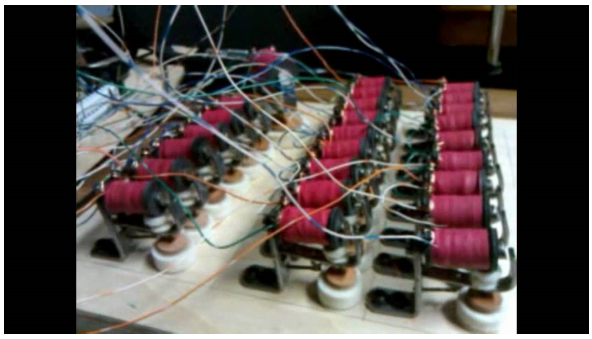
Unit 13
Electric Action Pipe Organs

When a pipe organ uses electric key action to connect from the keys to the valves (or pallets) under the pipes, the connection is made with electrical wire. When a key is depressed, an electrical signal travels instantly to a valve (or pallet) underneath a pipe, the valve opens, air is admitted through toe of the pipe, and sound results. The two most commonly used electric key actions are:

- Direct electric
- Electro-pneumatic (air-driven) components



Direct electric key action (left) is the least desirable action. Direct electric action utilizes an electrical key contact and valve under each pipe. The magnetic valve under the pipe opens directly and abruptly into the pipe, resulting in a harsh initial attack.

Electro-pneumatic key action (right), like direct electric action, uses electrical circuitry to send a low-voltage signal through a cable to the wind chest where a small electro-magnet is energized causing a valve to open. This, in turn, allows wind pressure to activate a bellows or "pneumatic" which results in a buffer zone that softens the movement of air as it enters the pipe. Electro-pneumatic key actions are more difficult to maintain because the leather pouches wear out over years of repeated use. Depending on environmental conditions in the building, these pneumatic pouches typically begin breaking down between 30-40 years of age. Moving into the 40-50 year life span of these pouches, the entire organ must go through a process of re-leathering or face dead or ciphering notes.

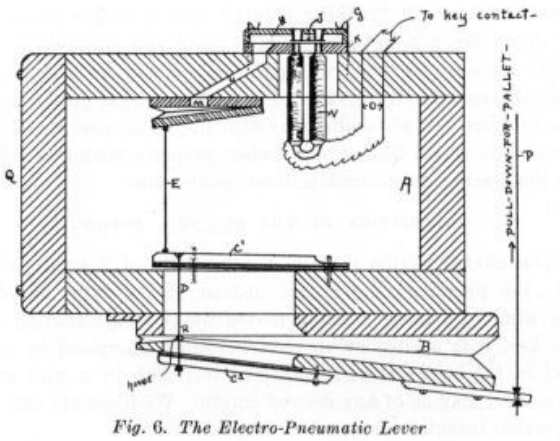


Fig. 6. The Electro-Pneumatic Lever

Electric key action allows the console to be placed any distance (within reason) from the pipework.