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**DEVICE FOR DEMONSTRATION OF MECHANICAL WAVES**

Analysis of recent researches and publications has shown that educational devices for studying the properties of mechanical waves which were produced commercially have a number of shortcomings: unstable performance as the result of use of mechanical rotating elements, through which achieved stroboscopic effect; insufficient light screens; high power lighting systems that require additional cooling and high-voltage power supply that does not allow devices to be used by students. Listed above shortcomings significantly reduce the level and the possibility of a demonstration experiment.

The solution of these problems can be achieved by the application of modern semiconductor technology and components in a device design.

We offer a device that has no deficiencies that were mentioned above. The device is designed and manufactured on the basis of an old projector. Making of the device does not require large financial costs. The average degree of complexity of the device allows to make it in a physical classroom, technical groups and student design bureaus.

In the design of this device, we used housing and a projection optical system apparatus. Lighting of the device (the scattering lens) has a larger area, allowing greater visibility demonstrations. For stroboscopic effect in the device, we developed and manufactured electronic strobe, the operation of which is assigned a relaxation oscillator. As a lighting system, we use powerful LEDs that provide the necessary illumination of the screen during the demonstration.

The device has no mechanical units for stroboscopic effect, which greatly increases its reliability. The device uses bright LEDs that provide the necessary illumination of the screen and operate at low voltage (20 V) and low power consumption. Adjustable vibration frequency of the vibrator and strobe enhances the study of the properties of waves. The device can be used as a normal projector in the demonstration and laboratory experiments in the study of various sections of physics in secondary and higher schools.

The device can also be used as a normal projector.