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The young man's book of amusement

Halifax, 1848

Musical Flame

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be answered without the trouble of forming changes upon so small a number of fixed tones. A table is subjoined, by the use of which a combination of three bells is made to express the whole alphabet :

A is represented by	111	O is represented by	222
B ..	112	P ..	223
C ..	113	Q ..	231
D ..	121	R ..	232
E ..	122	S ..	233
F ..	123	T ..	311
G ..	131	V ..	312
H ..	132	U ..	313
I ..	133	W ..	321
K ..	211	X ..	322
L ..	212	Y ..	323
M ..	213	Z ..	333
N ..	221		

Musical Flame.

Musical tones are produced by the combustion of hydrogen gas in tubes of different diameters.

The following Experiment is taken from the Century of Inventions of the Marquis of Worcester, and professes to be, "How to make a Brazen or Stone Head in the midst of a great Field, or Garden, so artificially and natural, that though

a Man speak ever so softly, and even whisper into the ear thereof, it will presently open its Mouth and resolve the question in French, Latin, Welsh, Irish, or English, in good terms, uttering it out of its Mouth, and then shut it until the next question is asked."

Let a concave mirror of about two feet diameter, be placed in a perpendicular direction. The focus of this mirror may be fifteen or eighteen inches from its surface. At the distance of about five or six feet let there be a partition, in which there is an opening, equal to the size of the mirror: against this opening must be placed a picture, painted in water-colours, on a thin cloth, that the sound may easily pass through it. Behind the partition, at the distance of two or three feet, place another mirror, of the same size as the former, and let it be diametrically opposite to it. Place the figure of a man seated on a pedestal, with his ear exactly in the focus of the first mirror: his lower jaw must be made to open by a wire, and shut by a spring; and there may be another wire to move the eyes; these wires must pass through the figure, go under the floor, and come up behind the partition. A person, properly instructed, should be placed behind the partition near the mirror. Then propose to any one to speak softly to the statue, by putting his mouth to the ear of it, assuring him that it will answer instantly. You then give the signal to the person behind the partition, who, by placing his ear to the focus of the mirror, will hear distinctly what the other said; and, moving

the jaw and eyes of the statue by the wires, will return an answer directly; which will, in like manner be distinctly heard by the first speaker.

Singular Experiment with a Barrel Organ.

In a large case, such as is used for dials and spring-clocks, the front of which, or at least the lower part of it, must be of glass, covered on the inside with gauze, let there be placed a barrel organ, which when wound up is prevented from playing, by a catch that takes a toothed wheel at the end of the barrel. To one end of this catch there must be joined a wire, at the end of which there is a flat circle of cork, of the same dimension with the inside of a glass tube, in which it is to rise and fall. This tube must communicate with a reservoir that goes across the front part of the bottom of the case, which is to be filled with spirits, such as is used in thermometers, but not coloured, that it may be the better concealed by the gauze. This case being placed in the sun, the spirits will be rarefied by the heat; and rising in the tube, will lift up the catch or trigger, and set the organ in play: which it will continue to do as long as it is kept in the sun; for the spirits cannot run out of the tube, that part of the catch, to which the circle is fixed, being prevented from rising beyond a certain point, by a check placed over it. When the machine is placed against the side of a room on which the sun shines strong, it may constantly re-