



## **A Short History of Inflatable Packers**

By Clem Rowe – Inflatable Packers International Pty Ltd (© 12 Nov.,2001)

On the 18th of February, 1924 a Mr Elvin E Townsend of Watsonville, California filed a patent application for a “sealing device for wells”. As can be seen from the attached drawing, this device is clearly an inflatable packer although it is not referred to as such and is the first mention of such a device that we’ve found. It comprised “a flexible sleeve, preferably formed of rubber, which is secured at its ends...by means of a central sleeve and clamping collars.” “Collapsible conical collars” were mounted at each end of the sleeve which “serve to protect the ends of the flexible sleeves and to prevent distortion thereof.”

Although a patent (US Pat No. 1,549,168) was granted for this invention we have not been able to determine if it was ever produced commercially.

Moving forward to May 23, 1938 we find another patent application, this by Mr George F. Stamps of Los Angeles, California which is the first mention we’ve found of an inflatable packer with internal “reinforcements, preferably consisting of woven fabric embedded in the material of the tube, which reinforcements serve to stiffen the end portions of the tube”.

Again, we’ve found no evidence that this product was used commercially, but only a year later Mr John Lynes of Houston, Texas filed for the first of his patents covering inflatable packers. This was to be the first of many as he also started the company Lynes Inc which later became synonymous with inflatable packers in the oil industry.

This first patent was for a drill stem test (DST) tool using inflatable packers. It was his 1943 application for patent number 2,611,437 (finally granted on Sept. 23, 1952) that gave us the first patent application for a “High Pressure Inflatable Packer” and it was this packer that was to become the standard against which all future developments were measured. The packer was fixed at one end and sliding at the other with the sliding end sealed on a central mandrel. It included a steel wire reinforced element with the “wires lying side by side constituting each layer and wrapped in a helix” with “adjacent layers...wrapped in opposite directions”.

Oilfield inflatable packers didn’t change very much over the next 20 years or so except for improvements in wire reinforcement and anchoring of same and introduction of many and varied applications. Lynes, Inc., in the person of Mr Billy C. Malone, was again the innovator in 1971 when they introduced the slat reinforced packer which permitted greater expansion in higher pressure and temperature applications to be attempted, albeit with some loss of packer resilience.

It is regrettable that we have not been able to trace the history and evolution of inflatable packers used in geotechnical and hydrogeological applications in any detail. Rumour has it that inflatable packers were in regular use in Europe in the 1930s for such applications as foundation grouting and coal “infusion”. Unfortunately we’ve not been able to substantiate these rumours.



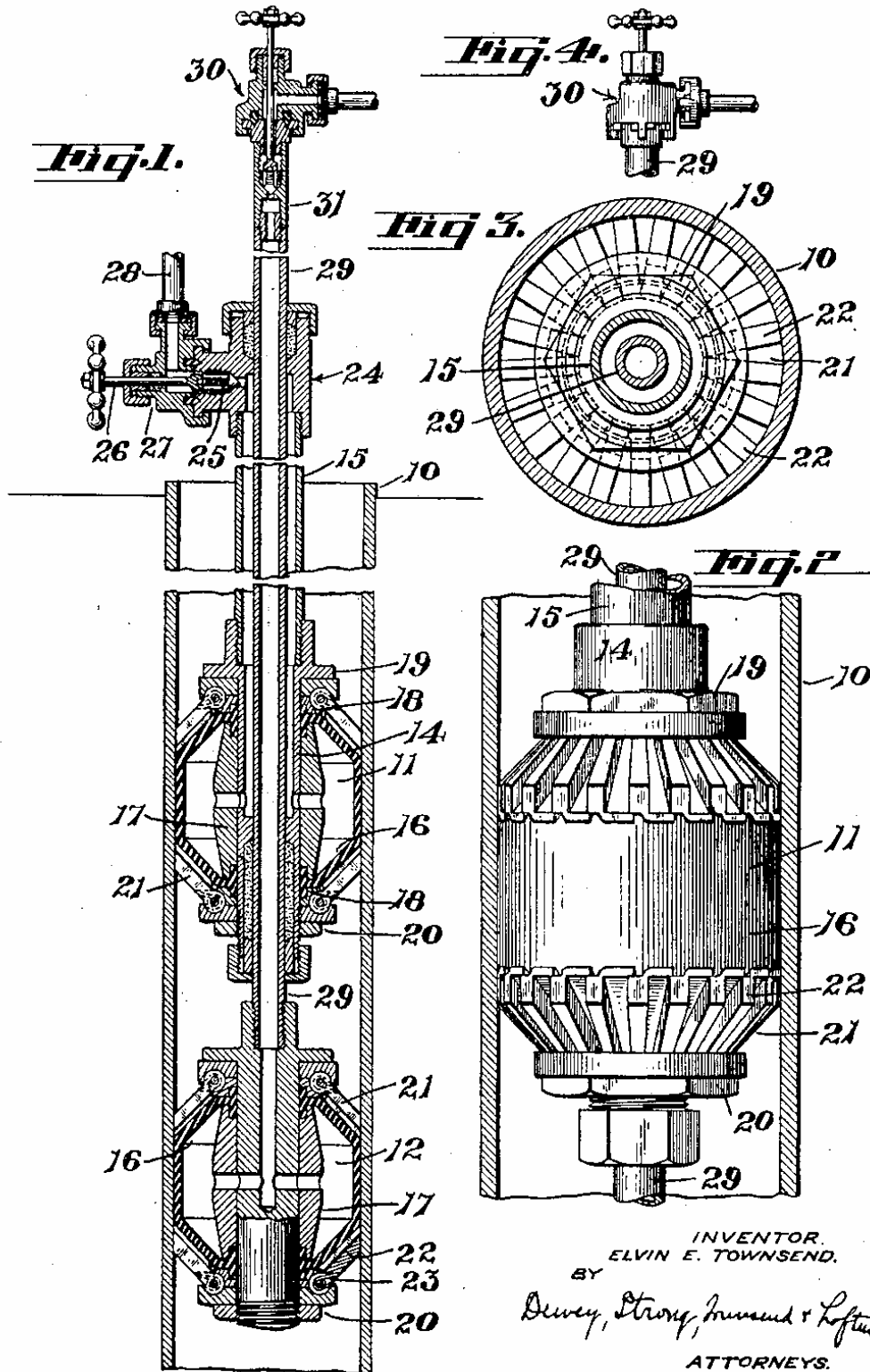
Aug. 11, 1925.

1,549,168

E. E. TOWNSEND

SEALING DEVICE FOR WELLS

Filed Feb. 18, 1924



INVENTOR.  
 ELVIN E. TOWNSEND.  
 BY  
*Dewey, Strong, Innes and Loftis*  
 ATTORNEYS.



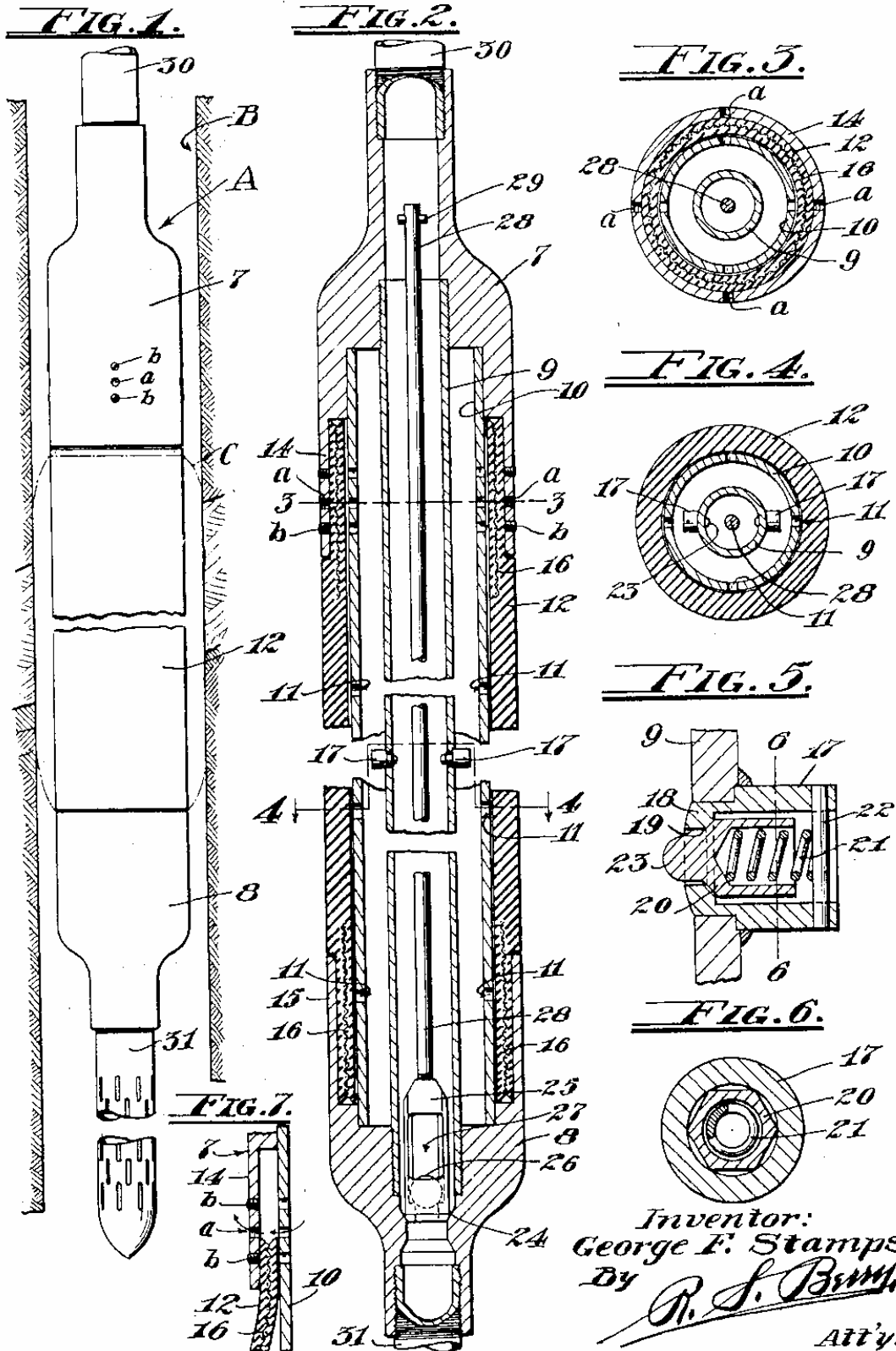
Jan. 16, 1940.

G. F. STAMPS

2,187,635

WELL PACKER

Filed May 23, 1938



Inventor:  
 George F. Stamps  
 By *R. S. Bennett*  
 Att'y.



Sept. 23, 1952

J. LYNES

2,611,437

HIGH PRESSURE INFLATABLE PACKER

Original Filed Jan. 29, 1943

7 Sheets-Sheet 6

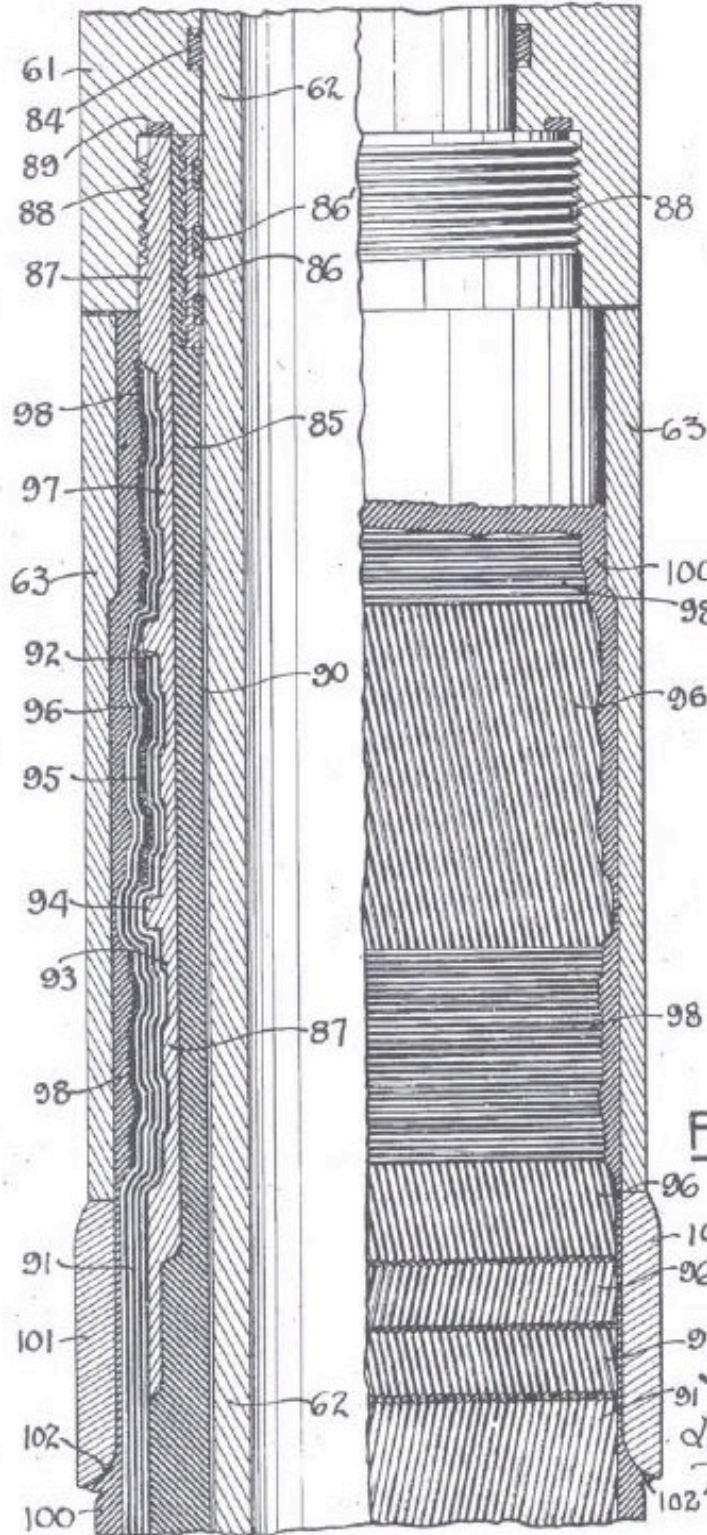
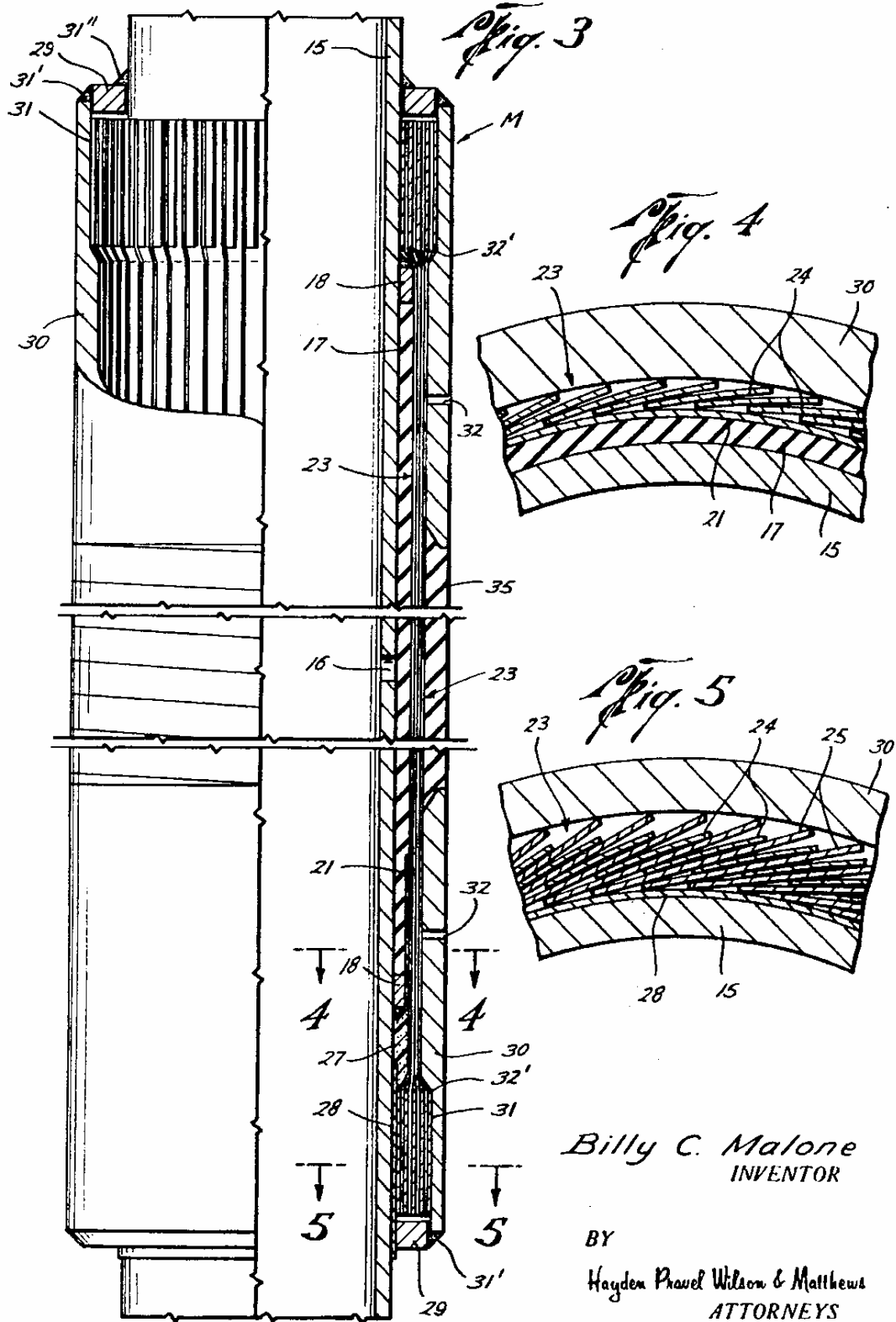


FIG. 22.

JOHN LYNES.  
INVENTOR.  
Lester B. Clark  
Ray L. Smith  
ATTORNEYS



Billy C. Malone  
INVENTOR

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