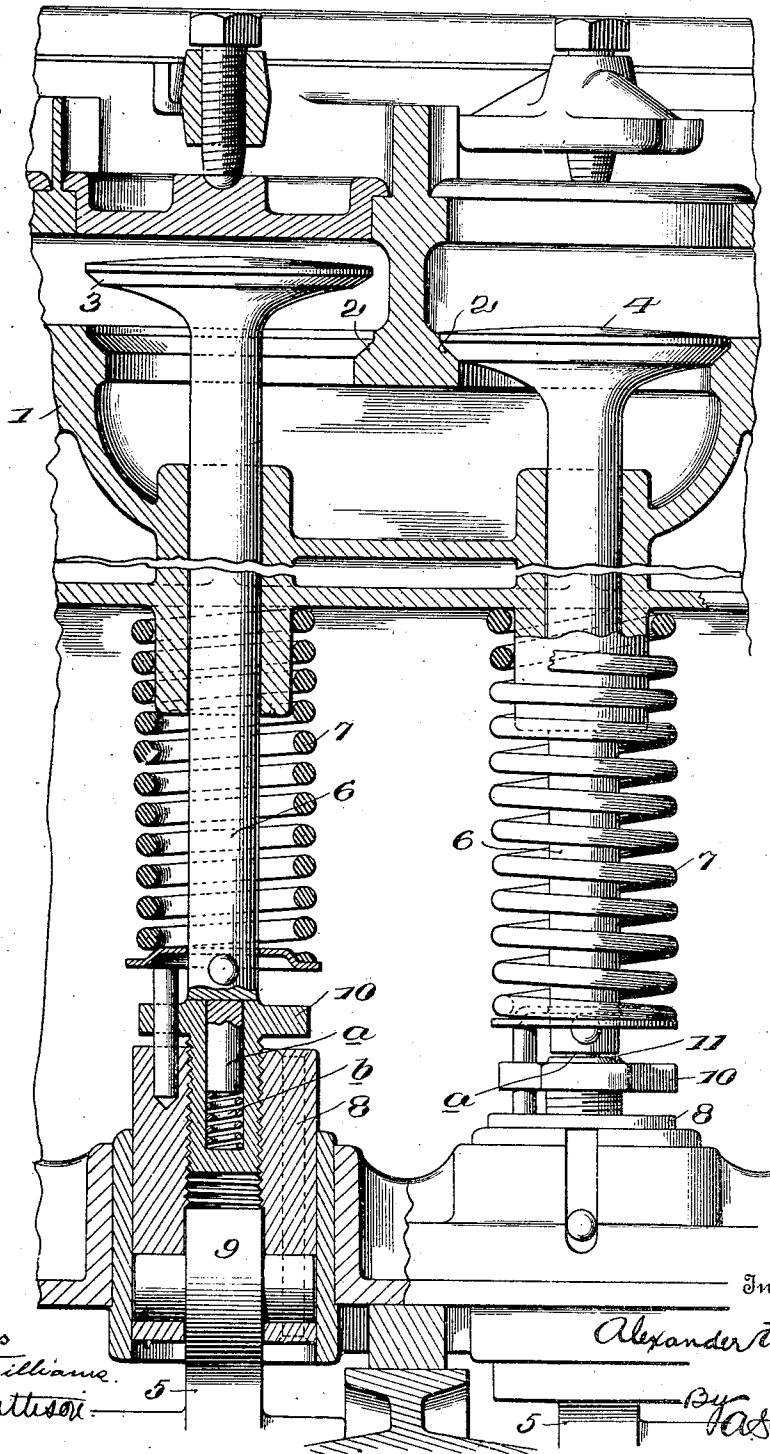


A. WINTON.  
VALVE OPERATING MECHANISM FOR EXPLOSIVE ENGINES.  
APPLICATION FILED APR. 29, 1911.

1,011,695.

Patented Dec. 12, 1911.



Witnesses  
W. A. Williams.  
H. A. Patterson.

Inventor  
Alexander Winton,  
By H. A. Patterson  
Attorney

# UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

VALVE-OPERATING MECHANISM FOR EXPLOSIVE-ENGINES

1,011,695.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed April 29, 1911. Serial No. 624,149.

*To all whom it may concern:*

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Valve-Operating Mechanism for Explosive-Engines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to valve operating mechanism for explosive engines, of the improved form hereinafter pointed out.

It is well-known to those skilled in this art that a certain amount of clearance between the cam operated member and the valve stem is necessary to permit the proper seating of the valves in explosive engines.

The object of my present invention is to provide this clearance between the said members and to provide an intervening member which will prevent the noise occasioned by the clearance in valve operating mechanisms, as heretofore constructed.

The accompanying drawing is a combined sectional and side elevation of two valves of an explosion engine, one being shown lifted off its seat and the other resting on its seat.

Referring now to the drawings, 1 is a valve housing of any suitable form, and 2 the valve seats in this housing. I here show two valves 3 and 4 only, for the purpose of illustrating my improvement, but the number of valves is immaterial to the invention.

The usual valve operating mechanism comprises a cam 5, a valve-stem 6, an expanded spring 7 which normally holds the valve seated, a movable member 8 carrying a roller 9, the roller 9 adapted to be engaged by the cam 5; and an adjustable member 10 located between the valve stem and the movable member 8. The form here shown is of an ordinary type, though my invention, as will appear hereinafter, is not limited to this specific form. In all forms of valve mechanisms for explosive engines known to me, there is a clearance between the valve stem and the member, or members, located between the valve stem and the cam 5. In the form of valve mechanism here shown this clearance is illustrated in the drawing at 11. In all forms of valve operating mechanisms known to me the member or members located between the valve stem and the cam have weight and are continually in reversal of motion, and this causes noise as the inter-

vening parts are moved or slapped back and forth through this clearance. Thus far I have described one of the ordinary types of valve-operating mechanisms. My improvement consists in locating a member between the said valve stem and the cam, which is normally projecting through this clearance space and normally exerting a separating tension between the valve and the cam, but a tension of a much less degree or strength than the tension or strength of the spring which normally holds the valve seated. This separating tension normally holds the parts intervening between the valve stem and the cam in contact with the cam and prevents the noise occasioned by the slapping action of the said continuously reversed motion of the parts and at the same time performs a cushioning effect between the valve stem and the seat cam. In the type of valve mechanism here shown this normally separating effect is accomplished by placing between the valve stem 6 and the members 8, 9 and 10 which intervene between the stem and cam 5, a normally outwardly projected member *a*. In the construction here shown, this normally projected member *a* is located in the adjustable member 10 and a spiral spring *b* normally serves to project the member *a* through the clearance space 11 and against the lower end of the valve stem 6. It will be observed that this normally projected member *a* has its outer end constantly in engagement with the lower end of the valve stem 6, and serves to constantly hold the roller 9 in contact with the cam 5, and by reason of this action the noise occasioned, as aforesaid, is prevented and the cushioned effect above mentioned is effected.

The broad application of my present improvement is not limited to use in the particular type of valve mechanism here shown, but is adapted to be used with other forms of valve mechanism, and I do not, therefore limit the broad scope of my invention to this particular type of valve operating mechanism.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. A valve operating mechanism comprising a valve having a stem, a spring acting to normally hold the valve closed, a rotatable cam, a reciprocating mechanism between the cam and said valve stem, an adjustable nut immediately between the valve

stem and said reciprocating mechanism, and a normally spring projected member carried within the adjustable nut for the purpose described.

- 5 2. A valve operating mechanism, comprising a valve having a stem, a spring acting to normally hold the valve closed, a rotatable cam, a reciprocated member actuated by said cam, an adjustable nut at the outer  
10 end of said member and adapted to engage

said valve stem, and a spring projected member carried within the outer end of said adjustable nut for the purpose described.

In testimony whereof I hereunto affix my 15 signature in the presence of two witnesses.

ALEXANDER WINTON.

Witnesses:

O. F. BAUGHMAN,  
W. J. WARD.