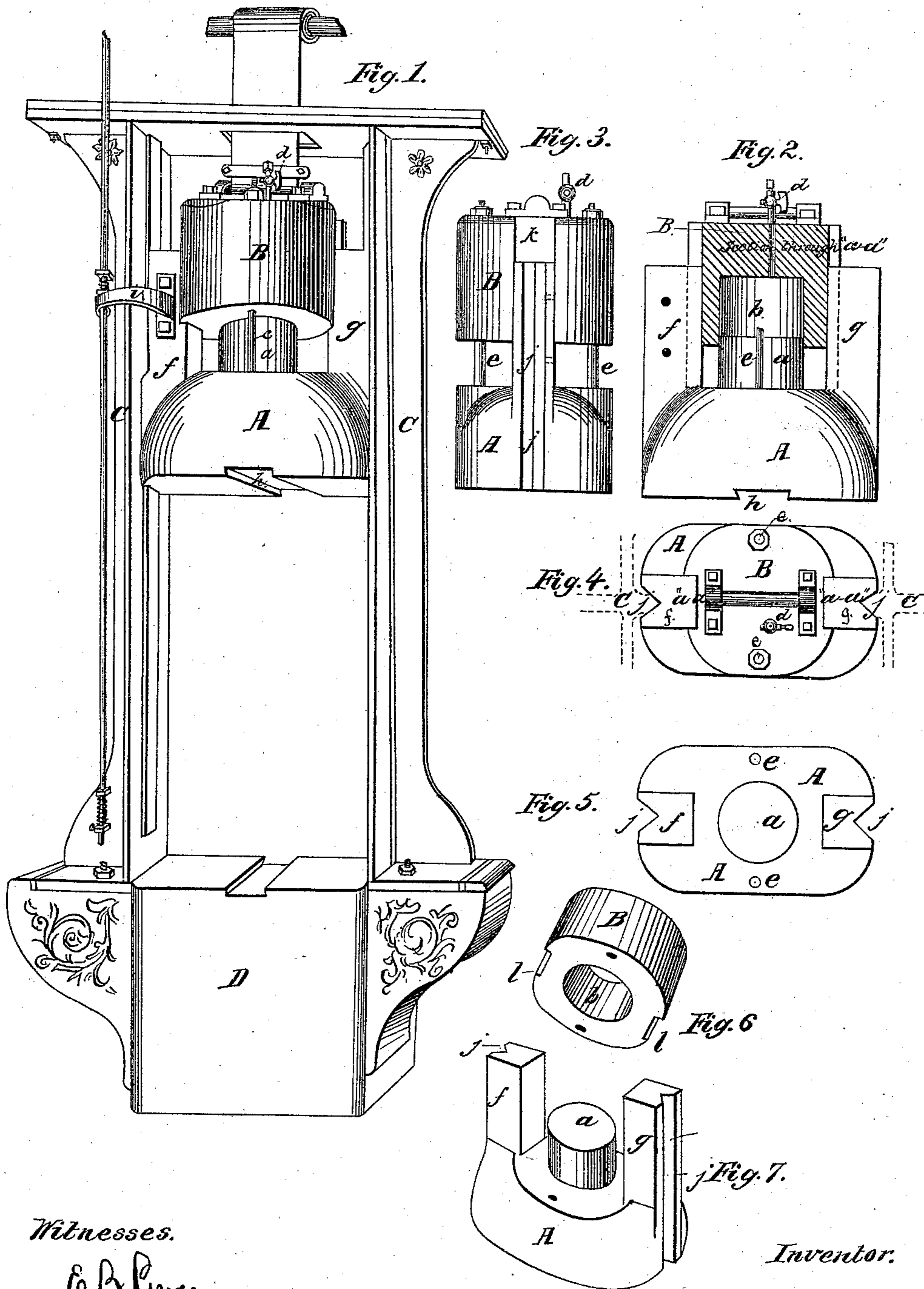


*J. Duff,*

*Drop Hammer,*

*N<sup>o</sup> 78,867.*

*Patented June 16, 1868.*



*Witnesses.*

*E. B. Pierce  
J. S. Stevens*

*Inventor.*

*James Duff*

# United States Patent Office.

JAMES DUFF, OF PEORIA, ILLINOIS.

Letters Patent No. 78,867, dated June 16, 1868.

## IMPROVEMENT IN DROP-PRESSES.

The Schedule referred to in these Letters Patent and making part of the same.

Be it known that I, JAMES DUFF, of Peoria, in the county of Peoria, in the State of Illinois, have invented a new and useful Improvement on Drop-Presses or Drop-Hammer; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a perspective view.

Figure 2 is an elevation of the two hammers, showing a section of the air-chamber.

Figure 3 is an end view of the two hammers.

Figure 4 is a plan of the upper hammer.

Figure 5 is a plan of the lower hammer.

Figure 6 is a perspective view of the upper hammer, showing the air-chamber; and

Figure 7 is a perspective view of the lower hammer, showing the plunger.

The nature of my invention consists in providing a drop-press or drop-hammer with a secondary or following-hammer, and a cushion between the two hammers, or its equivalent, so arranged as to prevent the rebound.

I construct my drop-press in any of the known forms, and apply thereto the usual appendages and machinery for working the same; but in order to obviate the rebound of the hammer when it strikes, I connect with the hammer A, a following-hammer, B, by means of stud-pins *e e*, or any convenient arrangement whereby the two hammers, when suspended, will separate to the required extent, and the following-hammer B rest upon the lower hammer A, when both rest upon the anvil.

I make an air-chamber, *b*, of any form and size, in the face of one of the hammers, and provide the same with an air-passage and stop-cock, *d*.

*a* represents a plunger, attached to the contiguous face of the other hammer, corresponding in size and form to the air-chamber *b*.

The hammers, being at rest upon the anvil, the plunger *a* occupies the air-chamber *b*, but, on being raised, they separate, and the air-chamber becomes filled with air. When the hammers drop, the compressed air, escaping slowly through the stop-cock *d*, partially sustains the following-hammer B, and it gradually comes to rest upon the lower hammer A, producing a constant pressure upon the same during the continuance of the blow, and thereby preventing the rebound.

### Claim.

What I claim as my invention, and desire to secure by Letters Patent, is—

The following-hammer B, air-chamber *b*, air-passage and stop-cock *d*, and plunger *a*, in combination with the hammer A, when arranged in the manner and operating as and for the purpose herein described.

Witnesses:

E. B. PIERCE,  
J. S. STEVENS.

JAMES DUFF.