

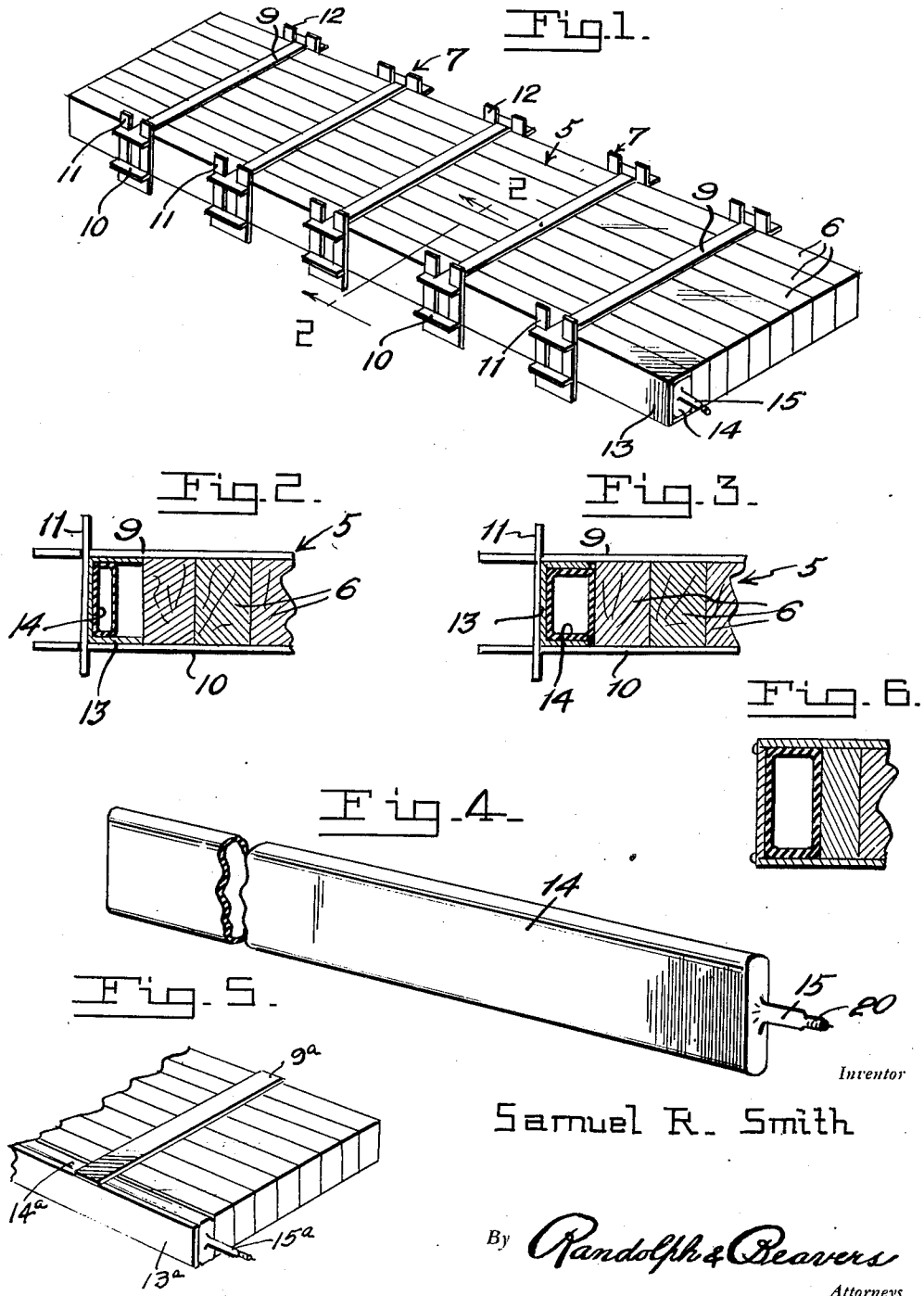
July 17, 1951

S. R. SMITH

2,560,902

FLUID PRESSURE ACTUATED MULTIPLE ARM PRESSURE CLAMP

Filed Sept. 5, 1946



Inventor

Samuel R. Smith

By *Randolph & Creavers*  
Attorneys

# UNITED STATES PATENT OFFICE

2,560,902

## FLUID PRESSURE ACTUATED MULTIPLE ARM PRESSURE CLAMP

Samuel R. Smith, Portland, Oreg.

Application September 5, 1946, Serial No. 694,920

1 Claim. (Cl. 144—289)

**1**

This invention relates to improved pressure clamps and has for one of its principal objects the provision of a clamping means for different materials.

Another object is to provide a pressure clamp that is easily adaptable to the assembly of any materials and to force these materials together by the application of air, gas, liquid or any other pressure.

Another object of the invention is the provision of a device that may be easily applied to and removed from the material upon which it works.

The manner in which the above and other objects are effectuated will become apparent from a reading of the specification taken in connection with the accompanying drawing, in which—

Figure 1 is a perspective view;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a sectional view illustrating the action of the valve means;

Figure 4 is a perspective view of the pressure means;

Figure 5 is a fragmentary perspective view of a modified form of the invention, and Figure 6 is a fragmentary cross sectional view of the modified form.

Similar numerals refer to similar parts throughout the several views.

Referring now to the drawing, the numeral 5 refers to the material to be compressed or pressed together. For illustrative purposes the material 5 is shown in the drawing as a series of boards 6, such as are utilized in a bowling alley.

In order to pressure fasten the material together, the clamps 7 are positioned therearound. The clamps 7 each include upper and lower straps 9 and 10 respectively.

These straps are held in place by means of the corresponding forward and rearward retainers 11 and 12 respectively.

The foremost section of the assembly has a U-shaped member 13 and encased therein is an expandable element 14 which has a valve stem 15 extending therefrom and which protrudes through the U-shaped member 13.

On the valve stem 15 is arranged the conventional valve head 20.

The operation of the device is as follows:

The material 5, to be pressure clamped is arranged in proper order and then the U-member 13, with the expandable element 14 therein is clamped against one end of the material.

When pressure of any sort, such as air, gas or other fluid is applied, the expansion of the expandable element 14 will force the boards 6 together.

A further form of the invention is shown in Figure 5, wherein a plate 13a extending the

**2**

length of the device, is employed instead of the channelled member 13 and U-shaped straps 9a having their ends secured to the upper and lower edges of the strip 13a embrace the boards 6, as in the manner shown in Figure 5. Interposed between the plate or strip 13a and the adjacent piece of material or board 6 is the expandable element 14a having a valve stem 15a at one end thereof. This modified device can be used on standard loads of predetermined size. The purpose in having the valve stem 15a at one end is to promote accessibility.

While I have described the preferred embodiment of the invention, it should be understood that the various changes may be made while keeping within the scope of the appended claim.

What I claim is:

A clamp comprising a plurality of separable clamping frames, each frame comprising upper and lower strap members having a crosshead at each end thereof and a pair of retaining members engaging end portions of the strap members and each bearing against the crossheads disposed at corresponding ends of the strap members, said retaining members each being substantially U-shaped and defining a slot opening outwardly of an end of the retaining member and accommodating portions of the two strap members, said clamping frames being adapted to receive a plurality of elements to be pressed together, an elongated channel member extending transversely through the clamping frames and disposed between the retaining members at corresponding ends of the clamping frames and the element disposed adjacent thereto, said channel member having an open side facing toward the adjacent element, and an elongated inflatable tube disposed in the channel member and engaging against the element disposed adjacent thereto for clamping the elements between the tube, when inflated, and the retaining members of the clamping frames which are disposed remote from the channel member.

SAMUEL R. SMITH.

### REFERENCES CITED

The following references are of record in the file of this patent:

#### UNITED STATES PATENTS

Number	Name	Date
488,546	Doddrell	Dec. 27, 1892
495,054	Palmer	Apr. 11, 1893
497,550	Russell	May 16, 1893
689,061	Bromm	Dec. 17, 1901
696,821	Huber	Apr. 1, 1902
1,048,519	Fuhs	Dec. 31, 1912
1,312,615	Cooper	Aug. 12, 1919
1,784,544	Russell	Dec. 9, 1930
1,827,258	Payzant	Oct. 13, 1931