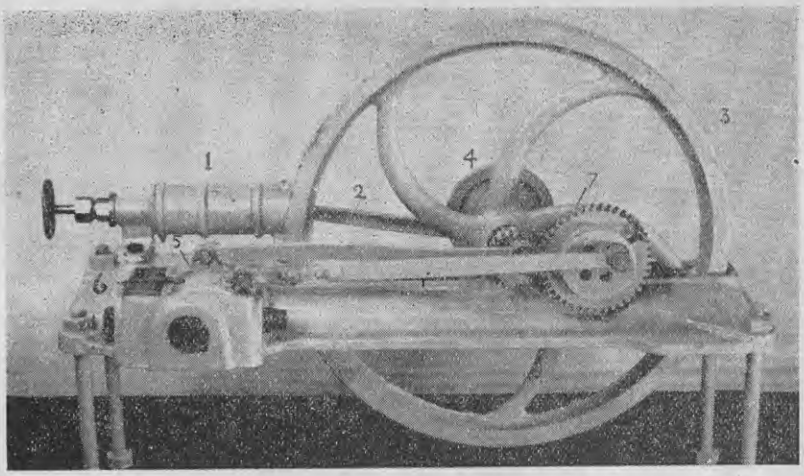

Fig. 9.—A general view of an automatic pulsator.

round curves, while a really snappy pulsator approximates to the form of the ideal graph. Needless to say, there are very few, if any, pulsators like this in practice. It must be borne in mind that the portions DC and FA represent the squeezing action. When this line slopes it means that the squeeze is sluggish and unstimulating. Similarly, the portions BE and GH represent the release phase when the vacuum is applied again after the squeeze.

Mechanism of Pulsator

Figs. 3 and 4 show the essentials of the pulsator valve. However, there are other types, and we shall endeavour to describe typical examples in order to show how they work and how to adjust and care for them. Pulsators may be classified into three main groups:—

(1) **Automatic Pulsators.**—These are essentially valve mechanisms operated by vacuum-driven motors. This class of pulsator was once much more popular than it now is, but in view of the fact that many are still in use a description will be given of the main types.

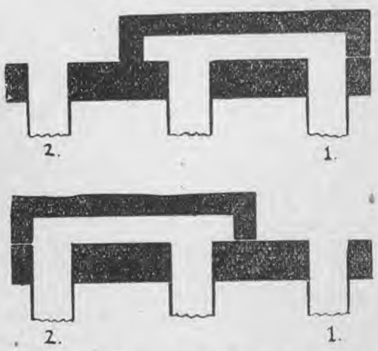

Fig. 10.—Diagram of the automatic pulsator valve.

(2) **Mechanically-driven Pulsators.**—In this type the pulsator valve is driven through suitable mechanism from the motor which drives the vacuum pump.

(3) **Miscellaneous.**—The two chief types in this group, which is difficult to classify accurately, are the diaphragm-controlled shuttle type of pulsator and the magnetic pulsator valve.

Automatic Pulsators

A general view of an automatic pulsator is shown in Fig. 9. It is essentially a small, single-acting vacuum engine which drives a double-acting pulsator valve. The driving force is generated in the cylinder (1), which contains a piston coupled to the connecting rod (2), which drives the flywheel (3) by the crank (4). When the piston is just past the bottom of its stroke the