse action” refers to the fact that the dampers are in contact with the strings when the instrument is at rest, as opposed to the over-sprung action of an autoharp. The autoharp at rest places the damper bars above the strings. Conversely the RAPH at rest places all of the damper bars in contact with the strings. The force of the springs is reversed - keeping the damper bar in continuous contact with the strings, and the piano key in the upright position. However, the springs are not fully compressed until a piano key is depressed, pulling the damper bar 0.5cm above the strings.









Trimming and sanding the output from CNC and laser cutter

(Brissenden P. G., 2012)

Trimming and sanding the output from CNC and laser cutter

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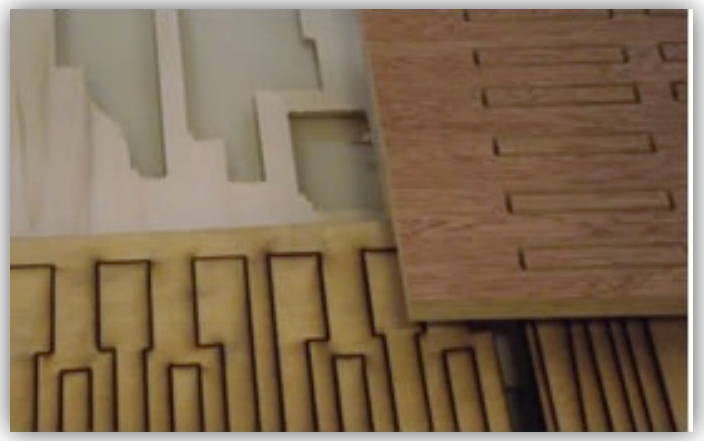


Outputs from CNC and laser cutter compared

(Brissenden P. G., Reverse Action Piano Harp, 2013)

INTELLECTUAL
PROPERTY OFFICE

Certificate of Grant of Patent

Patent Number: GB2449459

Proprietor(s): Philip G Brissenden

Inventor(s): Philip G Brissenden

This is to Certify that, in accordance with the Patents Act 1977,

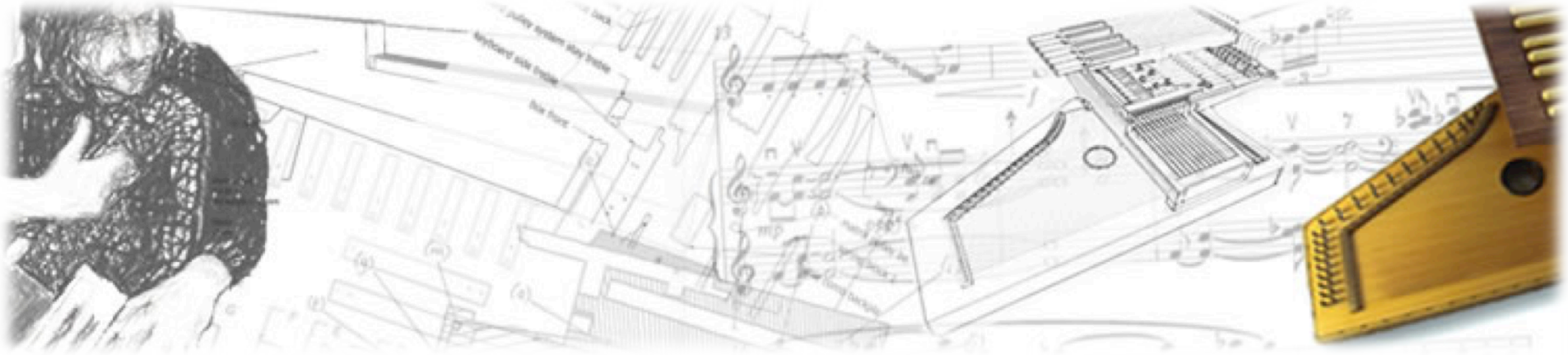
a Patent has been granted to the proprietor(s) for an invention entitled "**Reverse action piano harp**" disclosed in an application filed **23 May 2007**.

Dated 8 February 2012

John Alty
Comptroller-General of Patents, Designs and Trade Marks
Intellectual Property Office

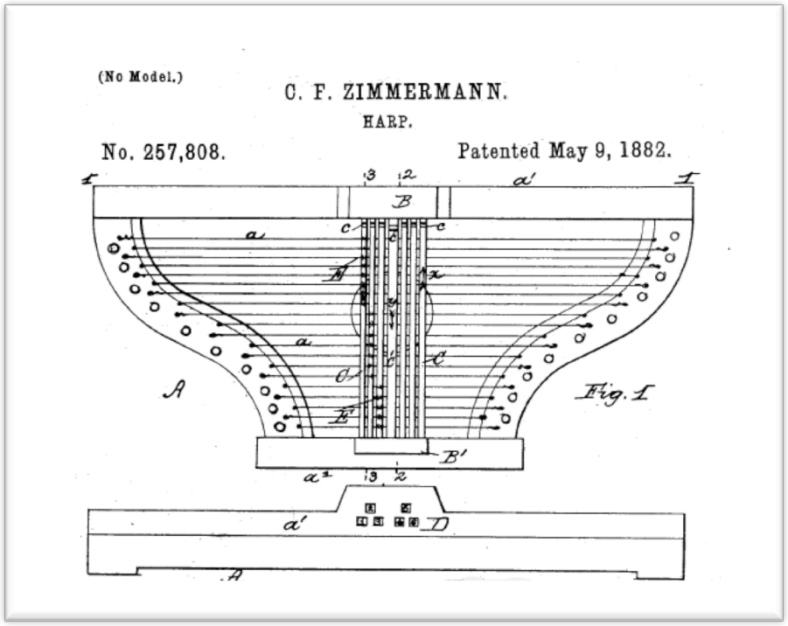
The attention of the Proprietor(s) is drawn to the important notes overleaf.

Intellectual Property Office is an operating name of the Patent Office



Song that Swings

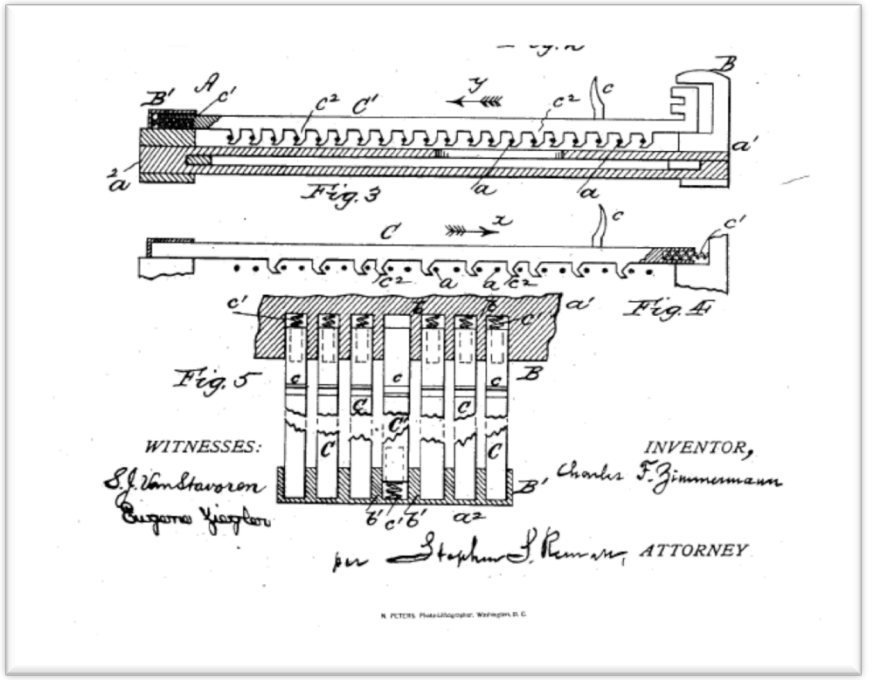
Phil Brissenden 2004



US Patent 257808

(Zimmermann, 1882)

Status: Public Domain



US Patent 257808 (Zimmermann, 1882)

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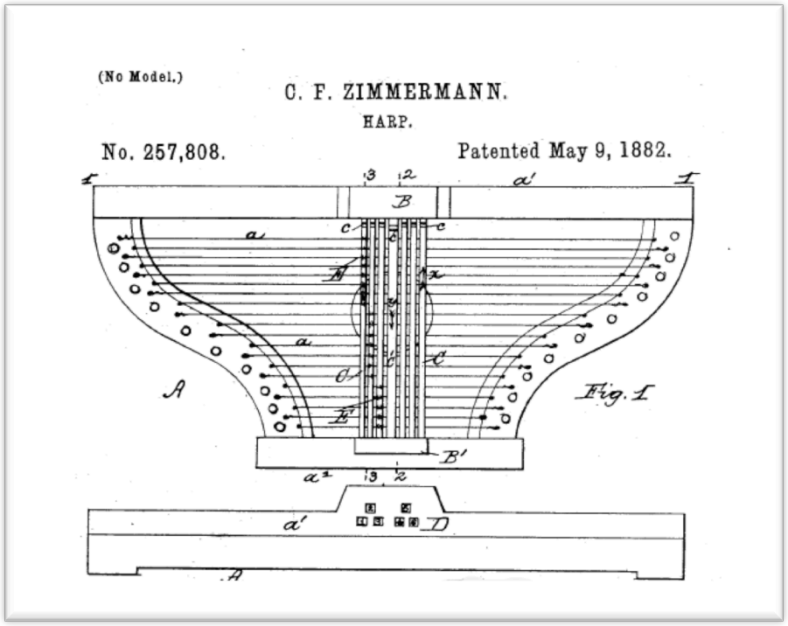

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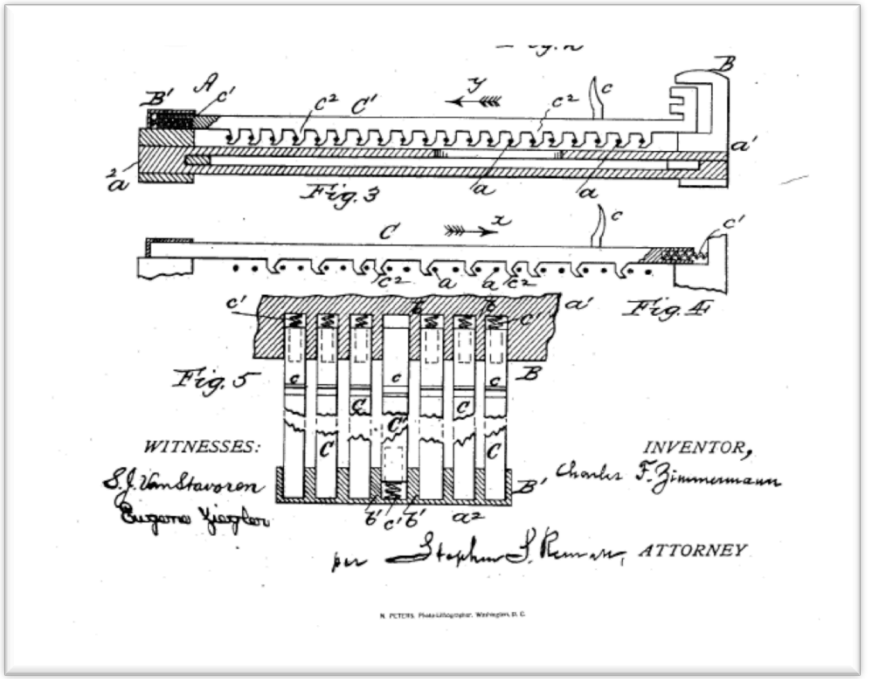
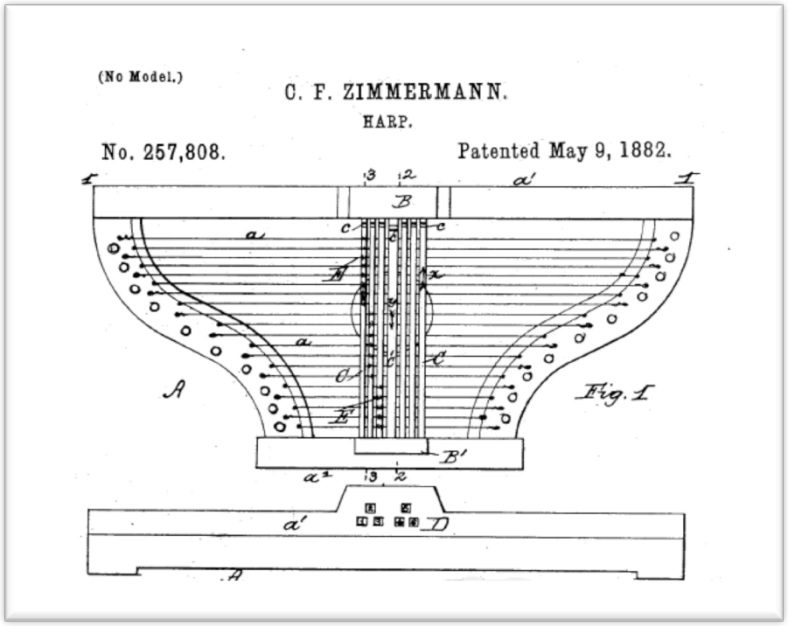


US Patent 257808 (Zimmermann, 1882)

Status: Public Domain.

Zimmermann playing his own invention. (Styles, 1990)

Status: Public Domain



US Patent 257808

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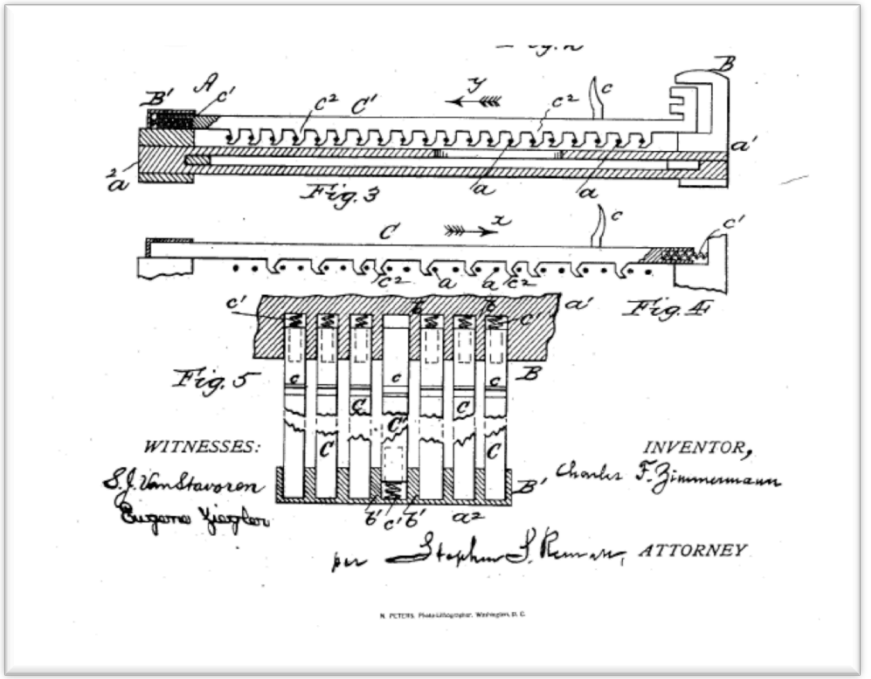

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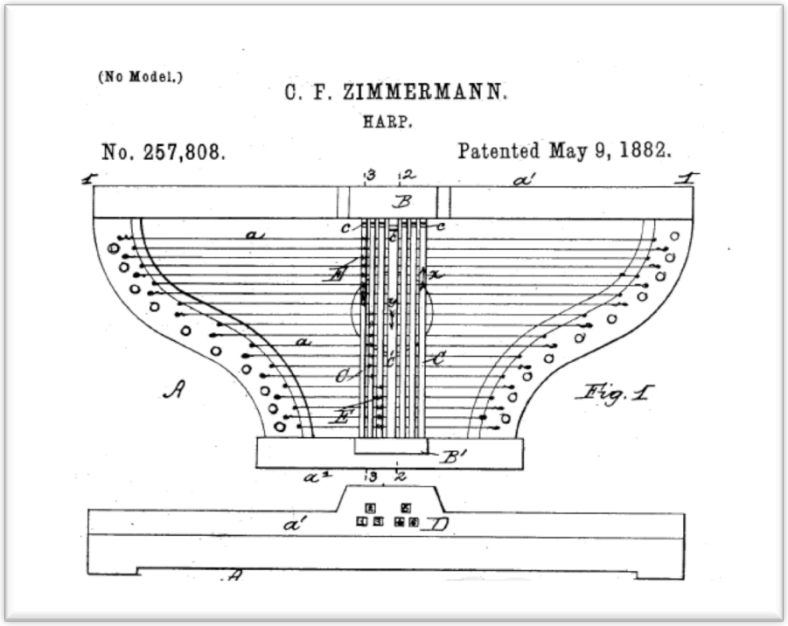

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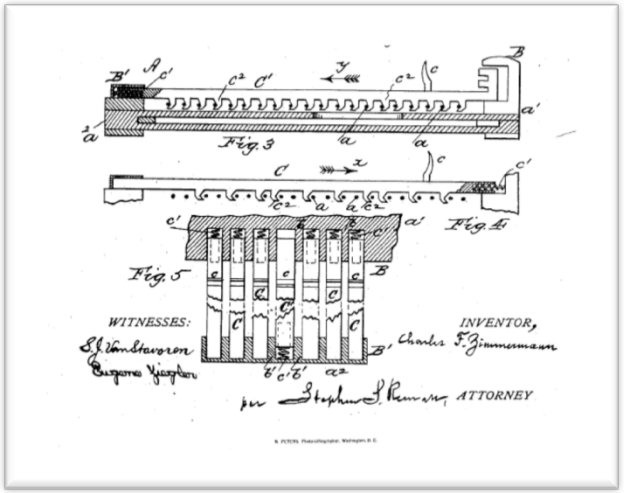
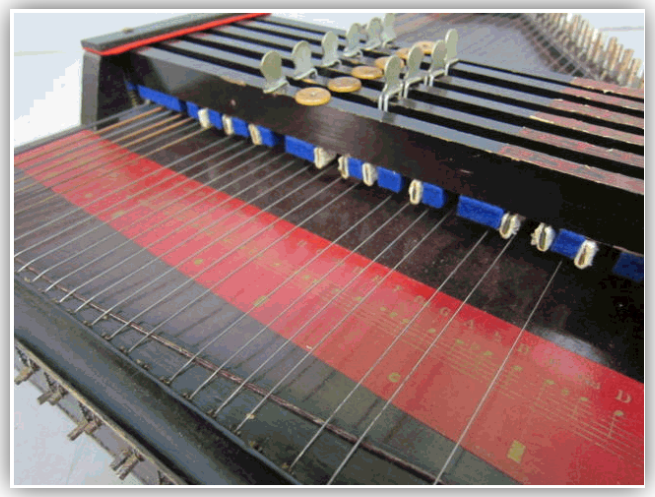


US Patent 257808 (Zimmermann, 1882)

Status: Public Domain.



Chord Bars and Pinch Mechanism on a Victoria Autoharp (Holmes, 2014).

Status Permission granted

Zimmermann playing his own invention. (Styles, 1990)

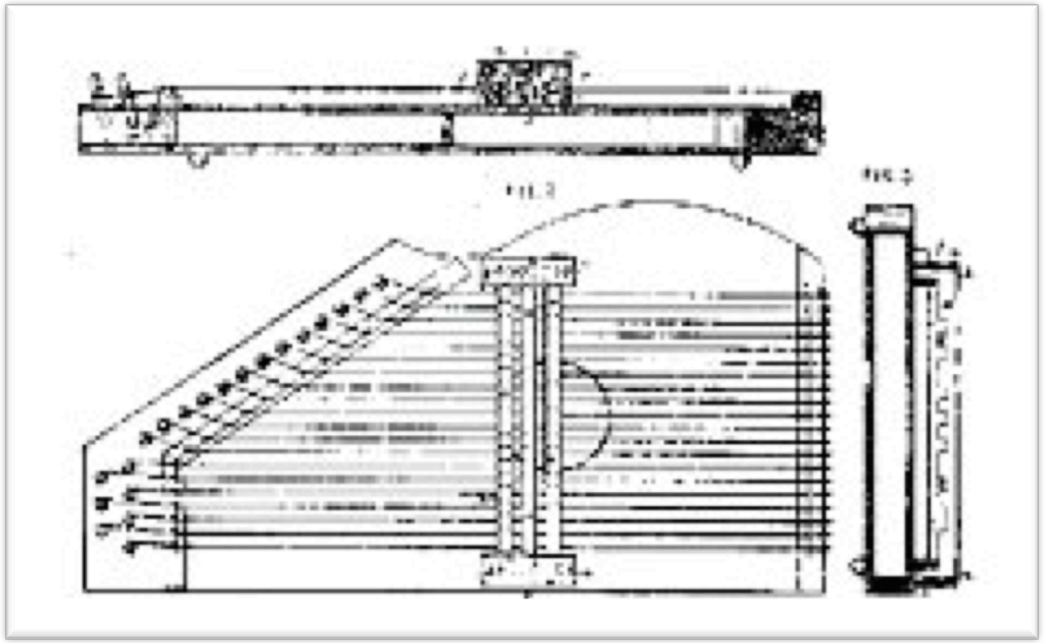
Status: Public Domain

Type 1 Zimmermann production model (Harrison, 2004).

With permission

Type 1 Zimmermann production model (Harrison, 2004).

With permission

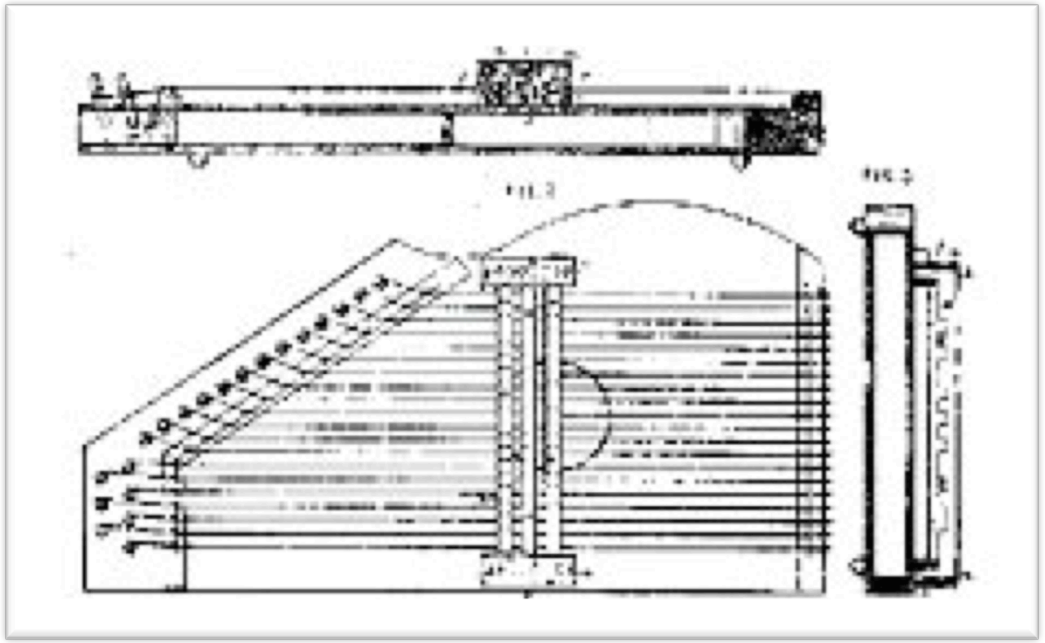


Karl Gütter's original patent drawing (Styles, 1990).

Status: Public Domain

Type 1 Zimmermann production model (Harrison, 2004).

With permission



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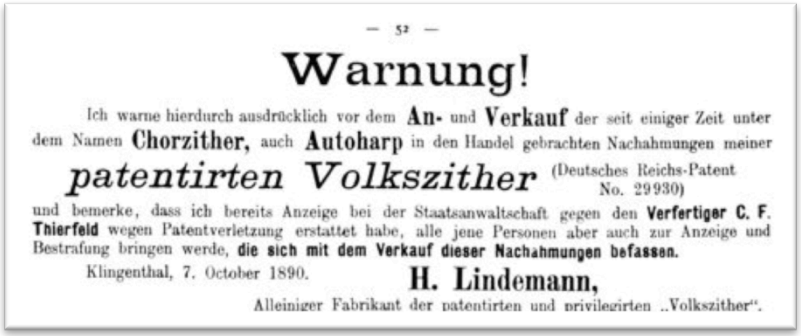


— 52 —

Warnung!

Ich warne hierdurch ausdrücklich vor dem **An-** und **Verkauf** der seit einiger Zeit unter dem Namen **Chorzither,** auch **Autoharp** in den Handel gebrachten Nachahmungen meiner

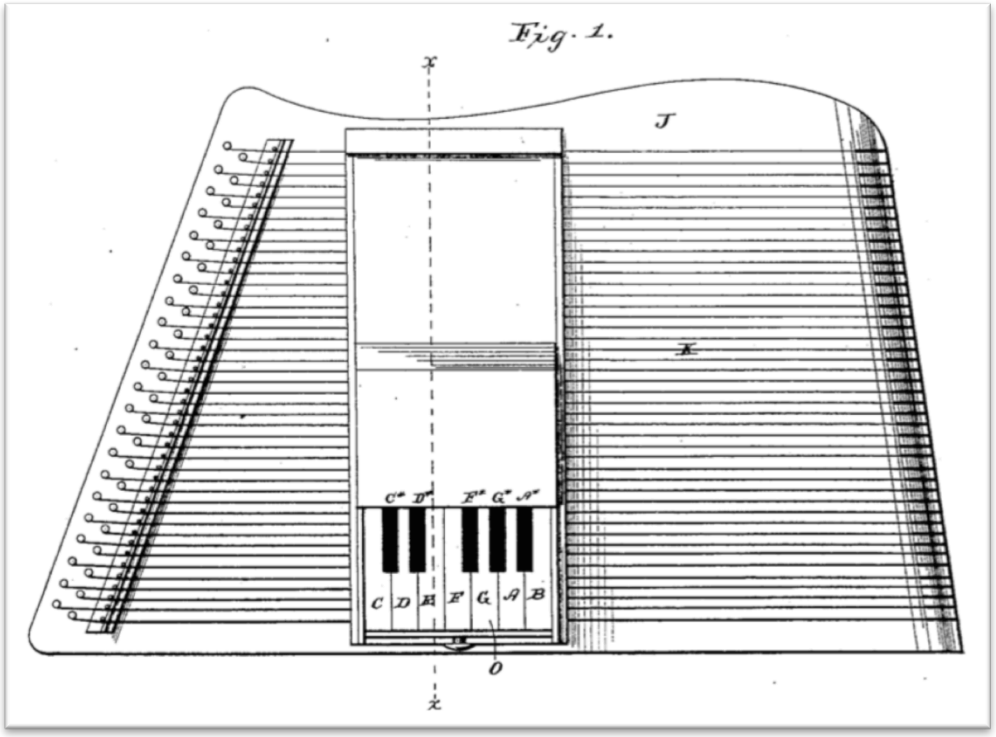
patentirten Volkszither (Deutsches Reichs-Patent No. 29930)

und bemerke, dass ich bereits Anzeige bei der Staatsanwaltschaft gegen den **Verfertiger C. F. Thierfeld** wegen Patentverletzung erstattet habe, alle jene Personen aber auch zur Anzeige und Bestrafung bringen werde, **die sich mit dem Verkauf dieser Nachahmungen befassen.**

Klingenthal, 7. October 1890. **H. Lindemann,**

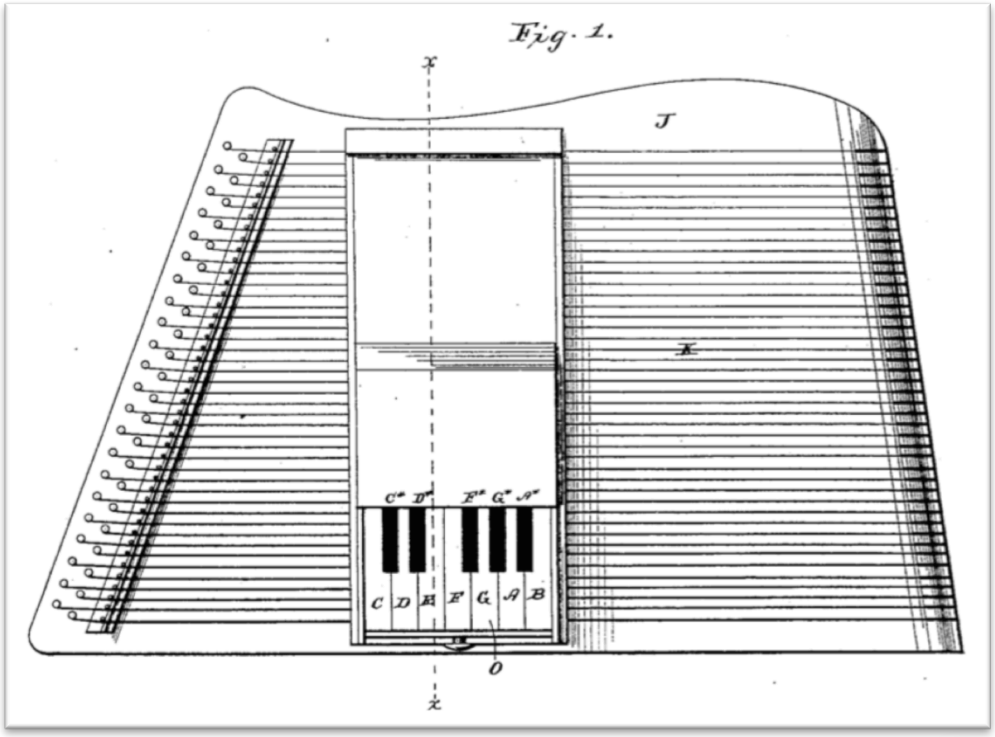
Alleiniger Fabrikant der patentirten und privilegirten „Volkszither".

Lindemann's warning notice posted in Der Zeitschrift für Instrumentenbau (Journal of Instrument Construction) (Michel). *Status: Public Domain*



Overview of Wigand's Instrument

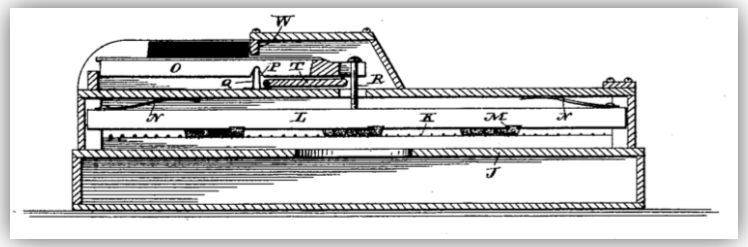
(Wigand, 1888) *Status: Public Domain*

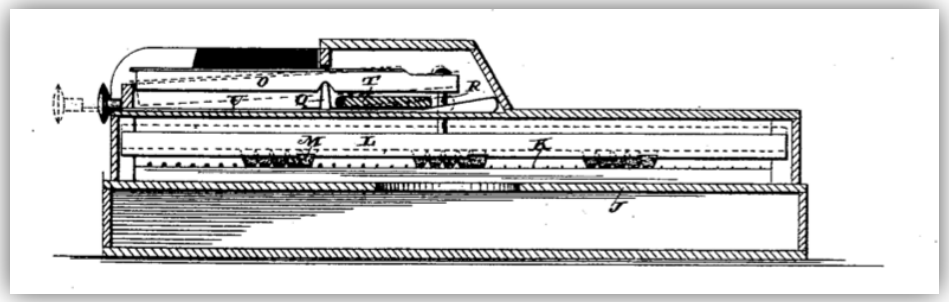


Overview of Wigand's Instrument

(Wigand, 1888) *Status: Public Domain*

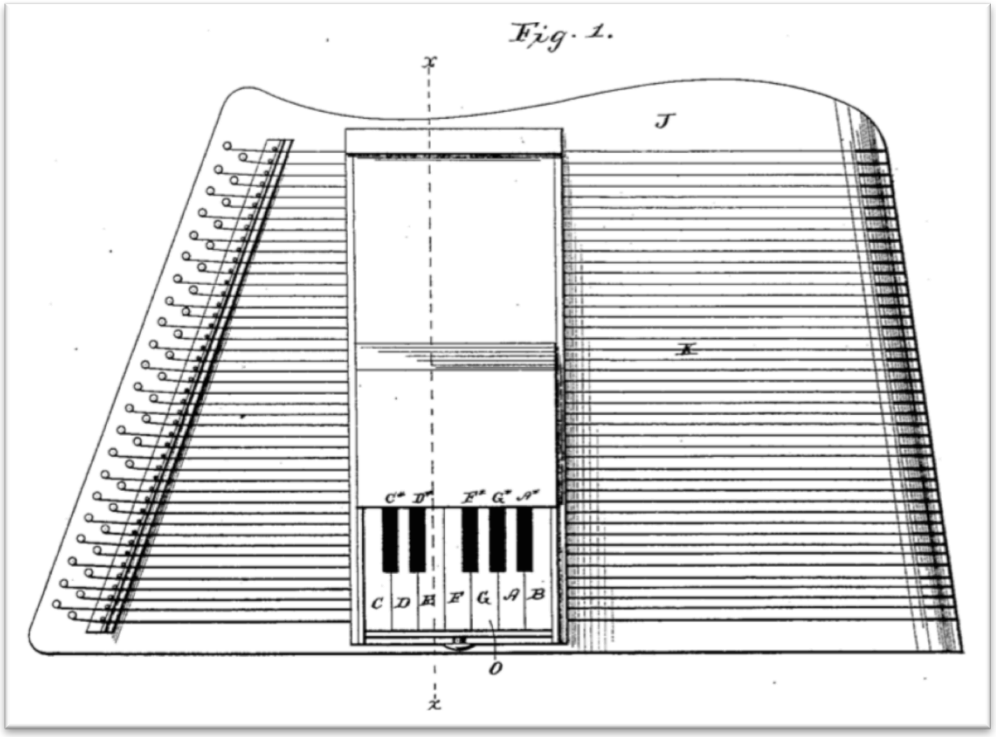
"It has been, therefore, my object to produce an instrument with only a limited number of damping-bars, but so constructed that by the various combinations of said bars with each other all the chords possible to be struck upon a piano can be produced.





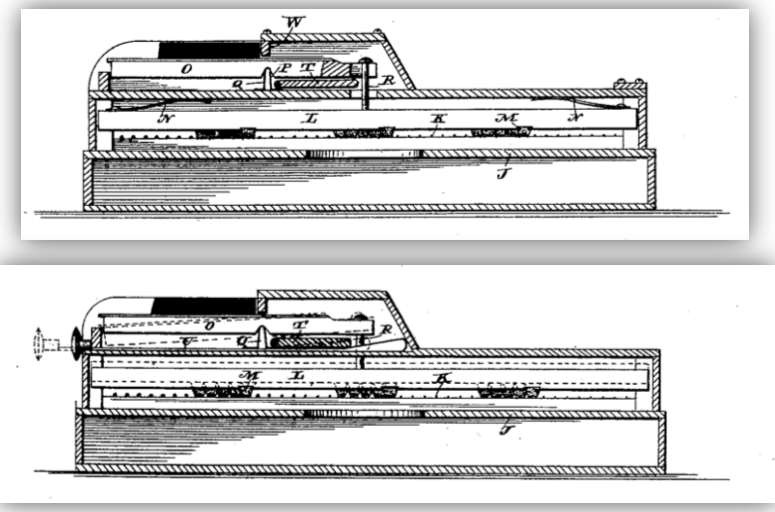
Cross-section through the Keyboard Mechanism

(Wigand, 1888) *Status: Public Domain*



Overview of Wigand's Instrument

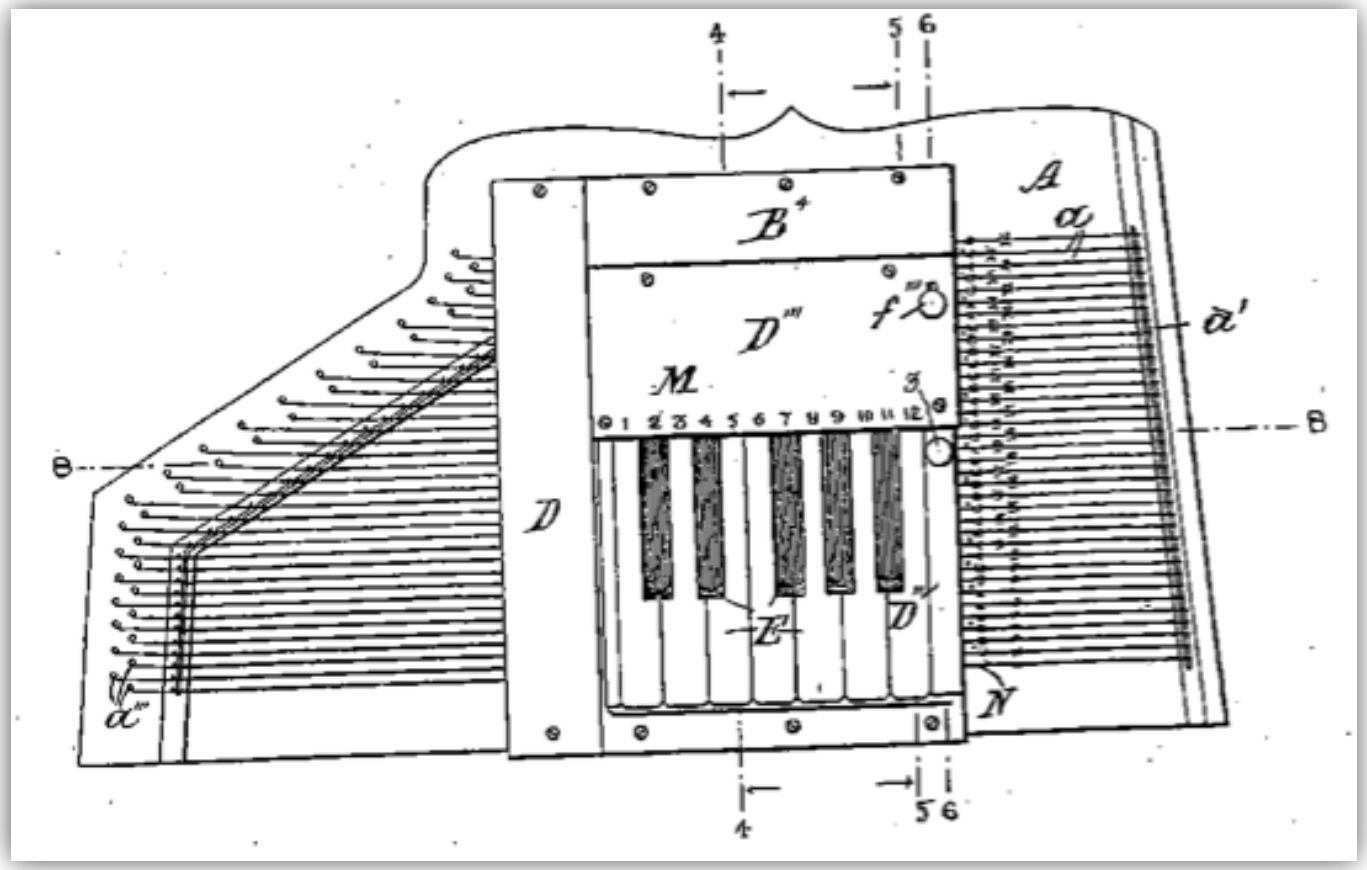
(Wigand, 1888) *Status: Public Domain*



Cross-section through the Keyboard Mechanism

(Wigand, 1888) *Status: Public Domain*

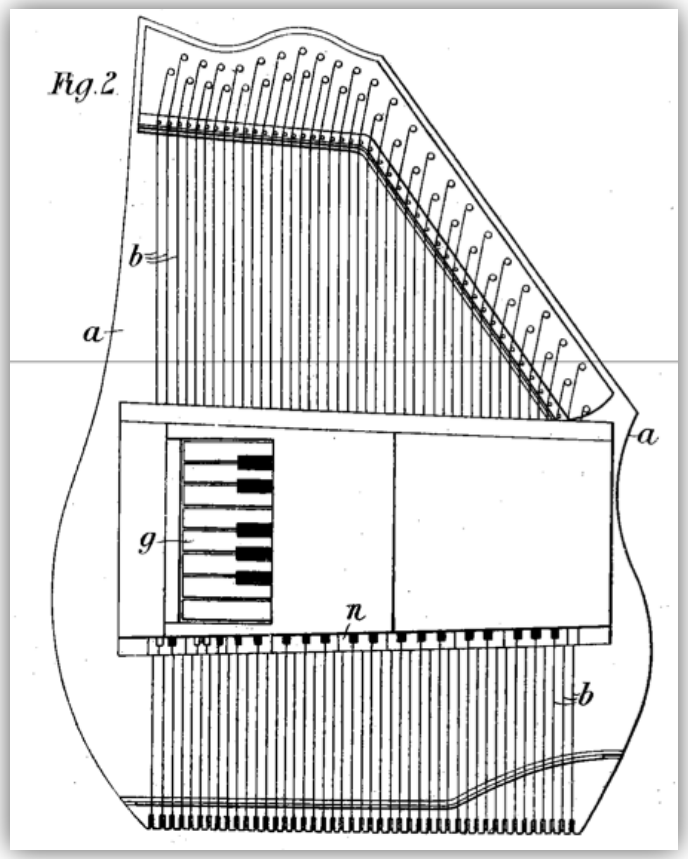
In carrying out my invention a different principle of construction has been adopted from that heretofore employed in instruments of this class-that is to say, instead of providing each bar with dampers adapted to prevent or shut of the vibrations of all the strings except those of a particular chord, I have provided each bar with dampers adapted to prevent or shut off the strings representing only a certain fundamental note and its octaves, and instead of keeping the dampers normally out of contact with the strings I have arranged to keep them normally in contact with the strings, the result being, when a single bar is operated, to release or leave free to vibrate only the strings representing a certain note and its octaves…"



Overview Back's Instrument

(Back, 1896) *Status: Public Domain*

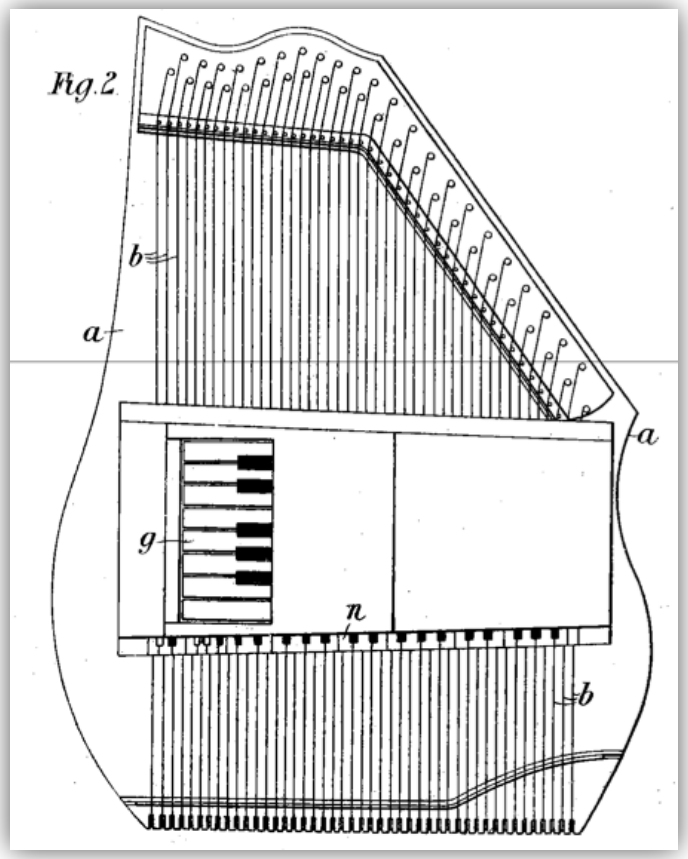
"Be it known that I, James S. Back of the city of Ottawa .. in the Dominion of Canada, have invented certain new and useful improvements in Autoharps; and I do hereby declare that the following is a full, clear and exact description.."



Overview of Millington & Young's Instrument

(Millington & Young, 1899)

Status: Public Doman



Overview of Millington & Young's Instrument

(Millington & Young, 1899)

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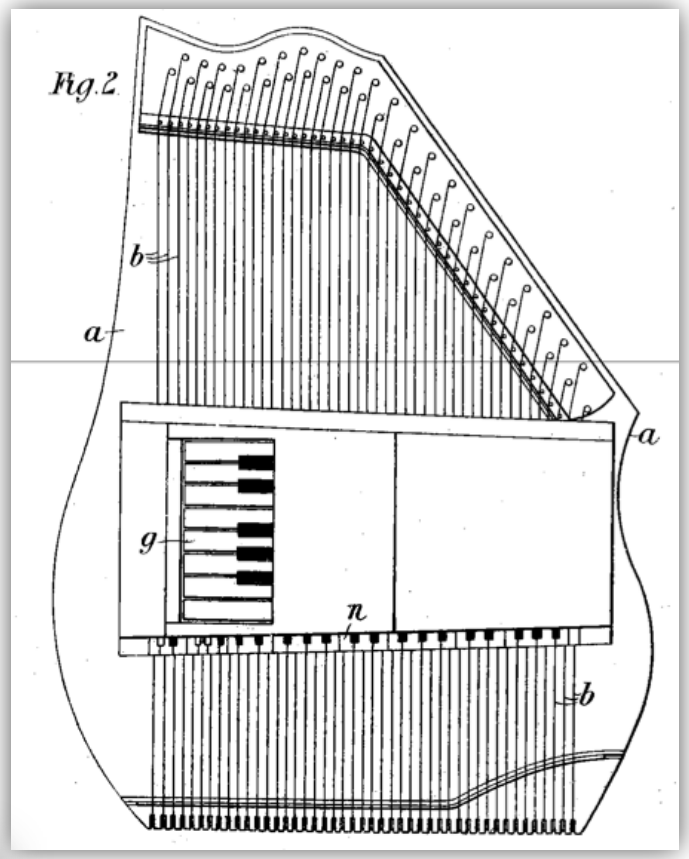

Overview of Millington & Young's Instrument

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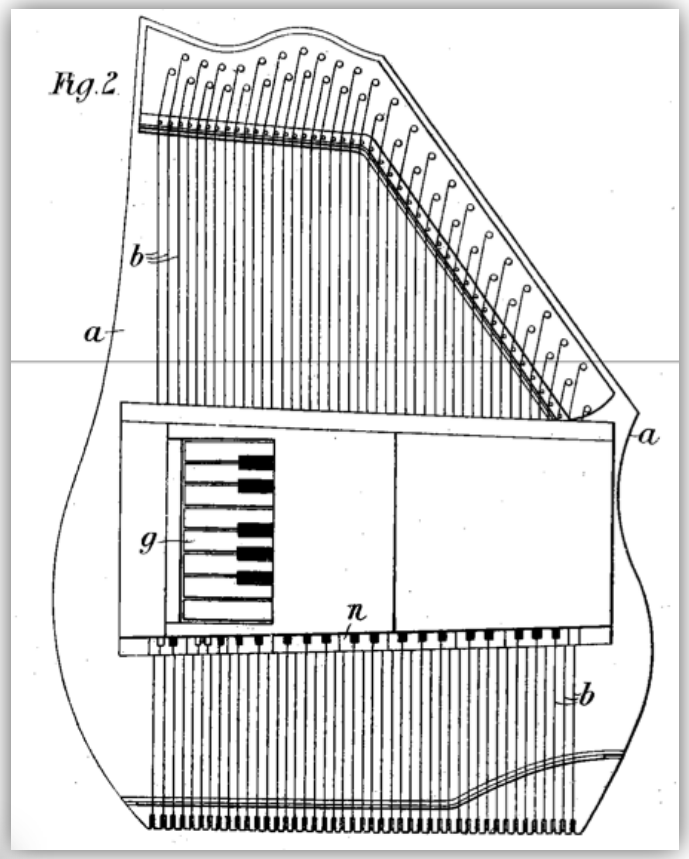

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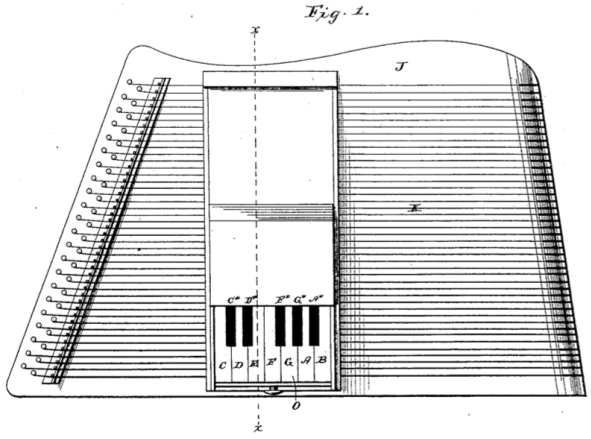
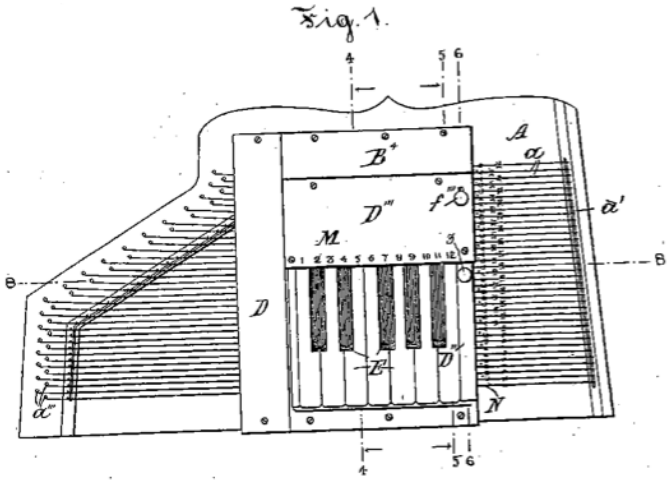
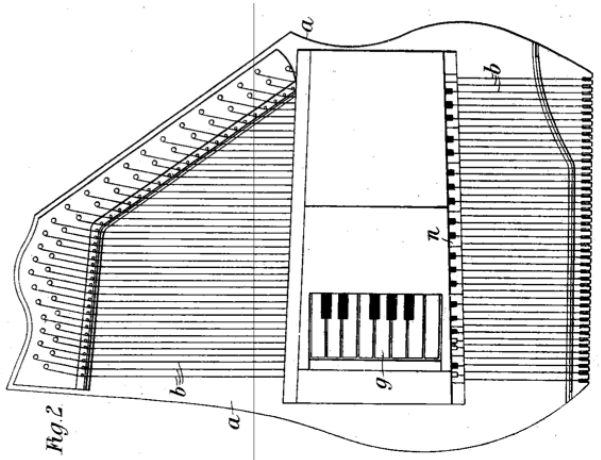


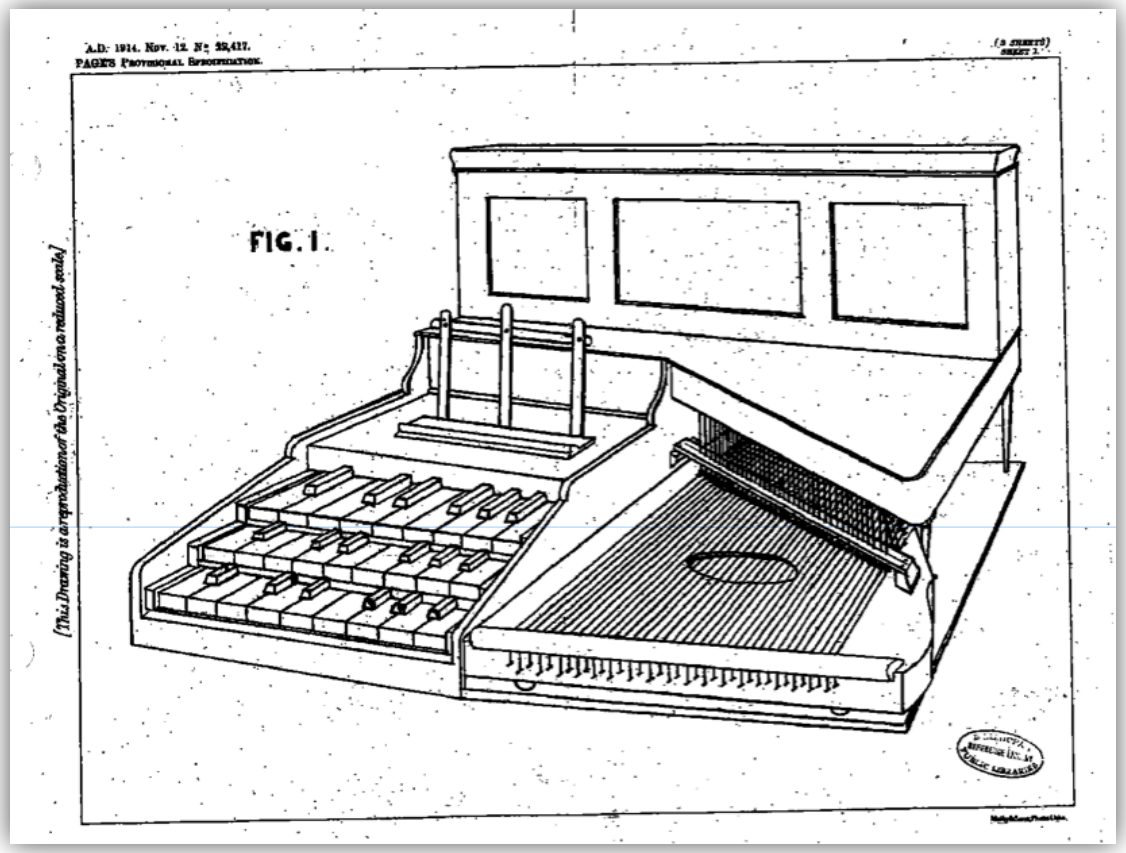
Wigand



Back



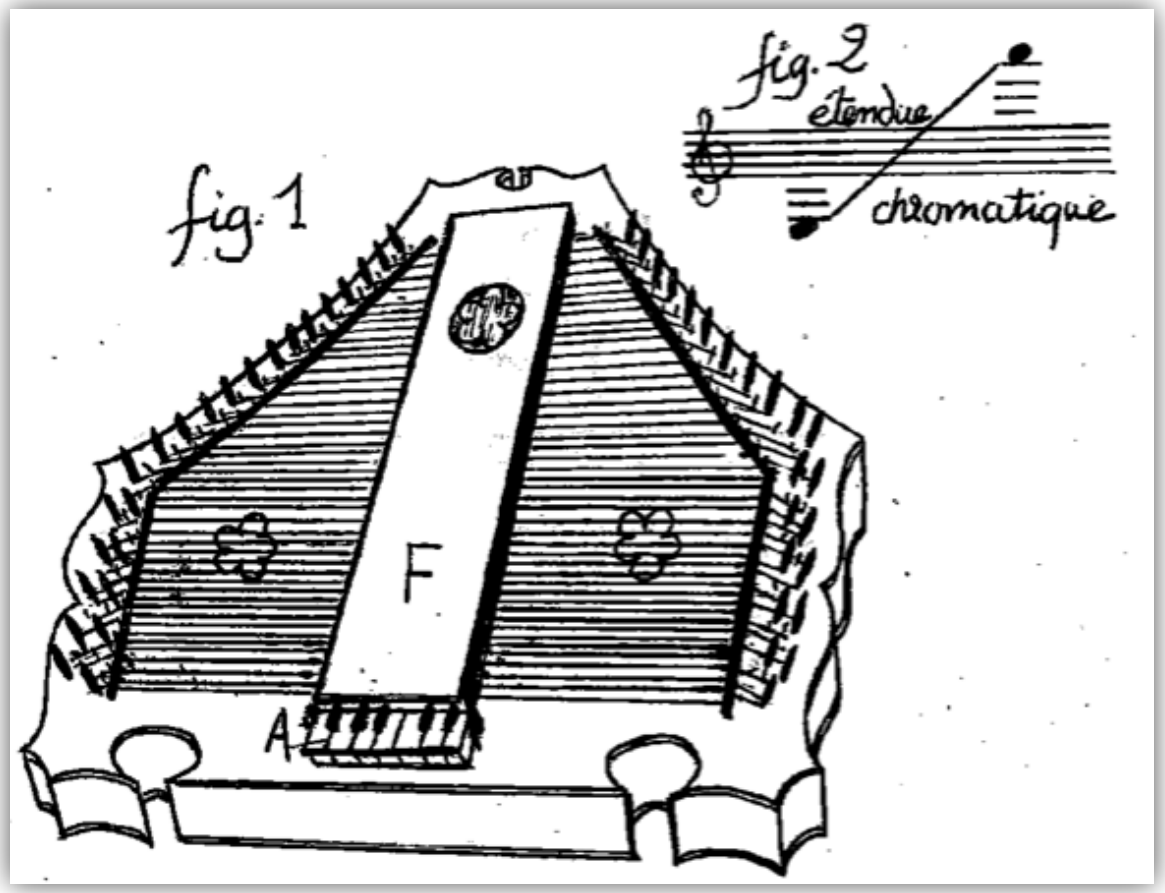
Millington/Young



Overview of Page's Instrument

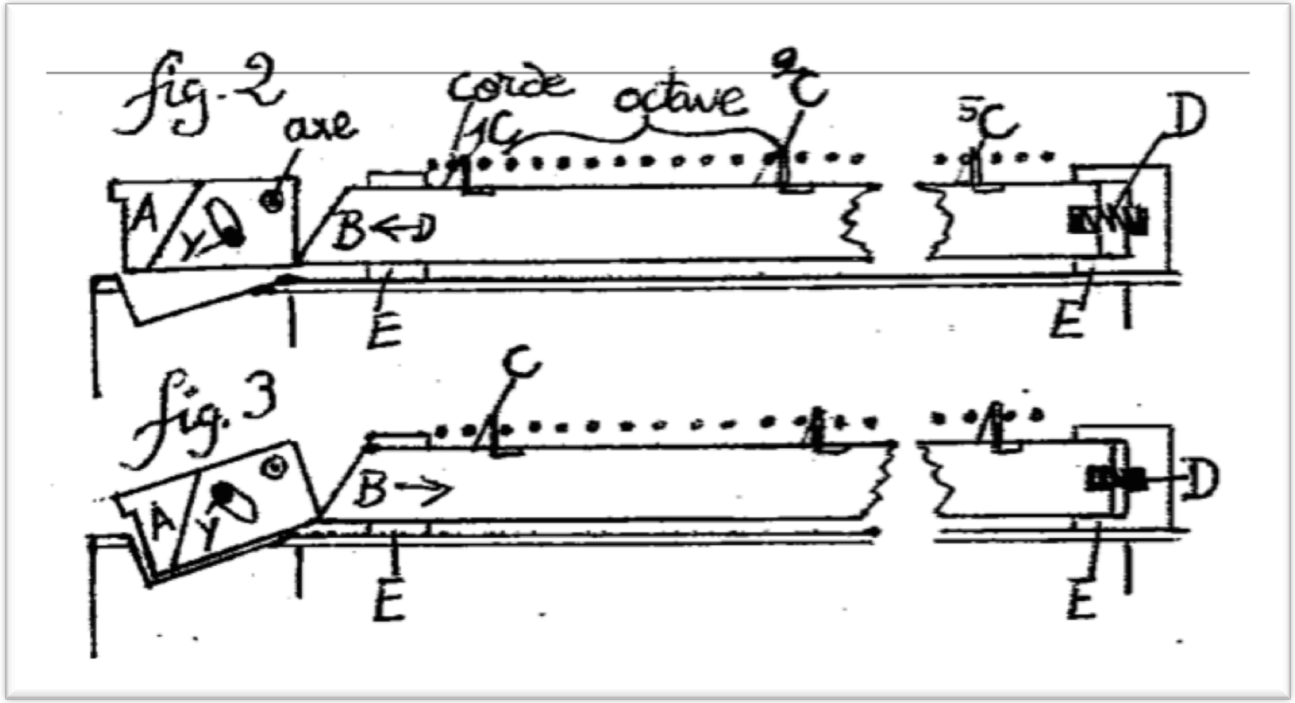
(Page, 1915). *Status: Public Domain*

“Il existe dans ce domaine un systeme anglo-saxon (autoharp) qui a l’inconveneient de ne permettre que 12 our 15 accords …”
An Anglo-Saxon system (autoharp) exists in this sector that inconveniently does not permit more than 12 or 15 chords..



Overview of Henner’s Instrument

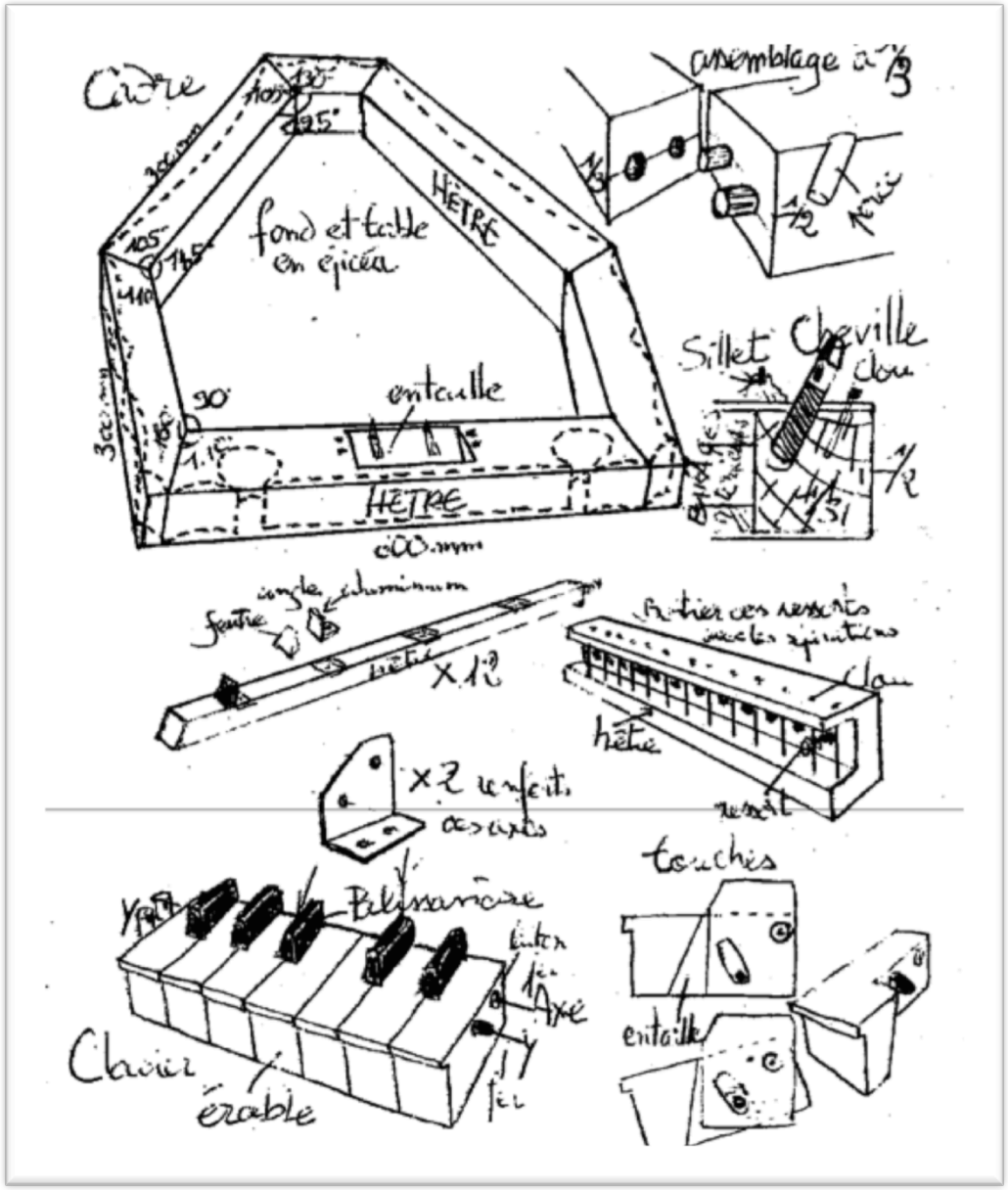
(Henner, 1976) *Status: Pubic Domain*



Drawings of the Key and Damping Mechanism

(Henner, 1976). *Status: Public Domain*

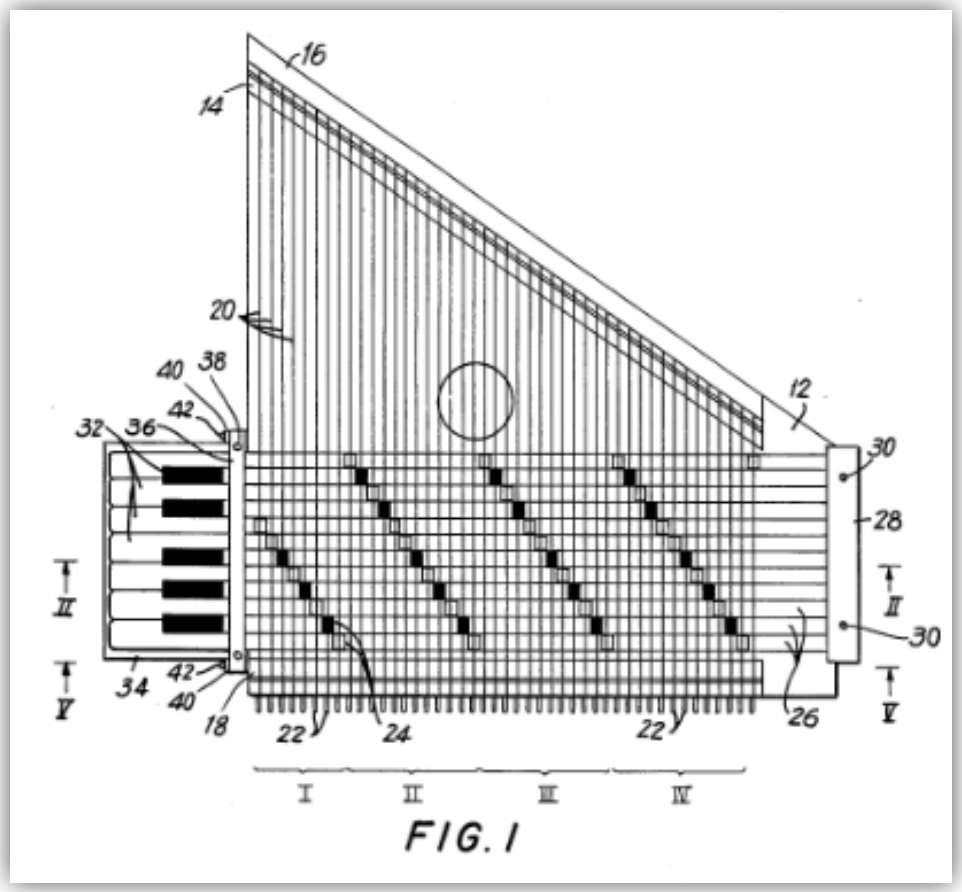
“Chaque touché (A) est en contact libre avec une poutrelle (B) montee d’etouffoirs (C) situes aux octaves de chaque touché…”



The Final Plate of Henner's Patent

(Henner, 1976). *Status: Public Domain*

"..Therefore, it is an object of the present invention to provide an improved stringed instrument of the type wherein the strings are arranged in sets of octaves, and a manual keyboard is provided for selecting various strings to vibrate when the strings are strummed, and wherein substantially all of the playing area is accessible to the performer for the strumming of such strings."

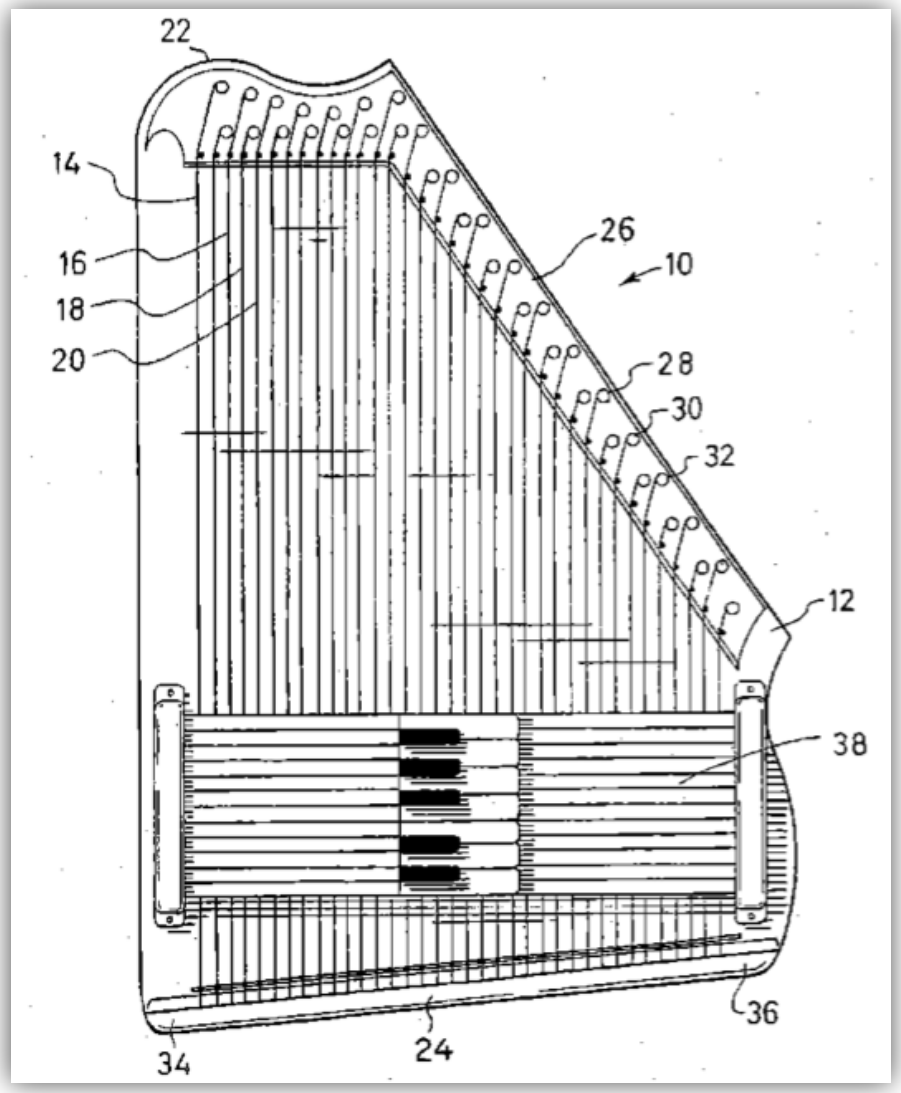


Overview of Aronis

(Aronis, 1979). *Status: Public Domain*

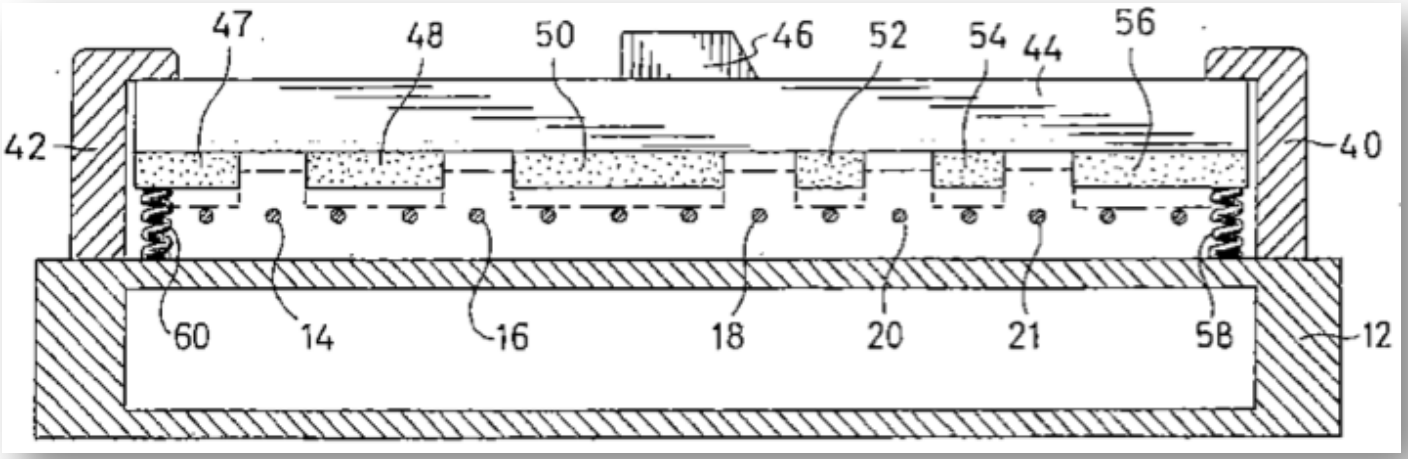
"A new autoharp allowing greater versatility of sounds by allowing individual control of the strings of an octave is disclosed. This invention is for use with string musical instruments such as the autoharp…

..Therefore it is an object of the present invention to provide a simple and inexpensive improvement of an autoharp which allows the unrestricted playing of notes and melodies."



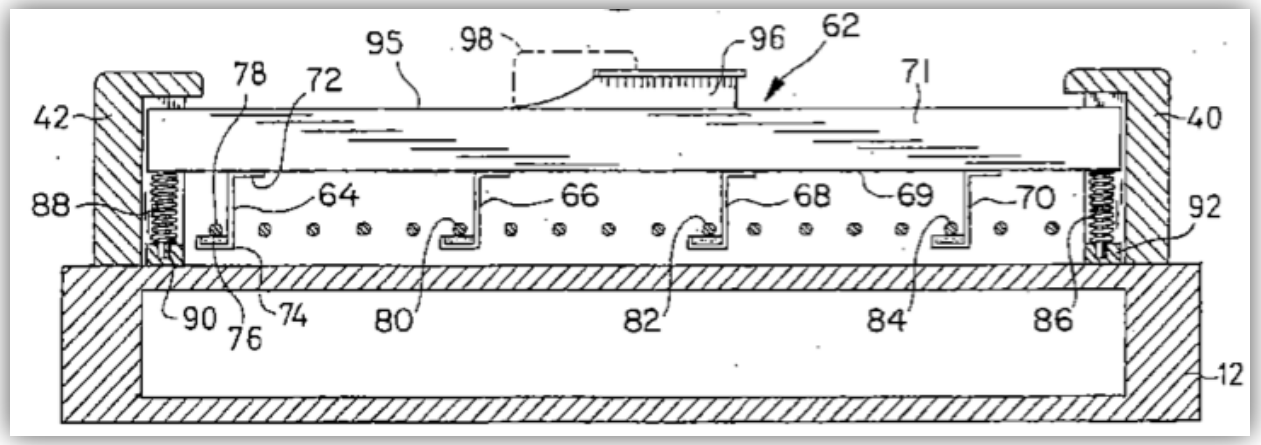
Overview of the Newton Instrument (Newton, 1985).

Status: Public Domaiin



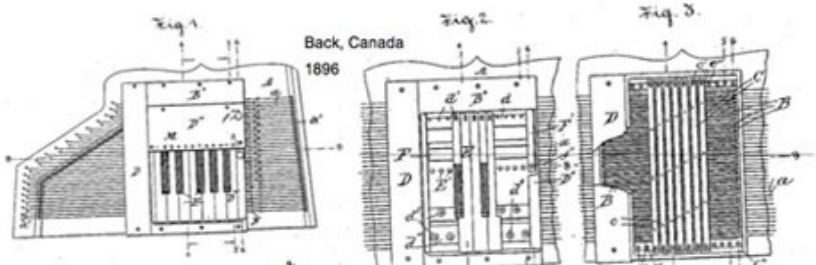
Standard Autoharp Damping Mechanism

(Newton, 1985). *Status: Pubic Domain*

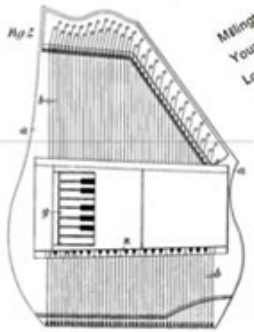


Newton's Replacement Damping System

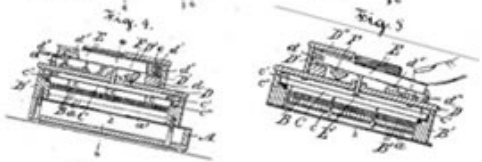
(Newton, 1985). *Status: Public Domain*

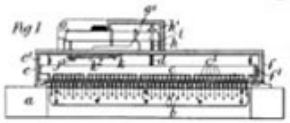


Back, Canada
1896

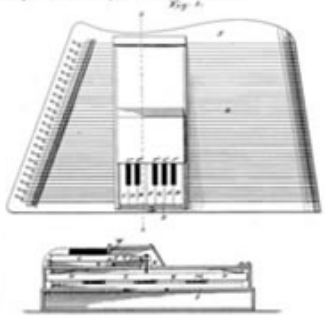


Millington &
Young,
London
1898

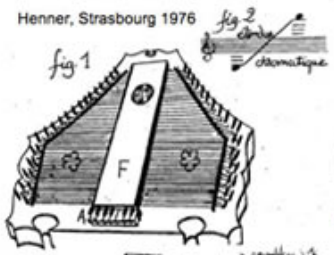


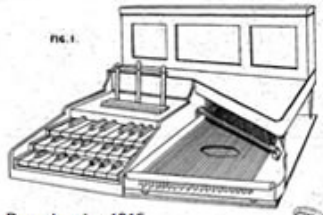


Wigand, Brooklyn, New York 1888

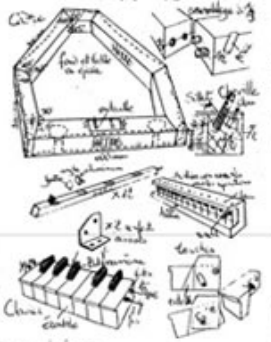


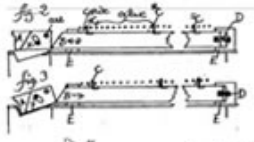
Henner, Strasbourg 1976



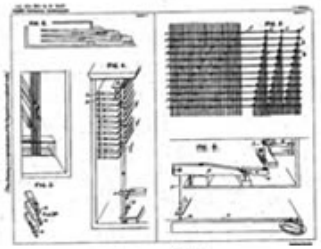


Page, London 1915





Aronis, US
1979



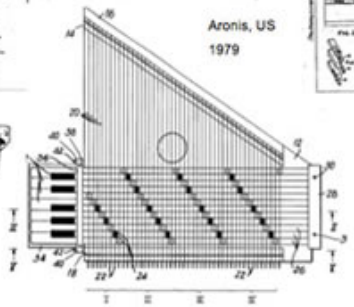
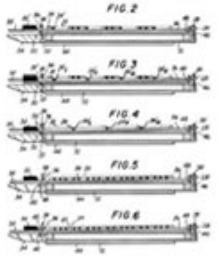
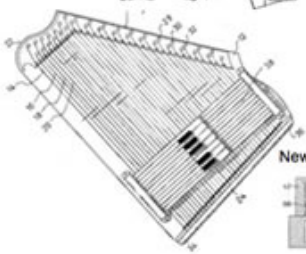
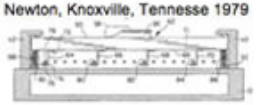


FIG. 1





Newton, Knoxville, Tennesse 1979



Zimmermann playing his own invention. (Styles, 1990)

Status: Public Domain

Zimmermann playing his own invention. (Styles, 1990)

Status: Public Domain

The table-top playing position (Michel) Status: Public Domain

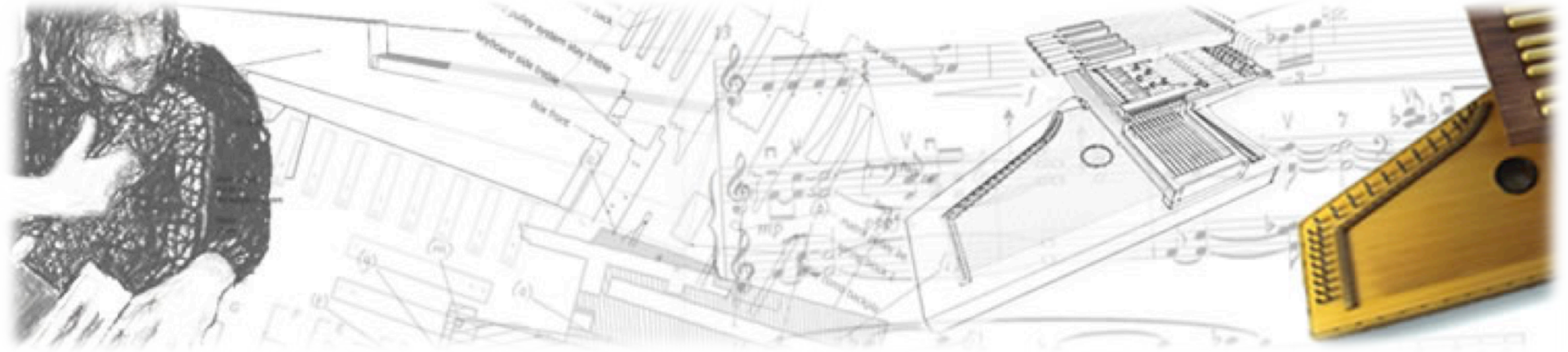
Zimmermann playing his own invention. (Styles, 1990)

Status: Public Domain

The table-top playing position (Michel)

Status: Public Domain

Figure 4.16. Parlour Scene shows the table-top playing position (Michel): status: Public Domain



Sea Fever

John Ireland
Arr: Brissenden

SALUT D'AMOUR.

(Liebesgruss.)

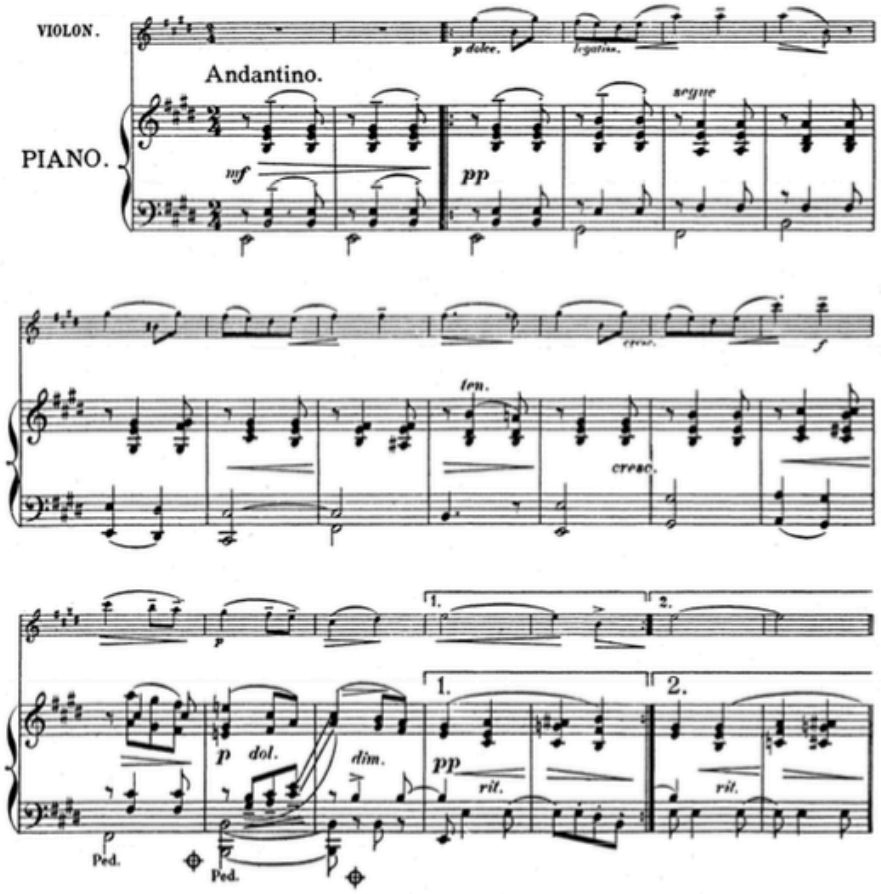
à Carice

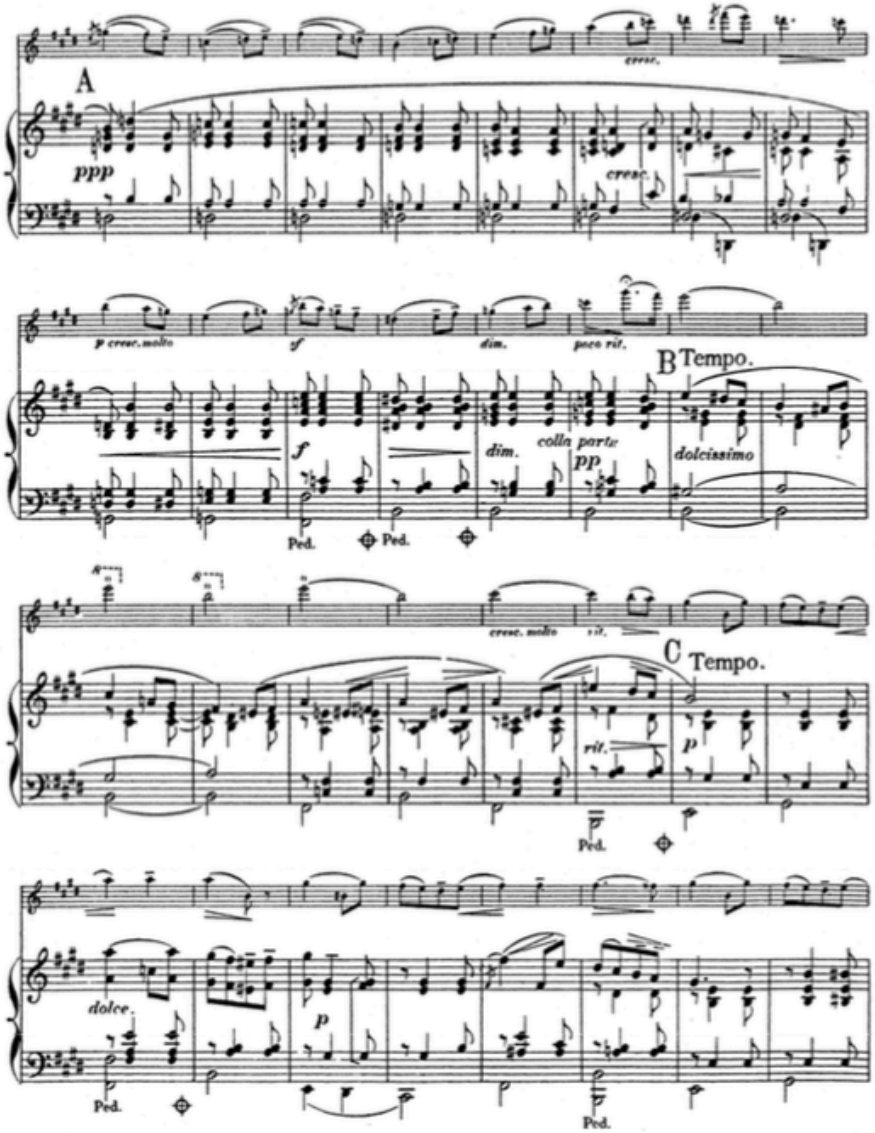
EDWARD ELGAR.
Op. 12.

VIOLON.

PIANO.

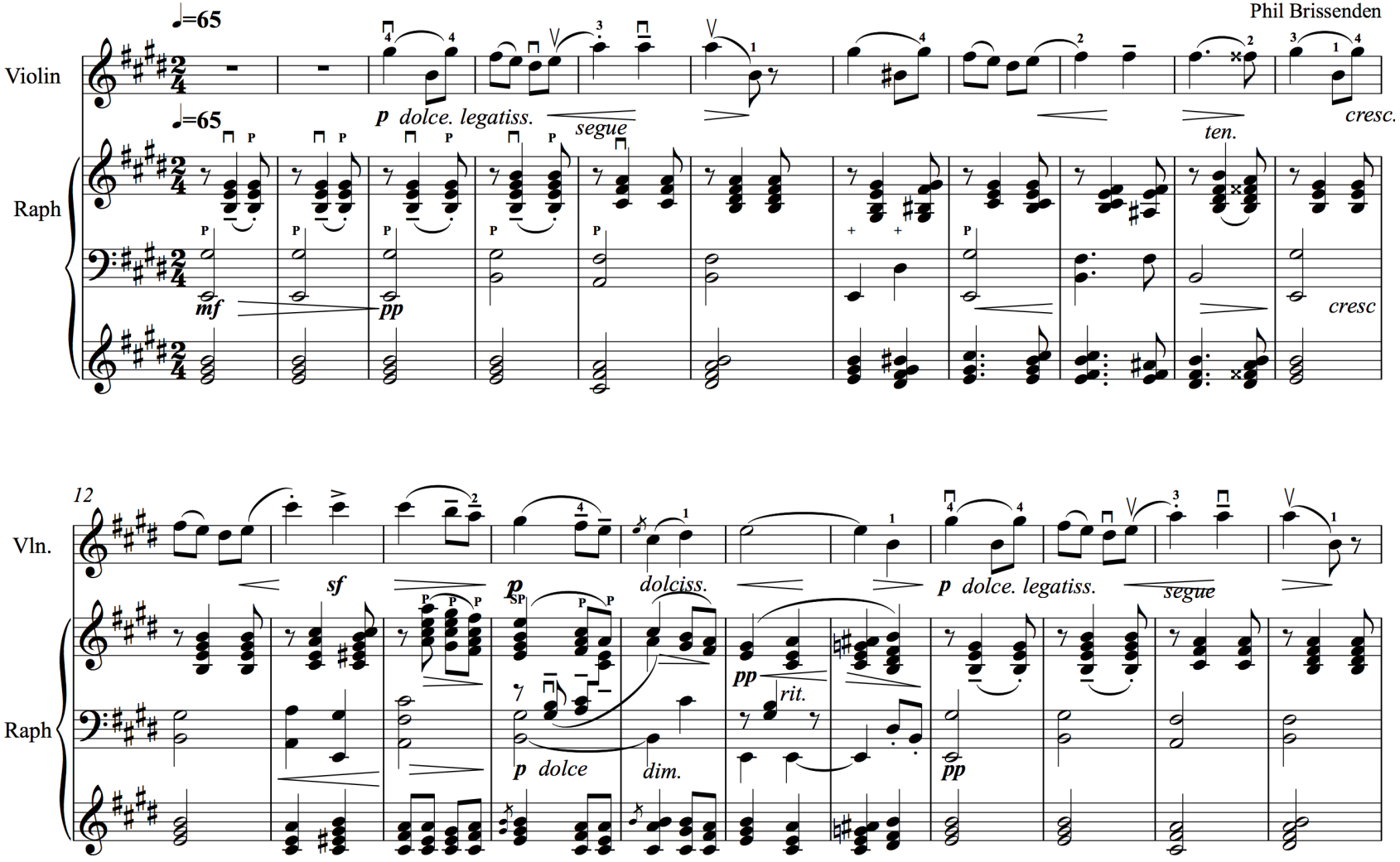
Andantino.

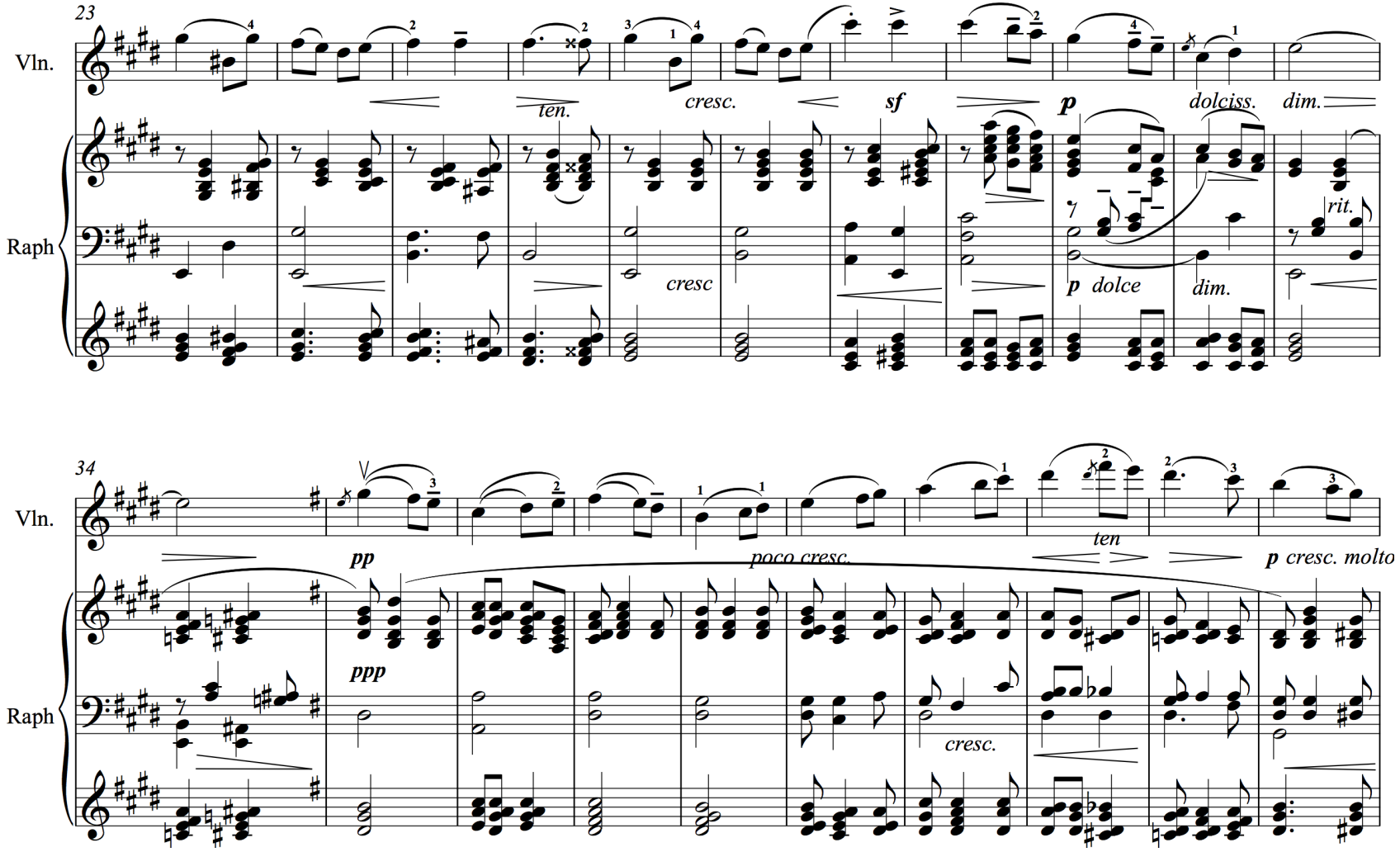


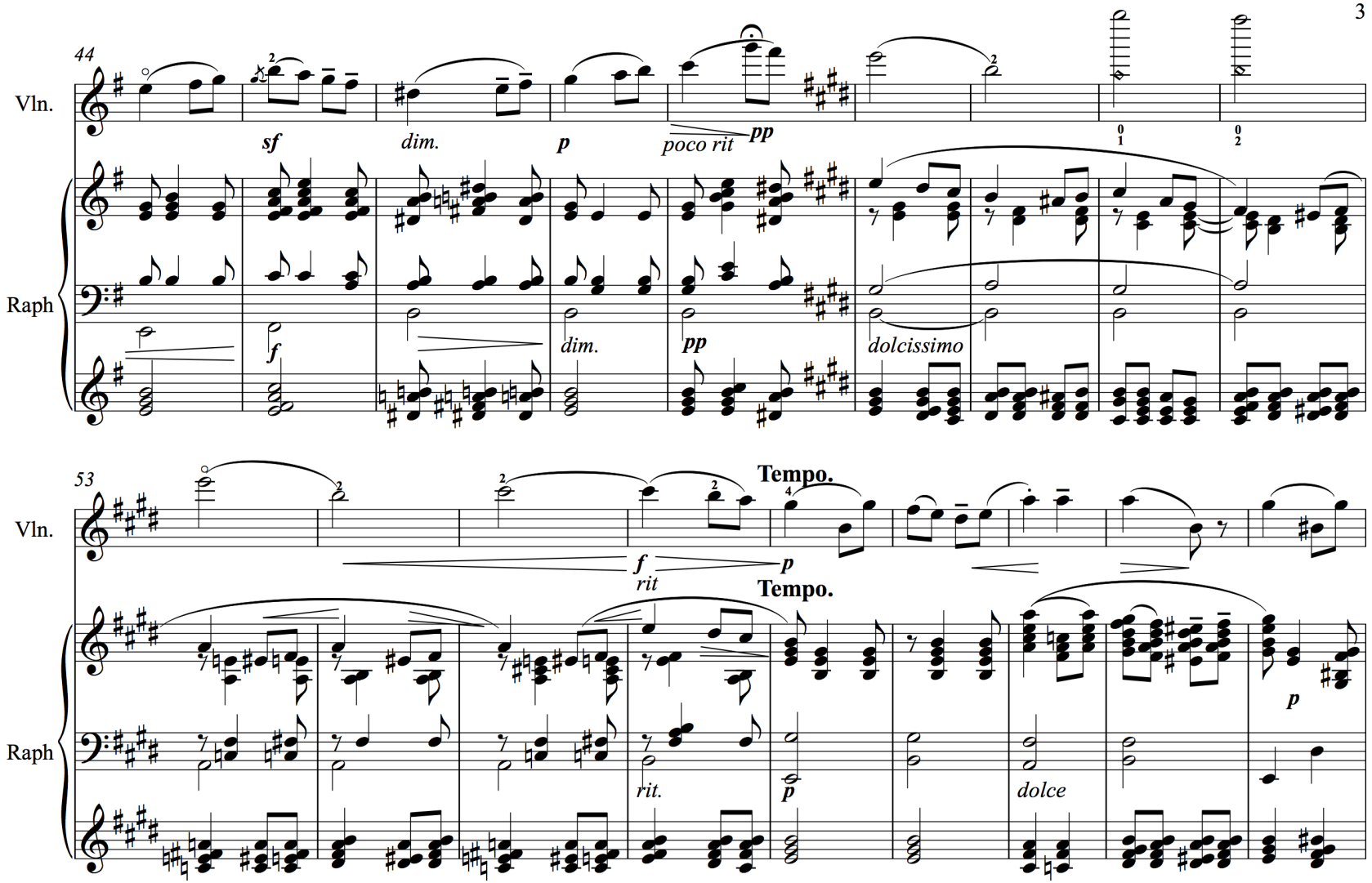


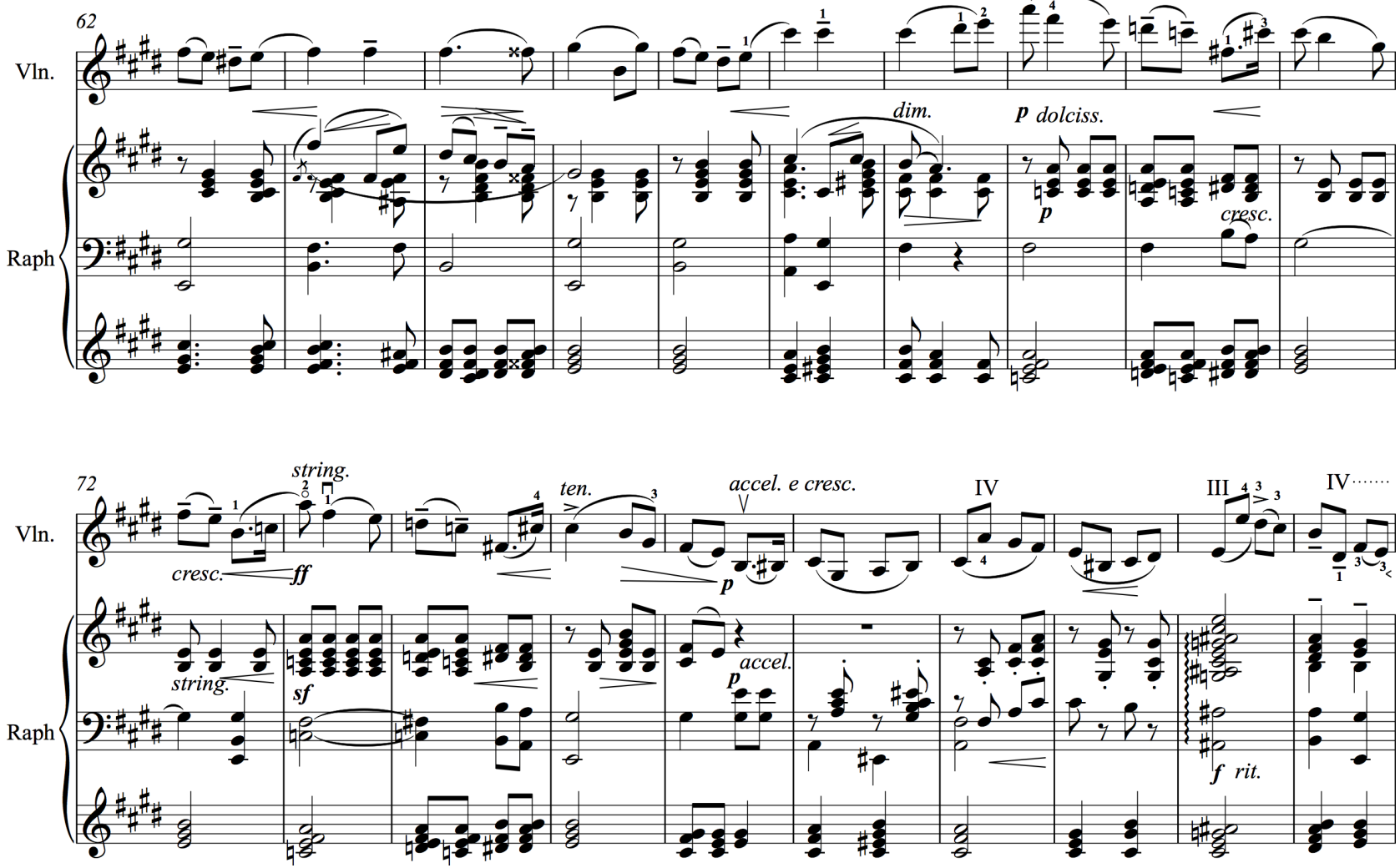
Salut D'Amour

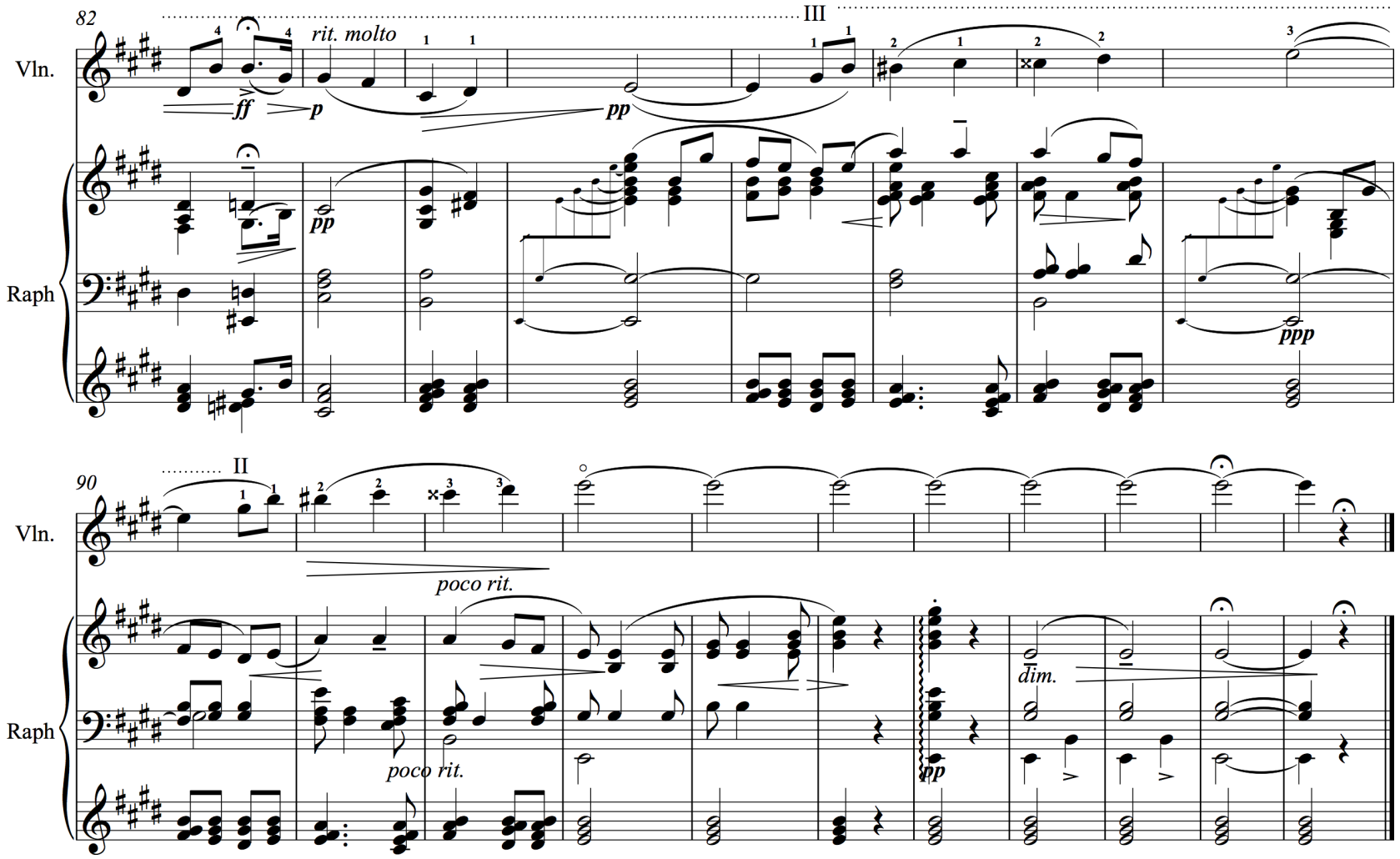
Edward Elgar
Phil Brissenden




23
Vln.
Raph
ten.
cresc.
sf
p
dolciss.
dim.
cresc
p dolce
dim.
rit.
34
Vln.
Raph
pp
ppp
poco cresc.
ten
p cresc. molto
cresc.

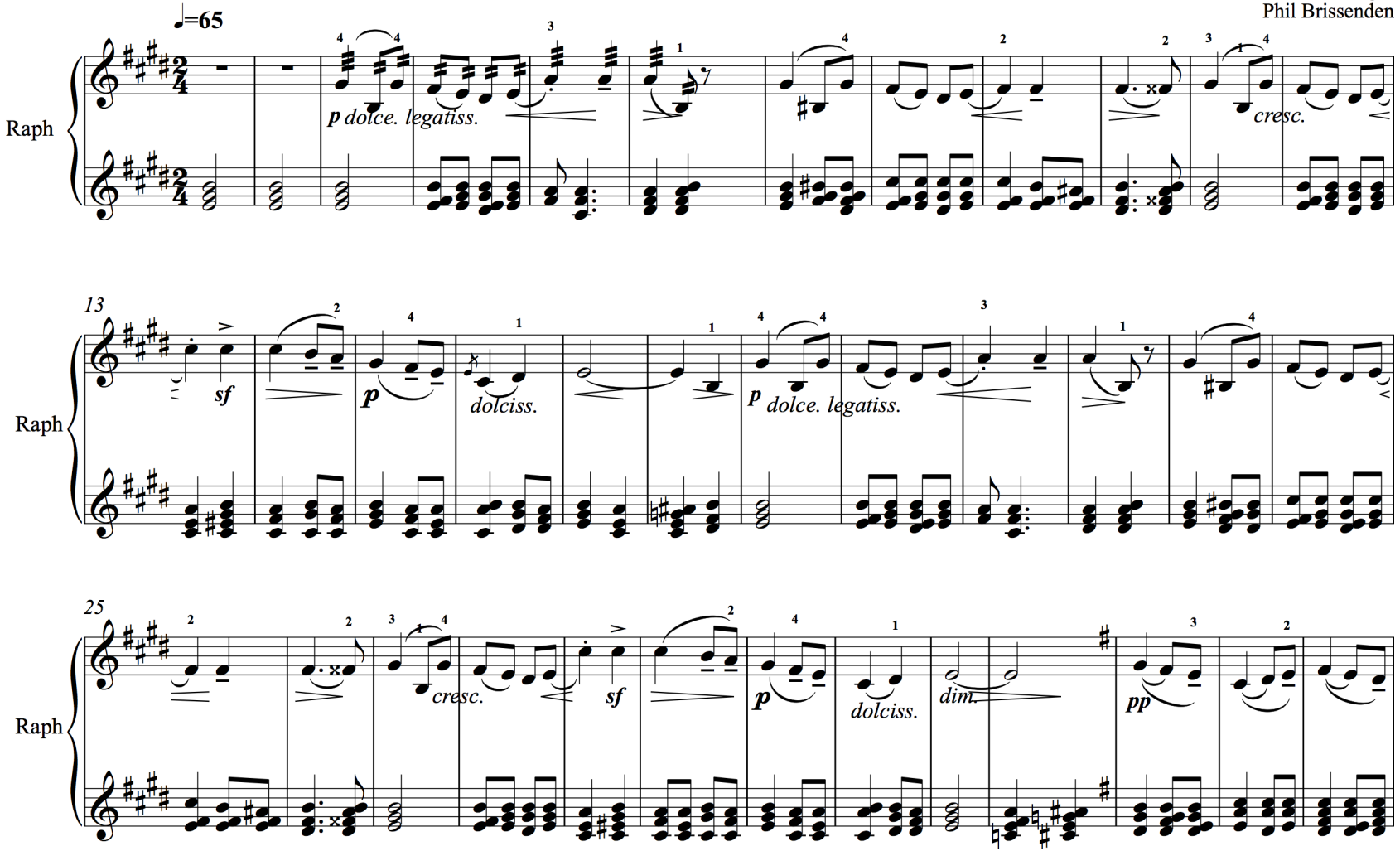

44
Vln.
sf
dim.
p
poco rit
pp
Raph
f
dim.
pp
dolcissimo
53
Vln.
f
rit
p
Tempo.
Tempo.
Raph
rit.
p
dolce
p

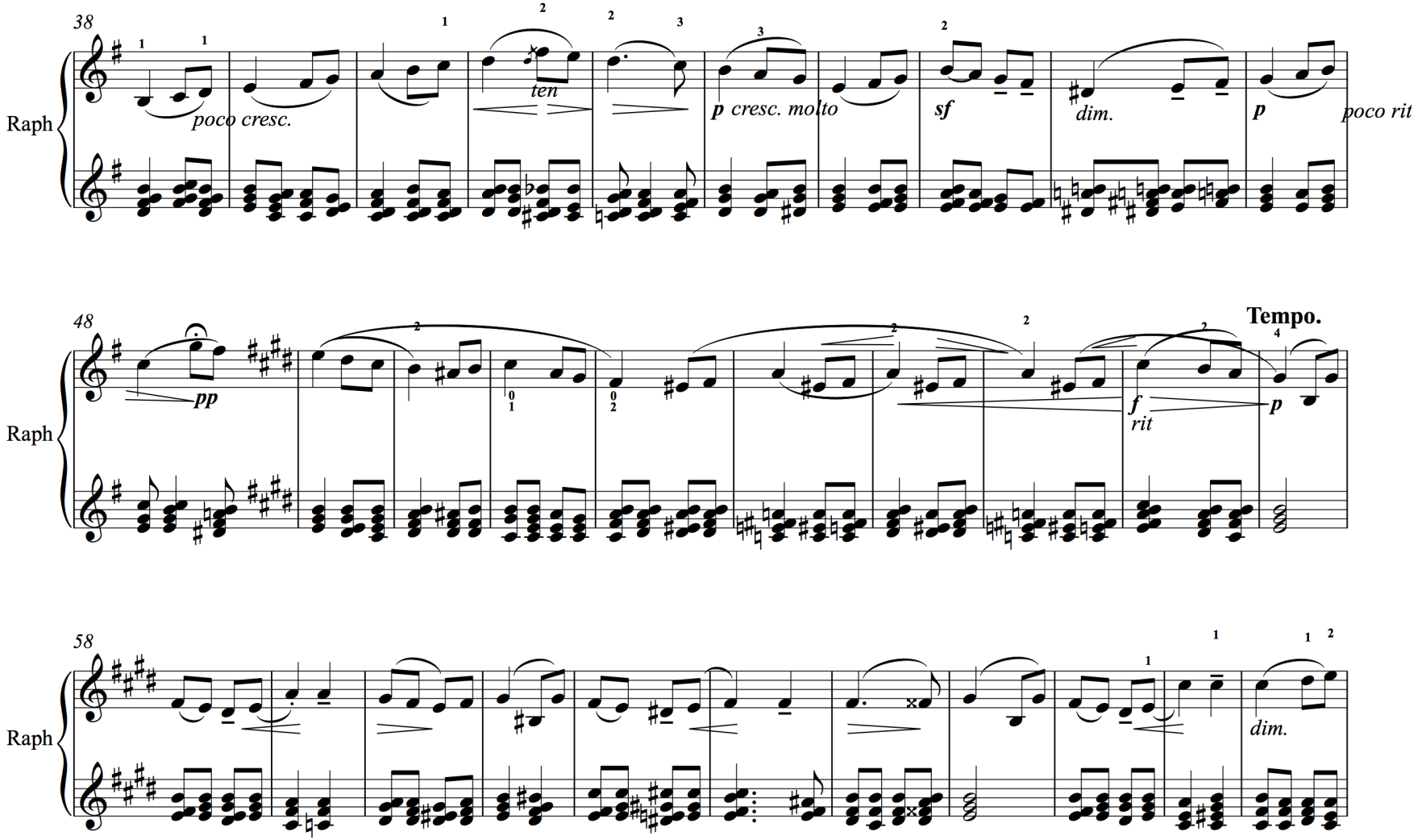

62
Vln.
Raph
dim.
p dolciss.
p
cresc.
72
Vln.
Raph
string.
cresc.
ff
string.
sf
ten.
p
accel. e cresc.
accel.
p
IV
III
IV
f rit.

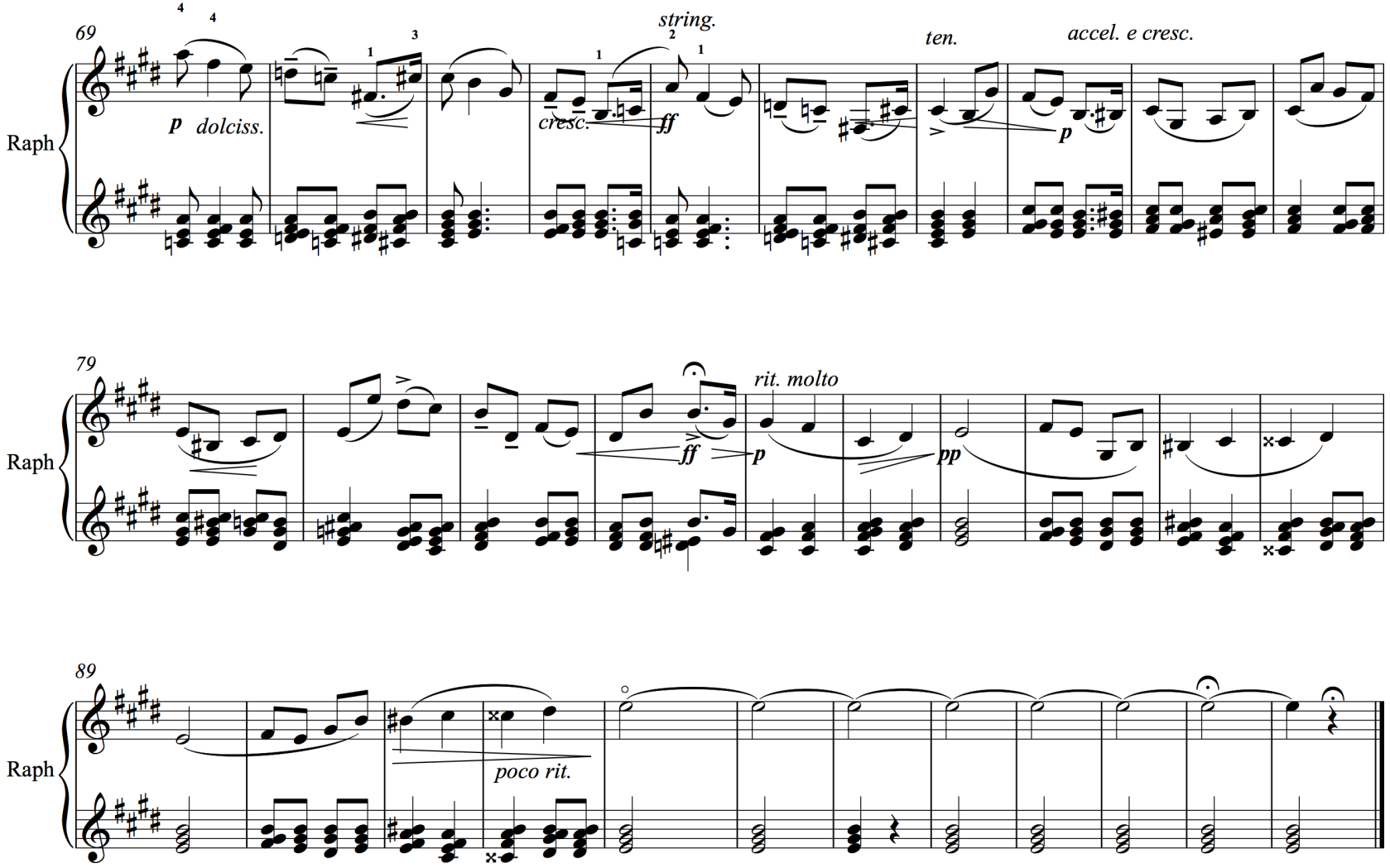

82
III
Vln.
rit. molto
ff
p
pp
Raph
pp
ppp
90
II
Vln.
poco rit.
Raph
poco rit.
dim.
pp

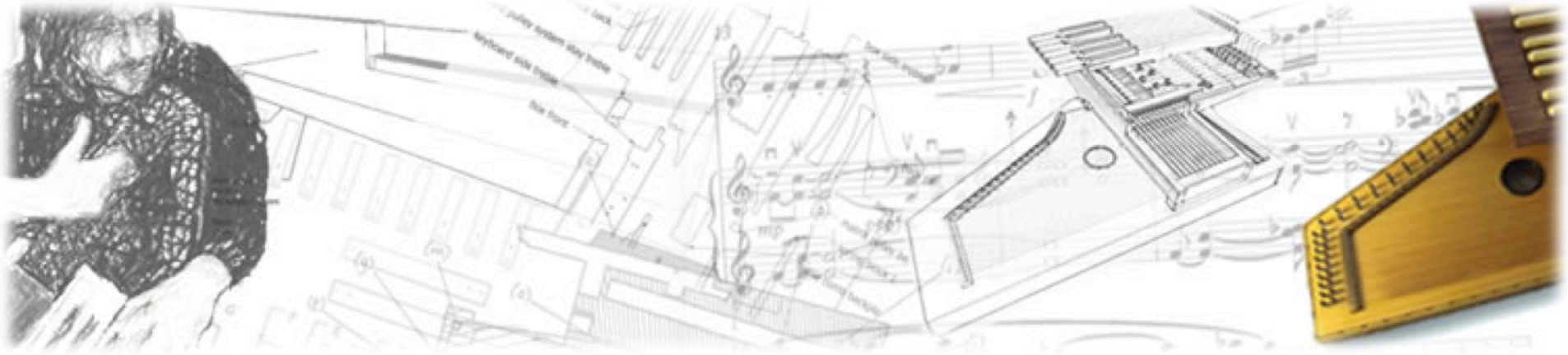
Salut D'Amour

Edward Elgar
Phil Brissenden




38
Raph
poco cresc.
ten
p cresc. molto
sf
dim.
p
poco rit
48
Raph
pp
f
rit
p
Tempo.
58
Raph
dim.


69
Raph
p dolciss.
cresc.
ff
string.
ten.
accel. e cresc.
p
79
Raph
ff
p
rit. molto
pp
89
Raph
poco rit.



Salud D'Amour

Edward Elgar
Arr: Brissenden

Adelphi Contemporary Music Group – Experimental Instrument Wing

Phil Brissenden – Raph
Adam Hart – Digital Theremin
Aden Peets – Interface based on the Udu
Alan Williams - Accordion

Can it play Bach….?
(Stockowski to Rockmore)

Can it play Bach….?
(Stockowski to Rockmore)

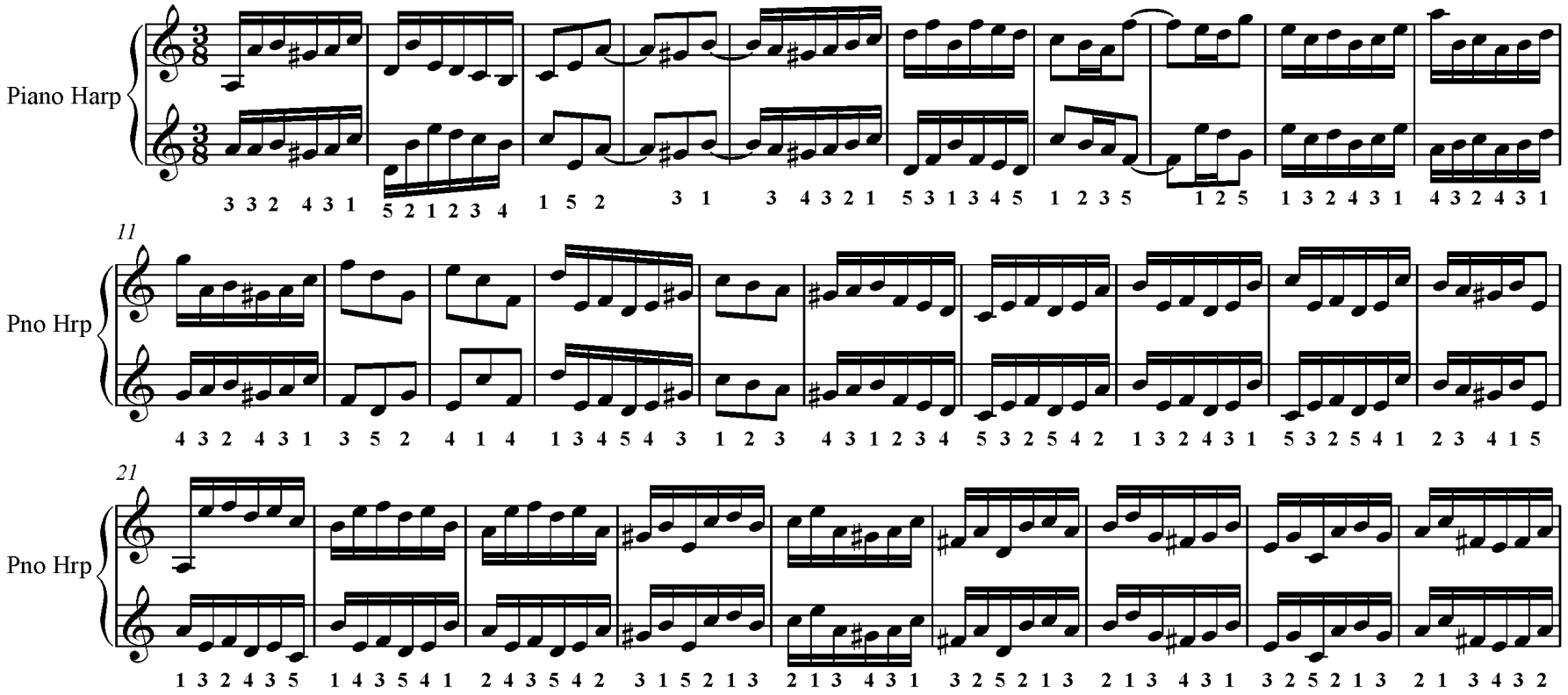
“With the violin there is a Heifetz, or you can play violin in a restaurant. But nobody thinks that the violin is only a restaurant instrument. With an electronic instrument the way you present it is the way people think of it. Ninety-nine percent of people think of electronic instruments as something for new, eerie, strange, ugly, strident sounds.”

Fantasie

(From Partita No. III in A minor)

Johann Sebastian Bach
1685 - 1750

Allegro Moderato



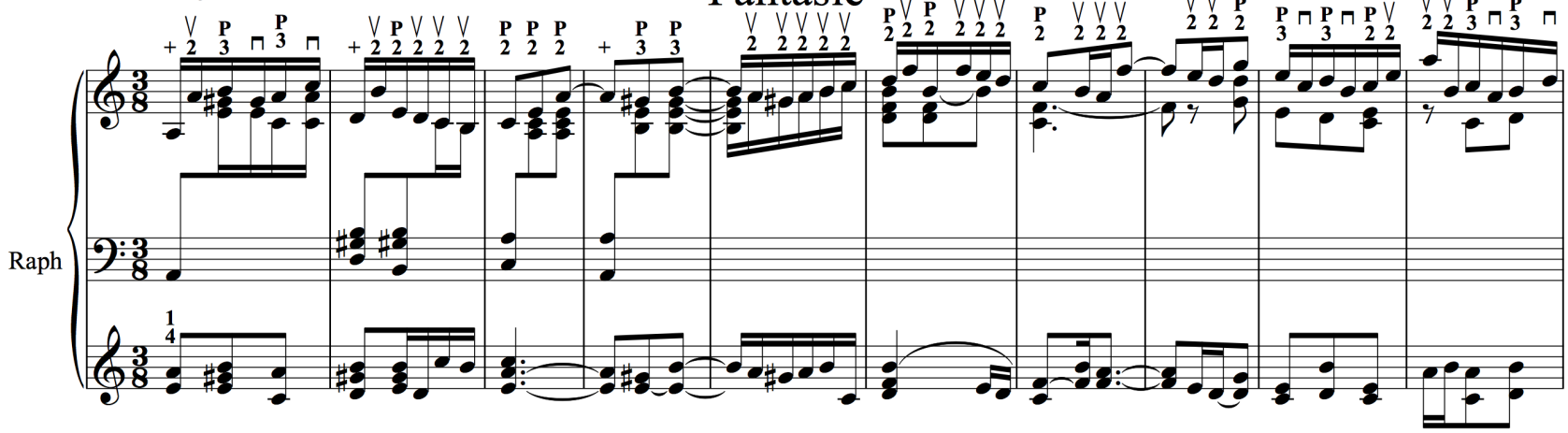
Bach's Fantasie (Partita No. 3 in A minor BWV: 827) Arr: Brissenden

Johann Sebastian Bach
1685 - 1750

Fantasie

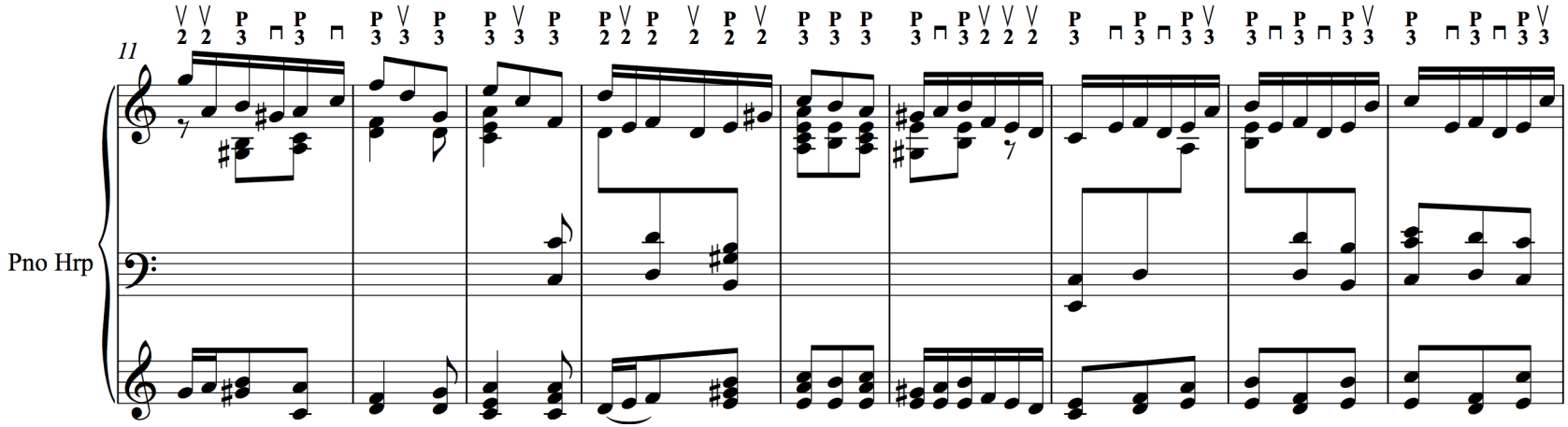
♪=110

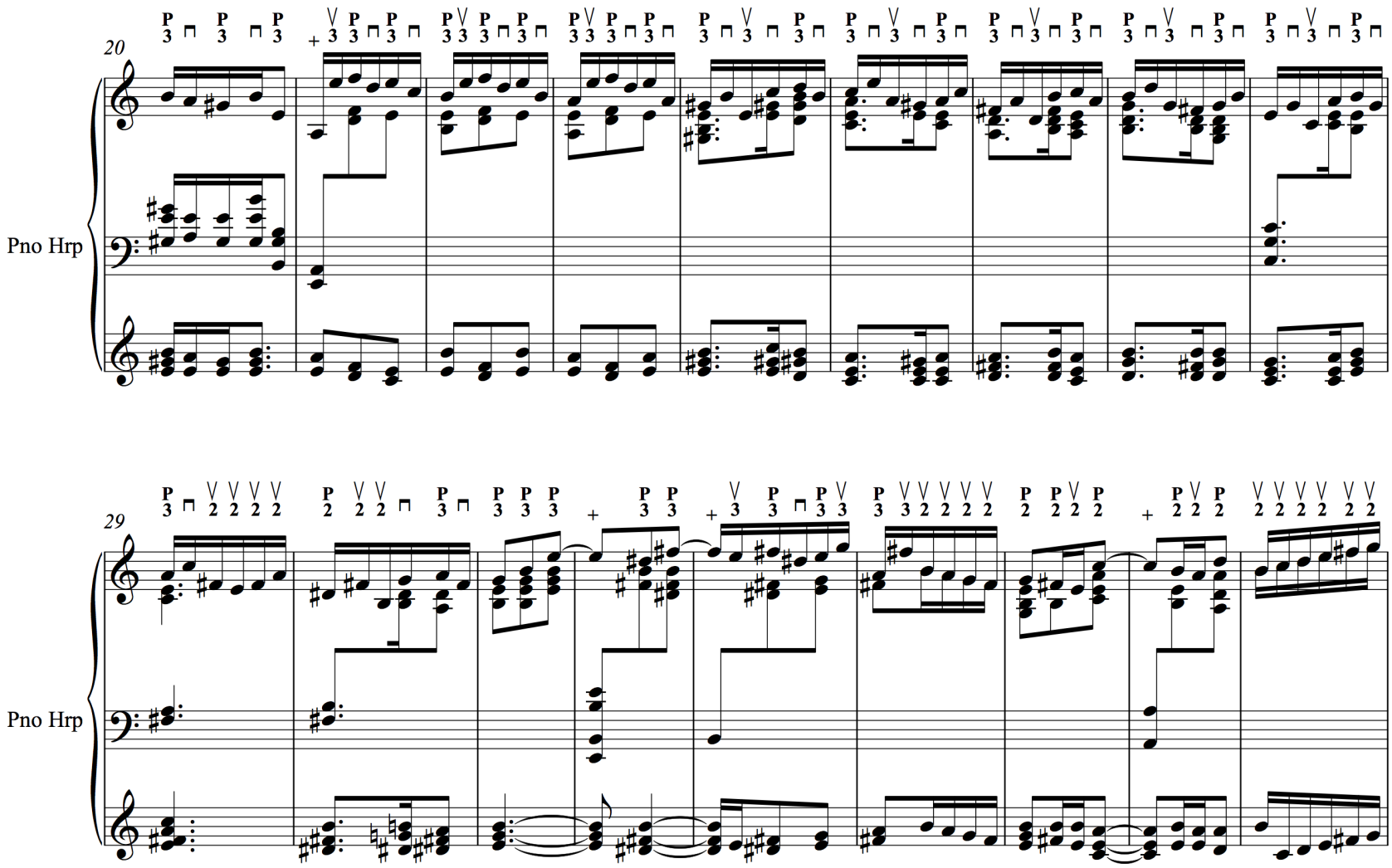
Raph

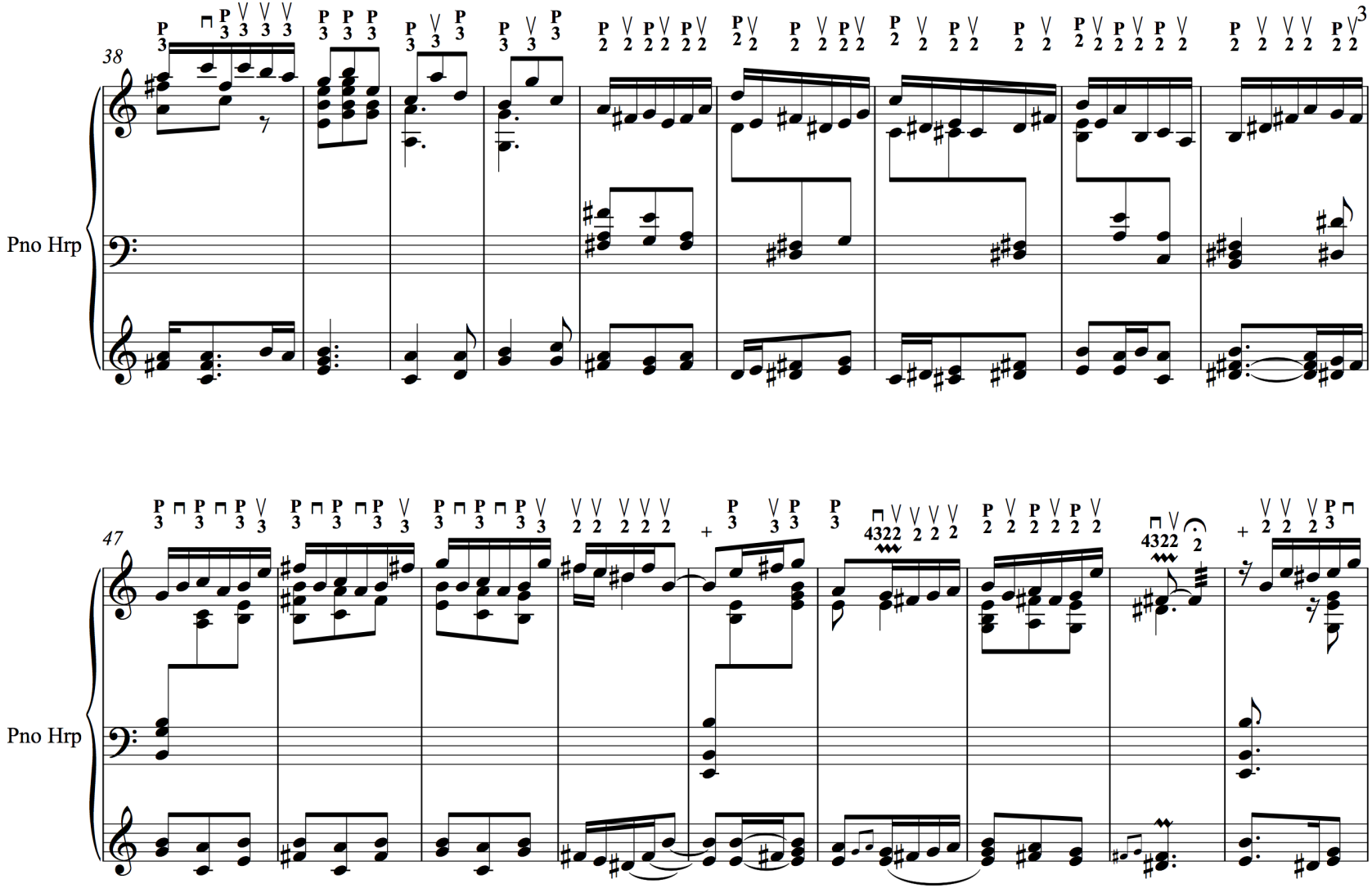


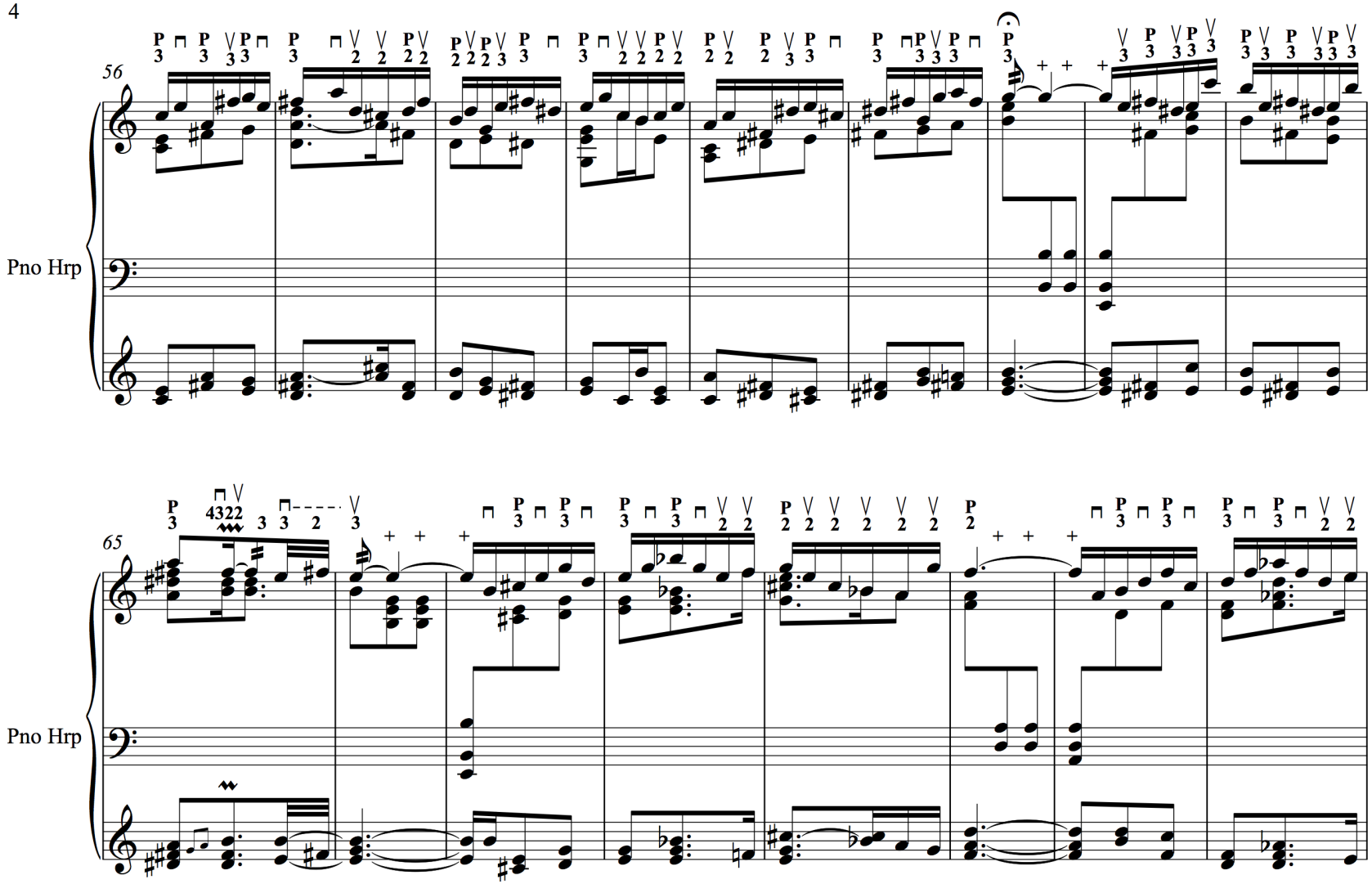
11

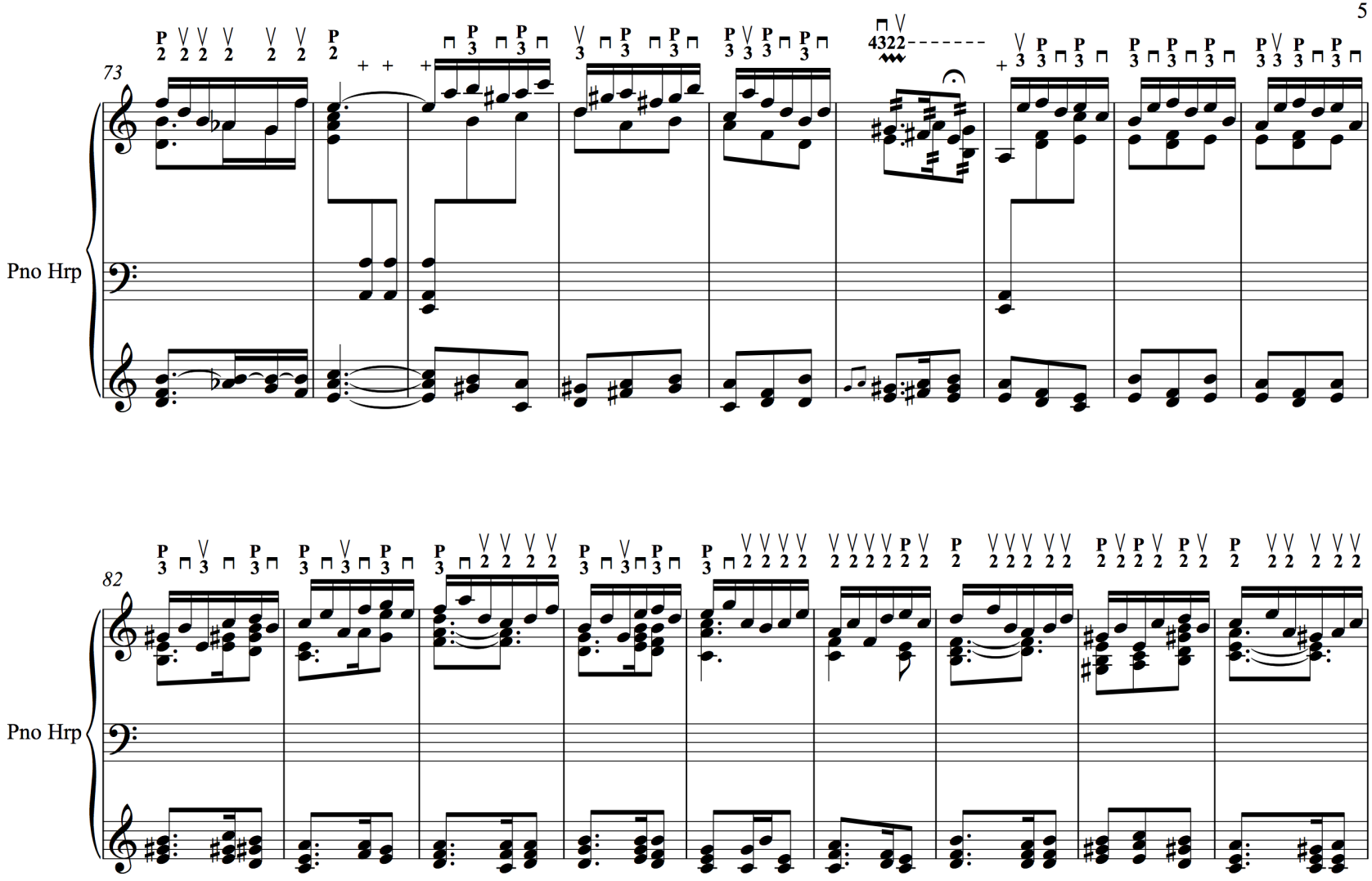
Pno Hrp

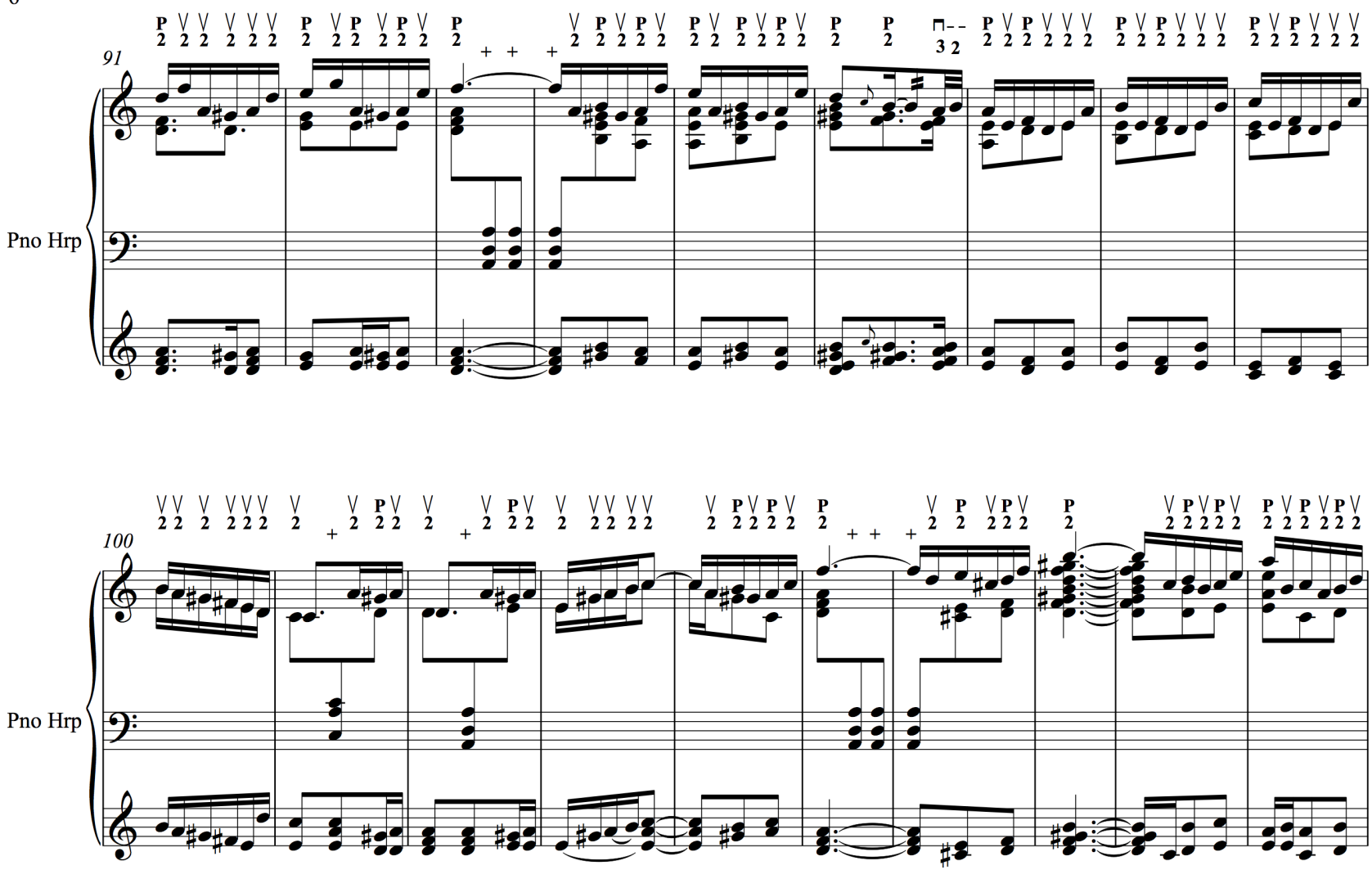


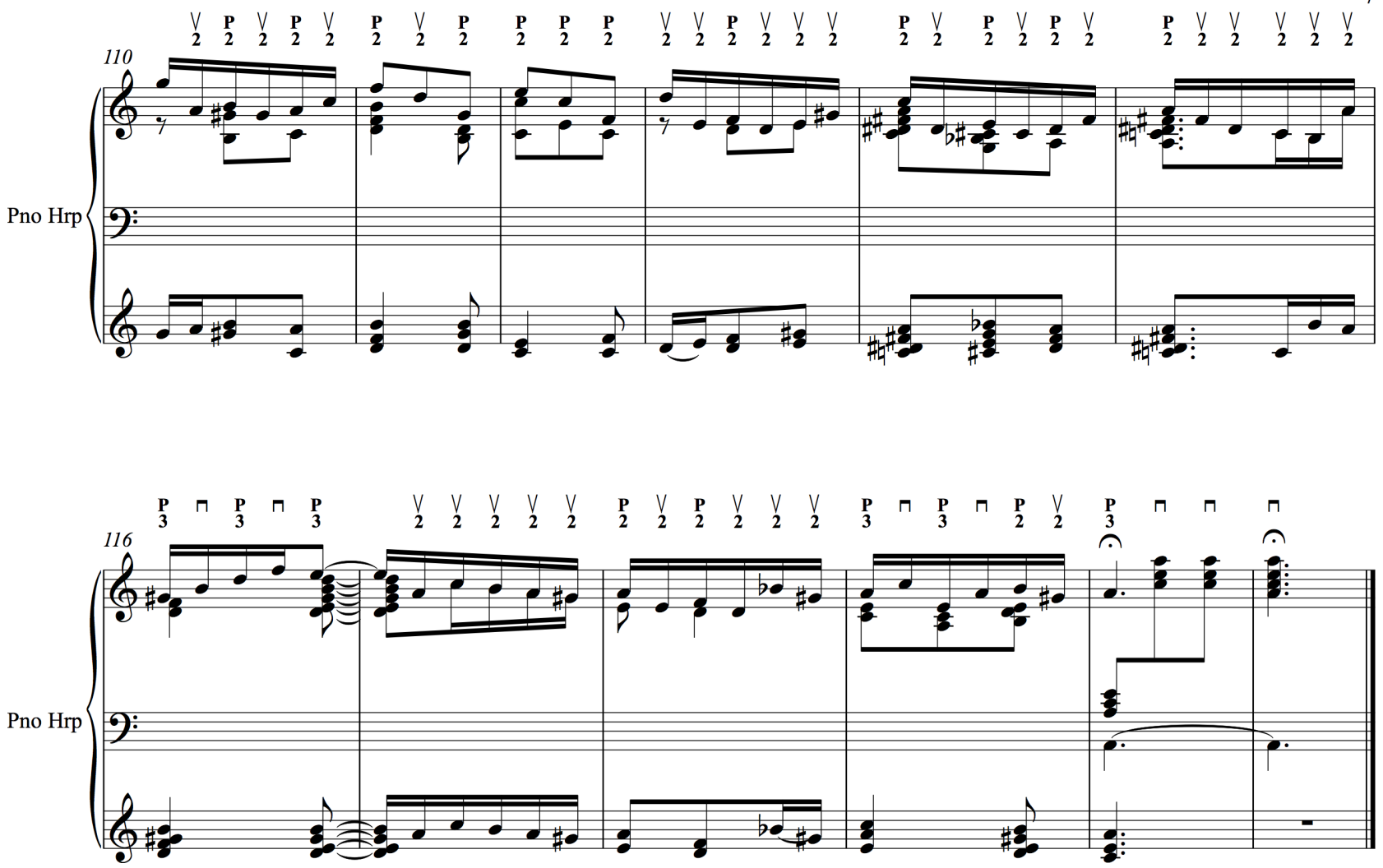

20
Pno Hrp
29
Pno Hrp

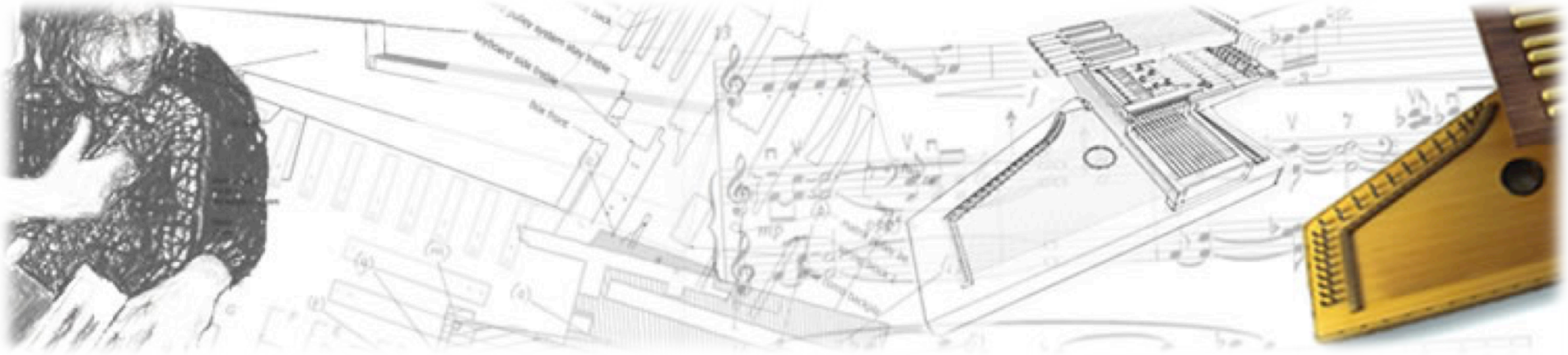

38
Pno Hrp
47
Pno Hrp


56
Pno Hrp
65
Pno Hrp


73
Pno Hrp
82
Pno Hrp


91
Pno Hrp
100
Pno Hrp


110
Pno Hrp
116
Pno Hrp



Fantasie

From Partita No: 3 in D Minor

Bach

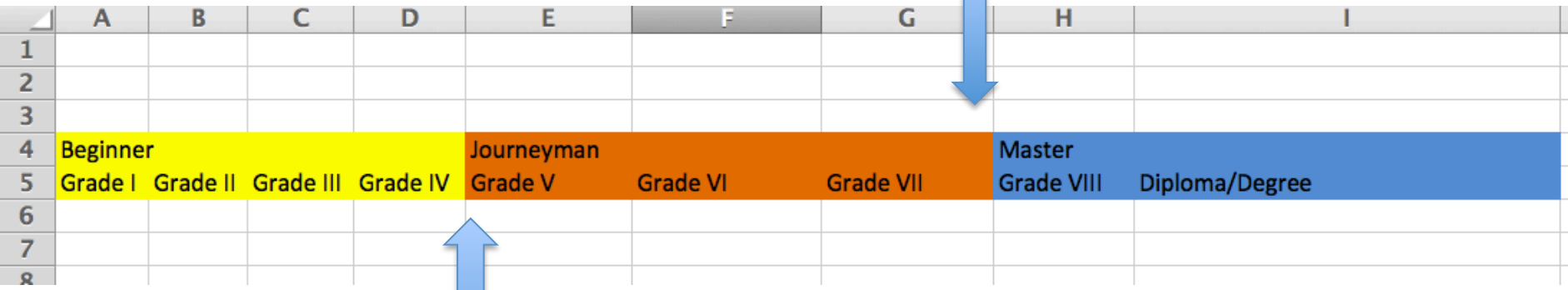
Arr: Brissenden

	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									
8									

	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									
8									

Bach: Fantasie

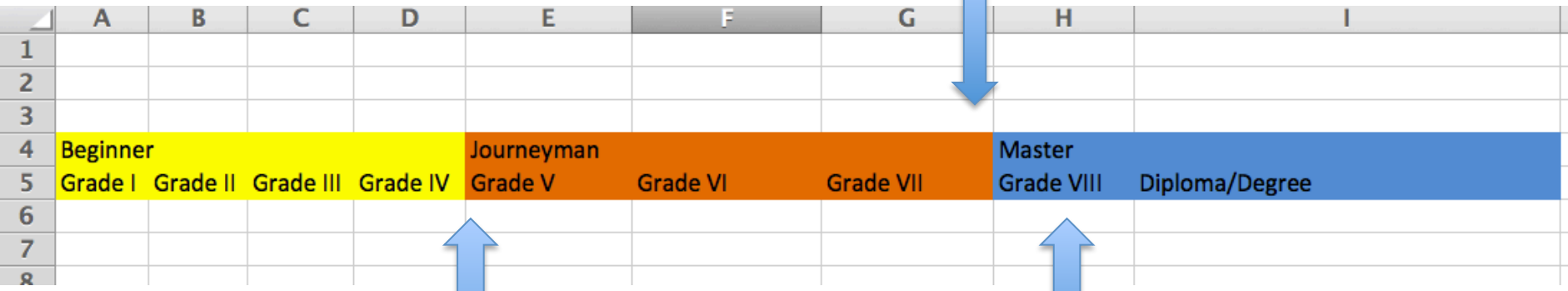
Elgar: Salud D’Amour



	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									
8									

Bach: Fantasie

Elgar: Salud D’Amour

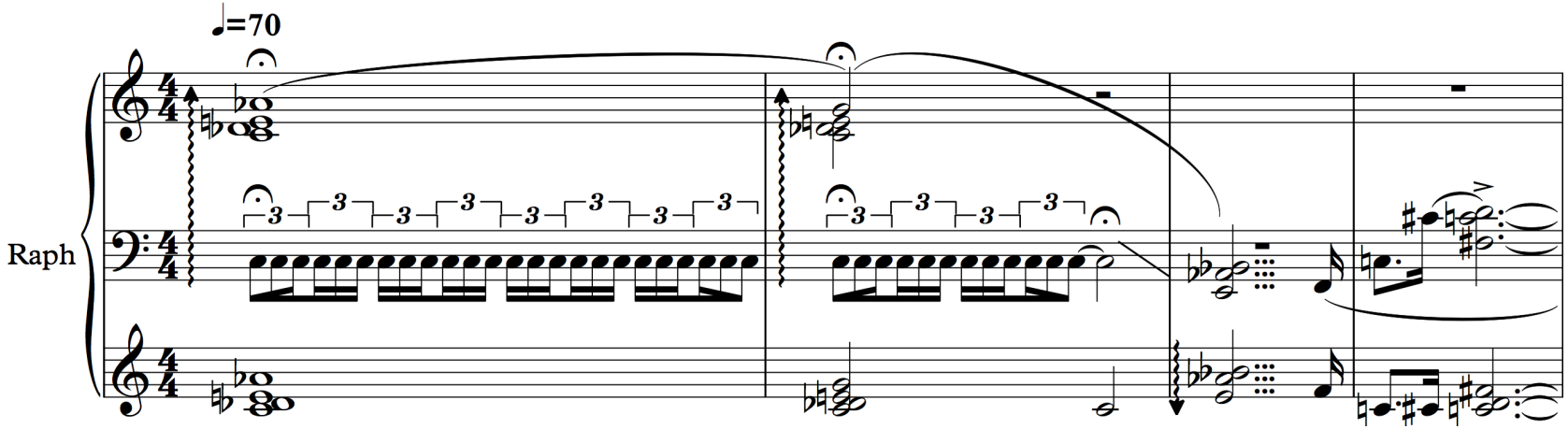


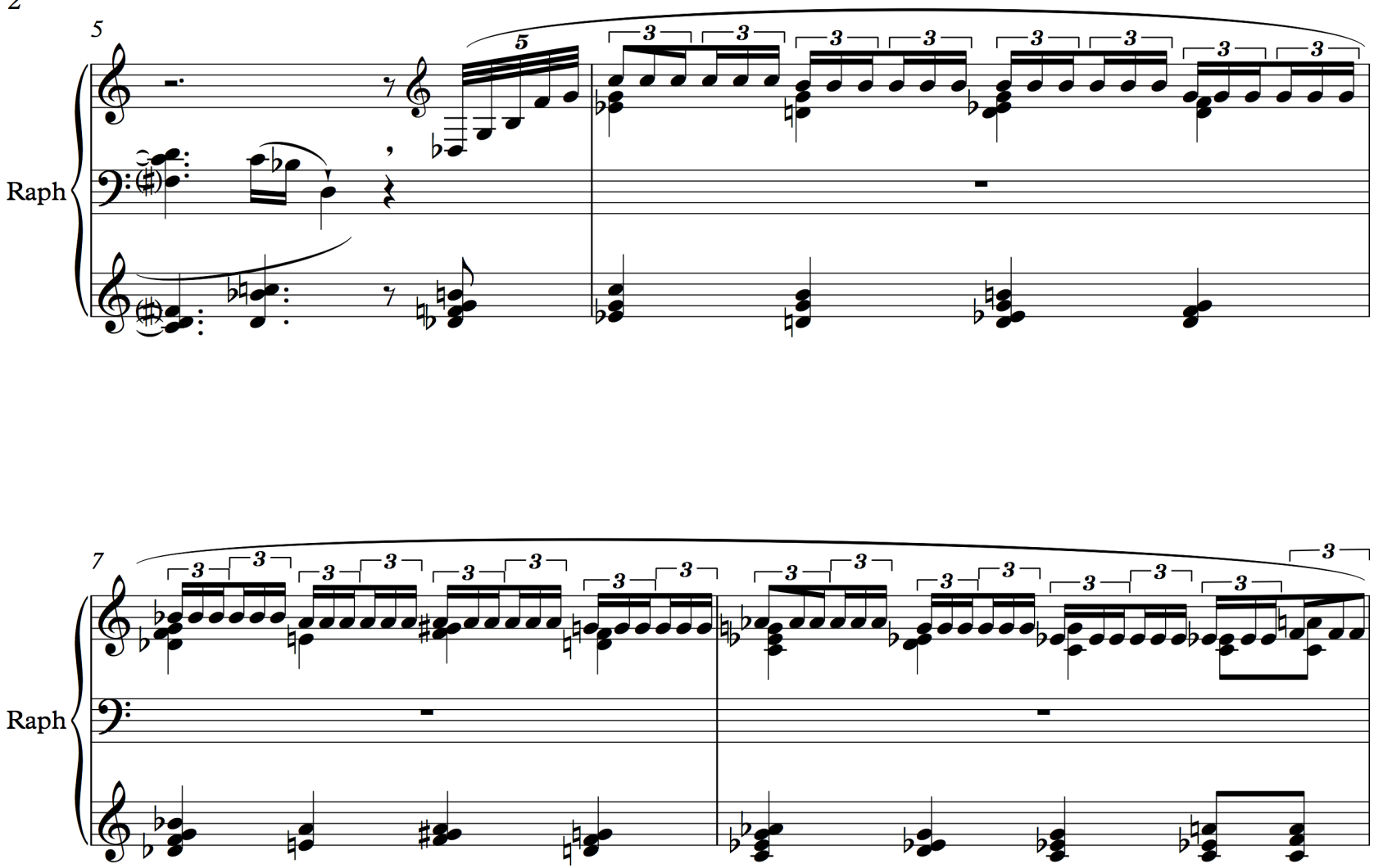
Bach: Fantasie

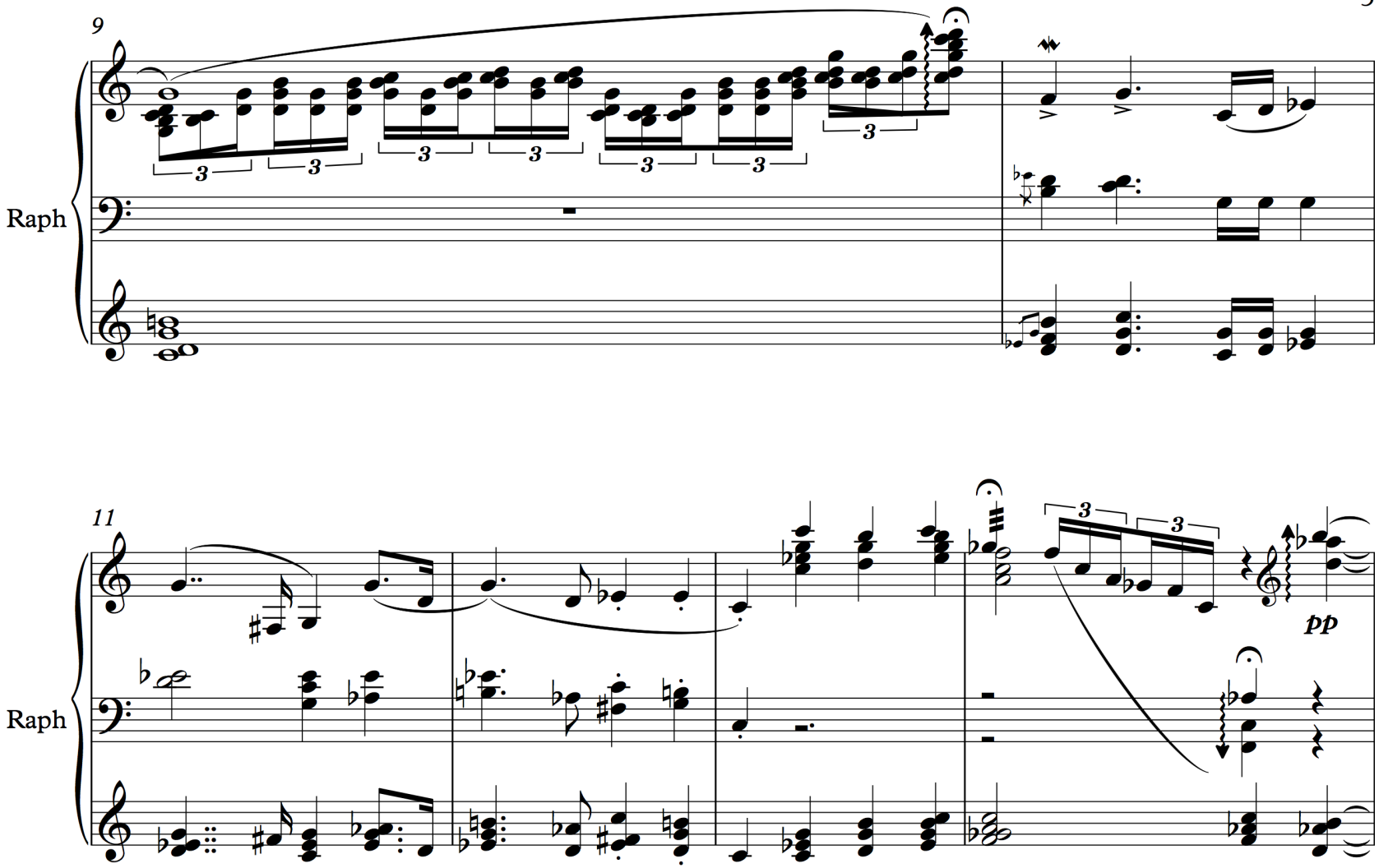
Ireland: Sea Fever

Nocturne

Brissenden




5
Raph
7
Raph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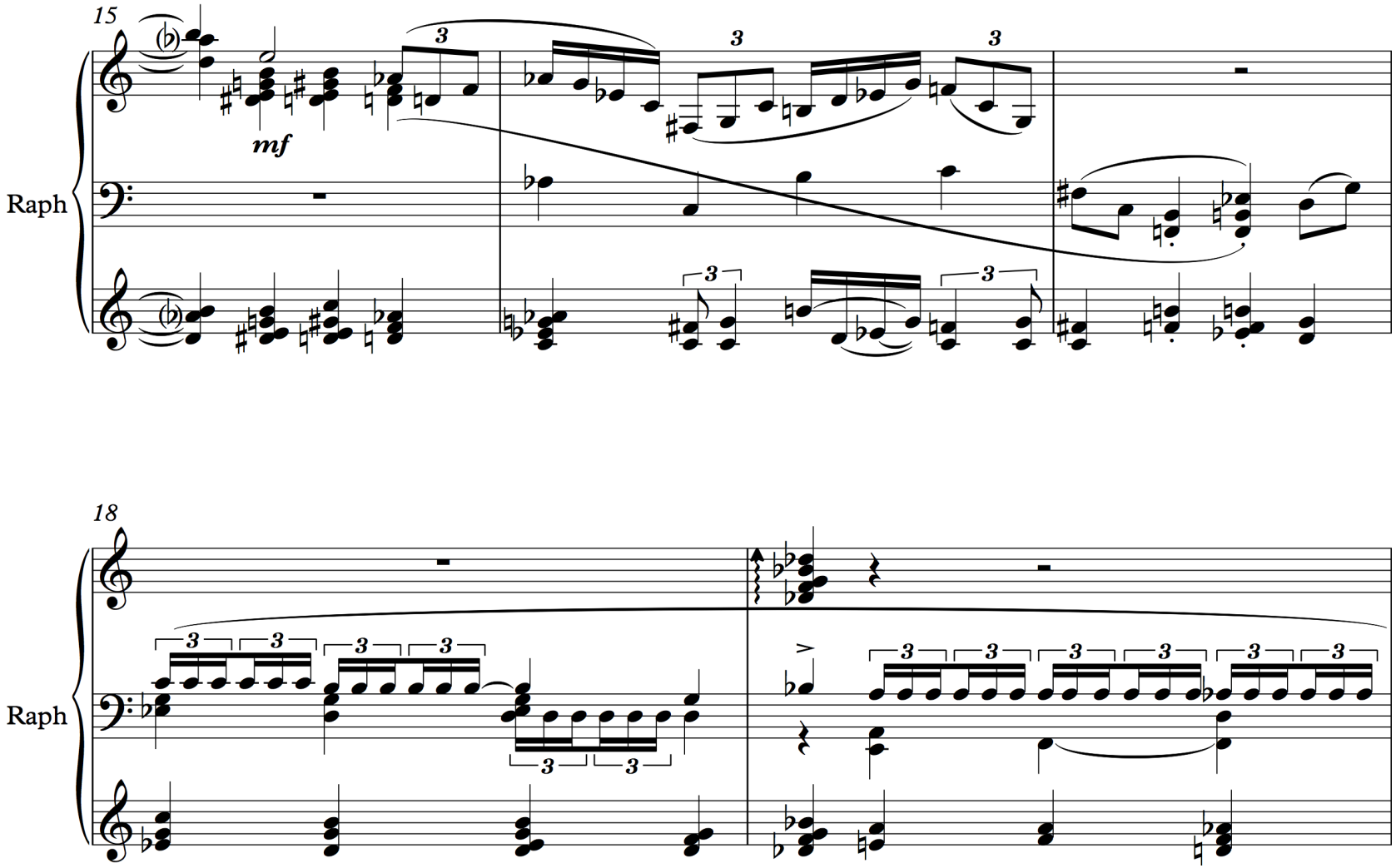
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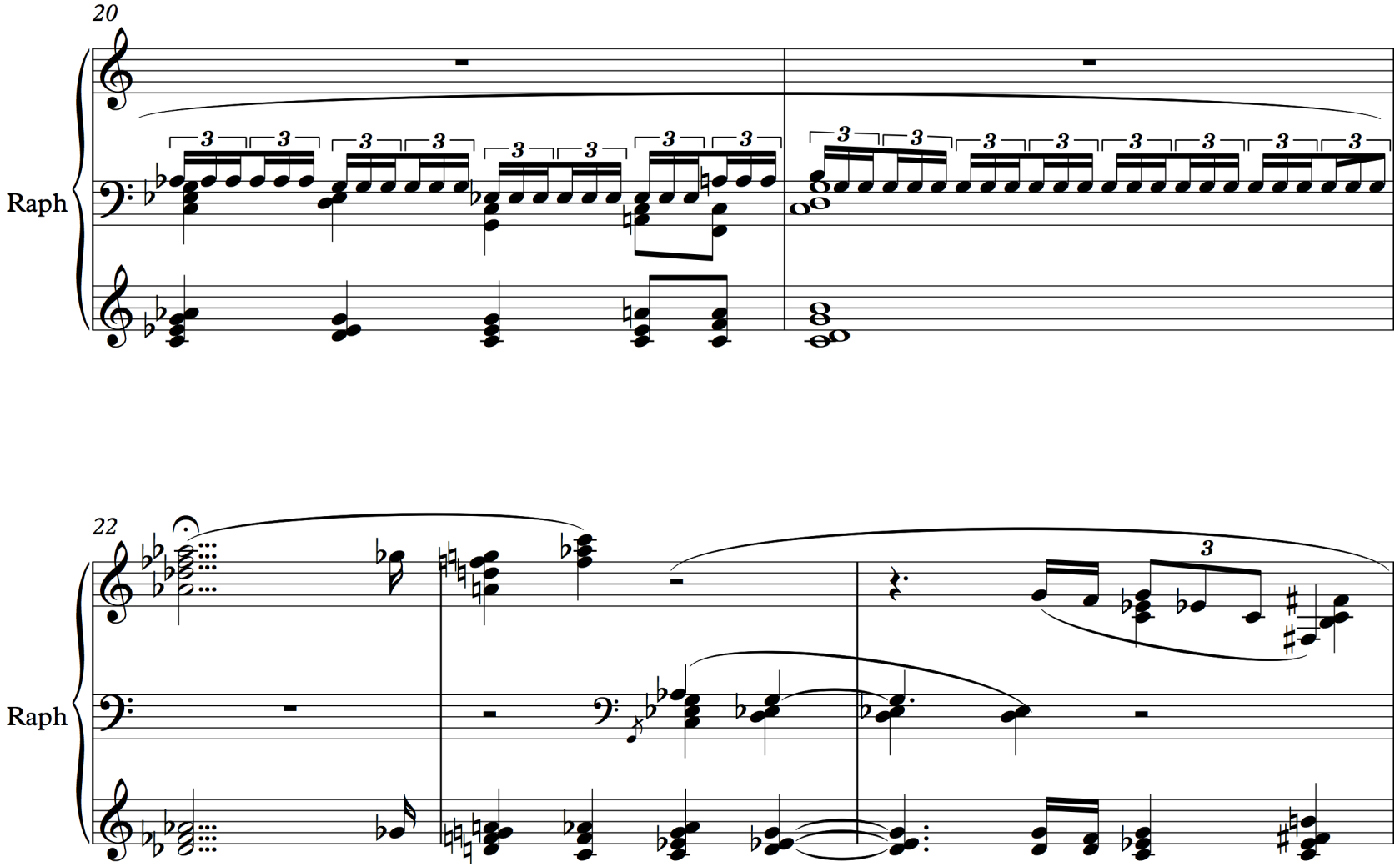
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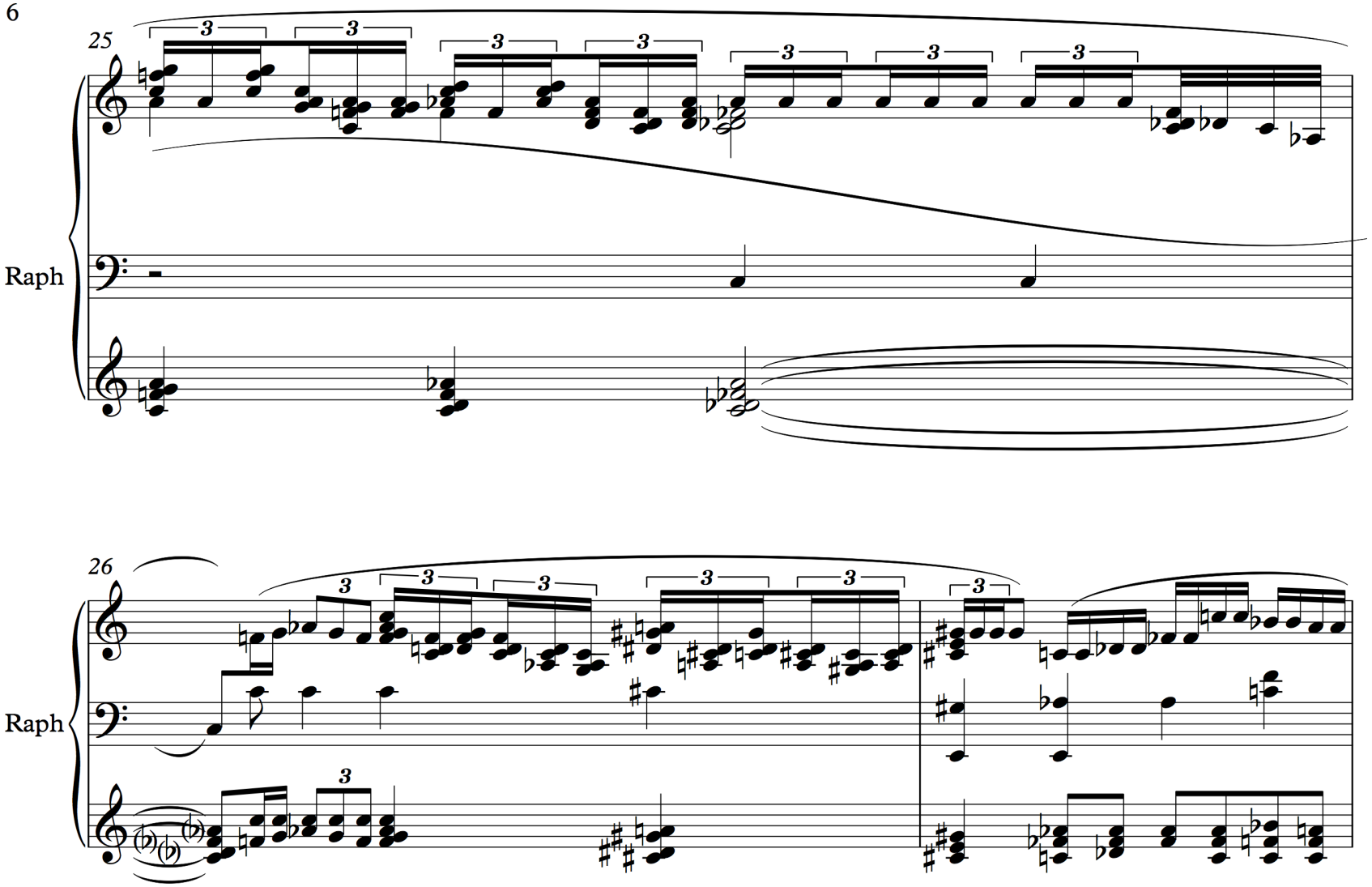
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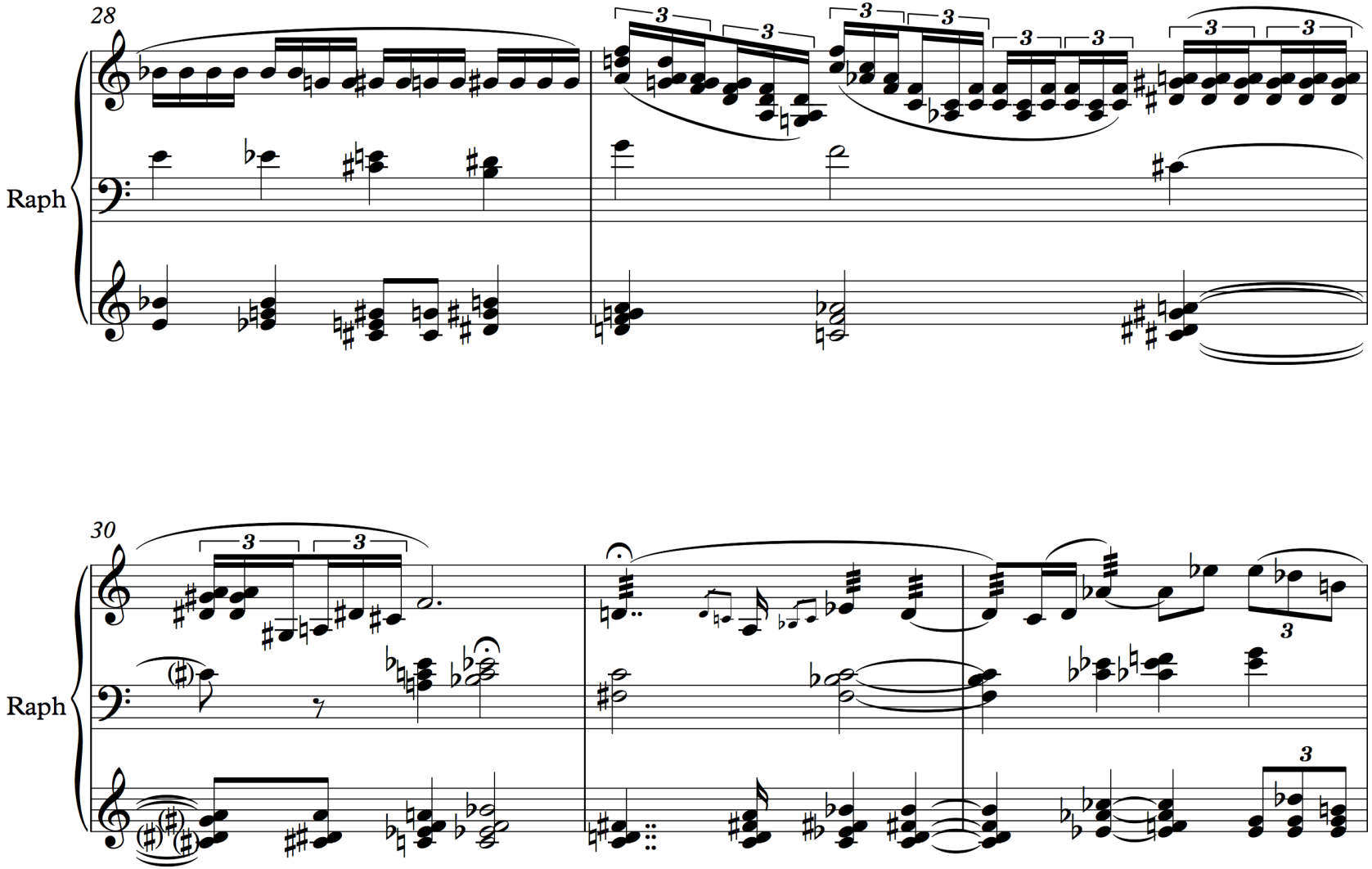
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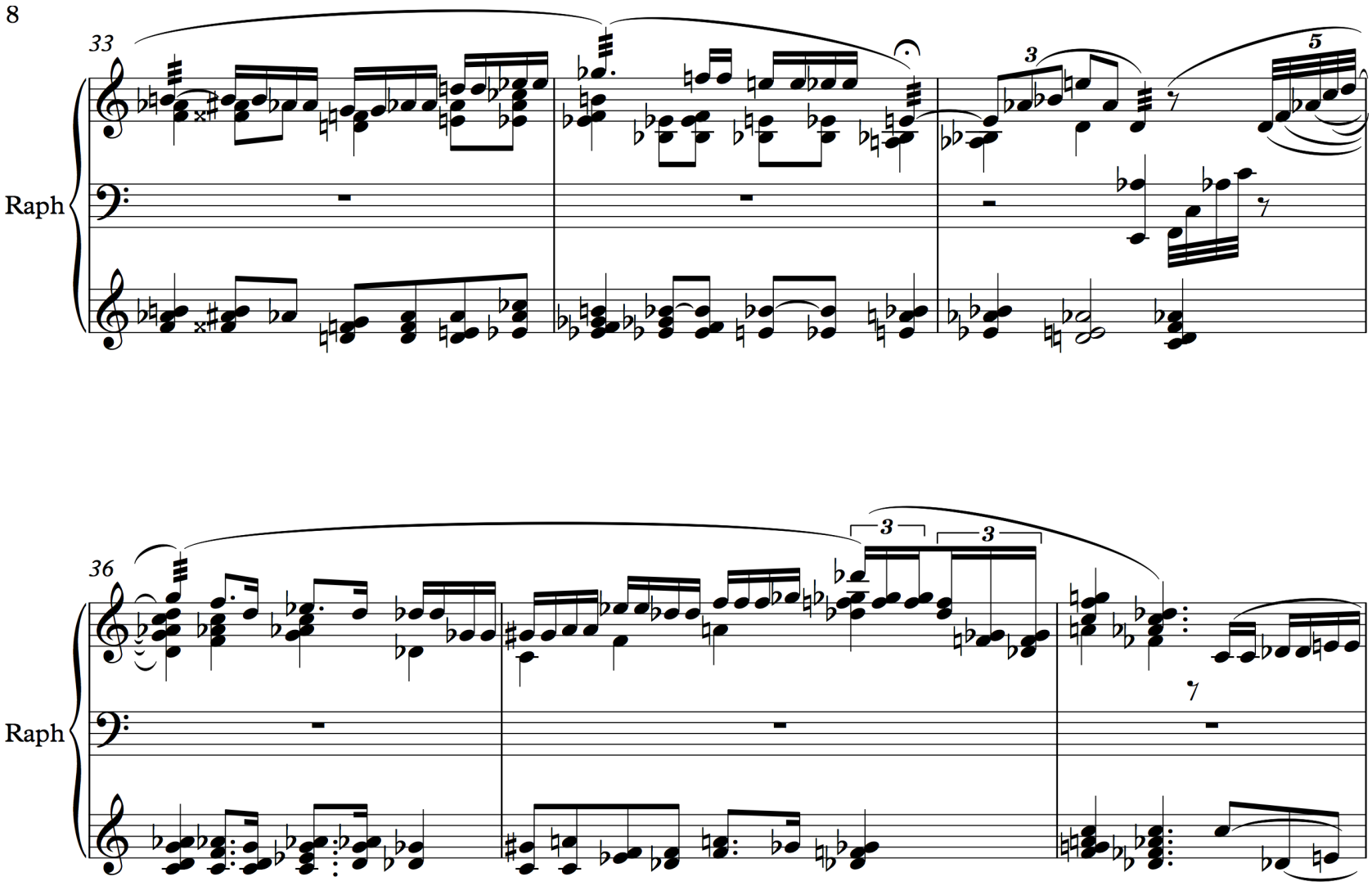
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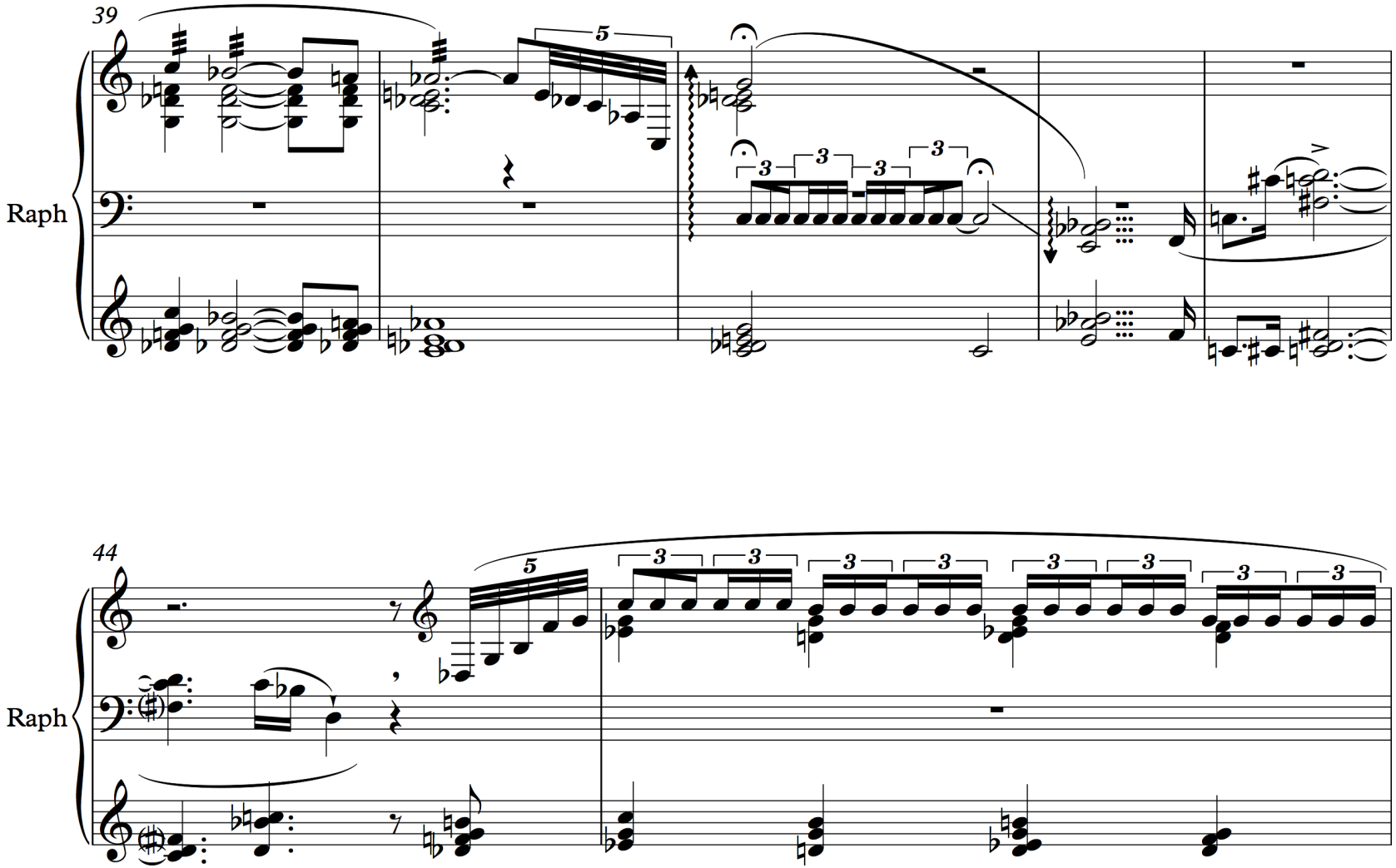
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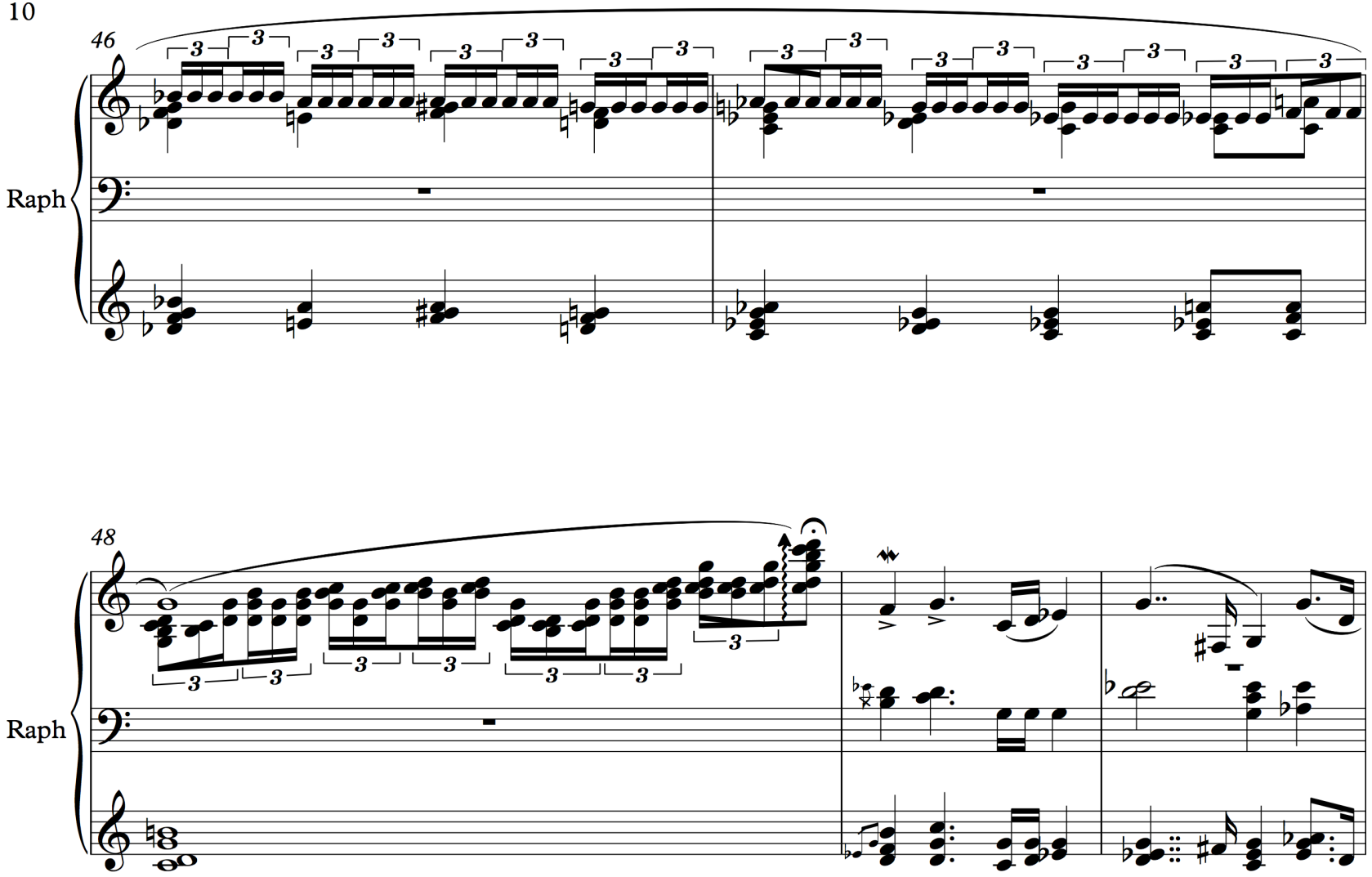
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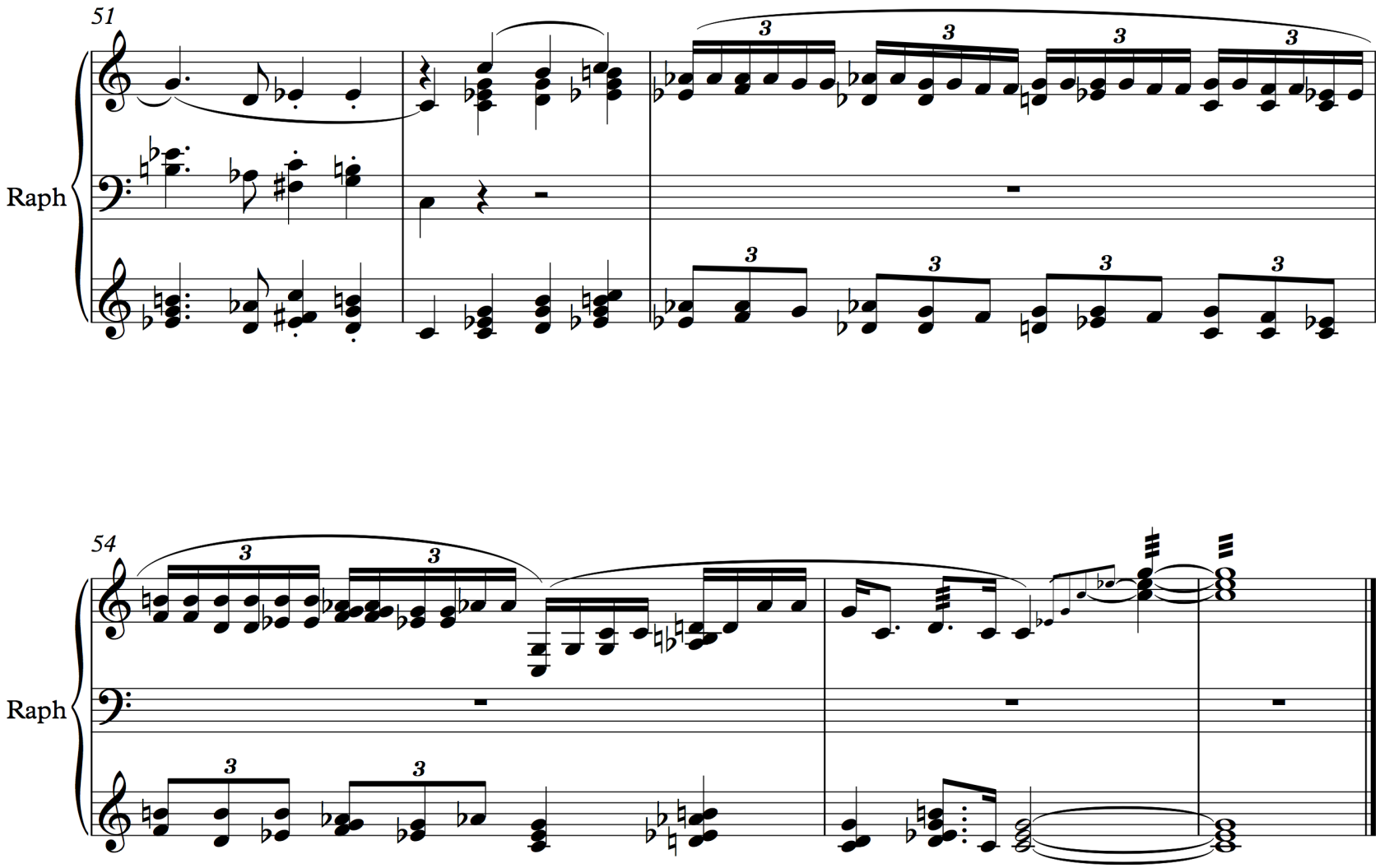
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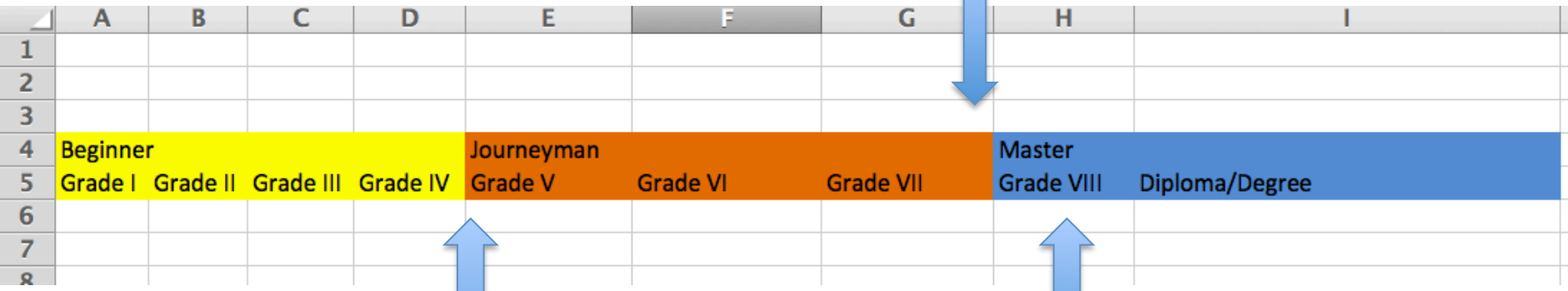
Elgar: Salud D’Amour



Bach: Fantasie

Ireland: Sea Fever

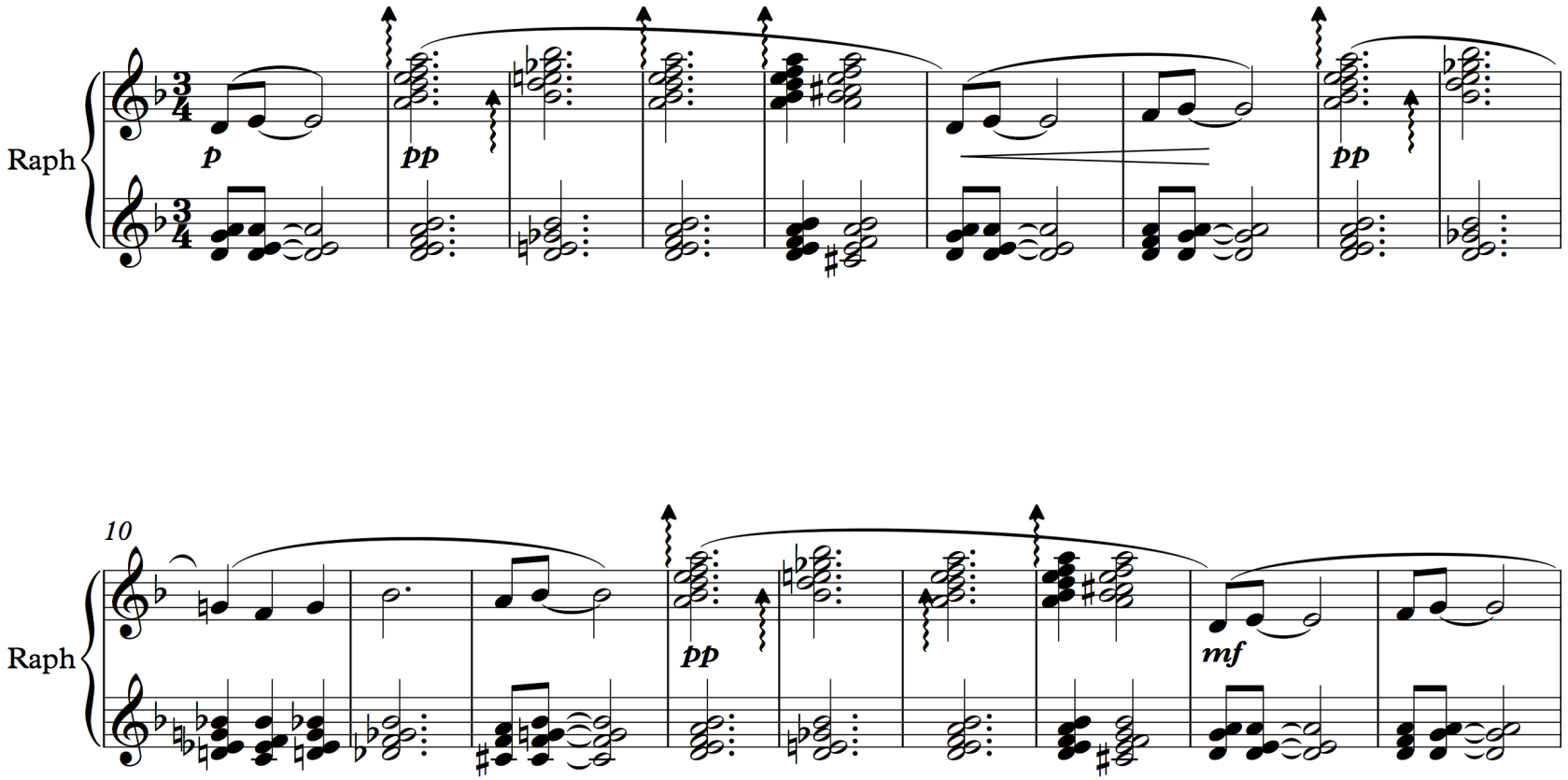
Brissenden: Nocturne

Elgar: Salud D'Amour

	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									

Bach: Fantasie

Ireland: Sea Fever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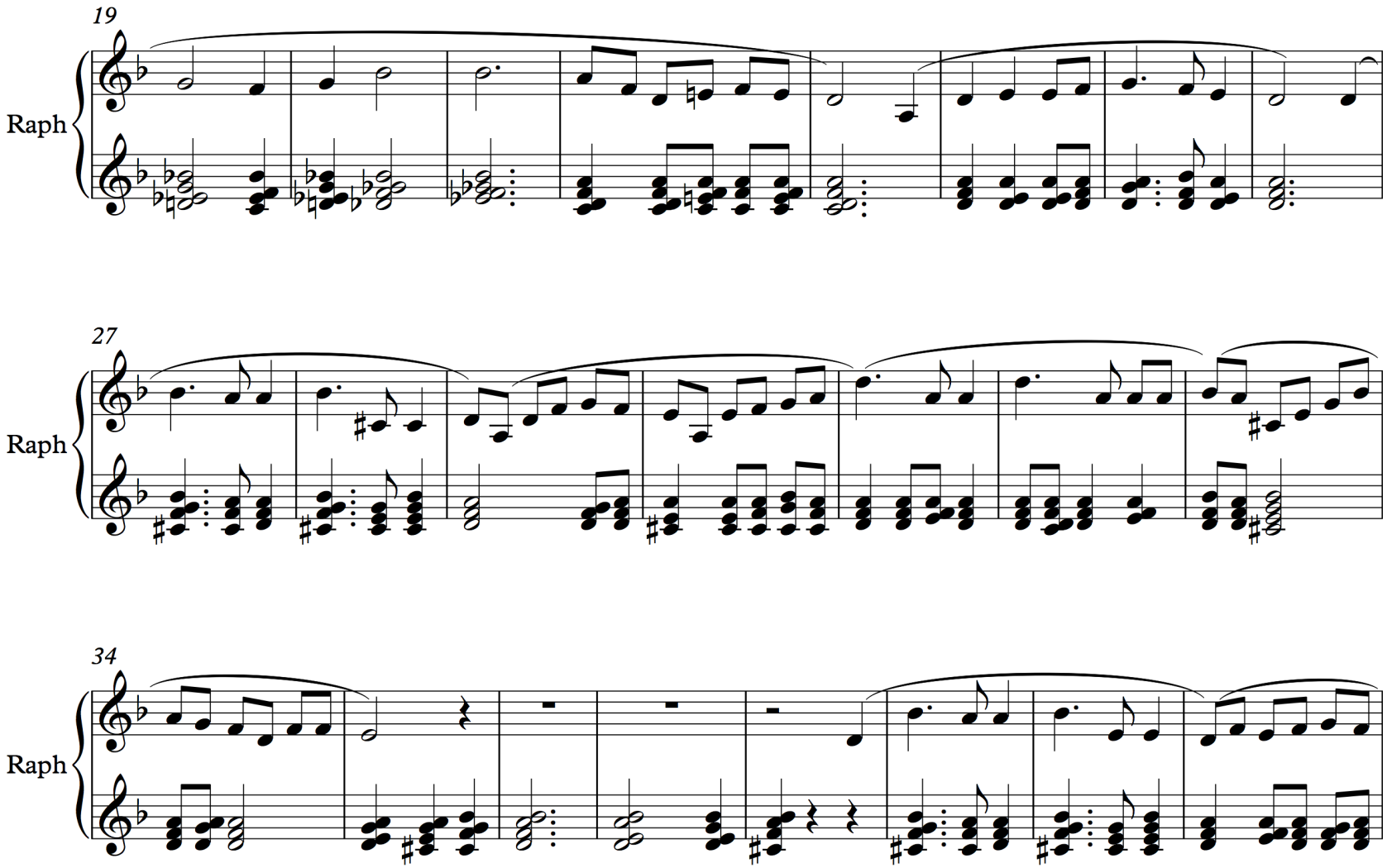
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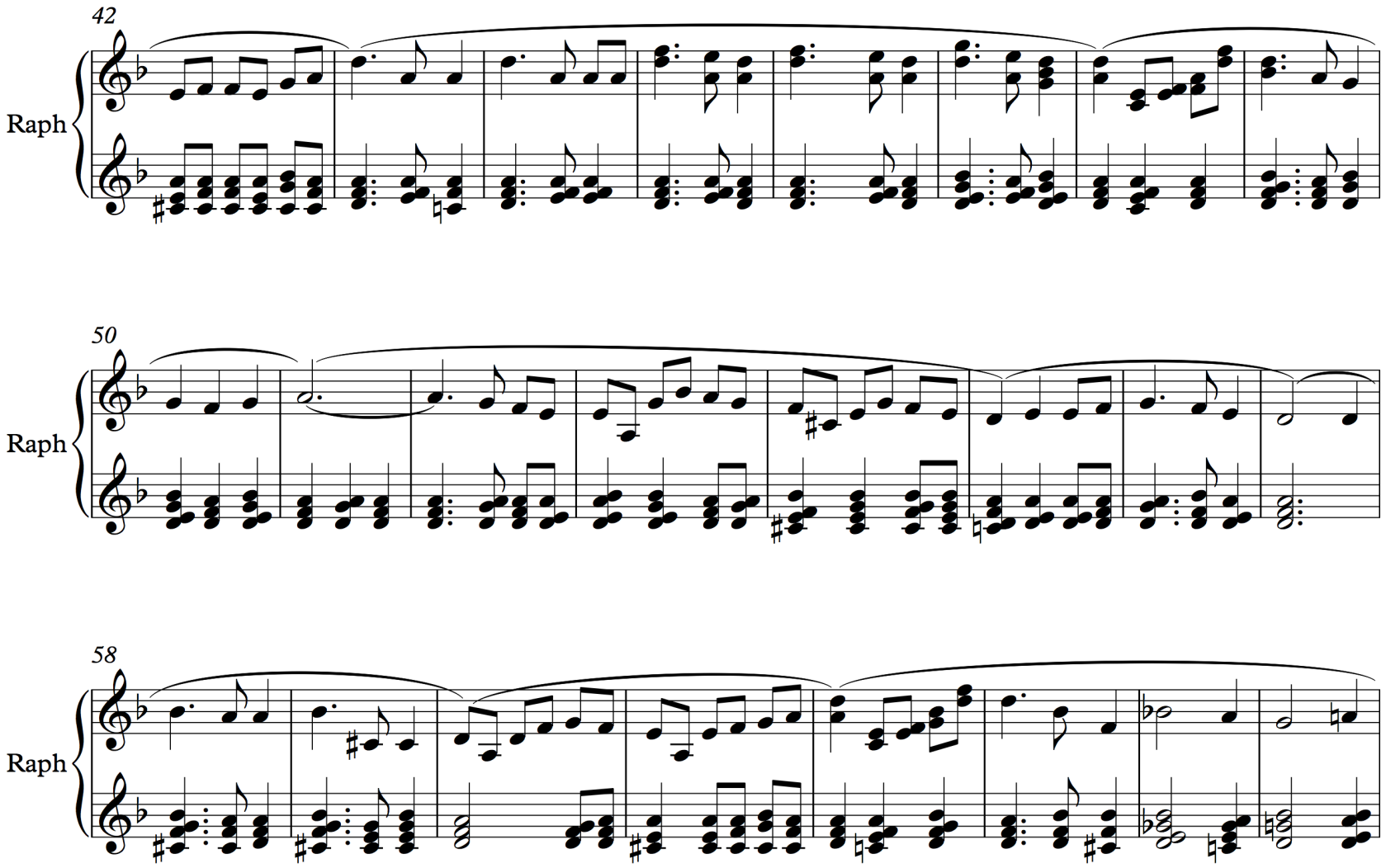
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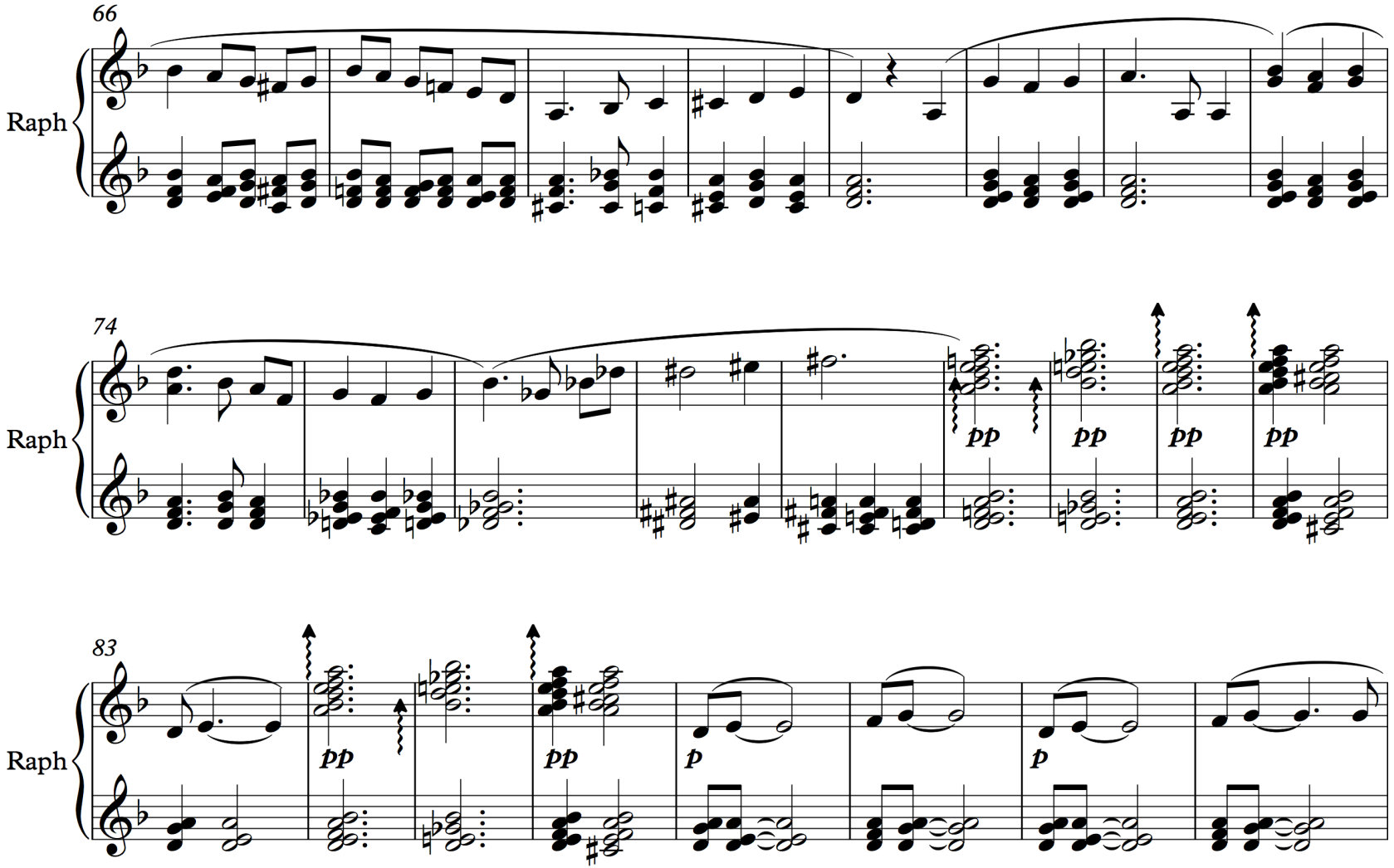
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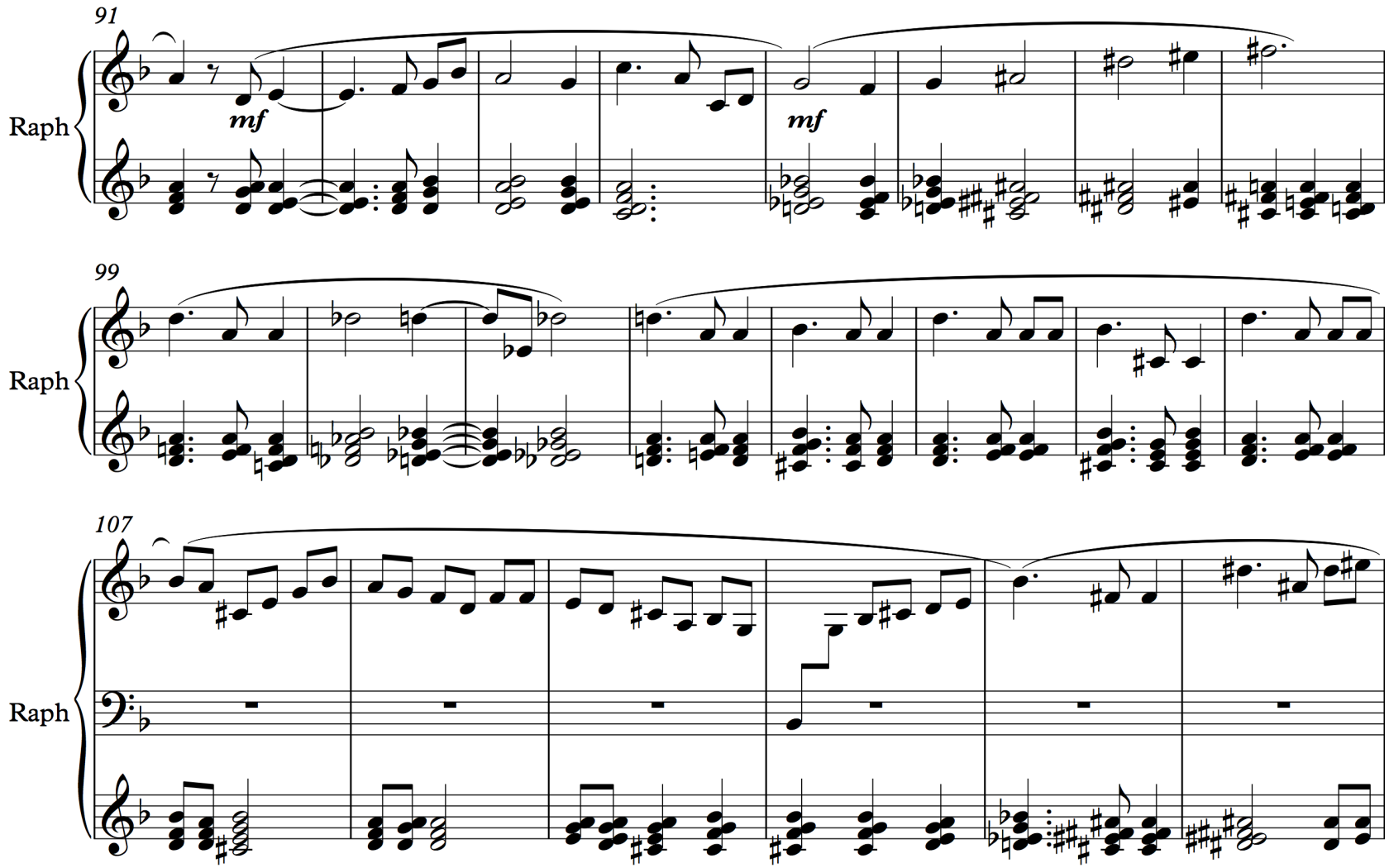
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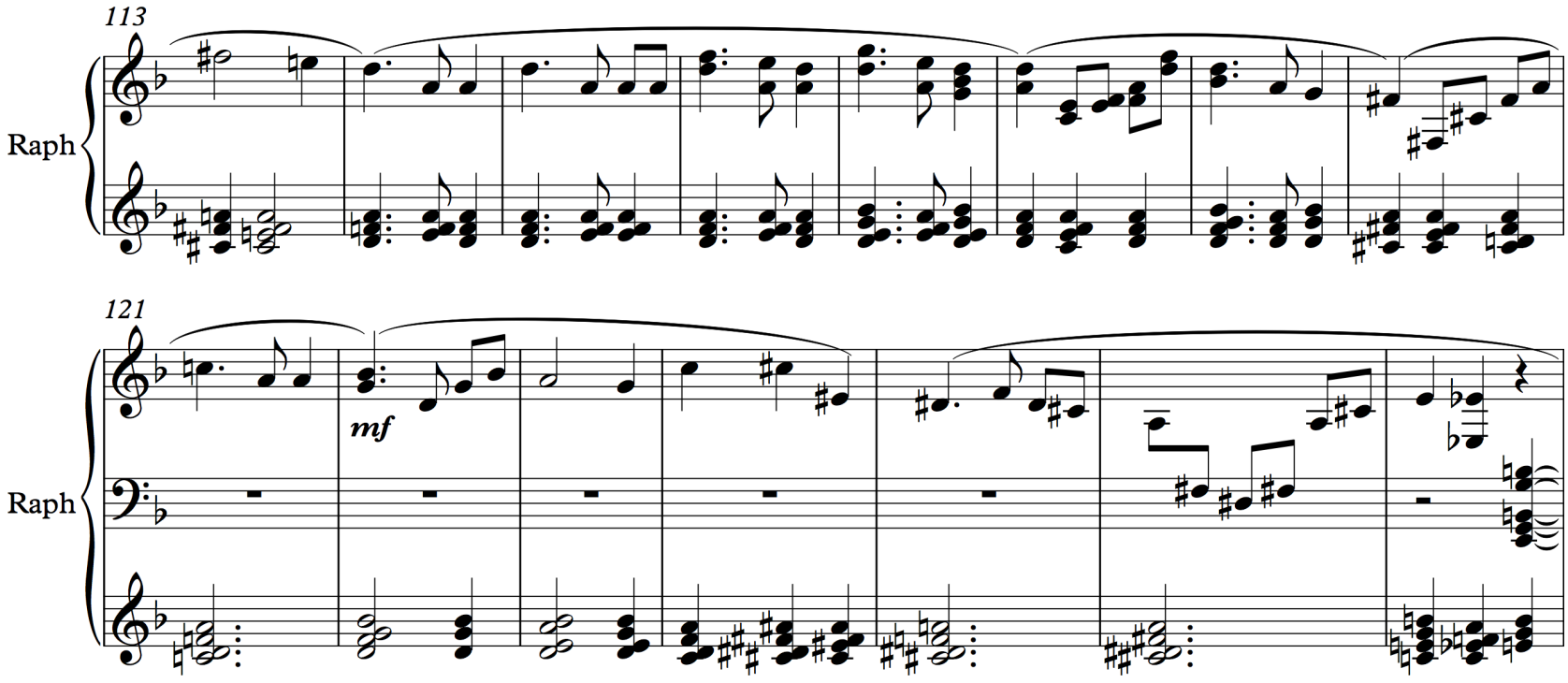
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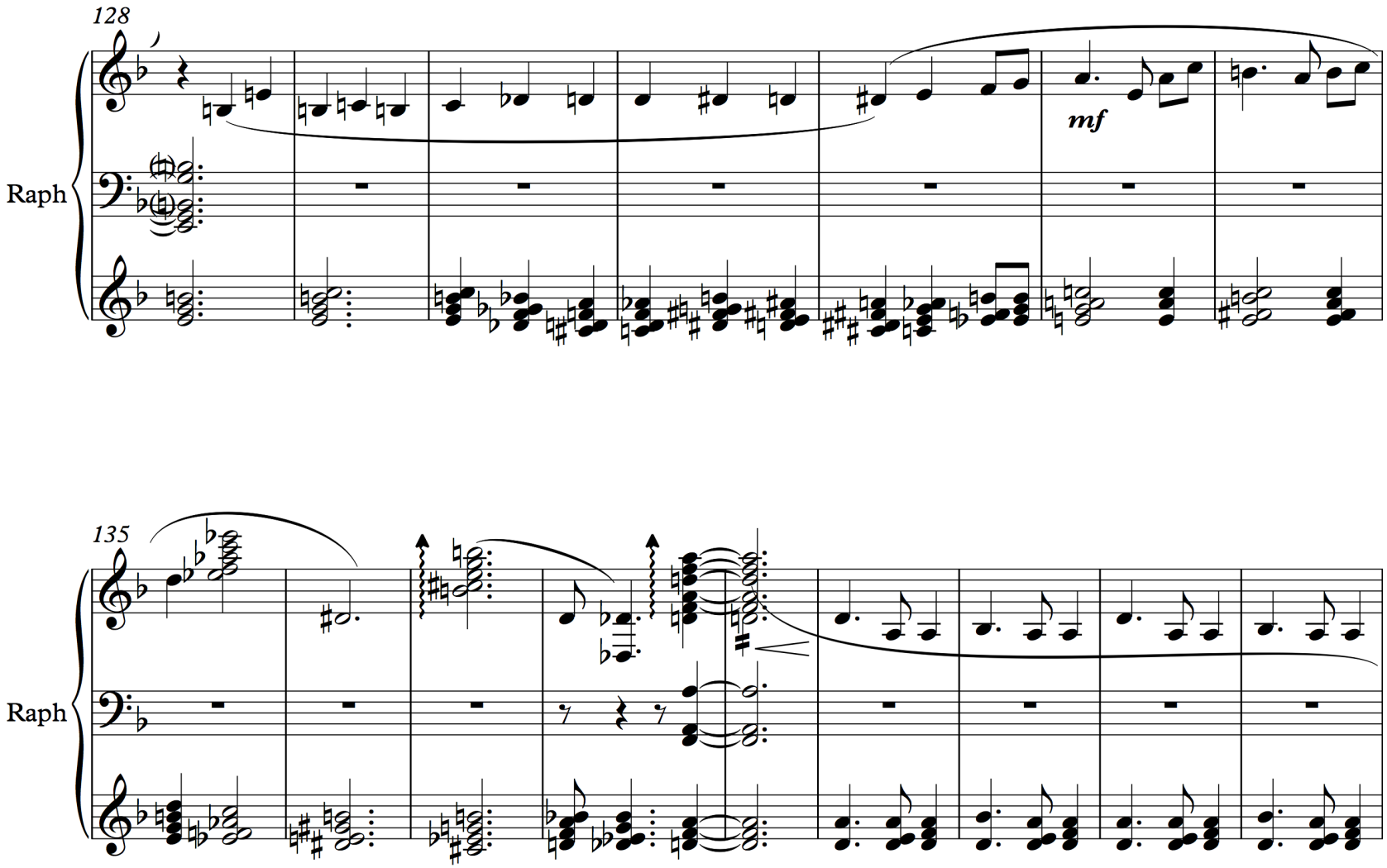
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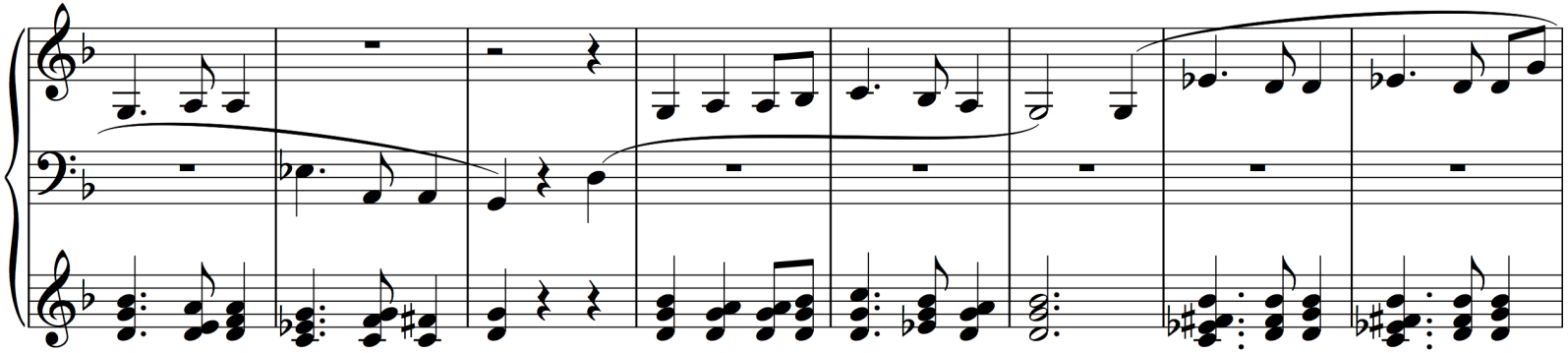
Raph

144

Raph



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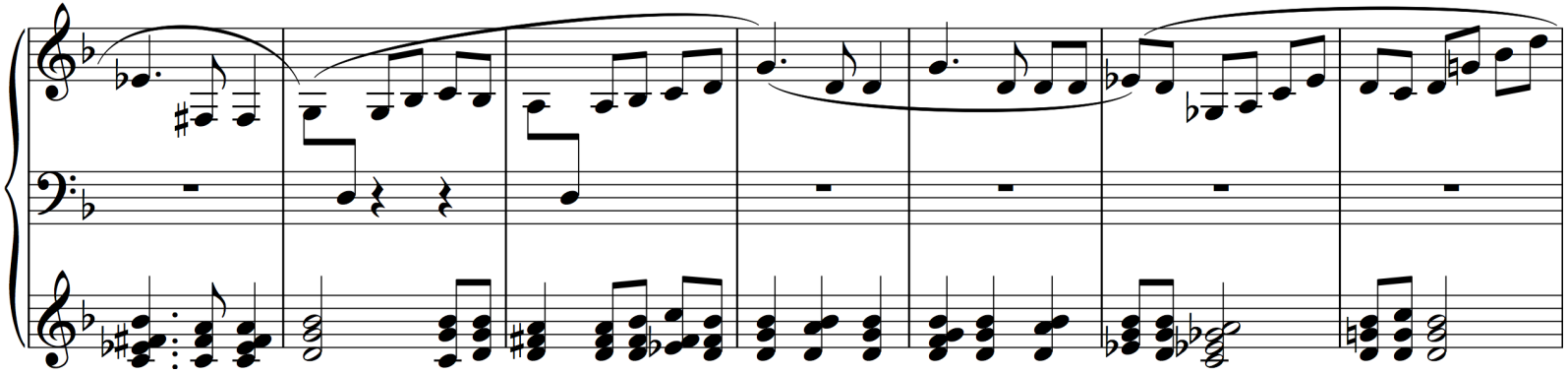

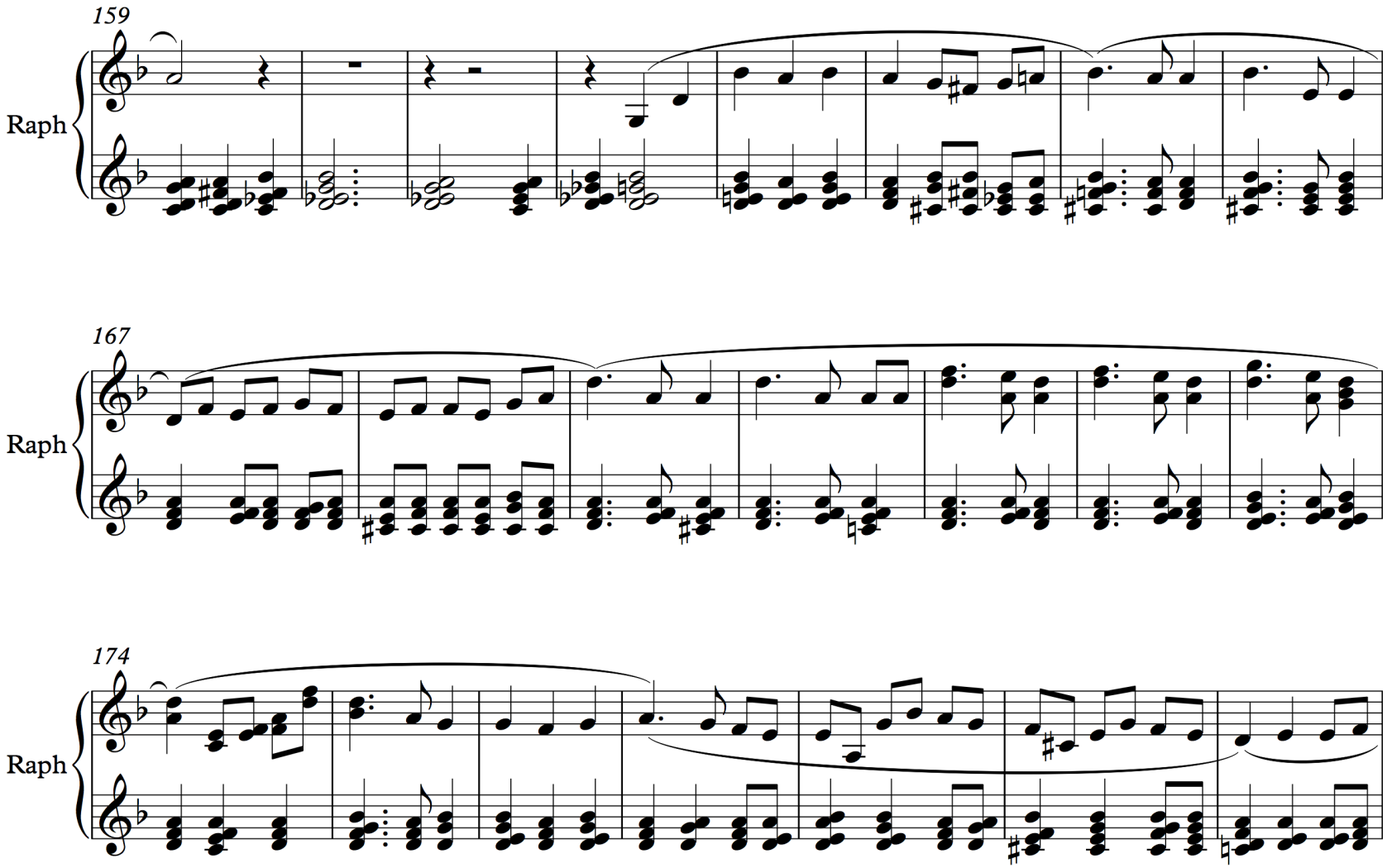
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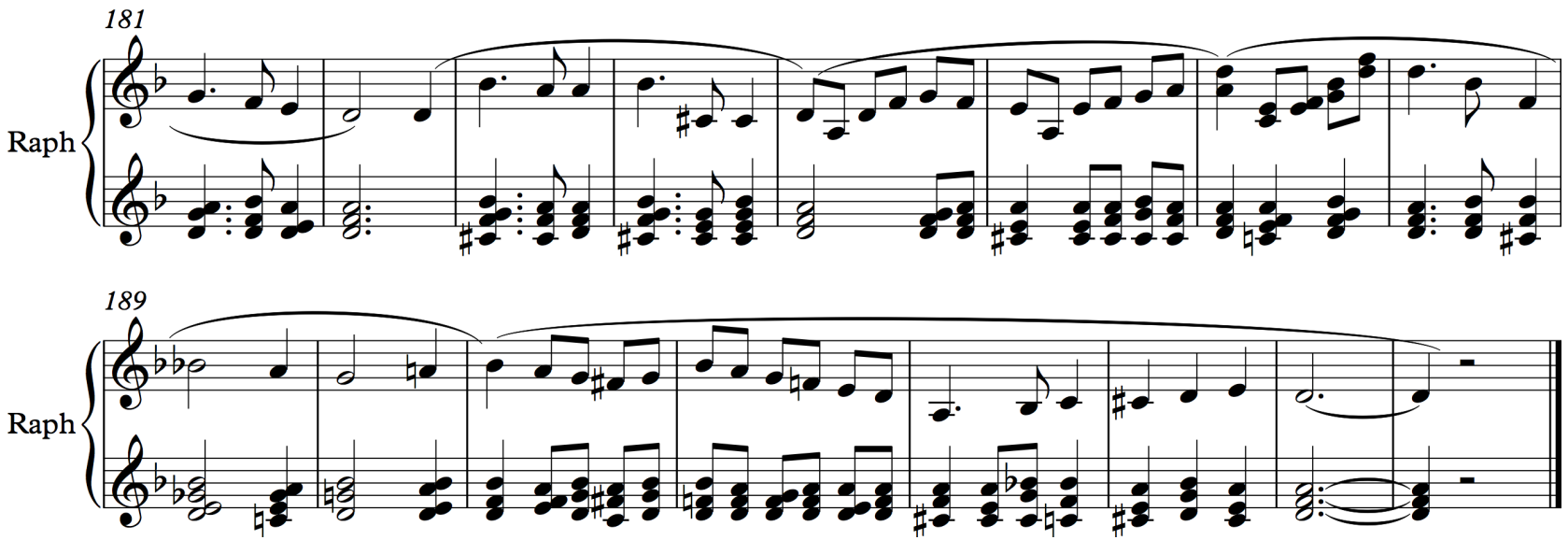

181
Raph
189
Raph

Brissenden: Nocturne

Elgar: Salud D'Amour

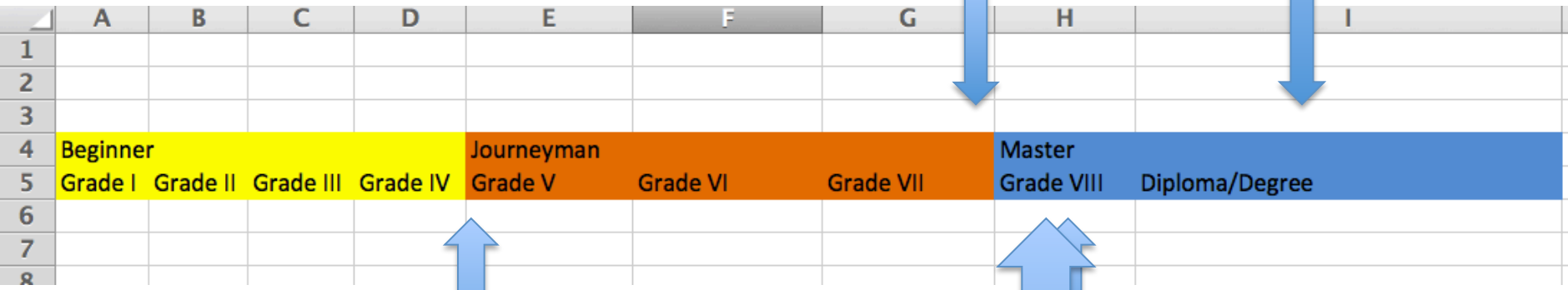
	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									

Bach: Fantasie

Ireland: Sea Fever

Brissenden: Nocturne

Elgar: Salud D'Amour



	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									

Bach: Fantasie

[illegible]and: Sea Fever

Brissenden: *As Yet Untitled*

Debussy: Clair de Lune

Brissenden: Nocturne

Elgar: [illegible]d D'Amour

	A	B	C	D	E	F	G	H	I
1									
2									
3									
4	Beginner				Journeyman			Master	
5	Grade I	Grade II	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	Diploma/Degree
6									
7									
8									

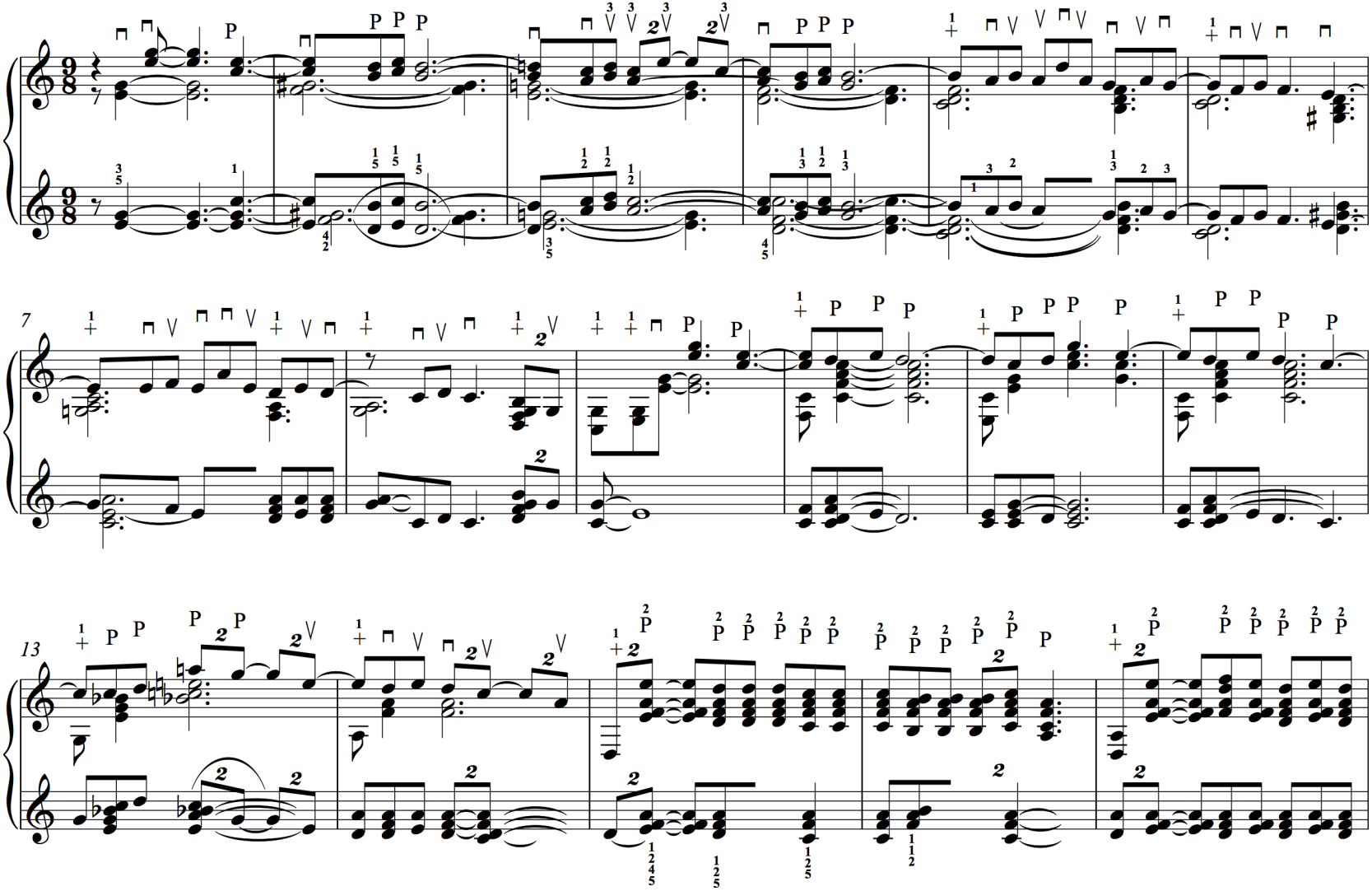
Bach: Fantasie

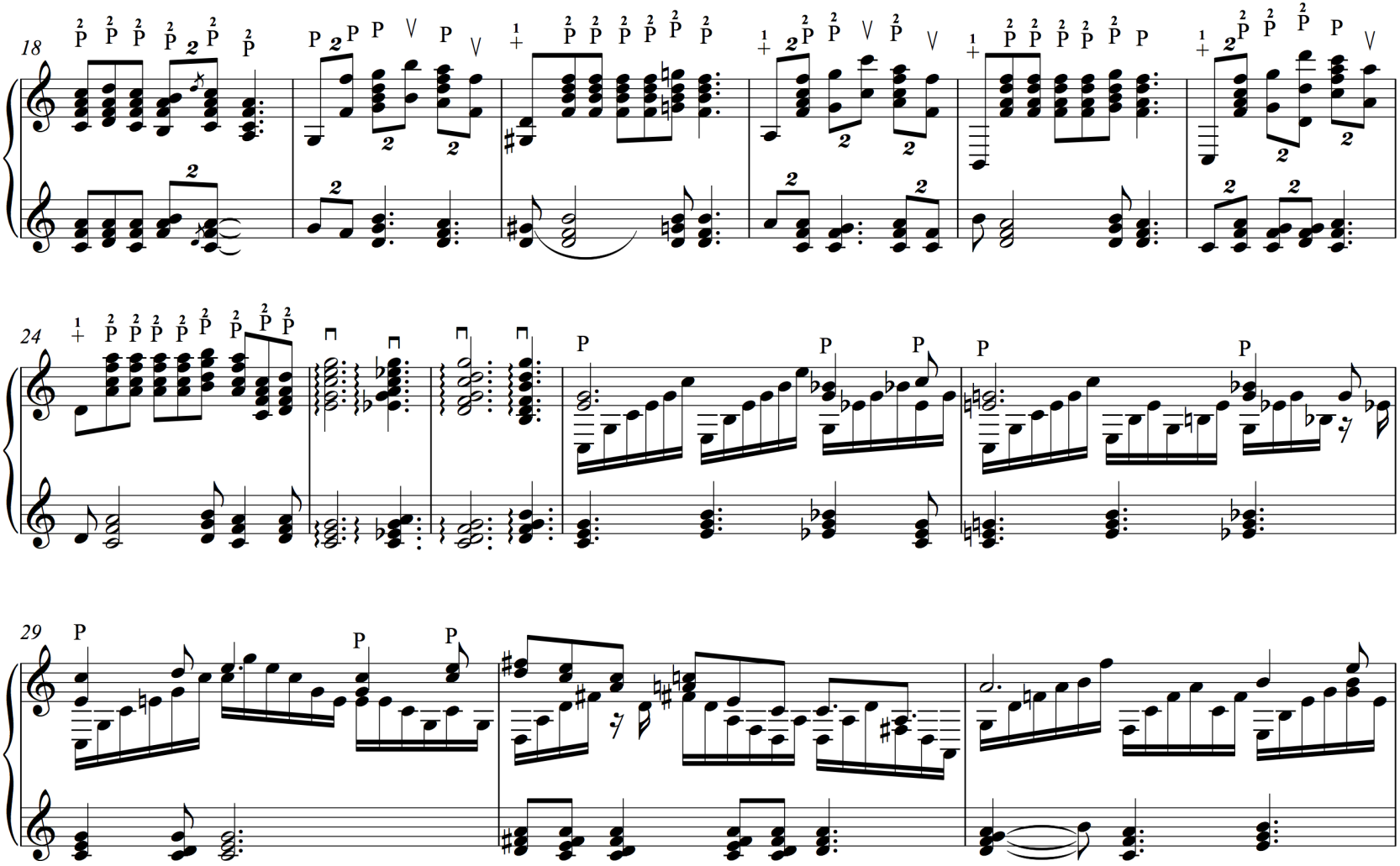
[illegible]and: Sea Fever

Brissenden: *As Yet Untitled*

Clair de Lune

Debussy
Arr for Raph: Brissenden 2009, 2012, 2014, 2018

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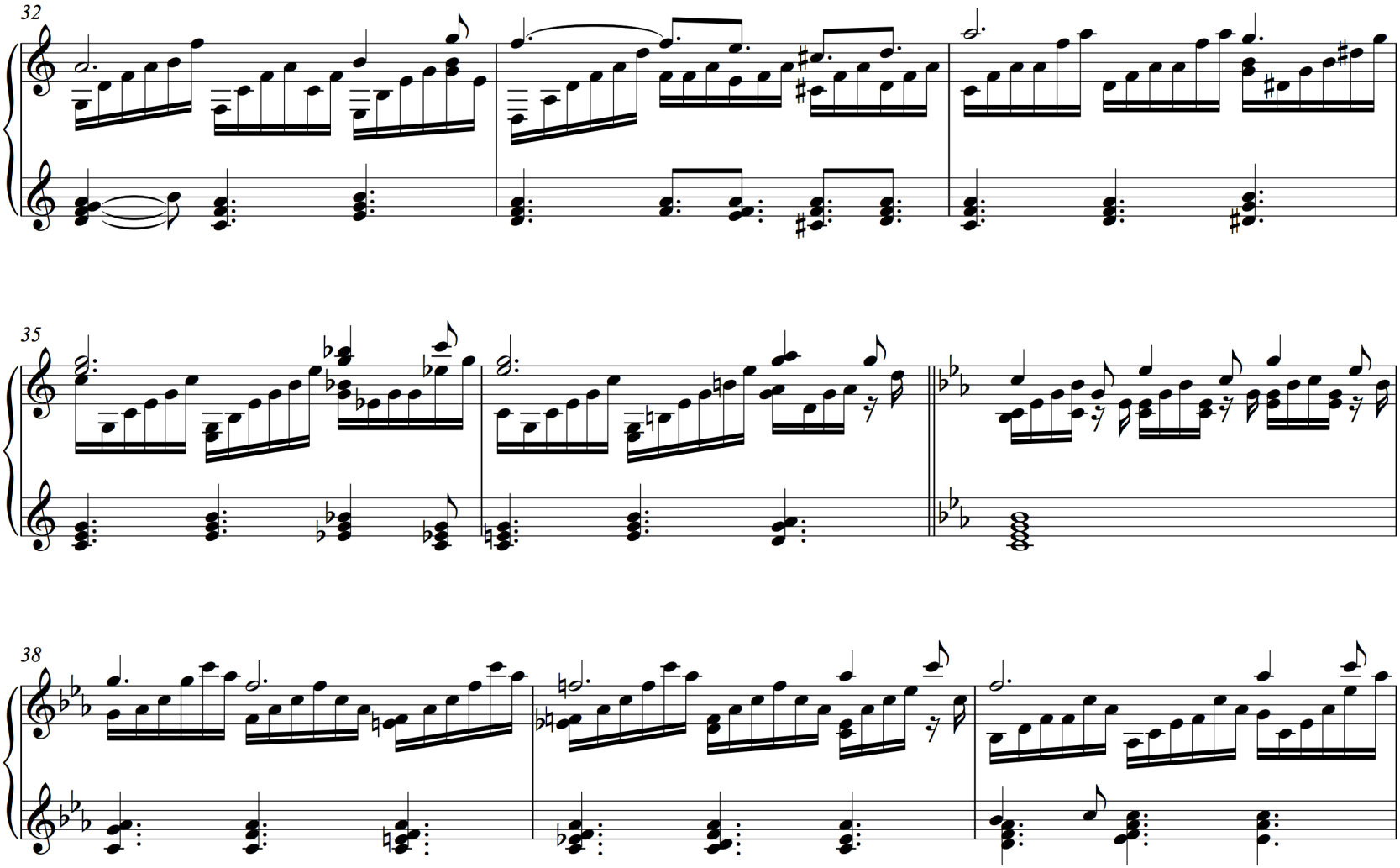
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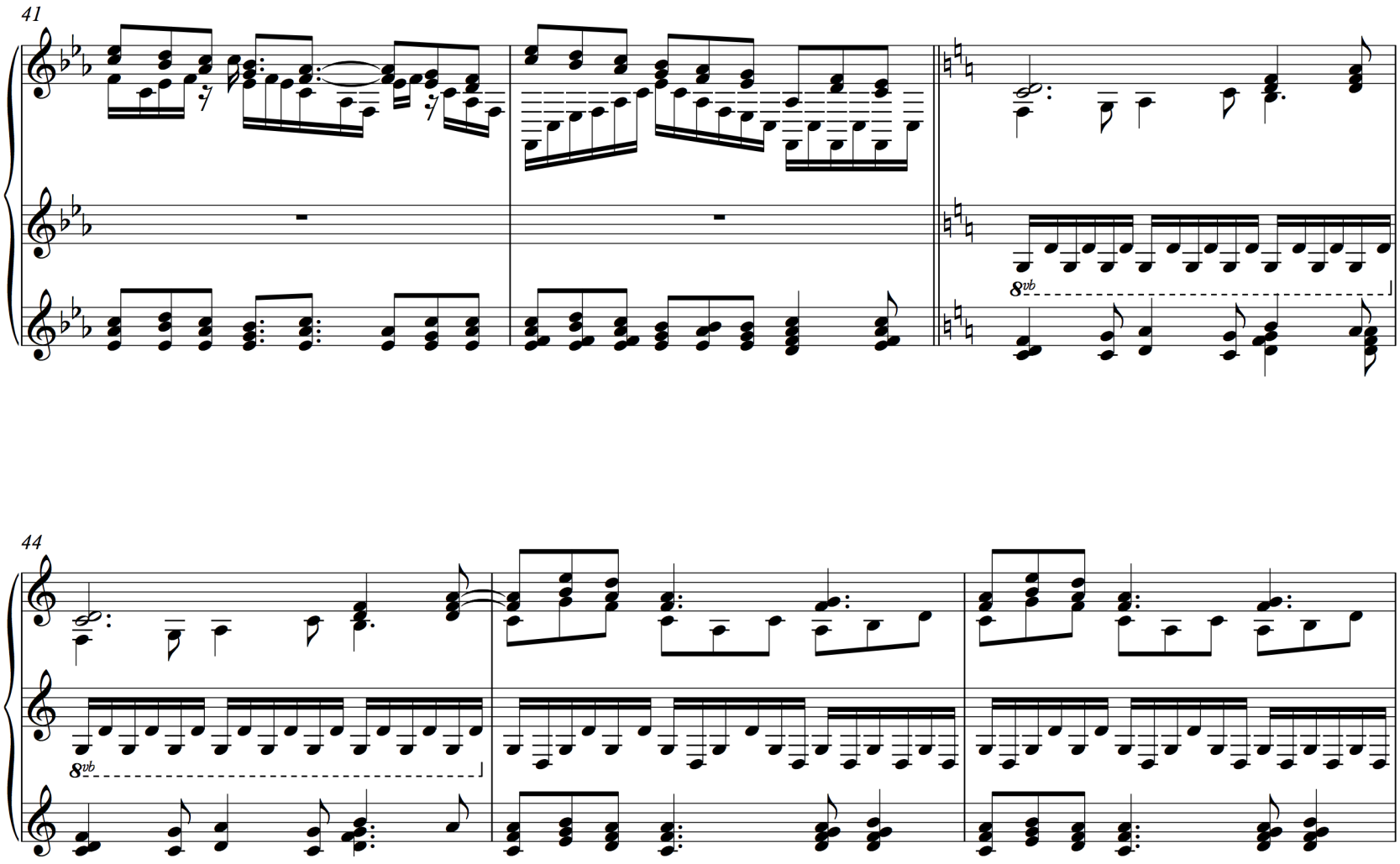
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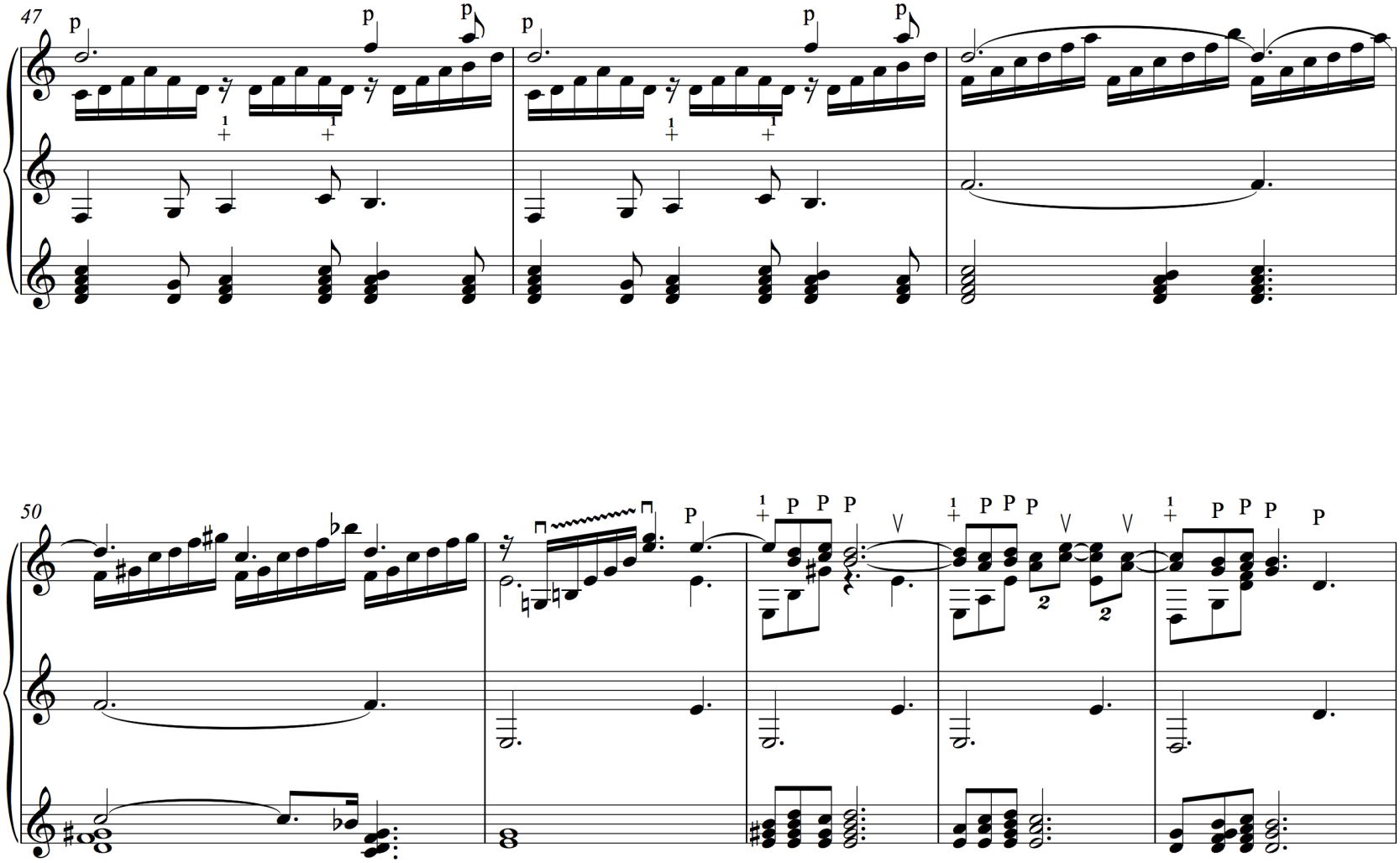
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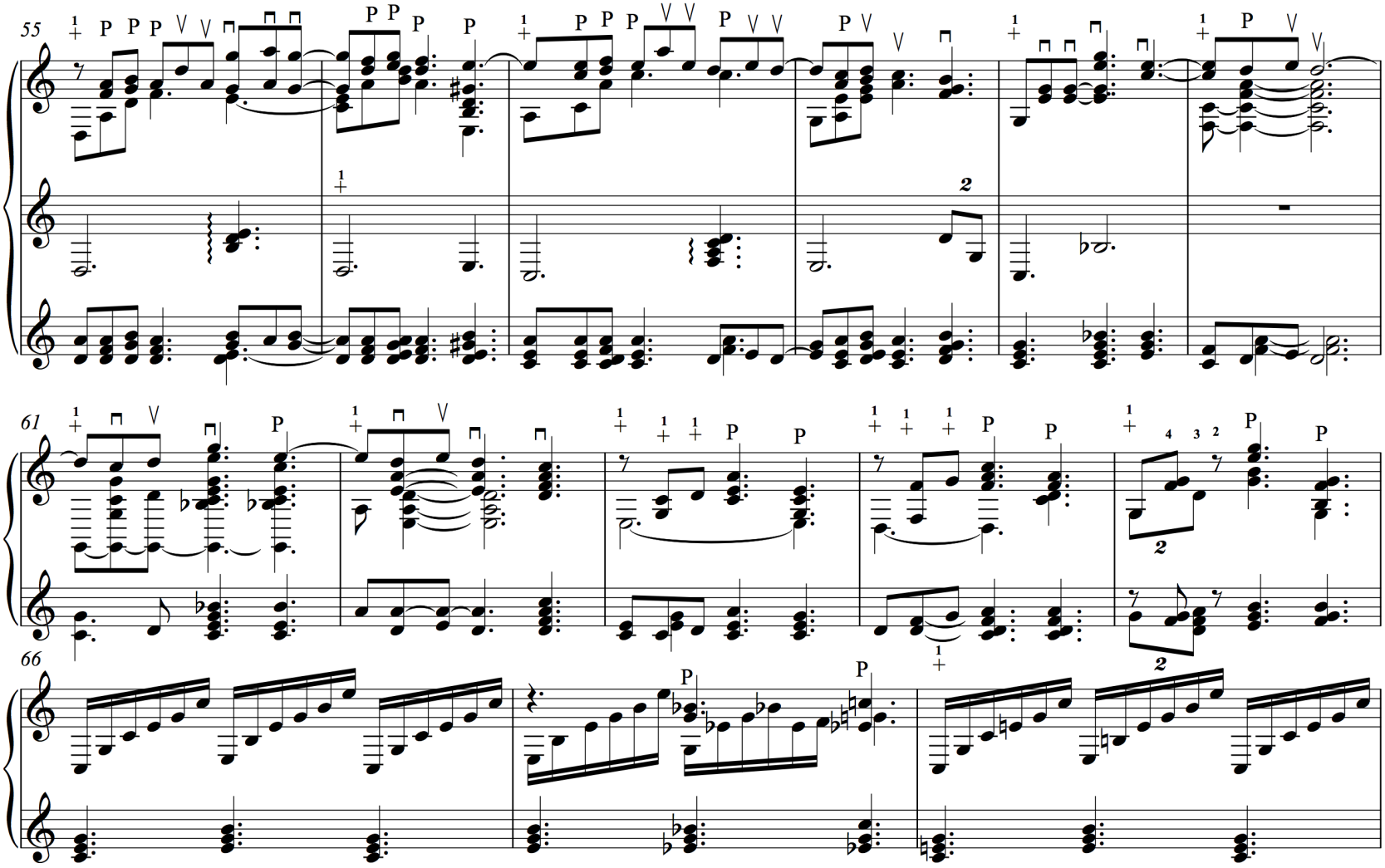
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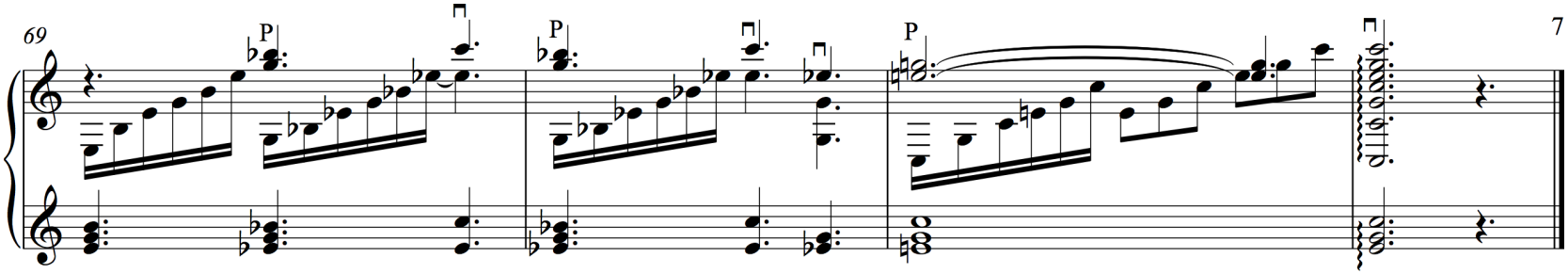
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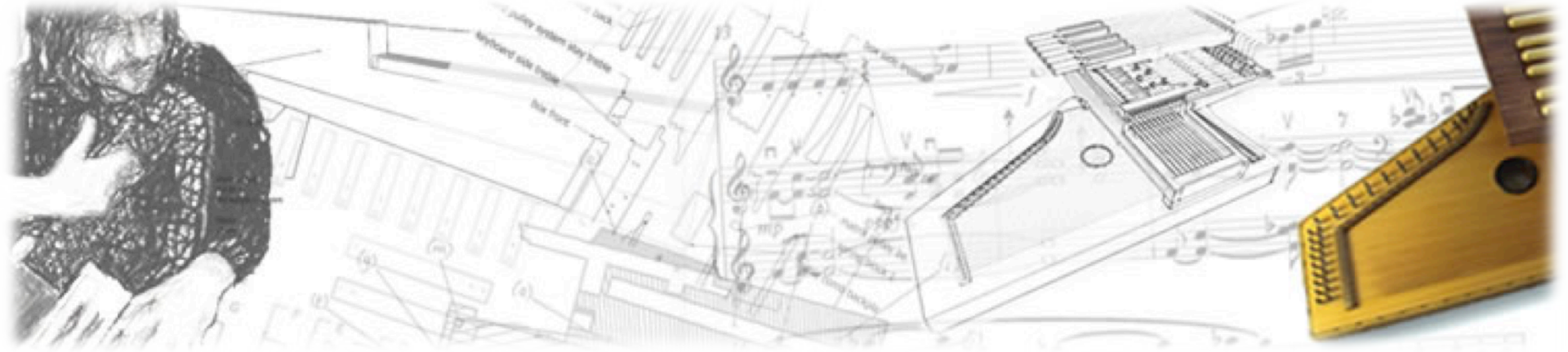
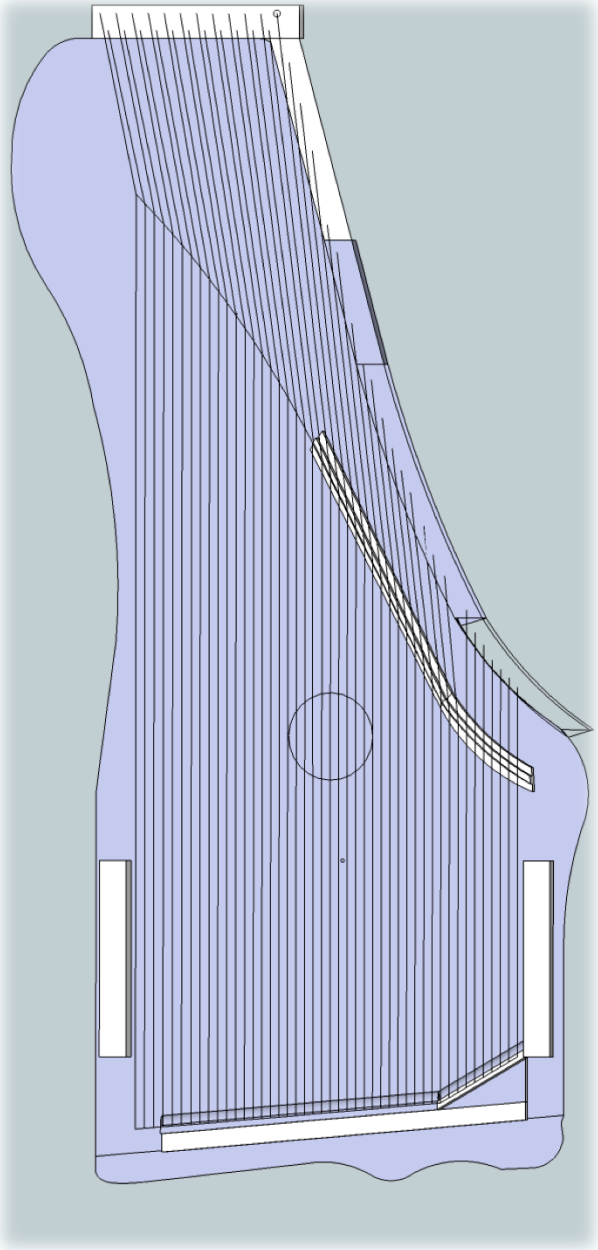
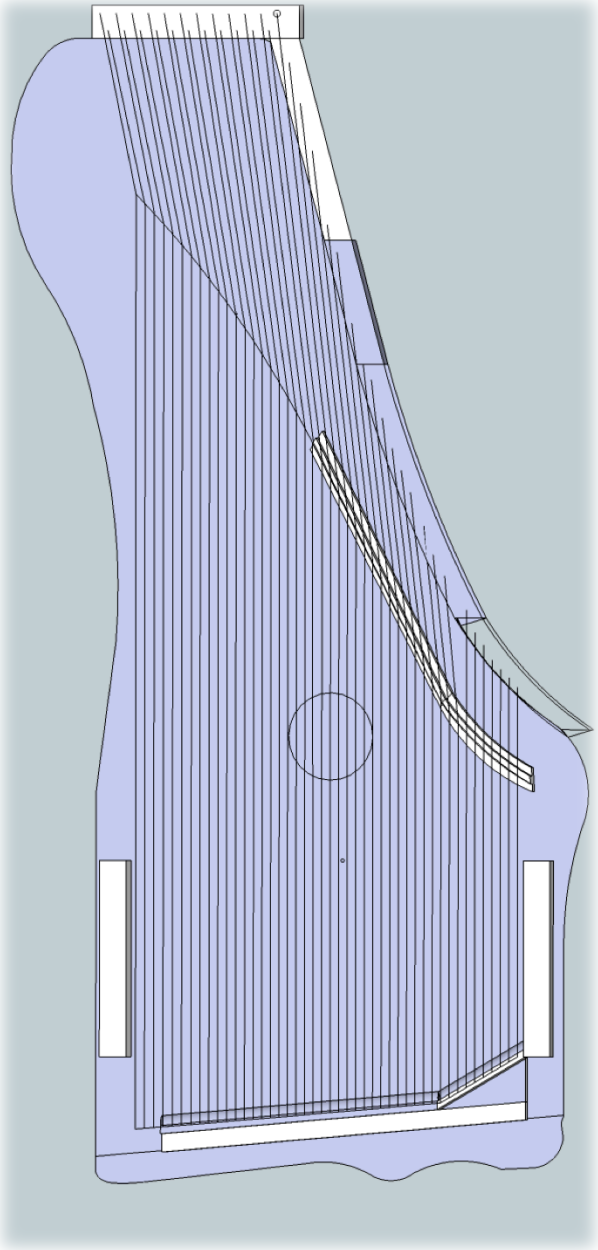
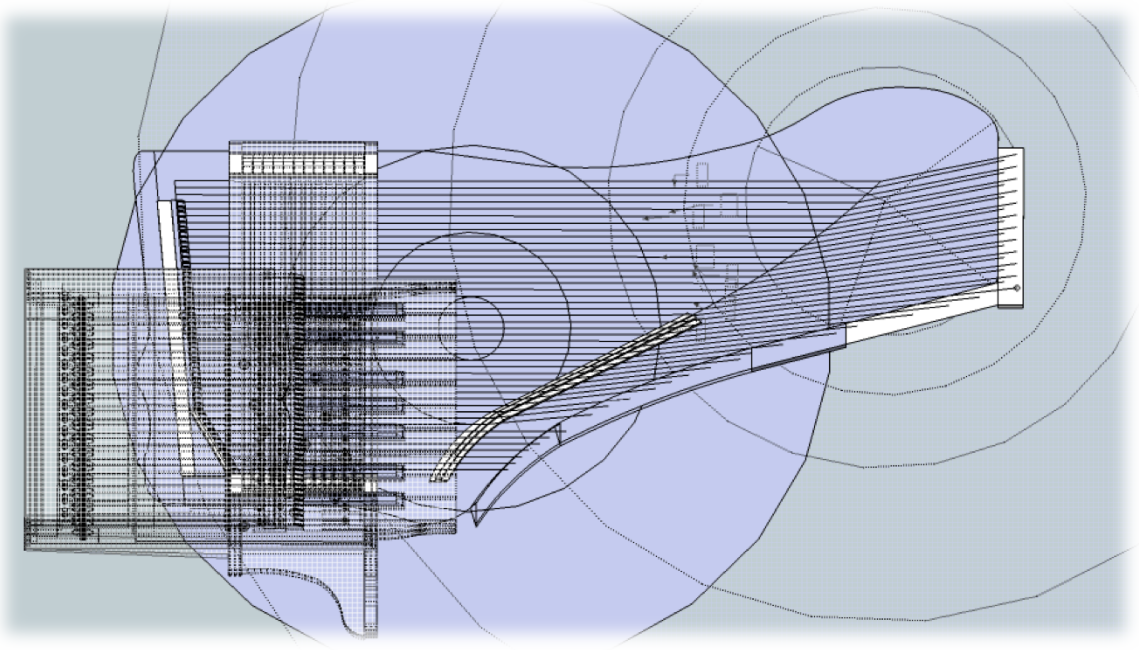


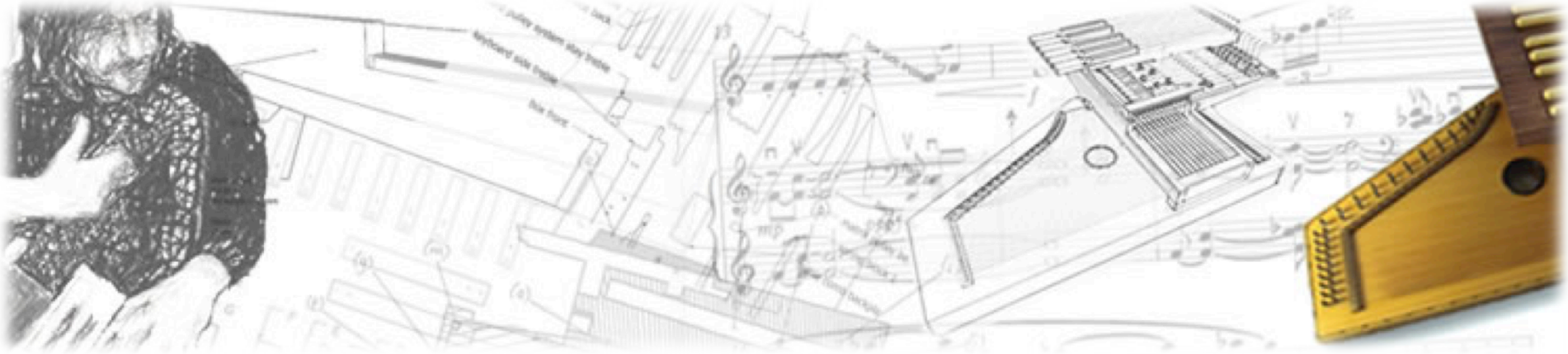
Clair de Lune

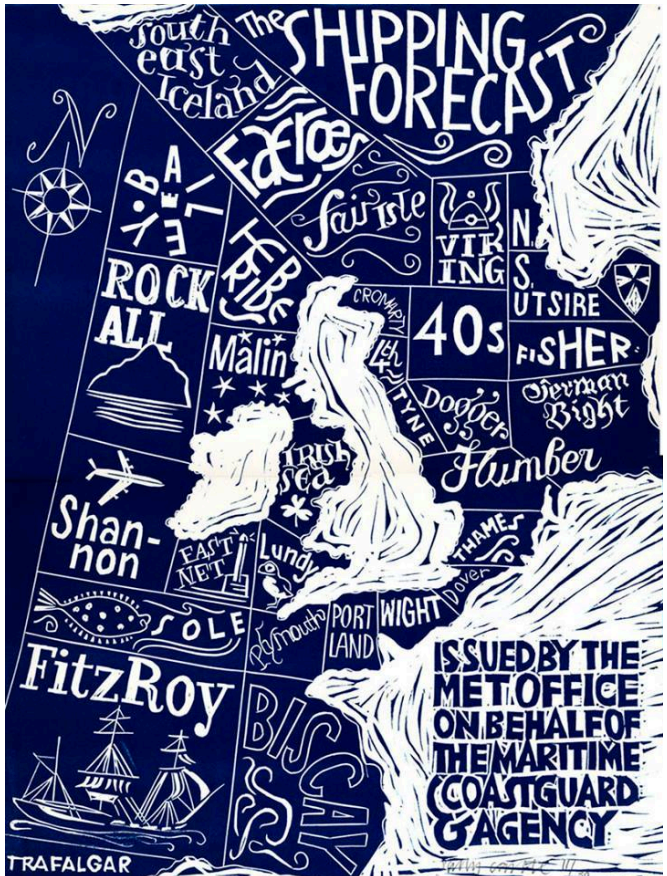
Debussy
Arr: Brissenden











Sailing By

Ronald Binge
Arr: Brissenden