

(No Model.)

L. WADACK & A. GRAFFY.

HYDRAULIC DOOR CHECK.

No. 322,218.

Patented July 14, 1885.

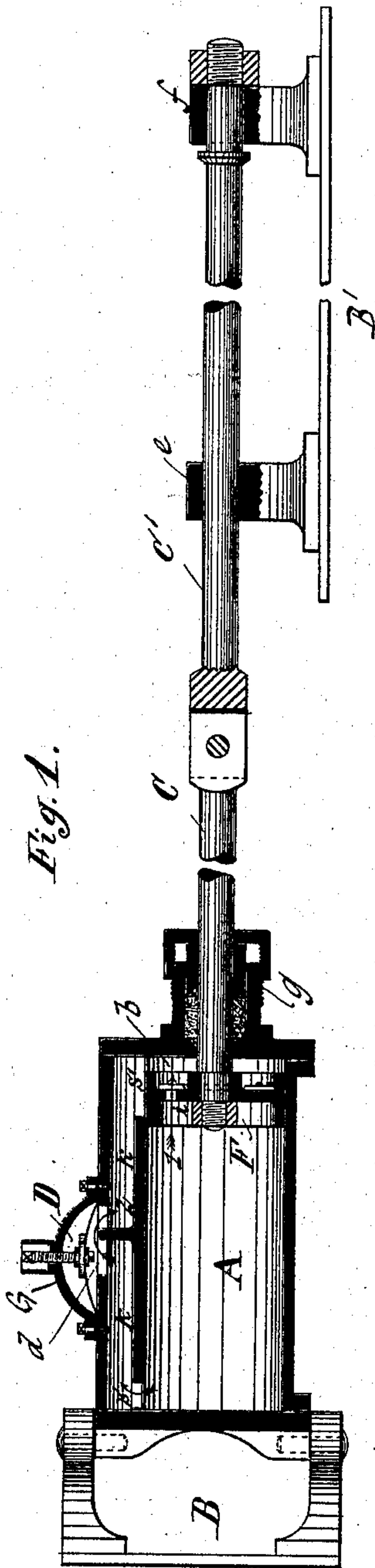


Fig. 1.

Witnesses  
William Miller  
Otto Hupfand

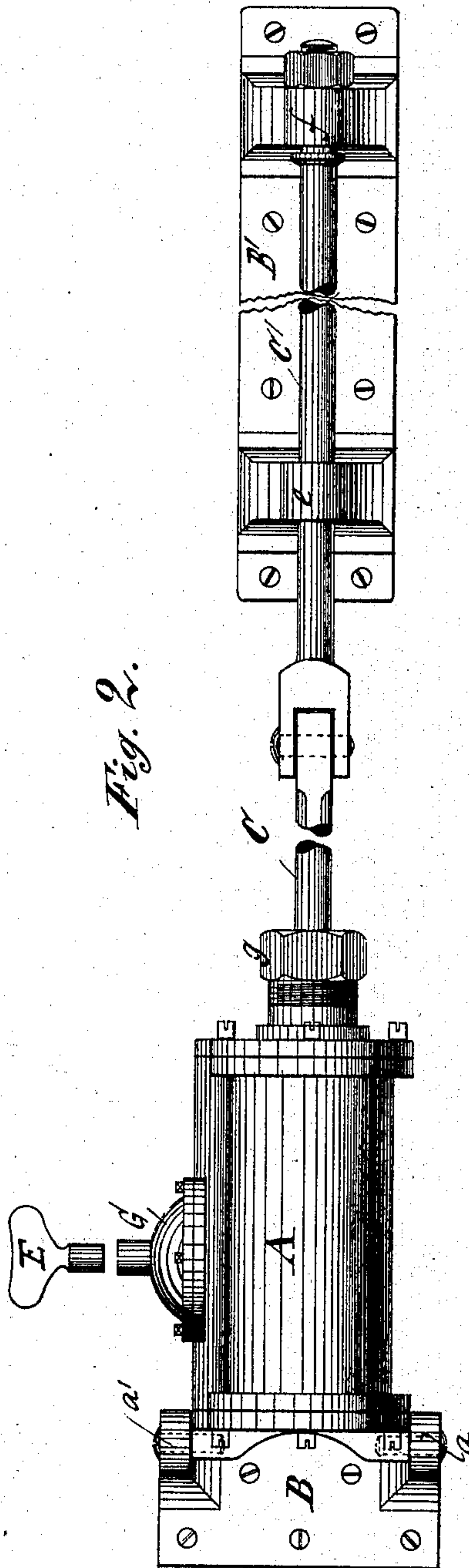


Fig. 2.

Inventors  
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# UNITED STATES PATENT OFFICE.

LEO WADACK AND ALOIS GRAFFY, OF BERLIN, GERMANY.

## HYDRAULIC DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 322,218, dated July 14, 1885.

Application filed December 29, 1884. (No model.) Patented in Germany July 6, 1884, No. 31,578, and in France October 13, 1884, No. 164,769.

*To all whom it may concern:*

Be it known that we, LEO WADACK, a subject of the King of Prussia, and ALOIS GRAFFY, a subject of the Emperor of Austria and King of Hungary, residing both at Berlin, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Hydraulic Apparatus for Preventing a Violent Shutting of Doors, of which the following is a specification.

This invention consists in a door-check comprising the following elements, to wit: A block to be rigidly secured to a door-frame, a swinging cylinder for containing a fluid, hinged to the block and provided at each end with a port connected by a longitudinal channel formed in the cylinder casting, and having an opening intermediate its ends which extends through the side of the cylinder, a cover surrounding the opening and secured to the cylinder, an adjustable regulating-valve arranged in the cover for controlling the passage of the fluid through the opening and the channel from one end of the cylinder to the other, a valved piston in the cylinder having a piston-rod, and a block for connecting the piston-rod with a door, all of which will be more fully hereinafter described in detail.

The invention is illustrated in the accompanying drawings, in which Figure 1 is a longitudinal horizontal section of my improved door-check. Fig. 2 is a side elevation of the same.

Similar letters indicate corresponding parts. In the drawings, the letter A designates a cylinder filled with a fluid, preferably glycerine, and which is pivoted so as to be capable of moving laterally to the lugs *a a'*, formed integral with a suitable block, B, which block is firmly secured by screws or other suitable means to the door-post on which the door is swung.

F, Fig. 1, is a piston adapted to work in the cylinder A, and it is provided with a transverse hole, *b*, which is opened or closed by a suitable flap-valve, *i*, secured to the piston. If desirable, several such holes *b* and the same number of flap-valves may be used.

S S' are ports formed at the ends of the cylinder, which are connected by a channel, *k*, formed in the cylinder-casting, and which

channel has also an opening, *d*, extending through the top of the casting. The opening *d* is surrounded by a cover, G, secured to the cylinder, and said cover affords a bearing for the stem of the valve D, which effects the regulation of the exit of the fluid from either end of the cylinder to the other. The key E, by which the valve D is adjusted, can be removed after the adjustment is effected.

C is the piston-rod, which passes through a stuffing-box, *g*, and is secured to the piston F in the usual manner; and C' is the connecting-rod, adapted to be secured in a suitable manner in the lugs *e f* on a second block, B', which is secured to the door by screws or any other means.

In the drawings, the parts of the device are shown in their relative positions when the door, (which is subjected to the action of a spring,) is closed, the piston F then being in the forward end of the cylinder, and the part of the cylinder A behind the piston and the channel *k* are filled by the fluid, the port S' being closed by the piston. If, now, the door is opened, the piston is driven backward, the port S' and flap-valve *i* are opened, and the fluid is driven through the port S and the channel *k* in the direction of arrow 2, Fig. 1, into the forward part of the cylinder, while at the same time it also passes through the hole *b* in the piston, the large areas of openings causing the fluid to offer little or no resistance to the piston, and the door is easily opened. When the door closes again, the piston is moved in a forward direction and the flap-valve *i* remains closed, and therefore the fluid can only make its exit through the channel *k*, the cross-section of which can be altered by the valve D, as before stated; and consequently the resistance offered the piston F can be increased or diminished at pleasure, and the motion of the door is checked accordingly.

We do not broadly claim a door-check composed, essentially, of a cylinder for containing a liquid or air, and a valved piston in the cylinder having a piston-rod; but

What we claim as new, and desire to secure by Letters Patent, is—

A door-check consisting of the following elements, to wit: a block, B, a swinging cylinder, A, for a fluid, hinged to the block and

provided at the ends with ports S S', connected by a longitudinal channel, *k*, formed in the cylinder, and having an opening, *d*, extending through the side of the cylinder intermediate of the ends of the latter, a closed cover, G, secured to the cylinder and surrounding the said opening, an adjustable regulating-valve, D, arranged in and guided by the cover to control the opening, the valved piston F, the piston-rod C, and a block, B', con-

nected with the piston-rod, substantially as and for the purpose described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEO WADACK.  
ALOIS GRAFFY.

Witnesses:

JOHANN HENKES,  
B. Roi.