

Steinway & Sons
Technical File
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**The New Steinway
“Diaphragmatic”
Soundboard**

1937



The
"Diaphragmatic" Soundboard

Patented Aug. 18, 1936 and Feb. 9, 1937

The "Diaphragmatic" Soundboard may be described as a soundboard that differs from all others in that its thickest portion is in the center of the soundboard area, and tapers therefrom toward all edges.

By this construction the mass tends to be concentrated at the center and flexibility to be concentrated at the edges to compensate for the rigidity of fastening.

The object of this construction is to cause vibration of the soundboard as a whole instead of sectionally or segmentally, such as in a diaphragm fixed at its edges and with a free center.

The maximum amplitude of vibration in the new soundboard exists at or near the center, irrespective of the note or notes struck. The advantage of this diaphragmatic mode of vibration is the absence of secondary vibra-

tions in which portions of the soundboard vibrate segmentally. The action in the new soundboard is a piston-like movement, of greatest amplitude in the center, and decreasing almost uniformly from this center toward the periphery.

This diaphragmatic action of the soundboard is assisted by a particular method of mounting, also new, and covered by U. S. Patent. In previous methods of mounting, cross strains were created so that the vibration of the soundboard as a single diaphragm was impossible, and undesirable segmental or partial vibration could not be entirely obviated. In the new mounting, all distortion and buckling strains are eliminated, and the soundboard best responds to the vibrations of the piano strings.

The new construction, now thoroughly tested, is incorporated in all Steinway pianos. It assists materially in the production of a more resonant, richer tone of longer duration.

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