Hanging hammer

Background

When a uniform beam overhangs a cliff edge by more than 50% we would expect it to fall. When additional weight is hung from the over hanging beam then it seems more certain that it should fall. Yet the photo shows it balancing.

You will need...

- ✓ A table,
- ✓ a uniform beam (e.g. a meter stick)
- ✓ a hammer and
- ✓ some string.

Follow these steps

1. Choose strong string and tie a loop of string in such a way that it supports the hammer and holds it with the head hanging freely and the tip of the handle in contact with the beam.
2. Carefully position the beam above the edge of the table in such a way that the head of the hammer is under the table sufficiently far that the centre of mass of the system is on the "correct side" of the fulcrum for stability.

So what happened?

The beam and hammer hung in equilibrium.

What next?

Scale up the project to a heavier hammer with a longer handle as shown below.