

(No Model.)

E. I. BLOUNT.
PISTON CYLINDER.

No. 419,916.

Patented Jan. 21, 1890.

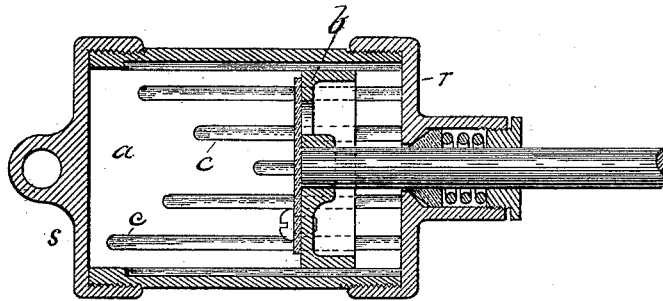


FIG. 1.

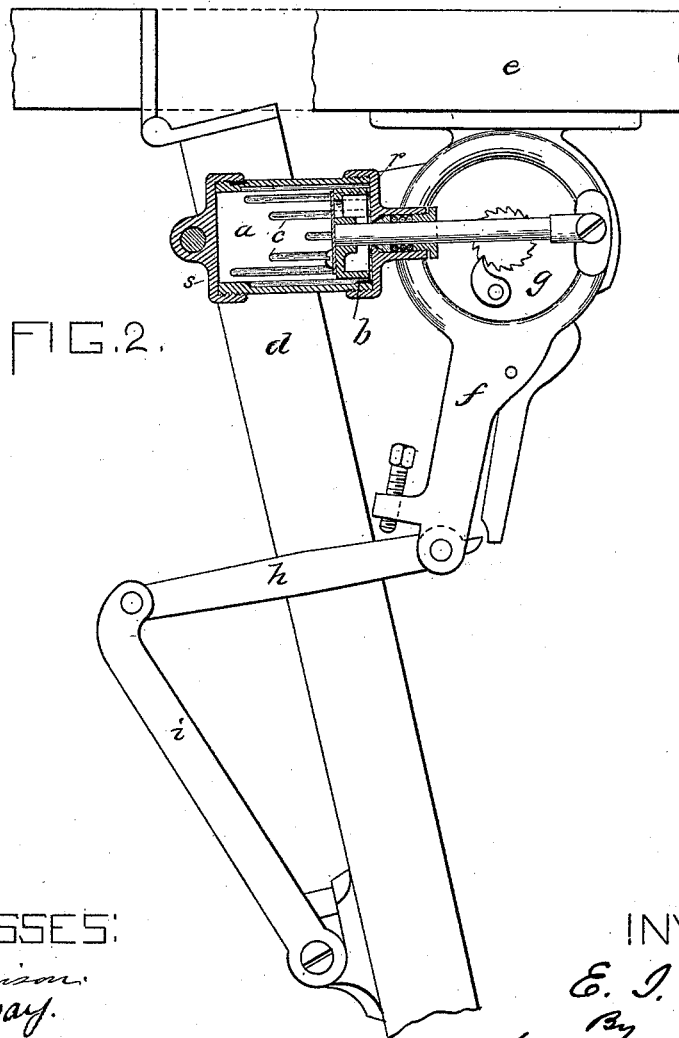


FIG. 2.

WITNESSES:
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UNITED STATES PATENT OFFICE.

EUGENE I. BLOUNT, OF CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO THE
BLOUNT MANUFACTURING COMPANY, OF PORTLAND, MAINE.

PISTON-CYLINDER.

SPECIFICATION forming part of Letters Patent No. 419,916, dated January 21, 1890.

Application filed May 13, 1889. Serial No. 310,556. (No model.)

To all whom it may concern:

Be it known that I, EUGENE I. BLOUNT, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Piston-Cylinders, of which the following is a specification.

My invention relates to pistons and cylinders generally, and particularly to such contrivances when designed to have the air or liquid in the cylinder flow from one side to the other of the piston—as, for example, where the cylinder and piston are employed as a buffer, or for the purpose of offering increasing and diminishing resistance to the operation of other devices connected with the piston.

My invention consists in providing the interior surface of the cylinder with a series of longitudinal grooves of varying lengths.

Reference is to be had to the accompanying drawings, and to the letters of reference marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Of the drawings, Figure 1 is a longitudinal central sectional view of a cylinder and piston embodying my improvements. Fig. 2 is a similar view of a cylinder and piston, showing the same as employed in a door-check.

In carrying out my improvements I provide a cylinder *a*, in which a piston *b* is adapted to operate with grooves *c* on the interior thereof, which grooves extend from the front end *r* to or toward the rear end *s*, terminating at different points—that is, so that some of the grooves shall terminate near the front end *r*, others at a central point, and still others at or near the rear end *s*, as is clearly shown in the drawings. With this construction, by making the piston so that it shall fit the interior of the cylinder somewhat closely, and filling the latter with oil or other liquid, or with air or other gas, the grooves *c*, serving as ports between the front and rear of the piston, will allow said piston to move quite freely in starting from the front toward the rear thereof, and such movement will be resisted with gradually-increasing force as the

piston approaches the rear end of the cylinder, and as the piston moves in the opposite direction the opposite effect will follow—that is, the movement of the piston will at first be resisted with considerable force, and said resistance will be gradually lessened as the escape of liquid from the front to the rear of the piston becomes freer.

With these improvements I am enabled to adapt a piston and cylinder to many uses which the ordinary piston and cylinder are incapable of fulfilling—for example, where it is desired to employ the piston and cylinder as a buffer, or where it is wanted that the piston and cylinder shall afford means for offering a varying resistance to the operation of other means connected therewith, as in the operation of door-checks, or where it is wanted that the spring which closes the door shall be resisted in its force as the latter approaches a closed position, though said spring may be allowed to operate quite freely at the start.

In Fig. 2 of the drawings I have shown my improvements as connected with a door-check. *d* designates the door; *e*, the door-casing; *f*, a spring-actuated arm, forming a part of the cap *g* of the spring-casing, and with which cap the spring may be supposed to be connected; *g*, the piston-rod pivoted or fulcrumed on the periphery of the cap, and *h i* toggle levers connecting the spring-actuated arm with the door. The use of my invention, however, is not confined to door-checks, the foregoing instance being cited merely to illustrate its varied utility in the mechanic art. It is to be observed, also, that my improvement is capable of ready and economic manufacture.

Having thus explained my invention, I declare that what I claim is—

A cylinder provided on its interior with grooves of varying length, substantially as and for the purposes hereinbefore set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 29th day of April, A. D. 1889.

EUGENE I. BLOUNT.

Witnesses:

A. D. HARRISON,
ARTHUR W. CROSSLEY.