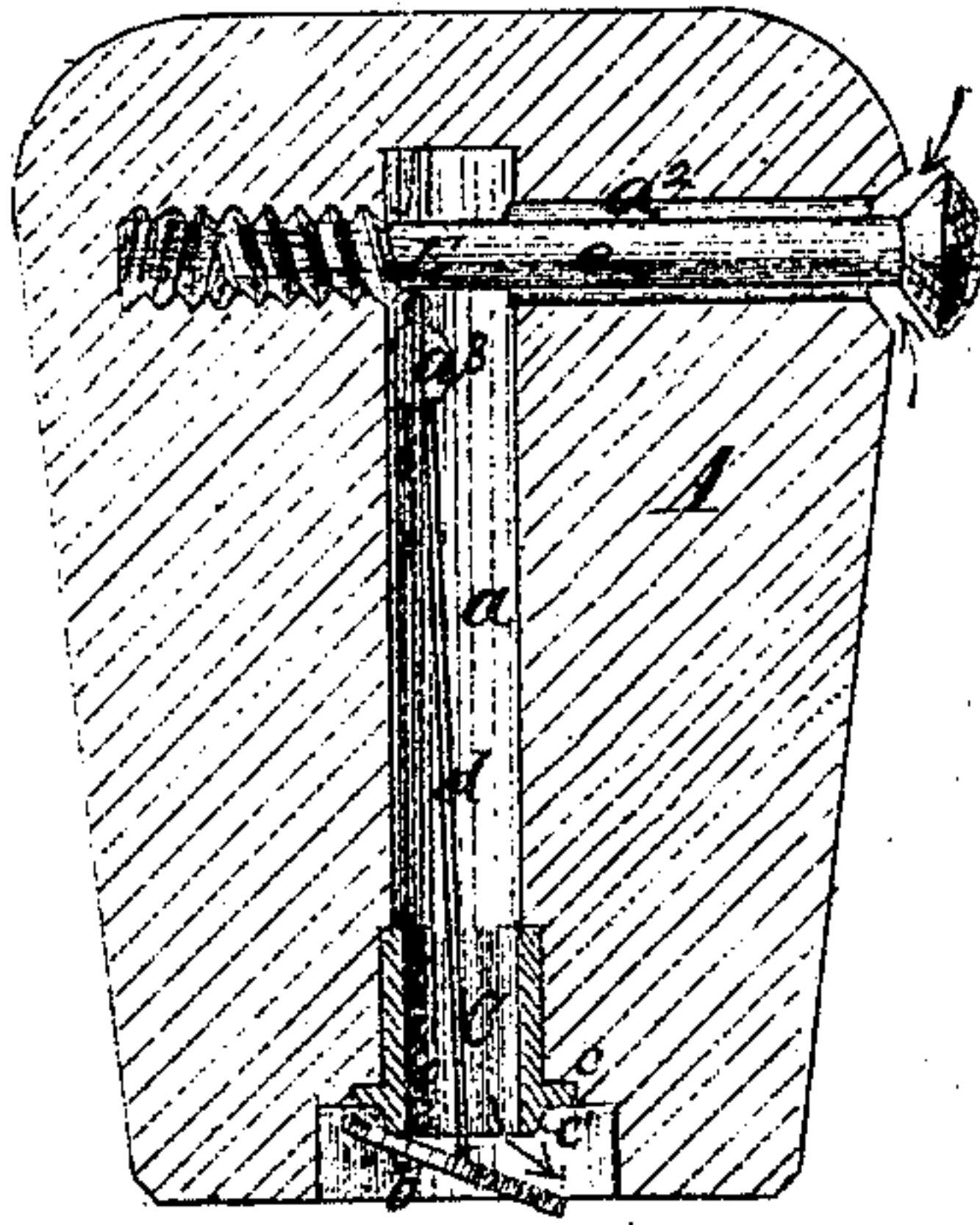


*Imp'd Bung.*  
*Benjamin R. Cole,*  
*Buffalo, N. Y.*

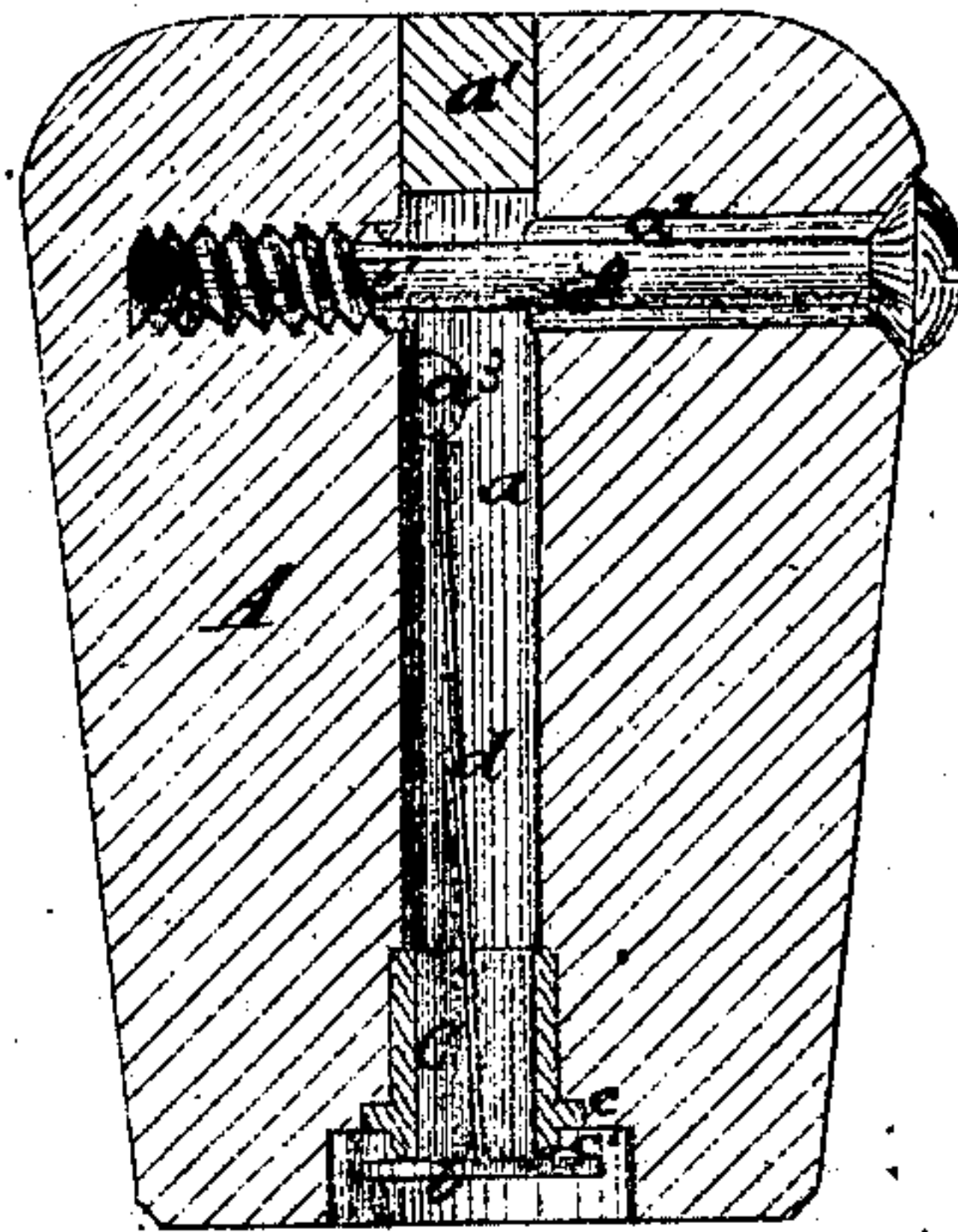
116810

*Fig. I.*

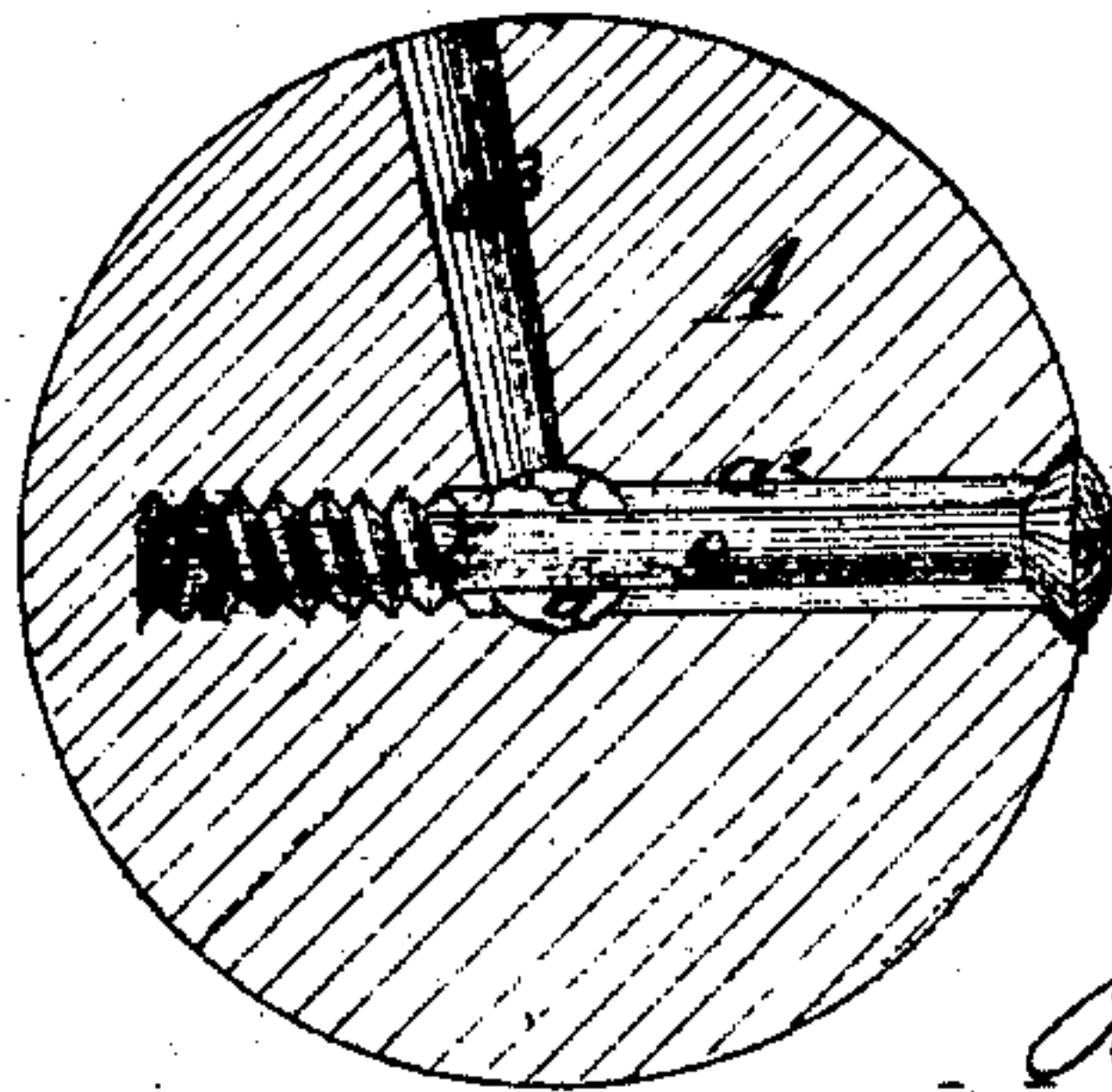
PATENTED JUL 11 1871



*Fig. II.*



*Fig. III.*



*Fig. IV.*



*Edw'd C. Hawley*

*Geo. J. Bonner*

Witnesses.

*Benj. R. Cole* - Inventor

*by Forbush & Hyatt*

*Attys.*



# UNITED STATES PATENT OFFICE.

BENJAMIN R. COLE, OF BUFFALO, NEW YORK.

## IMPROVEMENT IN VENT-BUNGS.

Specification forming part of Letters Patent No. 116,810, dated July 11, 1871.

*To all whom it may concern:*

Be it known that I, BENJAMIN R. COLE, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Vent-Bung, of which the following is a specification:

My improvements relate to that class of bungs which is provided with a passage or vent for the ingress of air into the vessel. The invention consists: 1st, in the arrangement in the vent of a bung of a rubber string attached to a valve in the lower end of the bung, which rubber string acts as a spring to keep the valve closed or in contact with its seat except when the strength of the spring is overcome by the force of the inward suction of the air, caused by the withdrawal of the liquid from the vessel. 2d, in the combination and arrangement in a vent-bung of an automatic spring-valve and a positive valve, stop-cock, or plug, operated by hand, for rigidly closing the vent during the transportation or handling of the vessel. 3d, in the arrangement in the vent at the lower end of the bung of a metallic valve-seat, consisting of a flange-thimble constructed as hereinafter described.

In the accompanying drawing, Figure I is a longitudinal section of my improved bung, with both valves open. Fig. II is a similar view with both valves shown closed. Fig. III is a transverse section. Fig. IV is an elevation of the valve-seat.

Like letters of reference designate like parts in each of the figures.

A is the bung, of ordinary shape.  $a$  is a central axial hole, made partially through the bung, as shown in Fig. I, or entirely through, with the outer end closed by a plug,  $a^1$ , as shown in Fig. II.  $a^2$  is a radial hole made through the portion of the bung which projects outside of the vessel so as to intersect the hole  $a$  and extend beyond, as shown. The hole  $a$  at the inner end of the bung is enlarged by forming a countersink to receive the disk-valve  $b$ , which is made of India rubber, leather, or other suitable material. The seat of this valve consists of a thimble, C, provided with an outwardly-projecting flange,  $c$ , and an outer ledge,  $c'$ , against which the valve rests. This thimble is readily inserted by driving it in place by means of a tool pressed against the flange  $c$ , which leaves the ledge  $c'$  projecting below the surrounding wood, so as to form a raised seat for the valve and thereby insure a tight joint between them. The valve is retained in place by means of the rubber string  $d$  attached thereto and extending along the hole  $a$ . It may be fast-

ened at its upper end by wedging it between the plug  $a^1$  and the sides of the hole at the outer end of the bung, or by wedging it in a radial hole,  $a^3$ , as shown, or in any other suitable manner. E is a screw arranged in the radial hole  $a^2$  for rigidly closing the vent. The threaded end of this screw extends beyond the point of intersection with the central hole  $a$ , and screws into the wood, as shown in the drawing. The body or shank  $e$  is reduced in diameter so as to leave a space surrounding it in the hole  $a^2$  for the ingress of air to the central vent-passage. The hole  $a^2$  at its outer end is enlarged into a countersink for the head of the screw, so that when the head is screwed therein it will tightly close the hole (Figs. II and III) and prevent any possible escape of the liquor in handling or transporting the same, which is liable to occur when no such rigid valve or stop is provided. By giving the screw a backward turn a free passage for the air around the head is opened, as represented in Fig. I. Valves which are closed and designed to be retained in contact with their seats by the pressure of the gas within the vessel are defective, as the pressure is not always sufficient, especially when the vessel is nearly empty, to keep the valve properly pressed against its seat so as to prevent the entrance of air. By the employment of the rubber spring  $d$  the proper contact of the valve with its seat is insured at all times, except when the strength of the spring is overcome by the inward pressure and flow of the air in restoring the equilibrium destroyed by the withdrawal of liquor from the vessel. It is evident that other devices than the screw hereinbefore described may be employed to rigidly close the passage  $a^2$ .

What I claim as my invention is—

1. The arrangement, with a vent-bung under a valve at the lower end thereof, of a rubber string attached to said valve and arranged in the vent-passage of the bung so as to retain the said valve in contact with its seat, substantially as hereinbefore set forth.

2. The combination and arrangement, in a vent-bung, of an automatic spring-valve and a throttle-valve, stop-cock, or plug operated by hand, for rigidly closing the vent, substantially as and for the purpose hereinbefore set forth.

3. The thimble-valve seat C, provided with flange  $c$  and ledge  $c'$  arranged in the vent of a wooden bung, as hereinbefore set forth.

Witnesses: BENJAMIN R. COLE.

JNO. J. BONNER,  
VICTOR H. BECKER.