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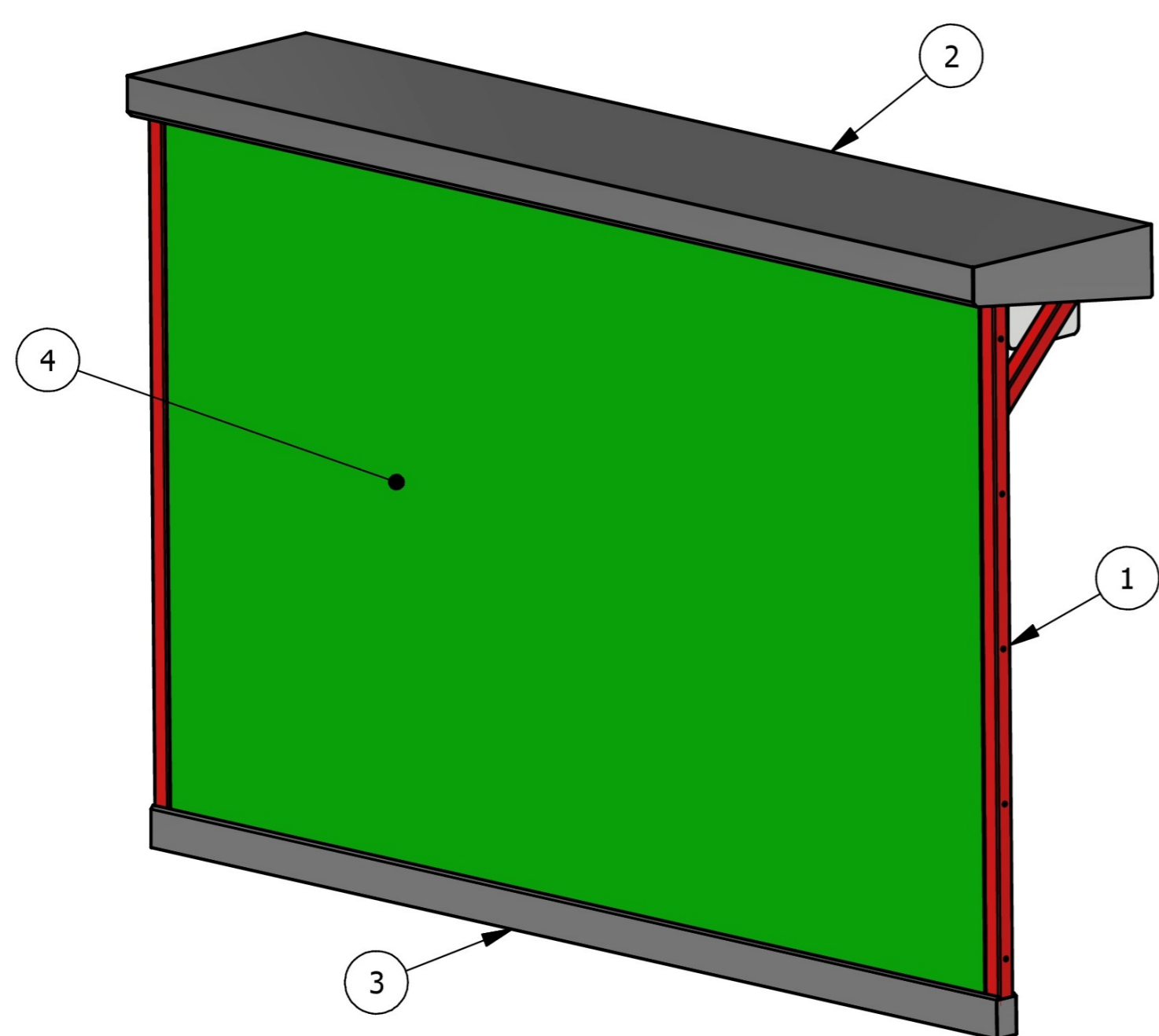


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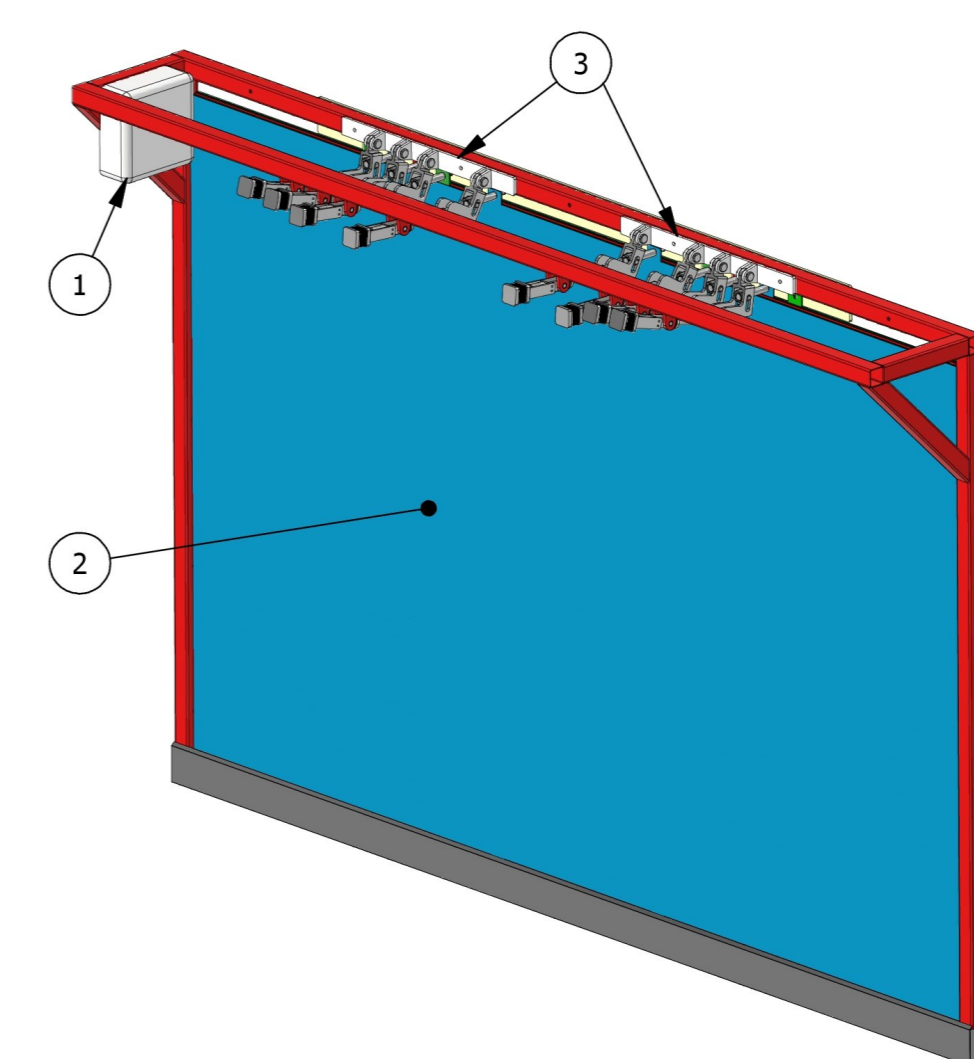
## Design of an adjustable multi-layer acoustic partition

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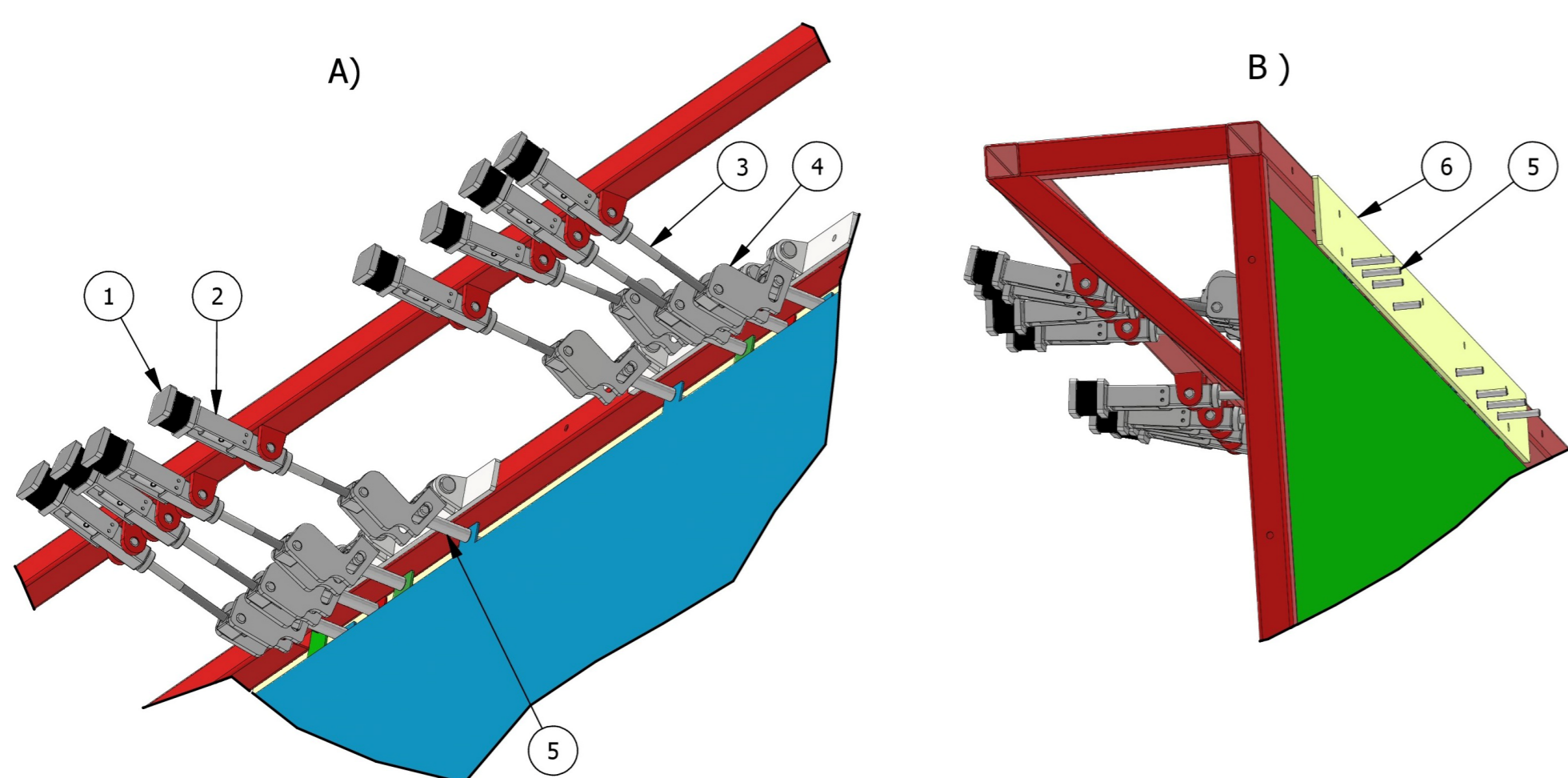
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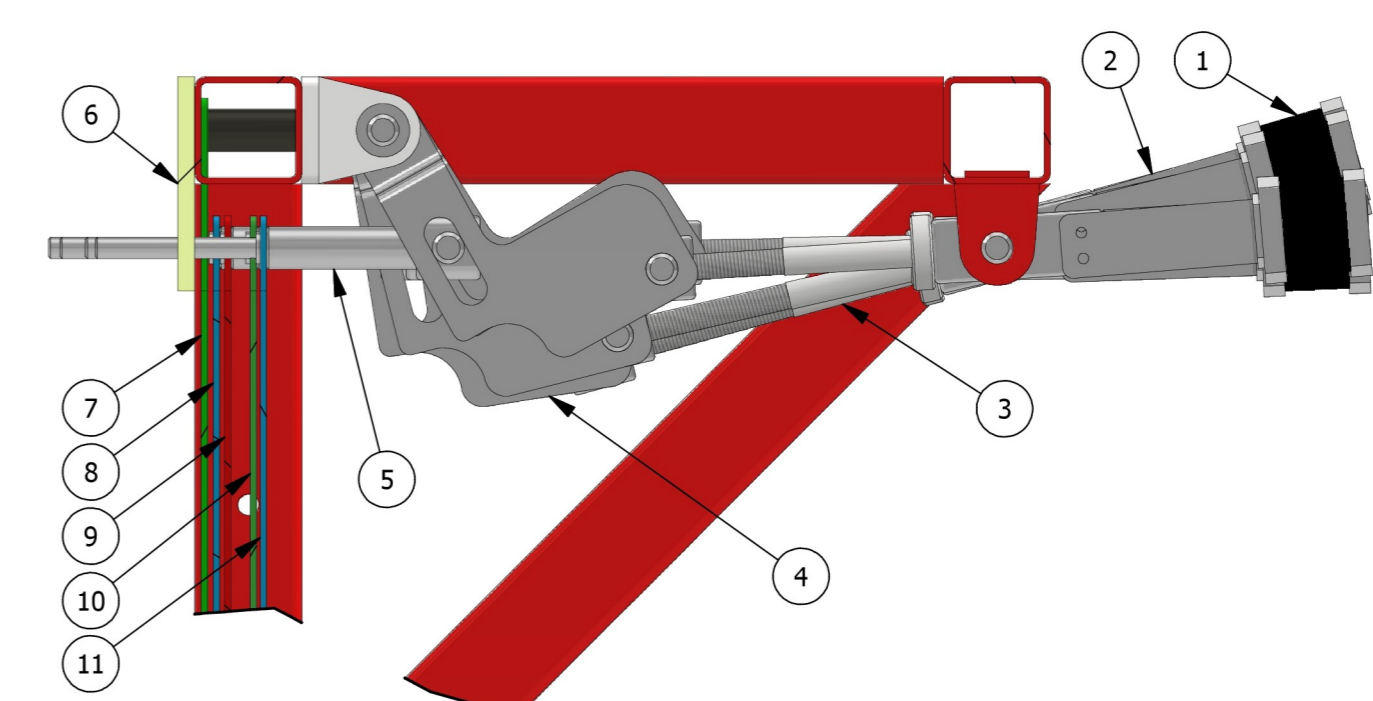
The proposed device consists of a main frame (1) which can be anchored to the floor, ceiling and walls of the building. There are thin sheet metal housings (numbered 2 and 3) at the top and bottom to protect the controls. The first panel (number 4), which is the first layer of the phonic structure, is permanently attached to the frame.



The figure shows the rear view (without the upper casing) of the adjustable multi-layer acoustic baffle design. Number 1 is used for the sensor and stepper motor control system. Number 2 indicates four mobile panels that are attached to the systems for determining the geometry of the phonic structure marked with number 3.



The figure shows a view of the system that allows you to control the geometry of the phonic structure. The stepper motors used (1) are attached to the frame and connected by a clutch (2) with the control screw (3), which cooperates with the lever (4) to set the position of the shaft (5) to which the panels are attached. The use of sliding sleeves in the plate (6) allows you to change the position of the shaft (5) and at the same time transfers the loads from the mounted panels.



The cross-section of the system for determining the geometry of the one-dimensional phonic structure is presented in the Figure. The number 7 denotes the first panel permanently fixed to the frame, while the numbers 8 to 11 correspond to the subsequent panels in the structure. The geometry setting system is divided into two mirror sections allowing for even and precise positioning of the layer. The system can be equipped with contactors to prevent damage. The use of a microphone and a system for analyzing the spectrum of a propagating mechanical wave will allow for dynamic control of the geometry of the system in order to optimally reduce the energy of the mechanical wave.