

Scientific Instruments

IBELIEVE that all have heard the story of Columbus and the egg. If not, here it is: Columbus asked some of his companions if they could make an egg stand on its end. They tried, but in vain. Columbus took the egg, gently tapped it on the table, thus cracking the shell, and made it stand on the cracked end. "That is easy" exclaimed his victims. "Certainly," replied Columbus, "once you know how."

If we investigate the mechanism or principles of XX. Century invention we shall find that we somewhat resemble the companions of Columbus. All things seem very simple. The steam engine, the phonograph, the moving pictures, the automobiles and even the numerous kinds of aëromobiles, are so many simple mechanical instruments. But someone had to break the egg.

Entering into particulars, the sun motor, perhaps, holds the first place on account of its lofty source of power. It consists of the ordinary working parts of a steam engine, a boiler where steam is produced; but instead of using coal, wood or petroleum as a source of heat the sun's rays are converged onto the boiler. This is done by means of large mirrors which are made to follow the motion of the sun by a heliostat.

An instrument which is worthy of note on account of its help in surgery is the X Ray. The rays of light, or whatever you wish to call them, are produced by a certain make of Geissler tubes. The tubes are nearly perfect vacuums through which electric sparks pass. The hand or any part of the body to be examined is placed in the rays issuing from the tube and a shadowgraph is received on a specially prepared glass which takes the place of the unpolished glass in a camera. The shadow may be received on a sensitive plate and a photograph produced. The mechanism is simple, but what does x stand for?

An invention which is worthy of note is the telautograph. This instrument transmits the exact writing of any person over an ordinary telegraph wire. The mechanism is too complicated to be explained here; it will suffice only to say that the sender writes with a pencil connected to two levers; at the receiver's end, two similar levers connected to a pen follow the exact move-