What is claimed is:

1. A packer for wells, comprising:

a body having a tubular shape;

a sealing element having an upward end and a downward end and disposed around the body;

a fixed first prop formed on the body upward of the sealing element;

a second prop downward of the sealing element, wherein the first prop is configured to wedge under the upward end of the sealing element and the second prop is configured to wedge under the downward end of the sealing element to push the sealing element outward at both the upward end and the downward end, wherein the second prop is movable relative to the body to slide upward and wedge under the downward end of the sealing element; and

a lower cover sleeve slidably disposed around the second prop and including a lower pushing face configured to push the sealing element upward to wedge the first prop under the upward end of the sealing element; and/or an upper cover sleeve slidably disposed around the first prop and including an upper pushing face configured to limit upward movement of the sealing element after the first prop is wedged under the upward end of the sealing element.

2. The packer of claim 1, wherein the second prop is configured to push the sealing element up onto the first prop when wedging under the downward end of the sealing element.

3. A method for setting a well packer according to anyone of claims 1 or 2, comprising:

propping an upward portion of a single sealing element to create a first propped seal point; and

propping a downward portion of the single sealing element to create a second propped seal point.