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The young man's book of amusement

Halifax, 1848

M. Rieussec's Chronograph

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placed in the hollow cube, and pour water into the vacant space around the sphere, until the water is exactly level with the edge of the cube, and consequently with the top of the sphere, after which, take the sphere carefully out, and measure the proportion which the depth of water left in the cube bears, to the vacant space lately occupied by the sphere; deduct the quantity of space occupied by the water, from the entire space contained by the cube, and the remainder will be the solid contents of the sphere. In order to find the proportion between the circle and the superficial square, let a cylinder be made of the same diameter as the sphere abovementioned, and equal in height to one of the internal sides of the cube, place the cylinder in the cube, pour water around it, until the water is level with the edge of the cube, then carefully take out the cylinder, find the proportion as previously directed for the sphere; and as the proportion of the cylinder is to the cube, so will the proportion of the circle be to the square.

M. Rieussec's Chronograph.

This chronograph has the form and size of a large pocket chronometer. The dial is moveable, and turns round an axis, passing through its centre perpendicular to its plane. When the chronograph is in motion, the dial turns round once in a minute; and as its circumference bears sixty divisions, the angular motion of one division corresponds to one second of time.

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The minutes are marked separately. The chronograph being in motion, the observer who wishes to mark the instant of a phenomenon, presses a stud, and that very instant a pen or metallic point passing through the open summit of a cone, filled with oil-black, and placed opposite to the fixed zero, from which the dial begins to move, marks on the circumference bearing the divisions for seconds, a point which serves to shew with what second and fraction of second the beginning as well as end of the time to be measured corresponded. The play of the mechanism which darts the pen, neither stops nor retards the motion of the rotatory dial; the stud may therefore be pressed several times while the motion continues, thus forming on the division of sixty, a number of black points, each of which will indicate by its position the instant in which it was marked. The pressure on the stud, and the formation of the black point, are simultaneous, and the diameter of this point is such, that one-fourth of the interval between two consecutive divisions may be readily estimated. This estimate will be more exact and easy, the larger the dial. It has succeeded well in measuring the speed in horse-races, machines in motion, running water, &c.

To preserve Fresco Paintings.

Frequent attempts have been made to separate fresco paintings from the walls on which they are executed, in order to rescue them from the destruc-