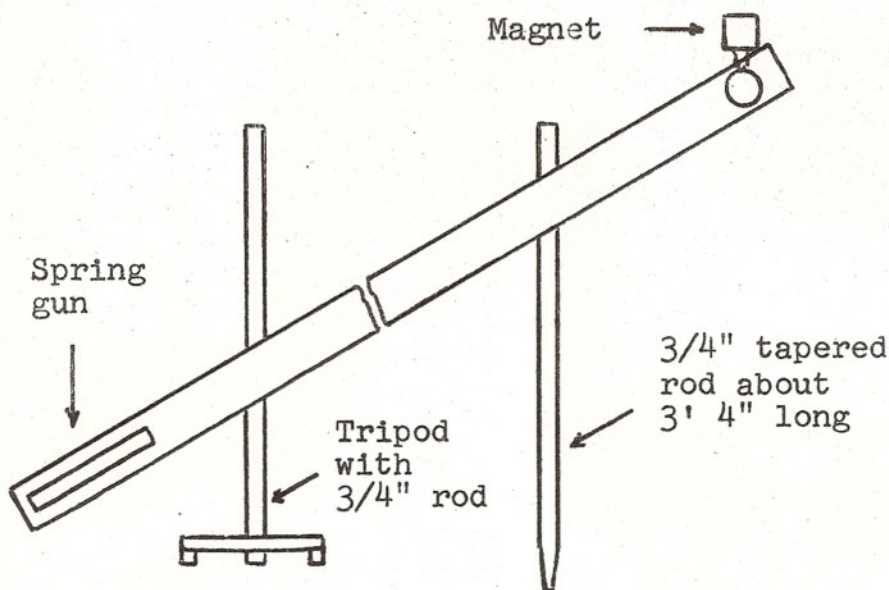


Shooting at a Ball Which is Allowed to Drop Vertically

M-Wall

1A



Set tapered rod in the tapered receptacle second from the (lecturer's) right, front corner of lecture table. Mount apparatus as illustrated above, at an angle of elevation about as large as possible.

Cock gun to maximum position, insert $1/2$ " steel ball projectile, and hang 1" steel ball target on magnet. Fire only after allowing sufficient time for the target to become stationary. In firing, it is essential to avoid even small movement of the apparatus. It is most satisfactory to rest the forearm on the table and, with the right thumb on the end of the channel and the first finger on the long trigger arm, squeeze slowly. (Any misses are almost certainly due to movement of the apparatus at the instant of firing.)

Notes: (1) The magnet is excited only when the gun is cocked. (2) If you wish, the experiment can of course be done with the apparatus essentially level, but the necessary high support at the trigger end makes it difficult to trigger the gun without introducing motion. (3) The spring in the gun is not sufficiently strong to produce a collision at a practical height unless the gun is cocked to the maximum position.

Warnings: (1) In laying the apparatus on the lecture table, be sure not to let it rest on the target assembly. Near the target assembly there is a pin in the bottom of the channel on which it can rest. (2) In order to avoid the possibility of being struck in the face by the recoiling projectile, it is advisable to have the students in the first two rows hold their hands, with fingers spread, in front of their faces.