Fire is a gas which has mass and weight. The fire weighs less than the atmosphere.

The fuel is located at the base of the fire in the low pressure region.

The weight of the water at the top of the balloon and column of water is equal.

Weight of atmosphere at the top of fire and column of atmosphere (ignoring plume)

The balloon weighs less than the water.

The pressure imbalance created by the weight of the atmosphere vs. the weight of the fire pushes the fire upward. This is buoyancy as it works in a fire and a wood stove.

The pressure imbalance created by the weight of the water vs. the weight of the balloon pushes the balloon upward. This is buoyancy.

Pressure created by the weight of the water at this level

Weight of water equal to height of balloon

Weight of balloon and fill air

Atmosphere

Water

Weight of fire

Pressure created by the weight of the atmosphere at this level

Weight of atmosphere equal to height of fire