line and cipher

michael winter (la, 2011)

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instrumentation:

the piece consists of a drone sustained concurrently with tremolos on chimes.

a chime part (given on the following pages[i]) is interpreted by a group of three people playing two chimes: one 'tremeloer' (who plays a tremolo on *both* chimes throughout) and two 'muters'.[ii] the two staff lines represent the chimes. notehead positions and stem directions indicate which chime to mute. a chime is only released at the moment the other is muted. the piece is played with three or (preferably many) more of these parts. the barlines and stem groupings are given to aid keeping time. the distance between stems indicates a tempo/time unit, which is the same for all parts and should remain as constant as possible. for all parts except one, the staff line to chime correspondence is opposite for the muters (as written in the provided 'full score').

the drone consists of three or more distinct sine tones tuned to prominent partials of the chimes being played for the exception part. up to three rational harmonic relationships may be built on top of each of these partials such that the frequency ratio to the partial contains a numerator or denominator no greater than 11 and does not produce any beating (either physical or psychoacoustic) with any prominent partials of the exception chimes. these 'satellite' tones should sound at a lower dynamic. additionally, the pitches of the drone may be doubled on any sustaining instrument so long as each tone of the drone remains primarily constant with only subtle timbral shifts of the drone as a whole.

form:

the form consists of a sort of phase between muters within a group. each part is played several times such that the muters overlap by increasing then decreasing amounts.

for the first occurrence of the phase, muters within a group do not overlap. that is, one of the muters starts muting once the other finishes their part (without pause; resulting in a duration twice as long as if played together). upon each successive occurrence, the muters overlap more and more (always at a multiple of the unit duration explained above). the amount of overlap per occurrence should be the same across all parts. eventually, all muters play at the same time; starting and stopping together. at this point, the parts should be repeated together several times before decreasing the amount of overlap. then, the overlap decreases until the last occurrence, where the muter that originally played first in the initial occurrence, plays directly after (without overlap) the other muter.

the trajectory of the phase is variable but it should take as long to move from the beginning to the fully-overlapped occurrences in the middle as it does to move away from the fully-overlapped occurrences to the end. the chime players (tremoloers and muters) may pause indefinitely between each occurrence. if so, the duration of the pause should be the same across all parts and rather similar between the occurrences. the drone starts anytime before and stops anytime after the chime parts start and end the phase. the whole piece should be at least 13 minutes.

clear; with a constant, very soft dynamic throughout; with the chime groups and members sustaining the drone distributed about the space to the extent possible.

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[i] the chime parts were generated with a computer program written in mathematica that calls the lilypond music typesetter. while several parts and a version of a full score are included, the score generating software is available upon request and will allow customization of several of the options explained throughout the documentation. the provided parts need not be realized in their entirety. pending on the chosen unit duration, parts may only be partially realized such that at least 8 time units worth of notes are realized with a combined duration of at least 60 seconds. each part derives from a unique, randomly generating binary string with any runs grouped by beams and stems.

[ii] the chimes can be fashioned out of metal tubing (preferably aluminum). all tremoloers must use the same type of soft beater and perform a fast, soft tremolo that maximizes resonance and minimizes attack. chimes within a part are tuned to each other as precisely as possible. chimes between parts are tuned distinctly; differing by small intervals such that various beating patterns result when different subsets of the chimes are played. the register of the chimes does not matter; however, the chimes must be long enough and properly secured (at any set of nodes as to avoid swaying while maximizing resonance) such that group members do not inhibit one another. the piece was originally conceived with the tremoloer in the middle and the muters at opposite ends of the chimes. chimes may be made available upon request.

line and cipher

full score

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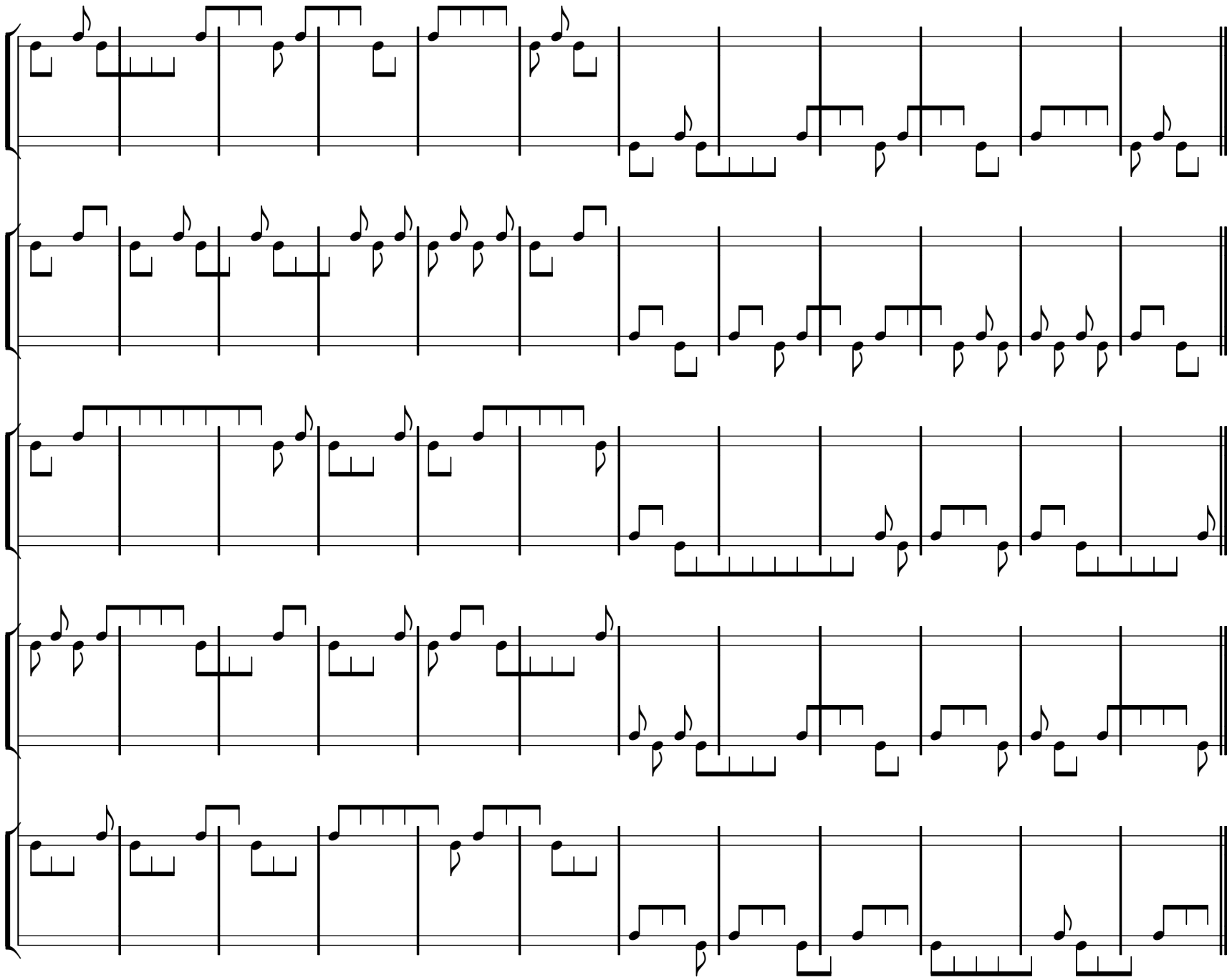

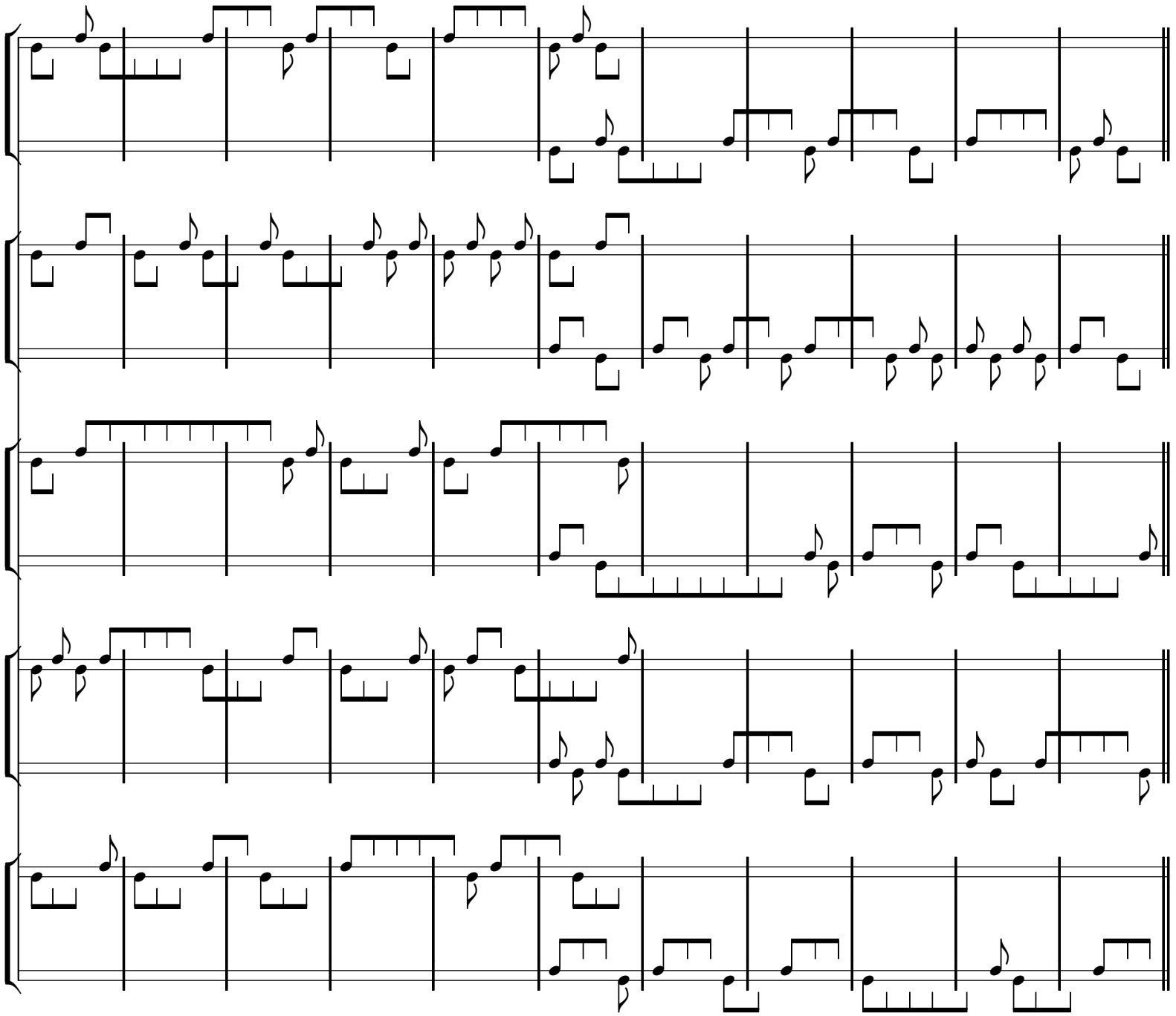

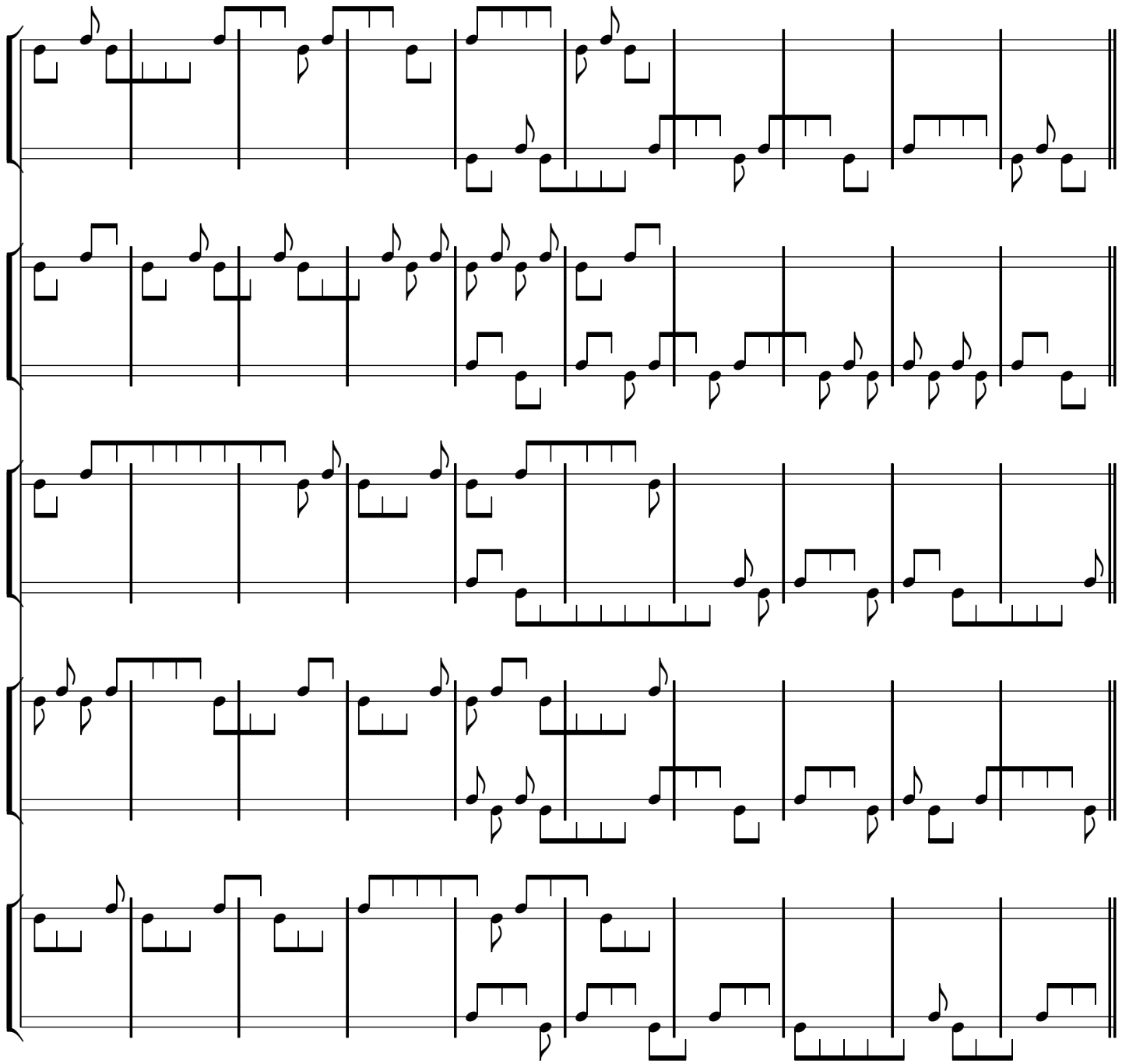

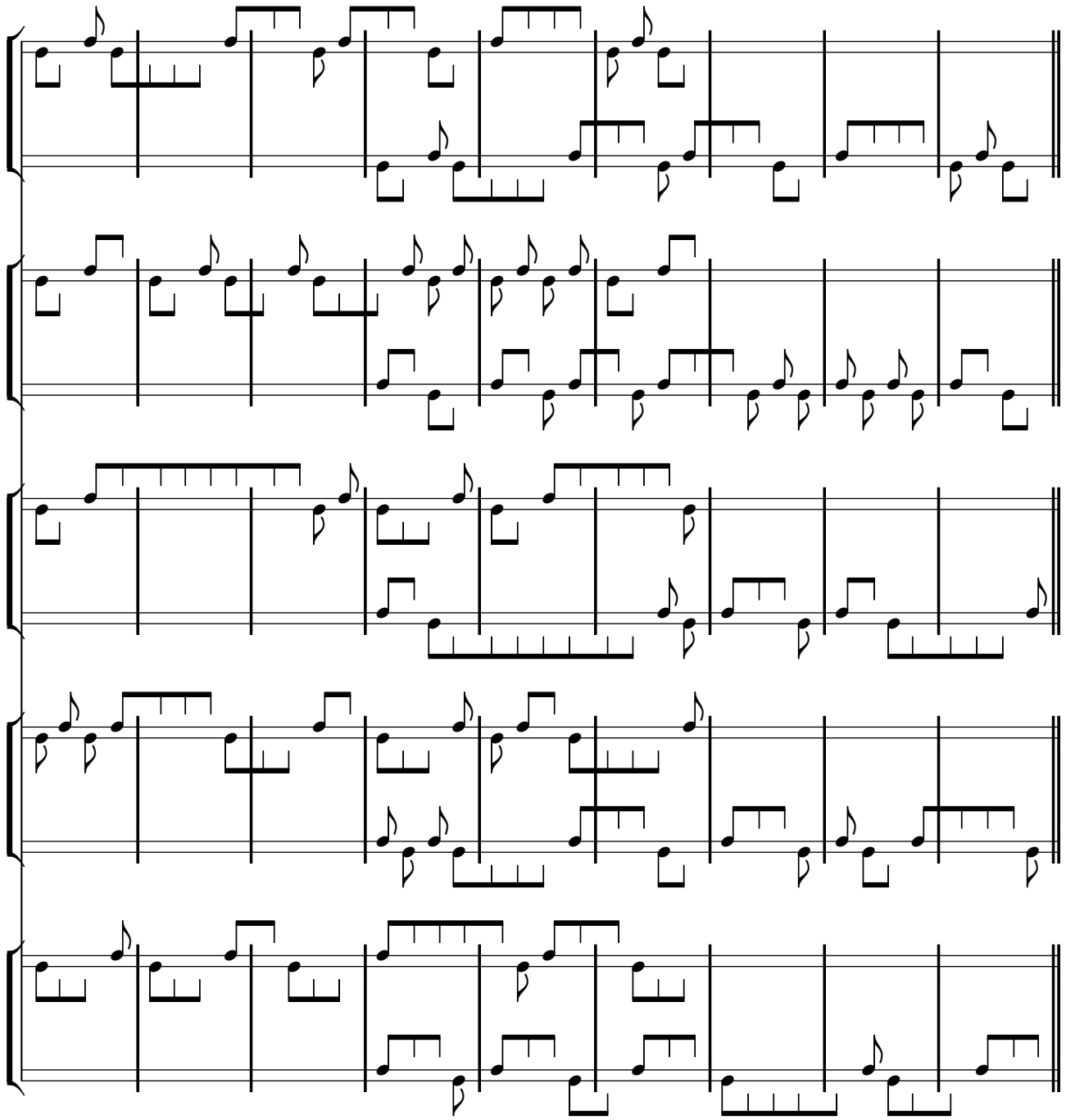

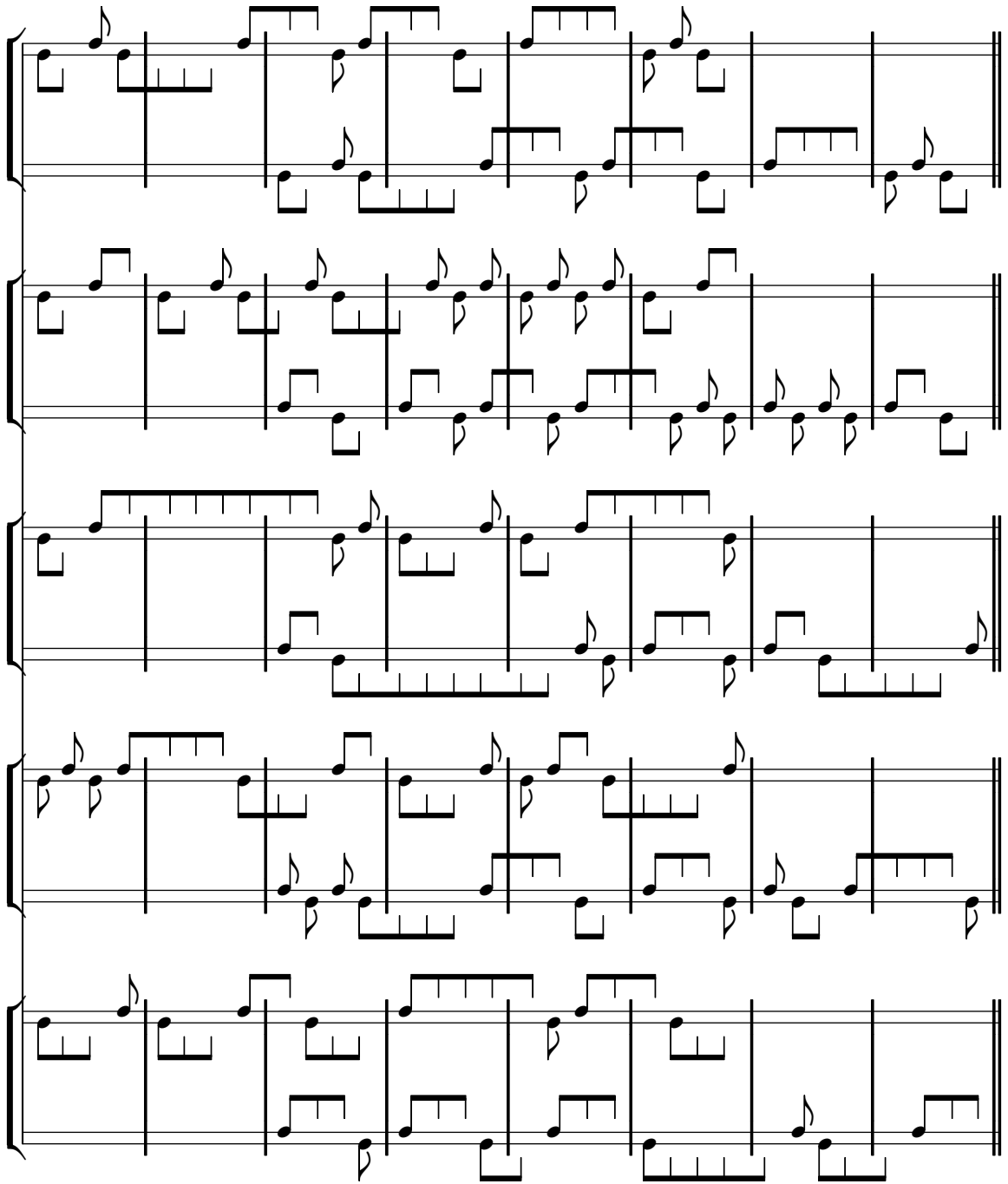

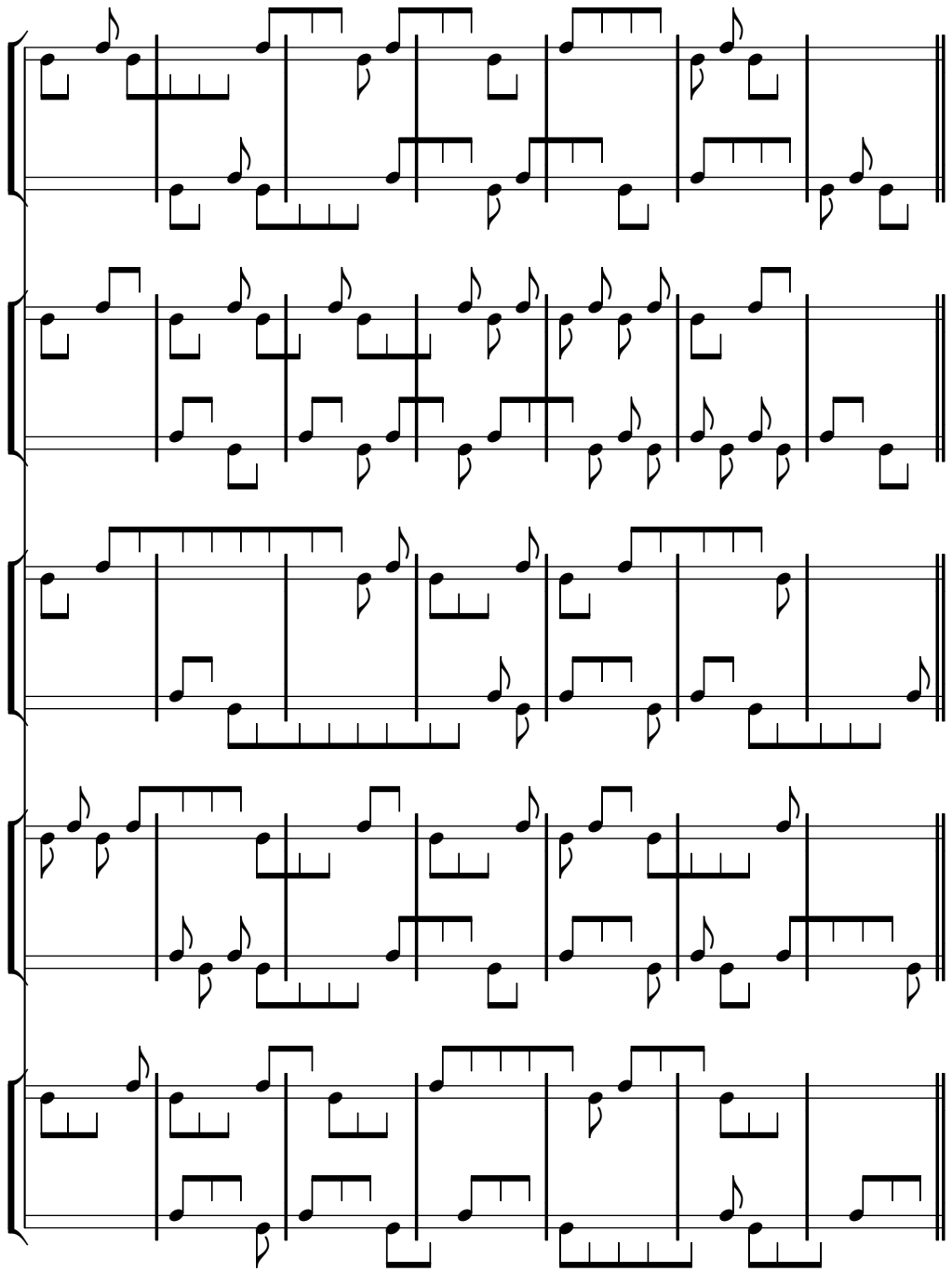

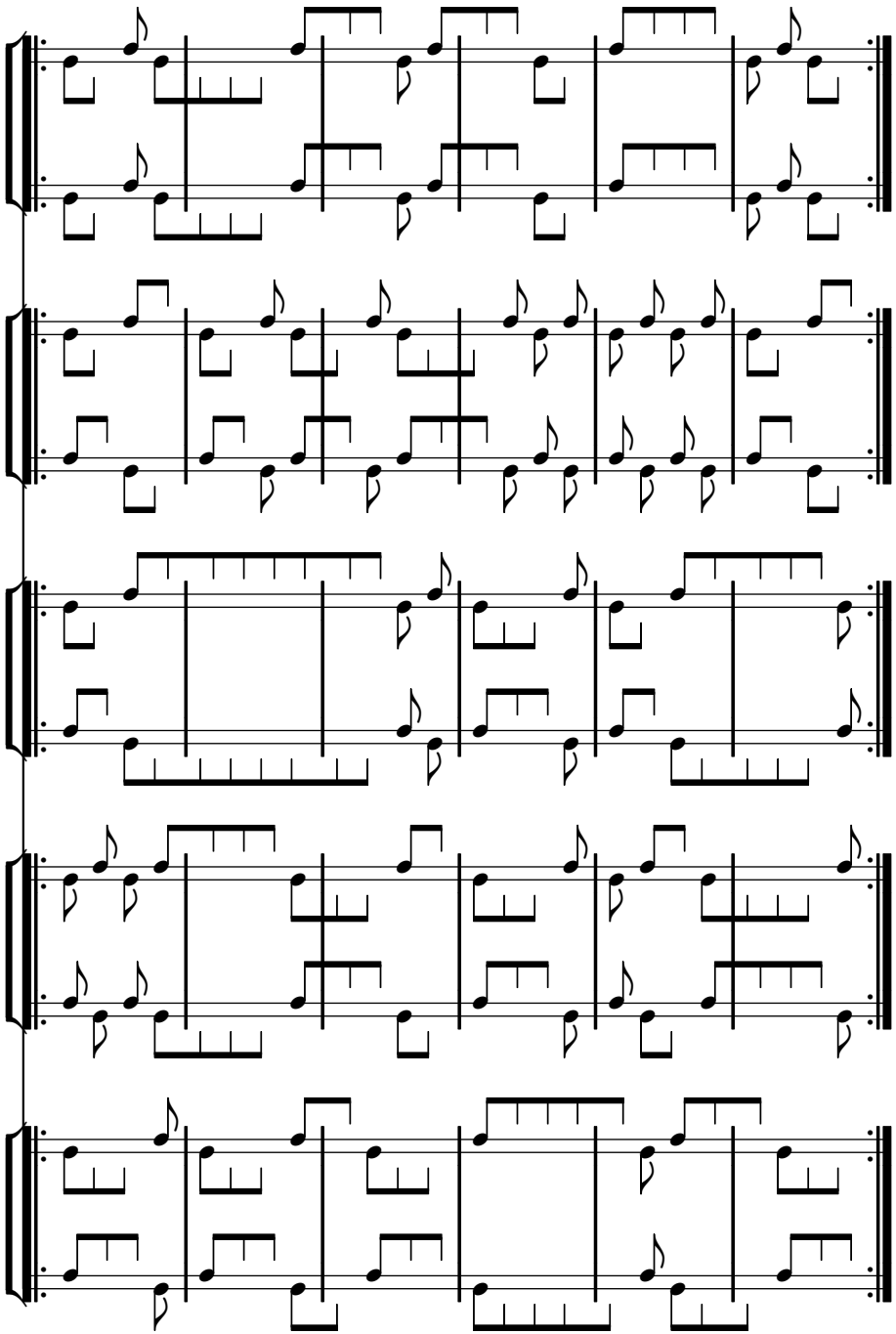

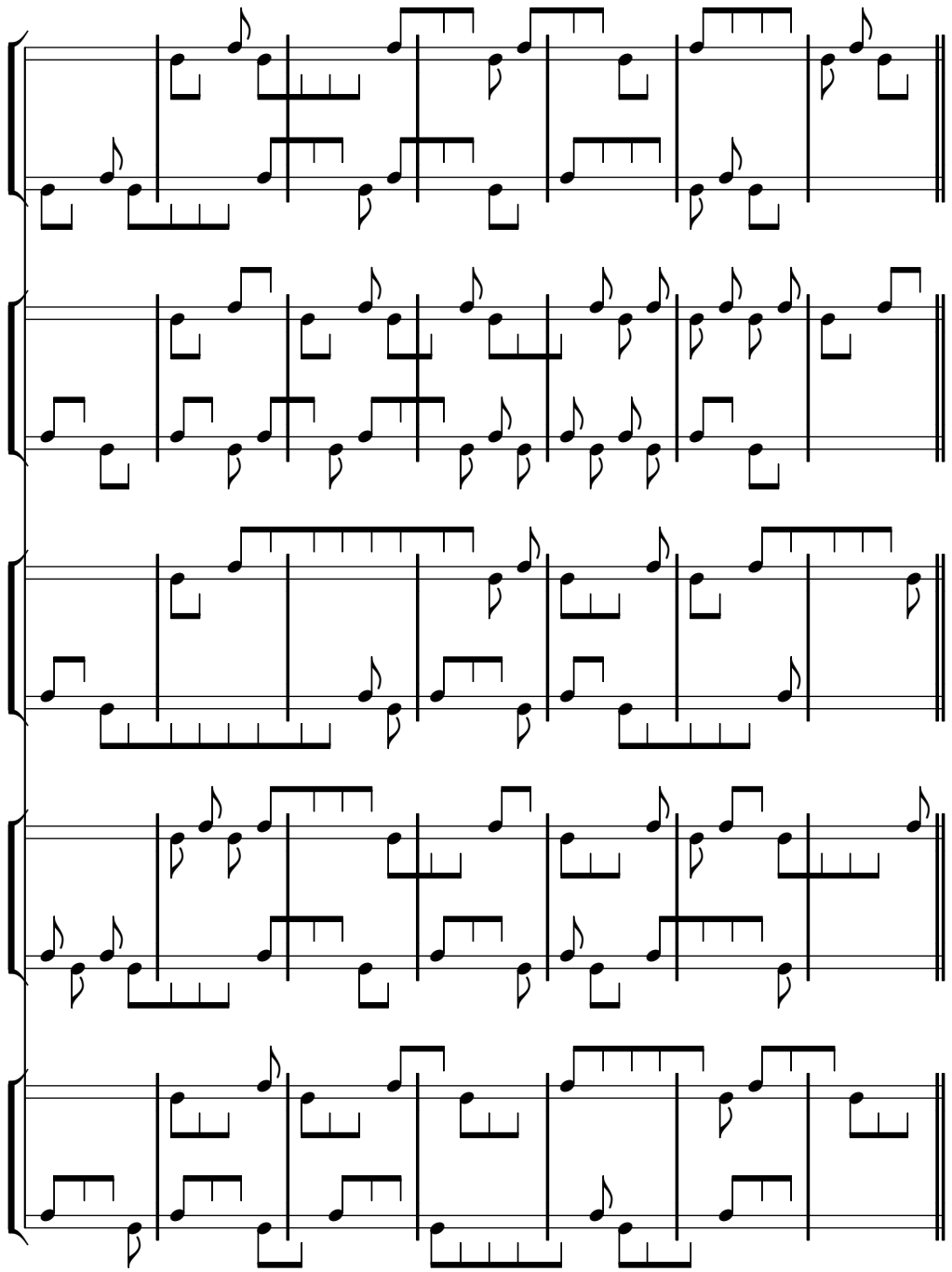

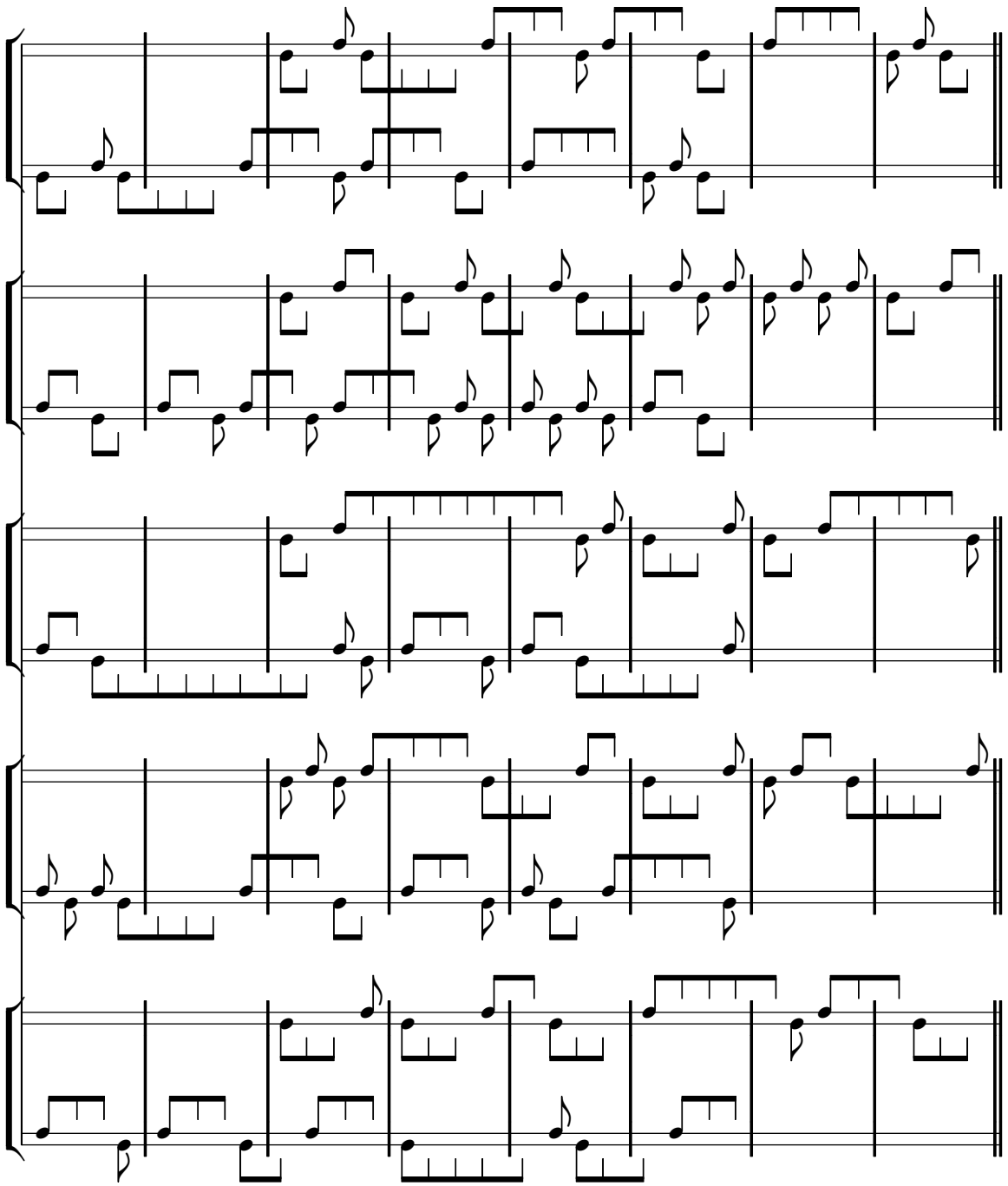

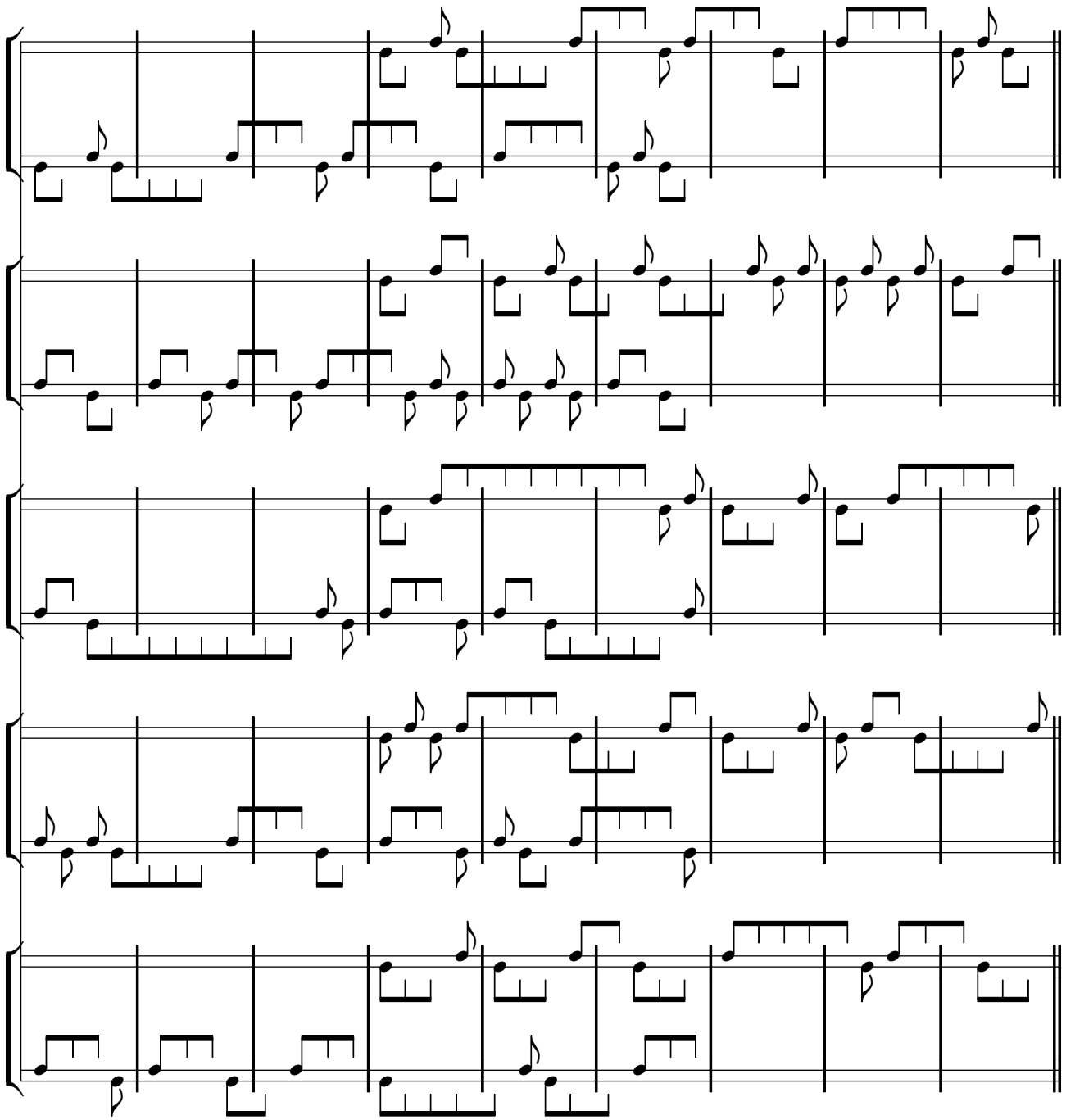

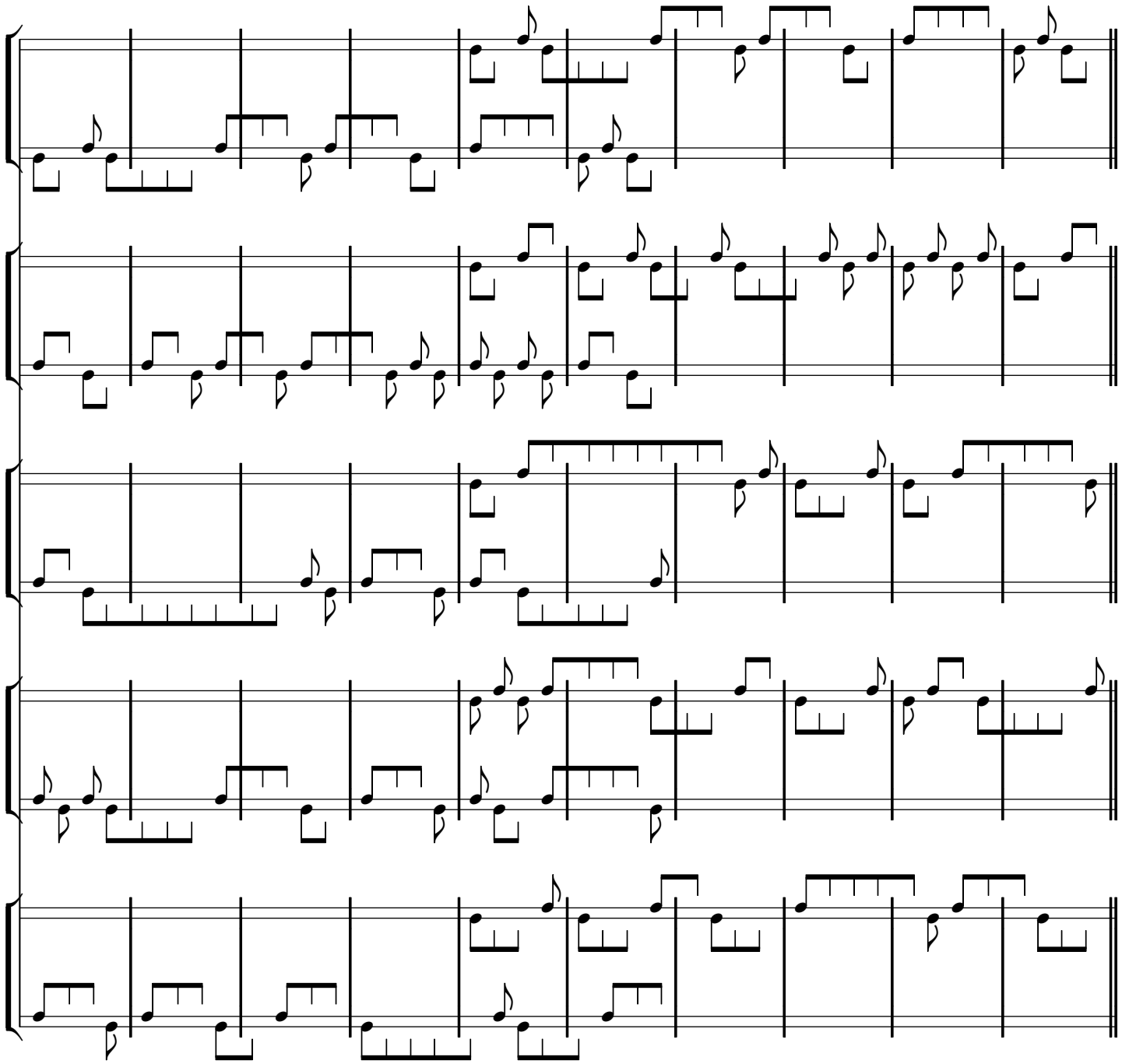

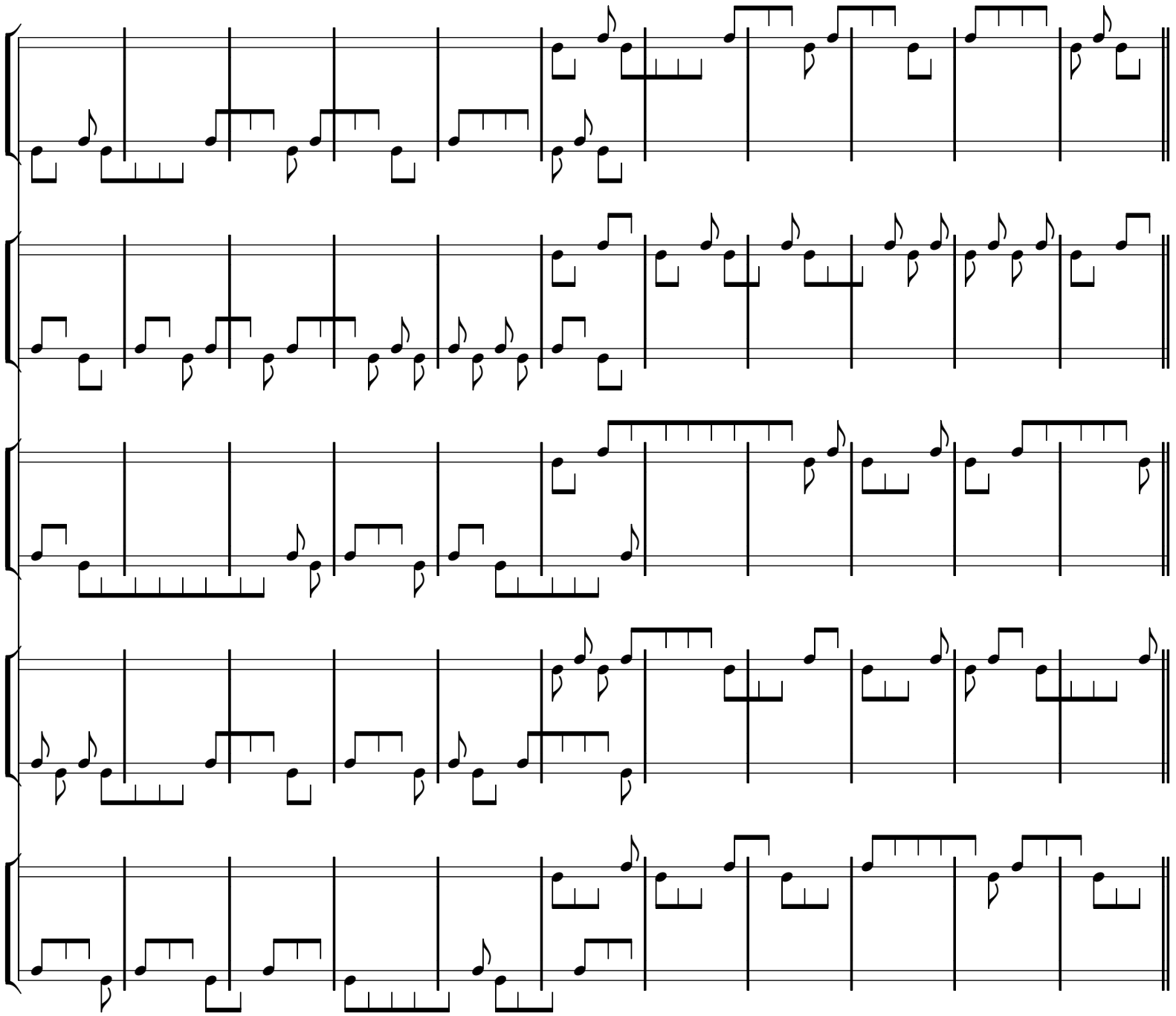

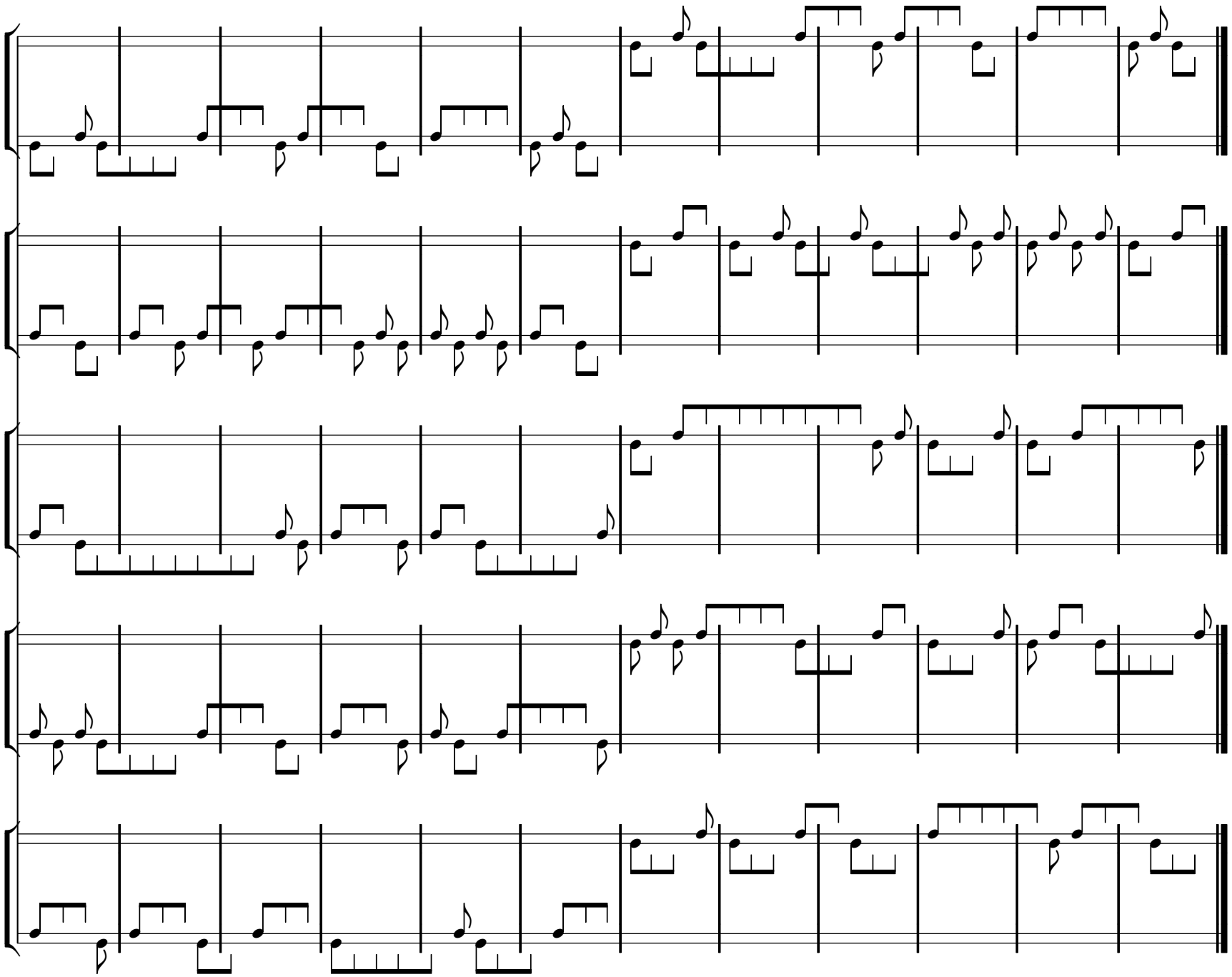

line and cipher

part

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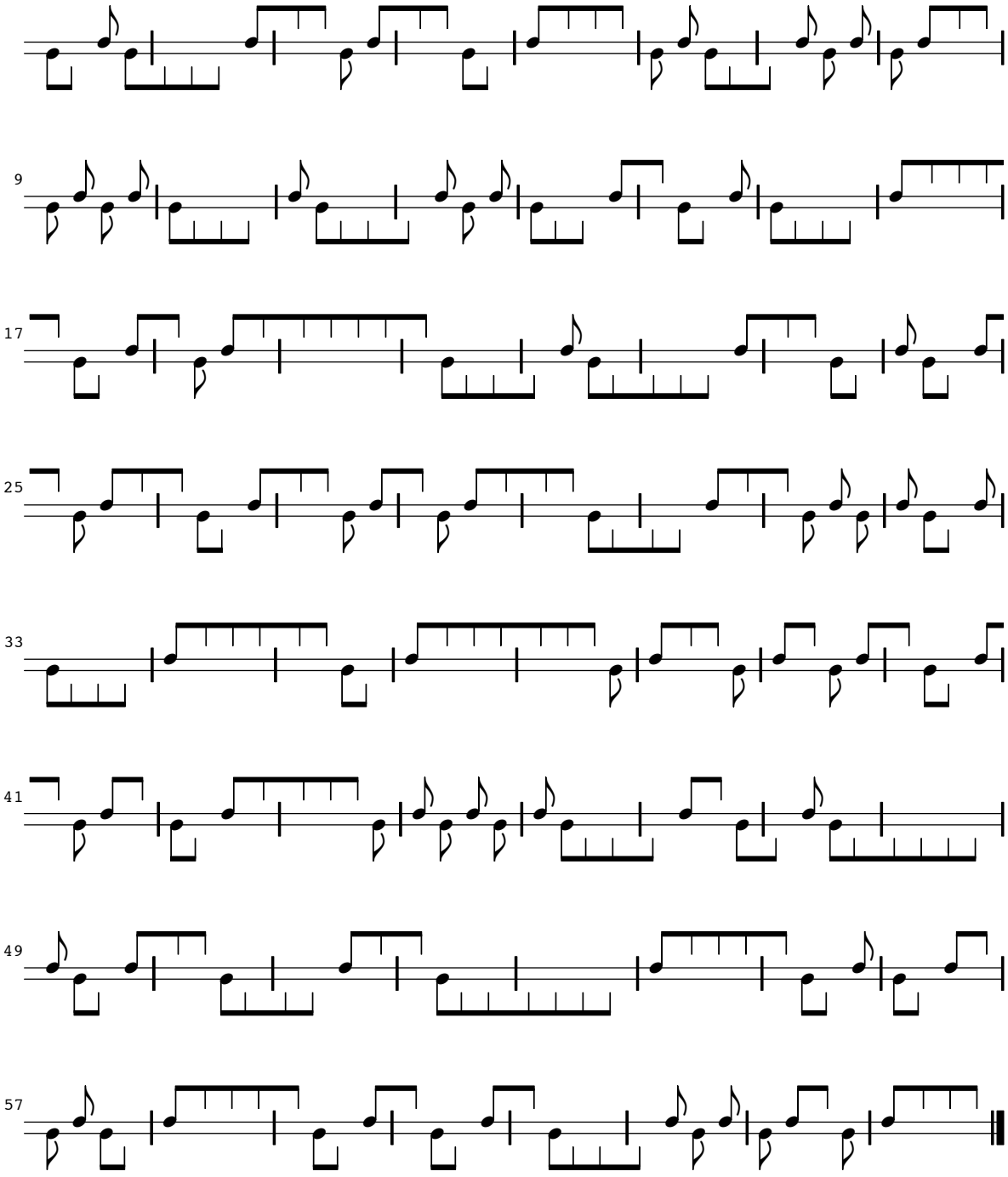

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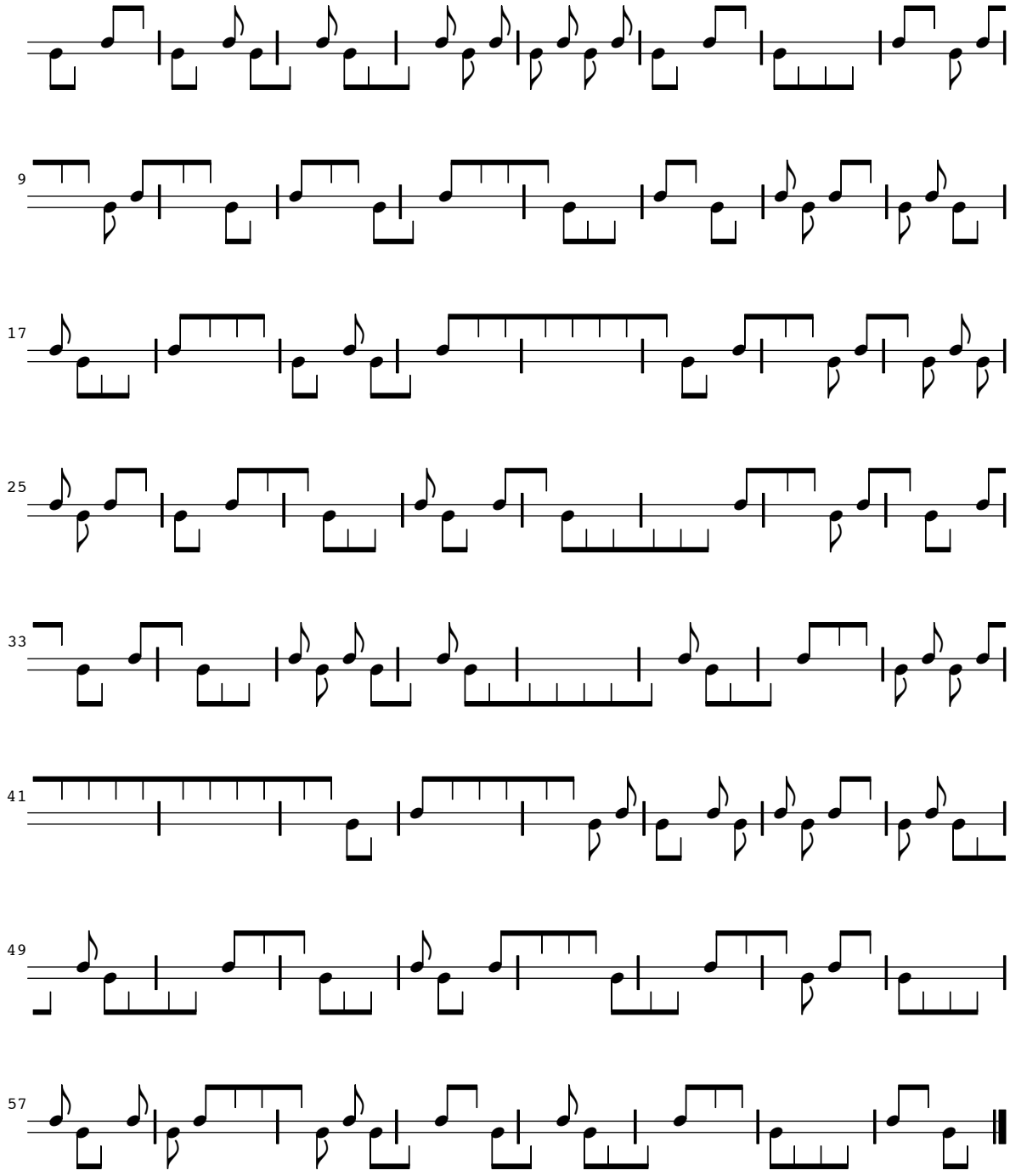

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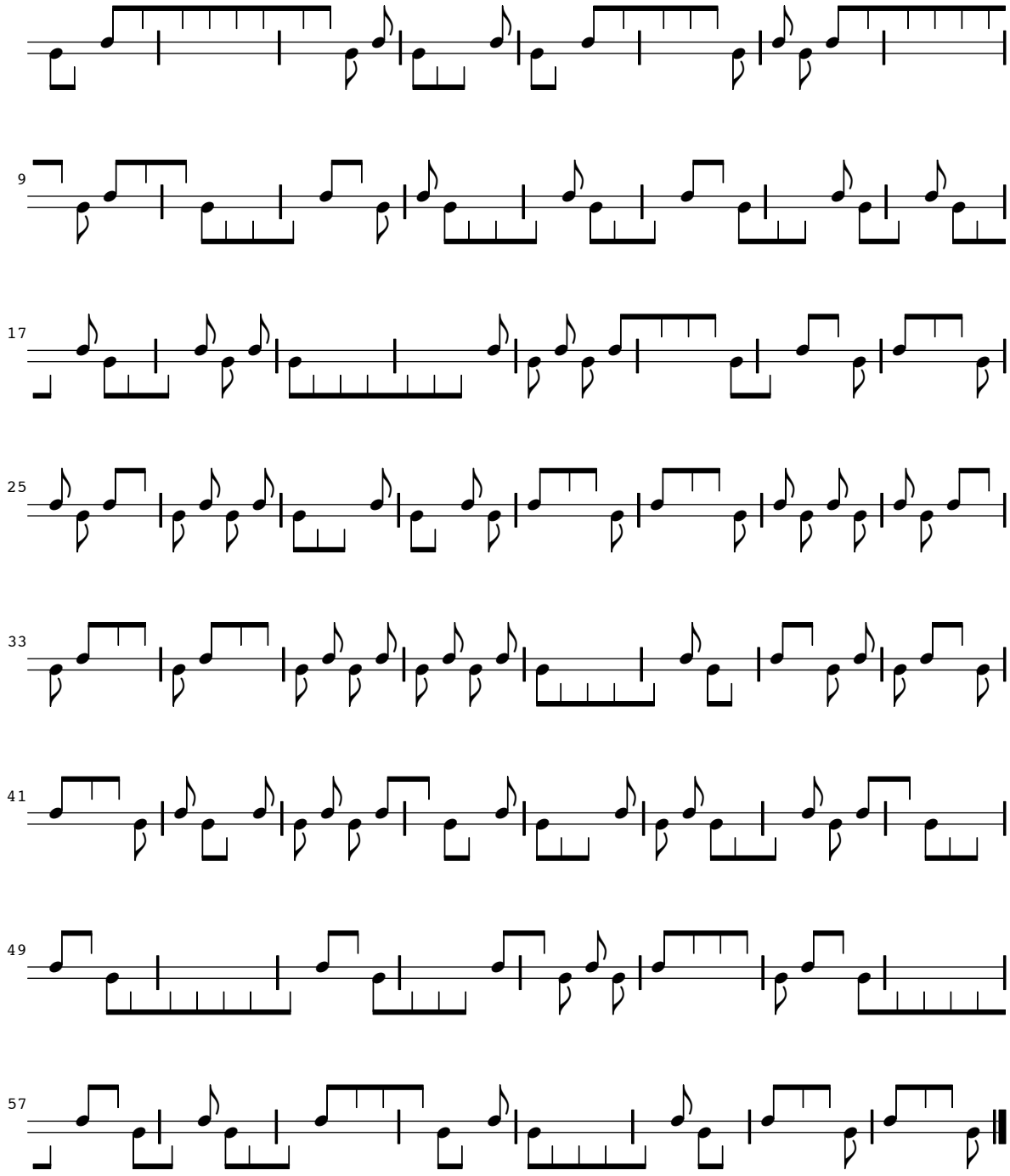

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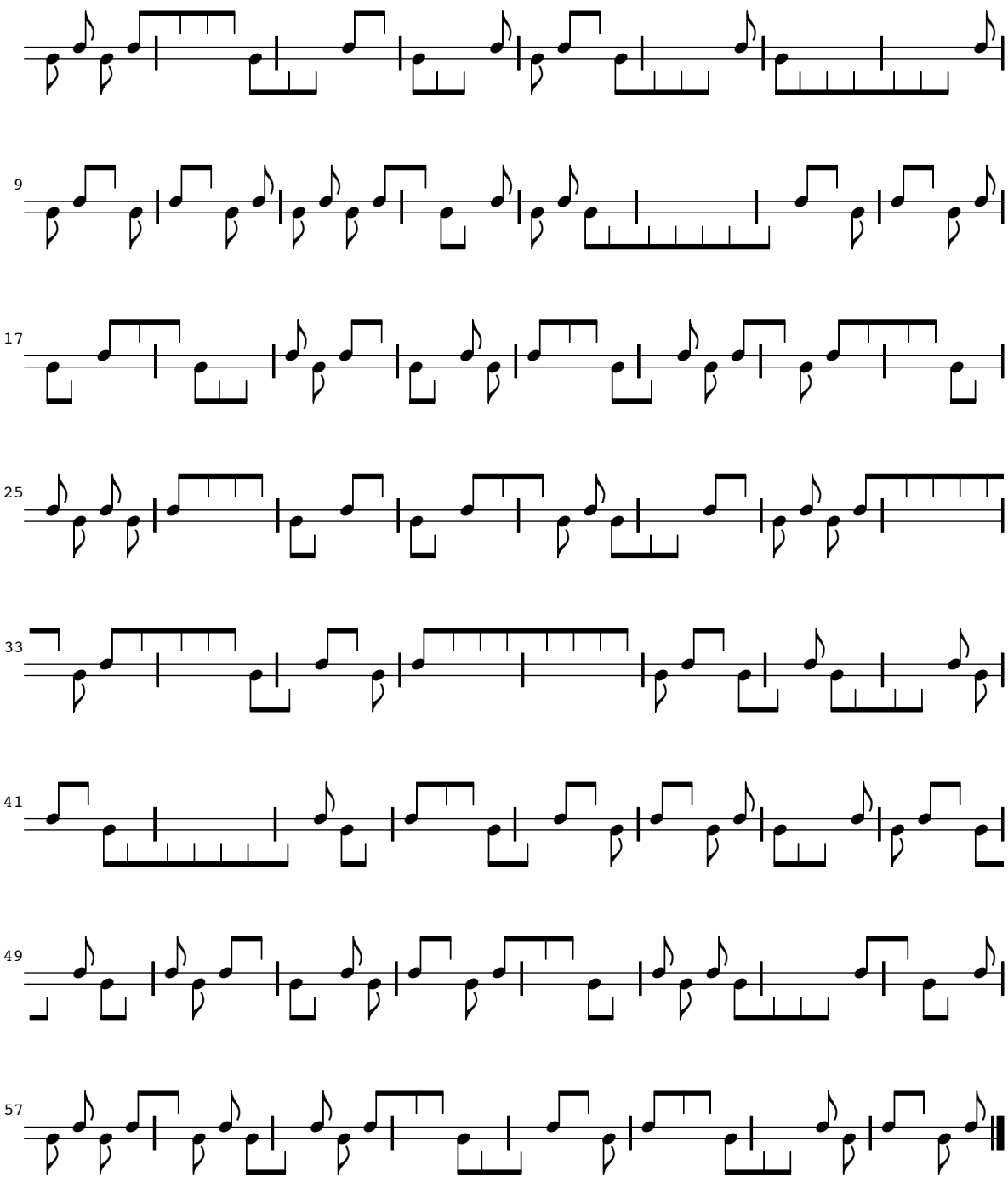

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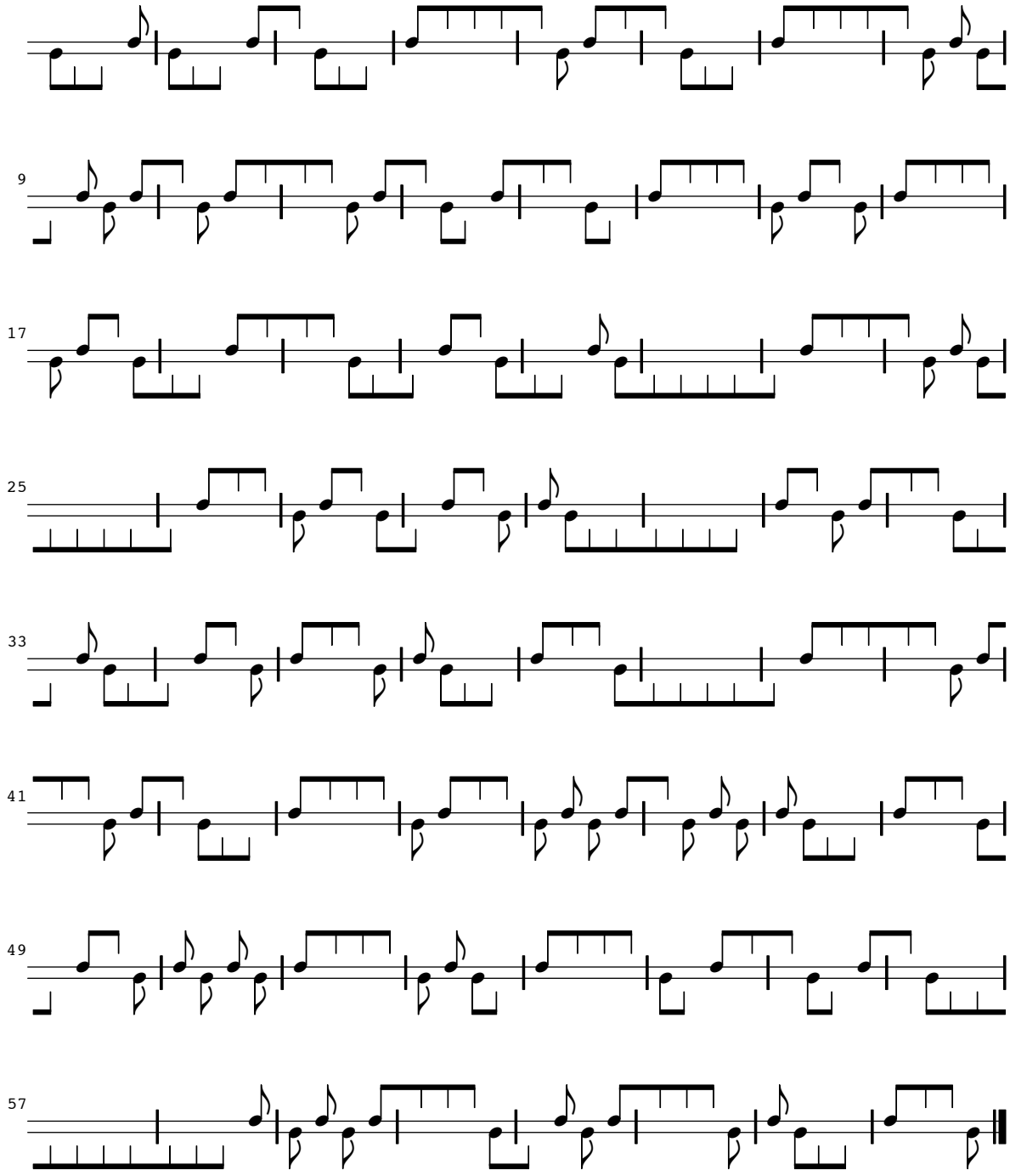

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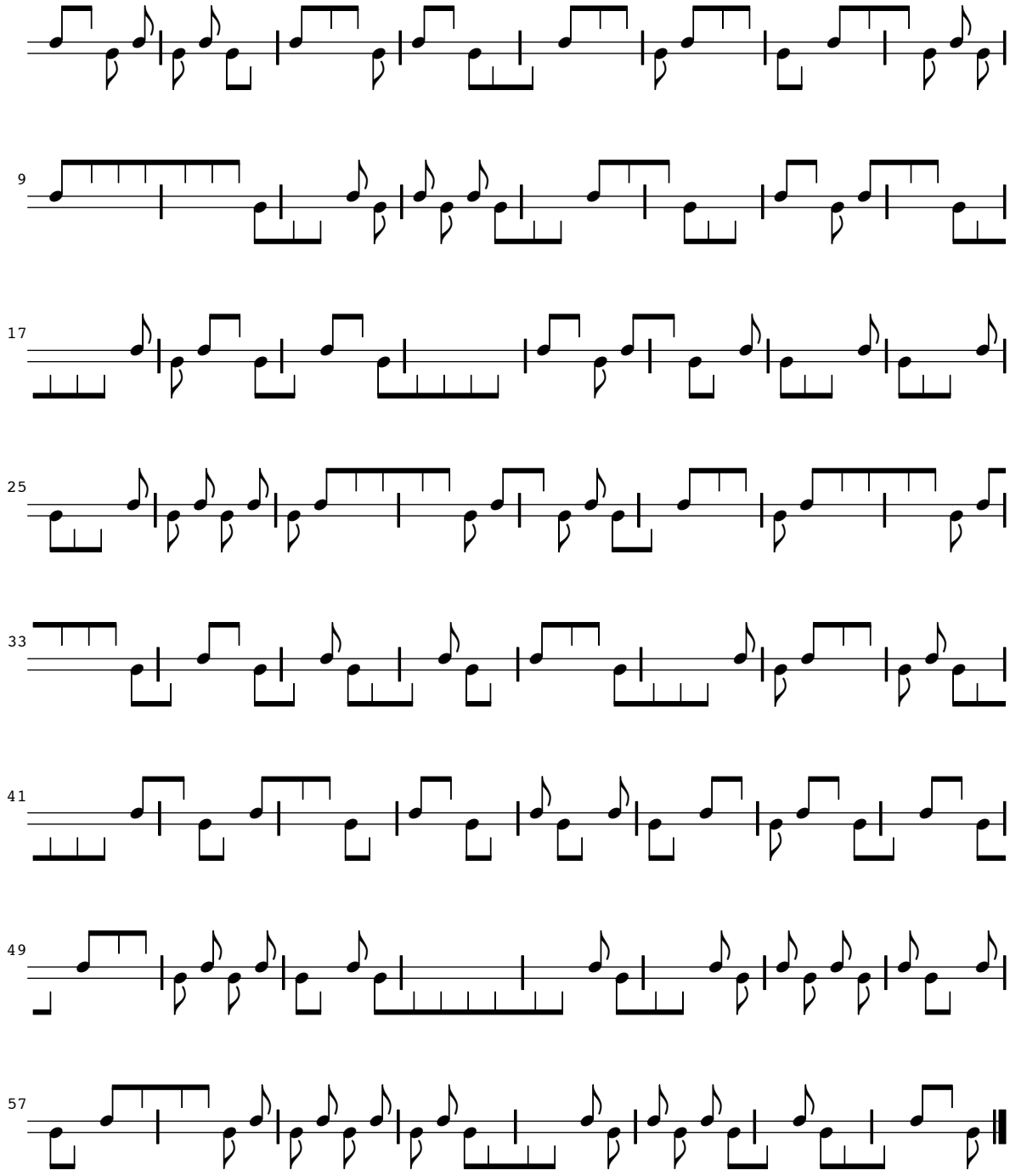

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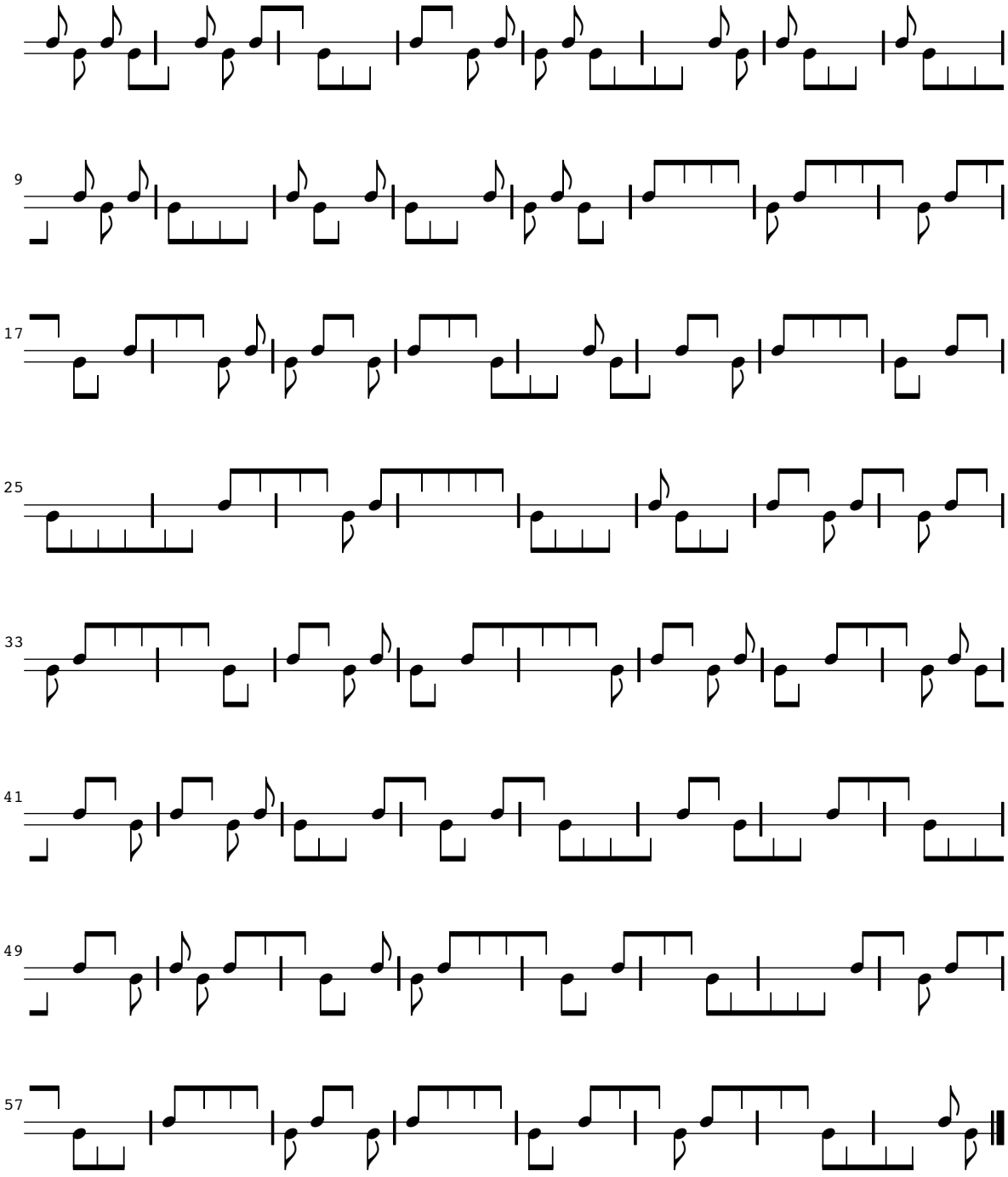

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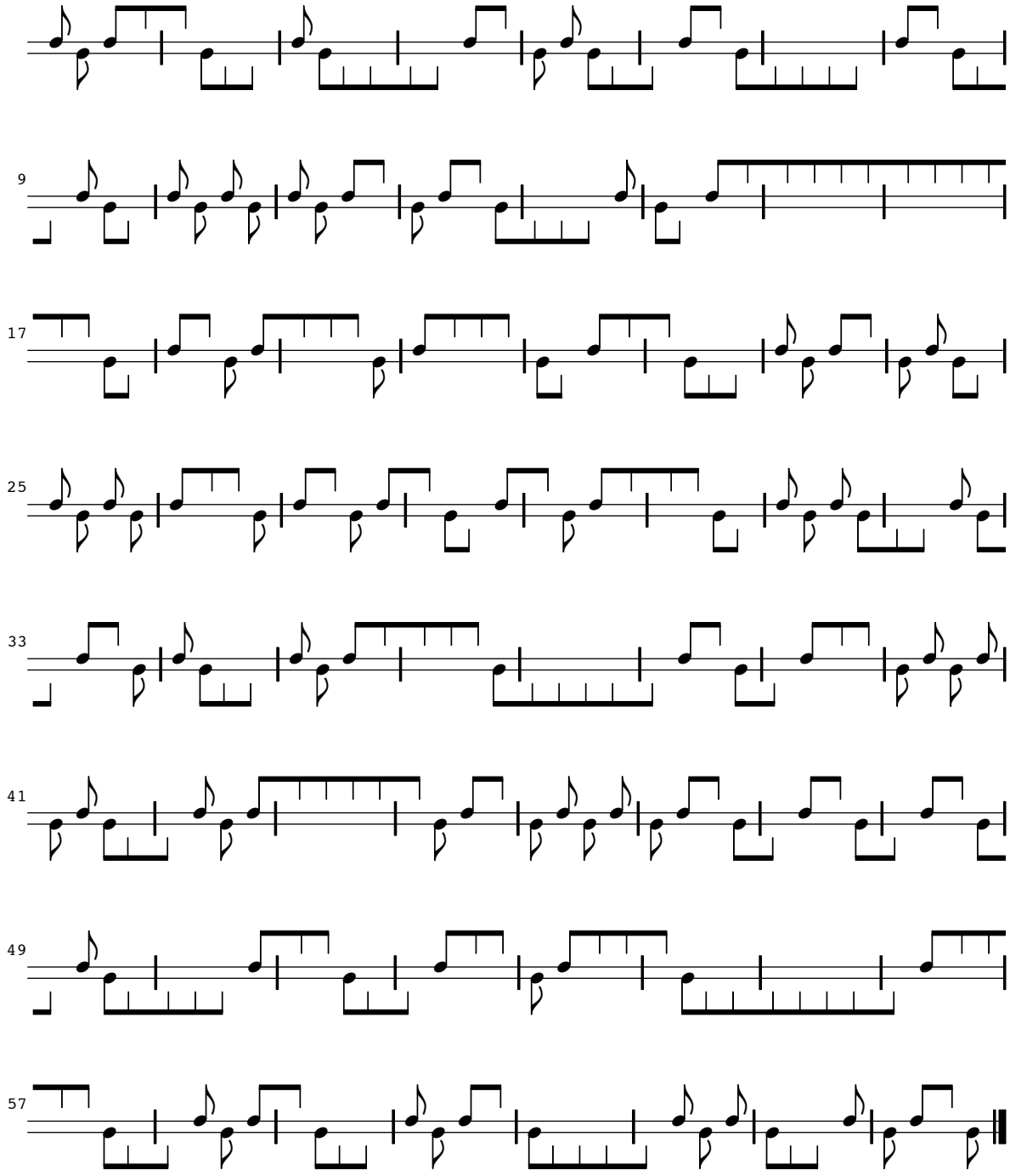

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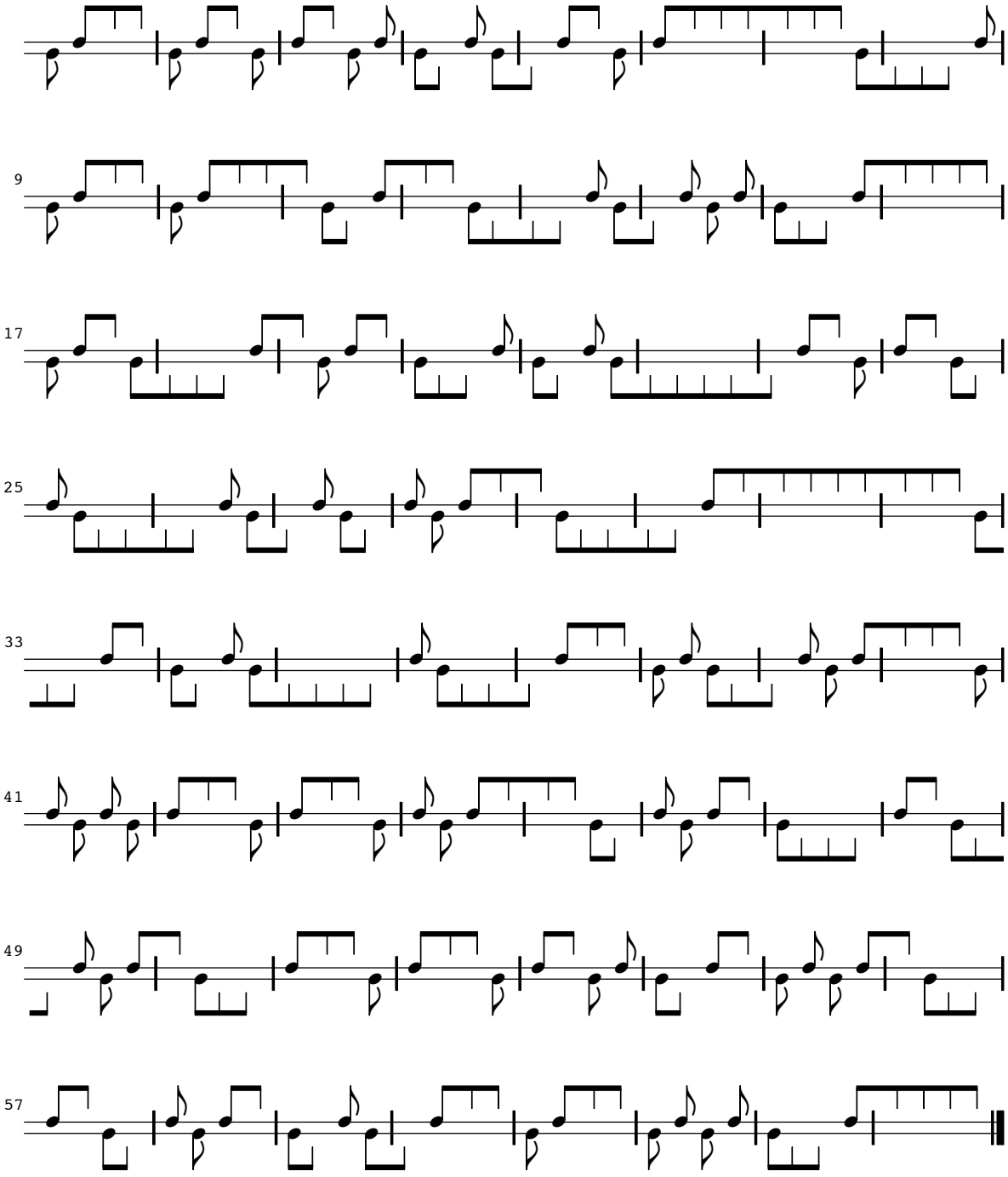

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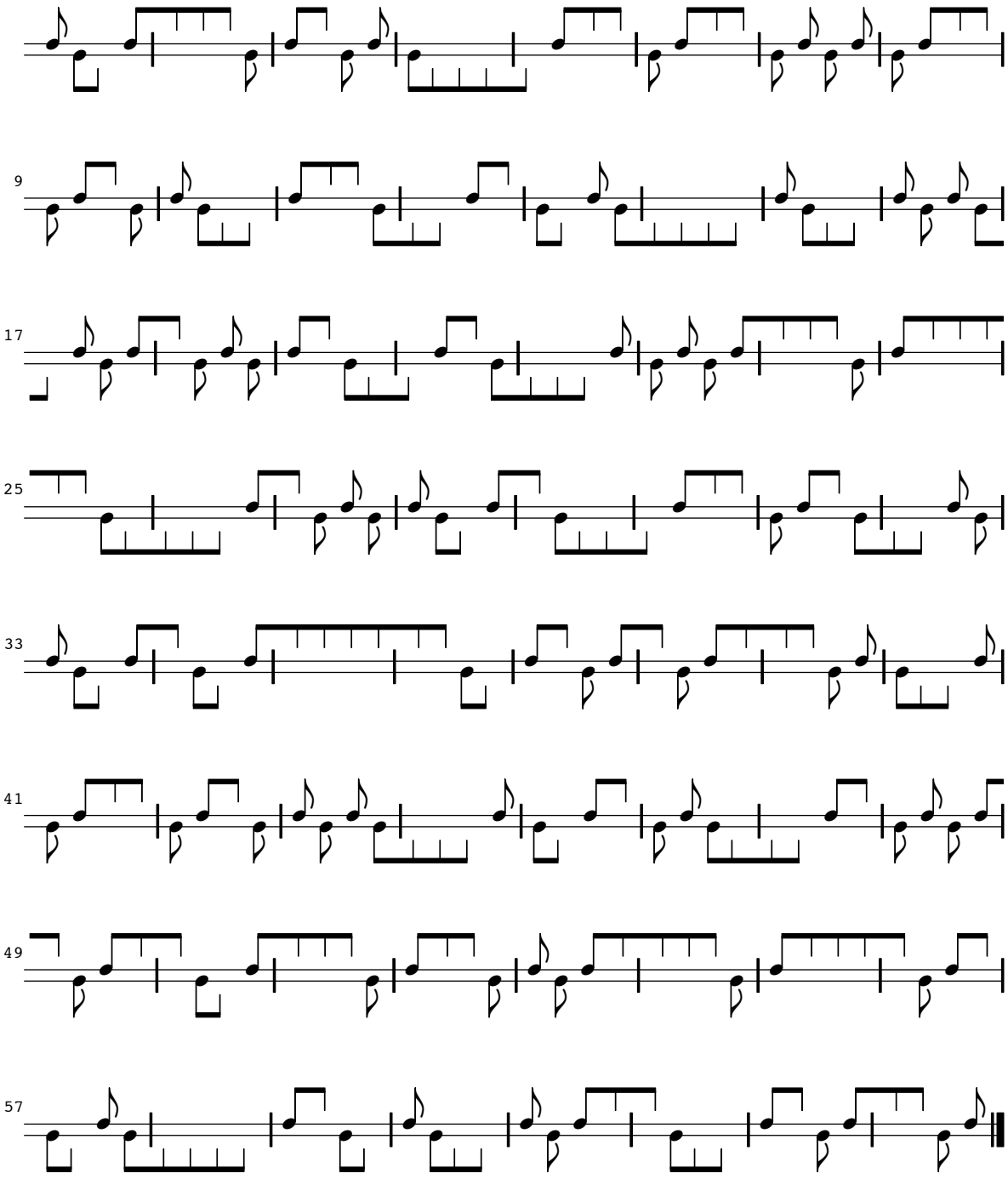

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