

Experiment XV.—Going up Hill, or the Law of the Inclined Plane.

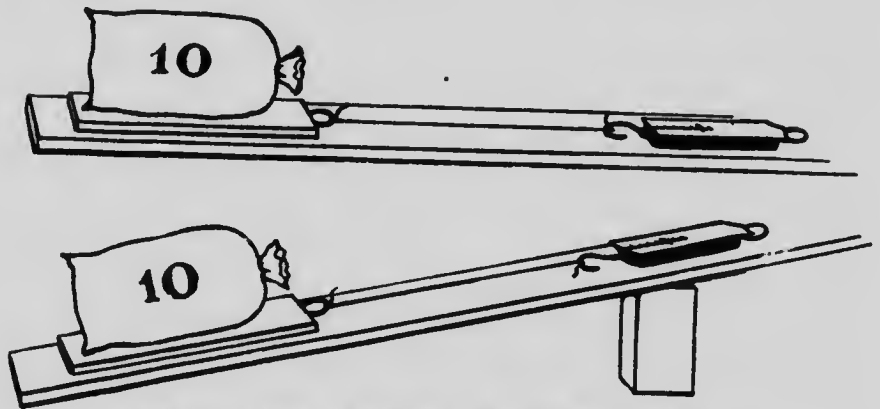


Fig. 17. Apparatus: Boards, Weight, Spring Balance.

The apparatus used in this experiment is usually called an inclined plane, and the law stated above, the Law of the Inclined Plane.

The apparatus consists of a board of planed wood about 5 ft. long and 8 or 10 in. wide, and a smaller board 1 foot long by 6 in. wide.

1. Weigh the small board ; place 10 lbs. on it, and find the force necessary to move it slowly along the large board when it is horizontal. You will notice that it takes a greater force to start the motion than to keep it going. Make your reading while the board is in motion.

2. Raise one end of the long board so that the lower side of the upper end is 6 in. above the table. This is a grade of $\frac{1}{2}$ foot in 5 ft., or 1 foot in 10 ft. So we would expect the increased pull to be $\frac{1}{10}$ of the total weight. Try it experimentally. Is the increase of pull $\frac{1}{10}$ of the total weight? Does the law of the inclined plane hold?

3. Raise one end 1 foot. Calculate the increased pull. Find it by experiment. Does the law of the inclined plane hold?