ABSTRACT: Two brass balls are released simultaneously one from rest the other with a horizontal velocity. They are observed (by sound) to strike the ground simultaneously, thus demonstrating that their vertical motions were identical even though they had differing horizontal motion. An excellent, simple, quick demonstration especially when used with M-6.

EQUIPMENT: 1) apparatus with two brass balls
2) ring stand with clamp

DEMONSTRATION: A brass ball with a centered hole is placed upon a spring loaded pin. When released the pin is withdrawn allowing the ball to drop vertically while at the other end, the pin strikes another ball giving it an initial horizontal velocity. Even though the second ball has a much longer distance to travel it strikes the floor at the same instant as the first (as judged by the sound of the impact). Only one impact is heard rather than the two which the students might have expected and this is also true of the subsequent rebounds. One can then discuss the independence of the vertical and horizontal motions perhaps following with a demonstration of M-6.

DIFFICULTIES: This is nearly a fool-proof demonstration. One must only be careful that the apparatus is held fairly horizontal so that the initial velocity is really horizontal with no appreciable vertical component.