

(No Model.)

L. M. RICH.  
PUMP.

No. 539,644.

Patented May 21, 1895.

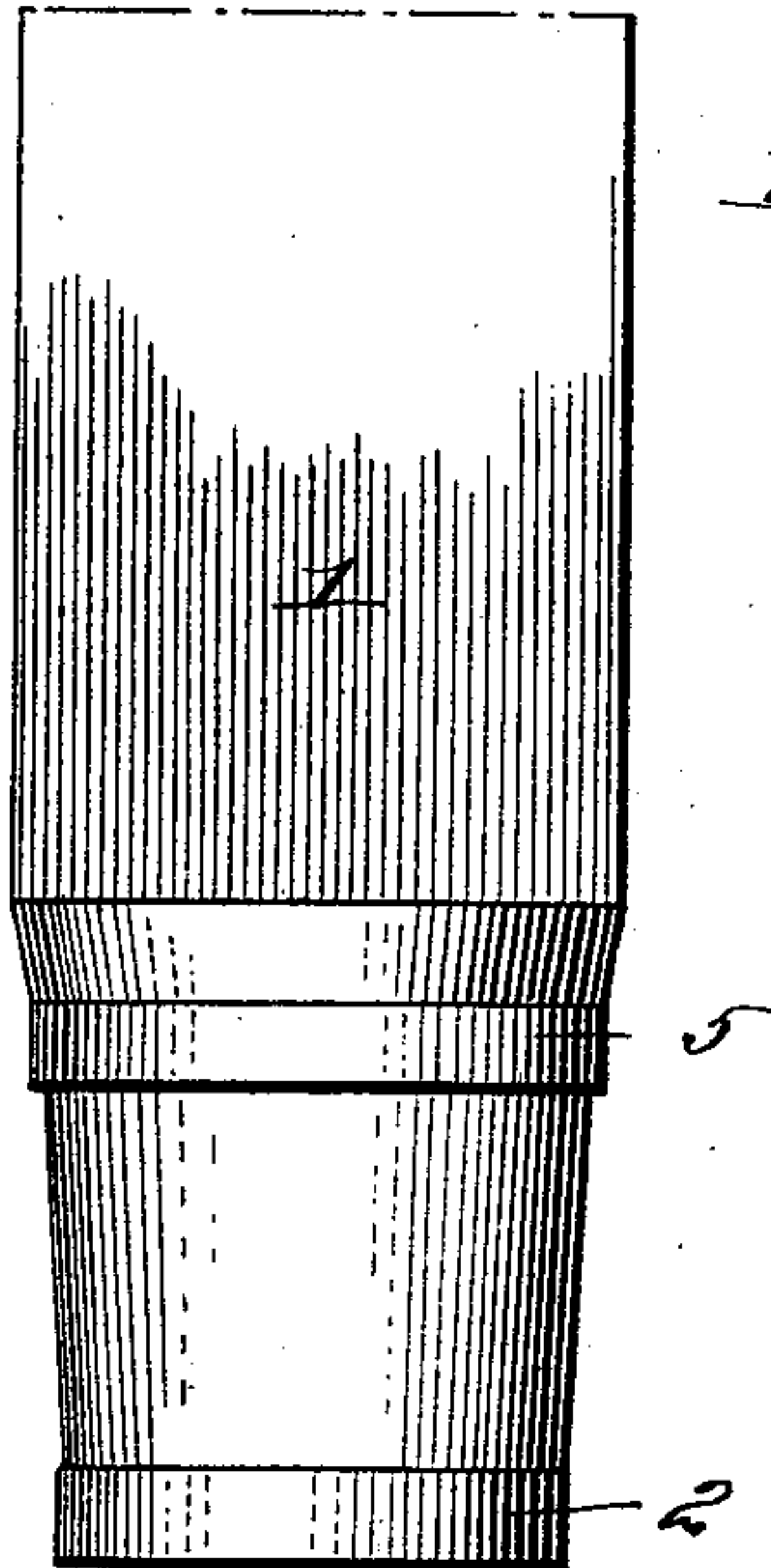


Fig. 1.

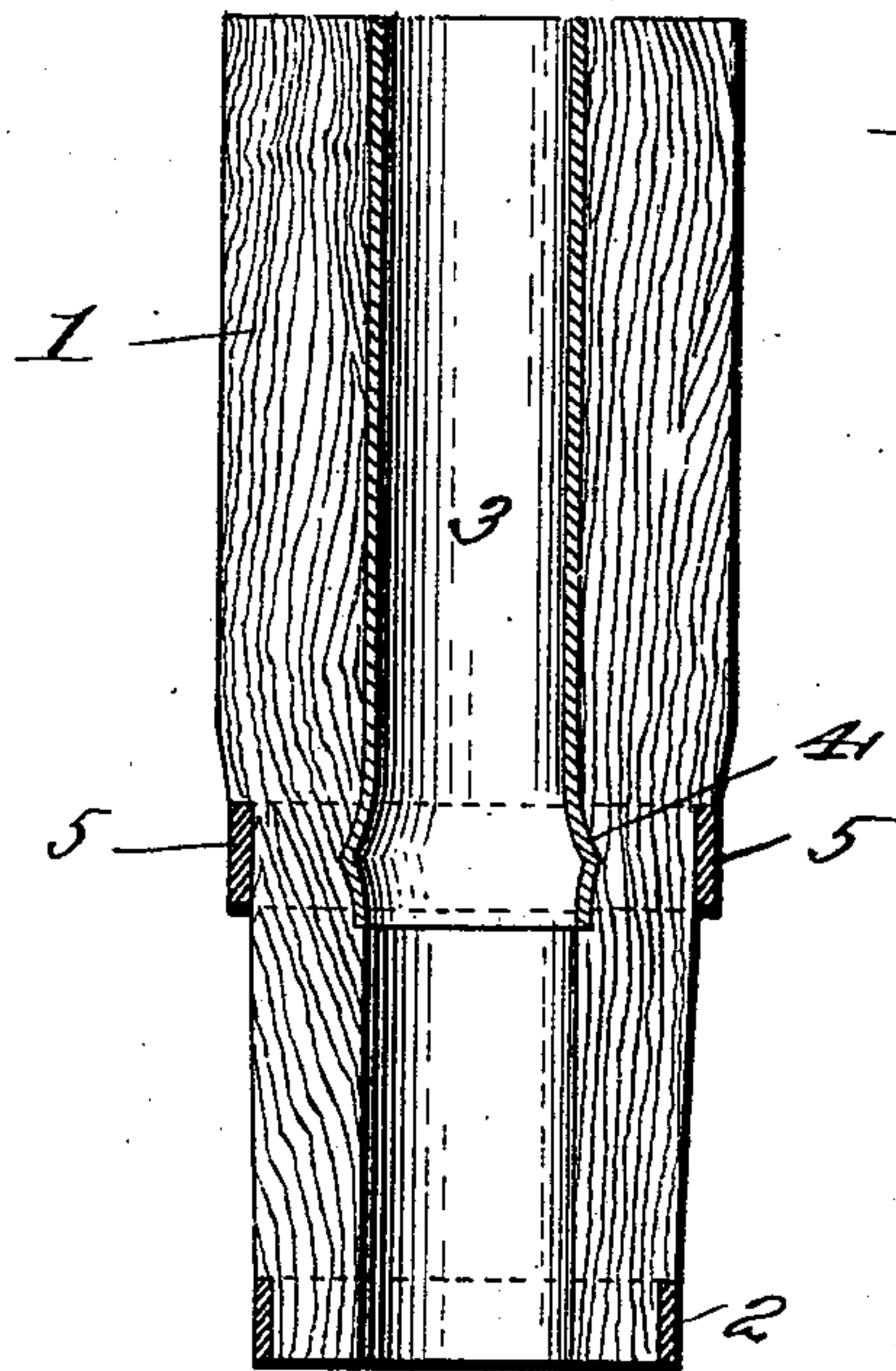


Fig. 2.

Witnesses  
*L. M. Rich*  
*Alexander Davis*

Inventor  
Lester M. Rich  
By Alexander Davis  
his Attorneys

# UNITED STATES PATENT OFFICE.

LESTER M. RICH, OF CEDAR RAPIDS, IOWA..

## PUMP.

SPECIFICATION forming part of Letters Patent No. 539,644, dated May 21, 1895.

Application filed February 11, 1895. Serial No. 538,011. (No model.)

*To all whom it may concern:*

Be it known that I, LESTER M. RICH, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in that class of pumps in which the piston works in a brass tube or cylinder secured in the bore of a wooden pump stock; and it has for its object to provide means for securely holding this cylinder in place, and to prevent it working loose when the pump stock expands or swells when wet.

The invention consists in so constructing the pump stocks that the swelling of the wood will serve to hold the cylinder firmly in its place instead of enlarging the bore of the stock and permitting it to work loose as is the case of the pumps of the ordinary construction.

In the drawings, Figure 1 is a side elevation of the lower end of a pump-stock. Fig. 2 is a vertical sectional view thereof.

Referring to the various parts by numerals, 1 designates the lower end of a wooden pump-stock which is bored vertically in the usual manner. Around the lower end of the stock is placed a metal ring 2 which prevents the lower end of the stock splitting. In the bore of the stock a metal cylinder 3 is driven. This cylinder fits tightly within the bore of the stock and its lower end is expanded and forced into the surrounding wood, an annular approximately V-shaped enlargement 4 being formed on said lower end. This enlargement may be formed at the upper end of the tube, and it may be of any suitable form.

Surrounding the stock at a point opposite the enlargement 4 of the tube 3 is a strong metal ring or band 5 which is of a sufficient width to extend for a short distance above and below the enlargement 4 of the tube when in position. This band 5 is placed over the lower end of the stock and is driven up until it binds tightly around it at a point opposite the enlargement 4 of the tube. If desired a

screw, or nail, or indentation in the band may be used to secure it against displacement, but it is proposed to have it bind so tightly around the stock that this will be unnecessary. The object of the band 5 is to prevent the wood of the stock expanding at this point when it becomes wet and thereby prevent the tube working loose in the stock.

Heretofore in this class of pumps, the tubes 3 have been expanded at either or both ends to hold them in position, but this has been found insufficient. When the stock becomes wet and expands, the bore of the stock enlarges and the tube soon works loose; but, by means of my strong metal band 5 the wood of the stock is held against expansion at the point of enlargement 4 of the tube, and the tube is thereby prevented from working loose. If there is any swelling of the wood when it becomes wet at this point, it will tend to close the bore of the stock and will bind on the lower end of the tube and more securely hold it in position.

It will thus be seen that I provide a very simple device which will securely hold the cylinder of this class of pumps in position, and which will cause the expansion of the wood stock to operate to hold the cylinder in position instead of causing the bore of the stock to enlarge and permitting the tube to work loose therein.

Having thus fully described my invention, what I claim is—

A pump consisting of a wooden stock, a cylinder in the bore thereof, said cylinder being expanded at its lower end, a band driven on the stock and fitting tightly around it at a point coincident with the expanded lower end of the tube whereby the swelling of the wood will hold the cylinder in place, and a band surrounding the lower end of the pump stock, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

LESTER M. RICH.

Witnesses:

GEO. W. EAKLE,  
J. F. RALL.