(No Model.)

W. E. NICKERSON.

FLUID SPEED REGULATOR FOR ELEVATORS.

No. 396,107. Patented Jan. 15, 1889.

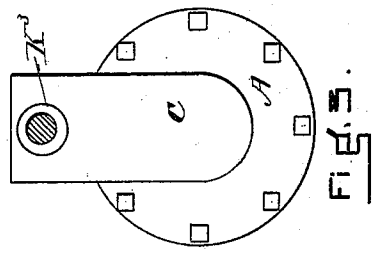

Fig. 3.

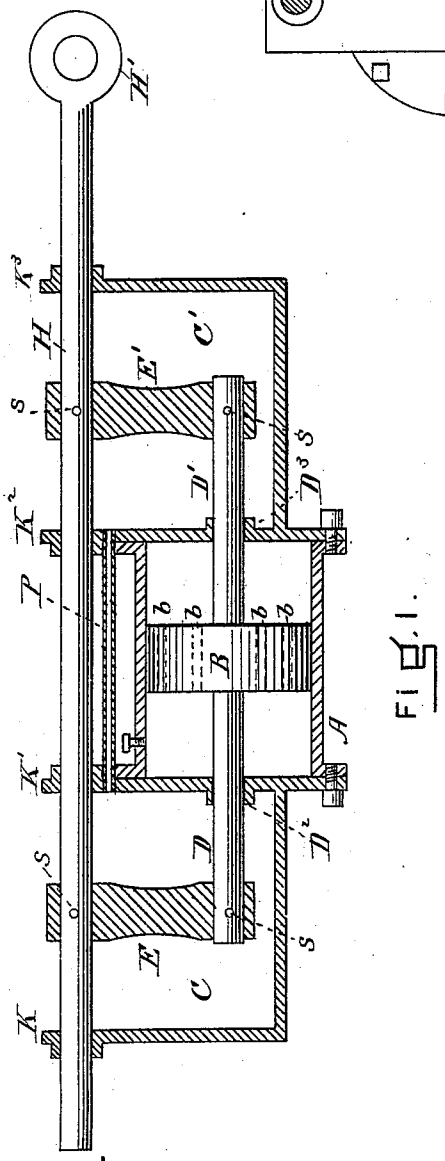

Fig. 1.

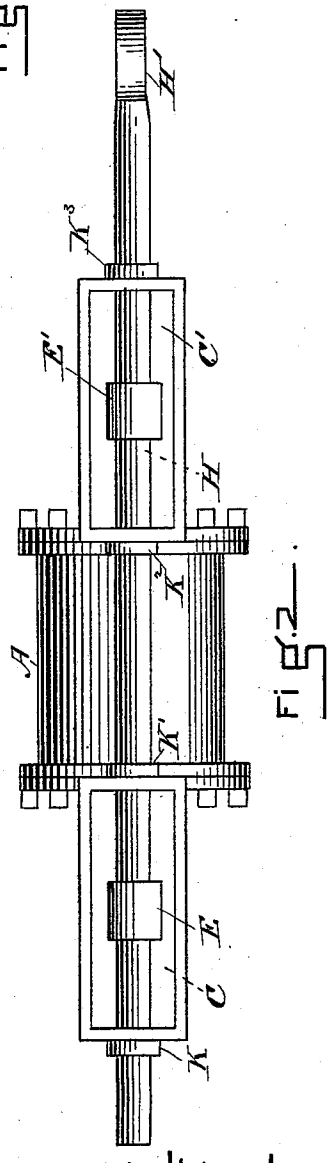

Fig. 2.

WITNESSES.

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WILLIAM E. NICKERSON, OF CAMBRIDGE, MASSACHUSETTS.

FLUID SPEED-REGULATOR FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 396,107, dated January 15, 1889.

Application filed September 21, 1888. Serial No. 285,996. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. NICKERSON, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Fluid Speed-Regulators for Elevators, &c., of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to so construct a fluid speed-regulator device of that class in which a piston is used that any leakage about the piston-rod is compensated or balanced at each movement of the piston to and fro. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a longitudinal vertical section of my device. Fig. 2 is a plan of the same, and Fig. 3 is an end elevation of the same.

The cylinder A is made of any suitable dimension and of any desirable metal or metals. Within the cylinder A, I have a piston, B, Fig. 1. This piston has a piston-rod, D D′, which moves freely in the boxes D^2 D^3. The boxes D^2 D^3 need not fit the piston-rod D D′ so closely as to create any friction, as it is not essential that they should be fluid-tight, from the fact that I have made provision for any amount of leakage that need occur with loosely-fitting or frictionless boxes at D^2 D^3.

C and C′ are tanks, one of which is attached to each end of the cylinder A. The object of the tanks C C′ is to receive the leakage from the cylinder A through the boxes at D^2 D^3, Fig. 1. The tanks C C′ extend somewhat above the cylinder A, and are to be kept nearly full of fluid, so that the fluid-level in them shall always be above the boxes D^2 D^3.

H is a reciprocating rod attached at H′ to a pitman or other appliance for uniting my regulator to the mechanism to be regulated.

The reciprocating rod H is connected to the piston-rod D D′ by means of arms E E′ and pins or screws S S S S, and slides in bearings at K K′ K^2 K^3.

For convenience in filling the cylinder A, I have an opening and plug at L, Fig. 1.

P, Fig. 1, represents a pipe leading from one of the tanks C C′ to the other, and serves to maintain an equal level of fluid in the two tanks.

The piston B has openings, as indicated by dotted lines at *b b b*, to admit of the passage of the fluid in the cylinder A from one side of the piston to the other as to traverses. The number and characteristics of the openings at *b b* may be varied to suit the requirements of the machine to be regulated.

I claim—

1. In a fluid speed-regulator, the combination of the cylinder A, the piston-rod D D′, and the piston B, having opening *b b*, with the fluid-tanks C C′, substantially as described, and for the purpose set forth.

2. In a fluid speed-regulator, the combination of the cylinder A and piston B, said cylinder A and piston B being adapted to admit of the passage of fluid from one side of the piston to the other, with the fluid-tanks C C′, substantially as described, and for the purpose set forth.

WILLIAM E. NICKERSON.

Witnesses:

FRANK G. PARKER,

WILLIAM EDSON.