

No. 616,843.

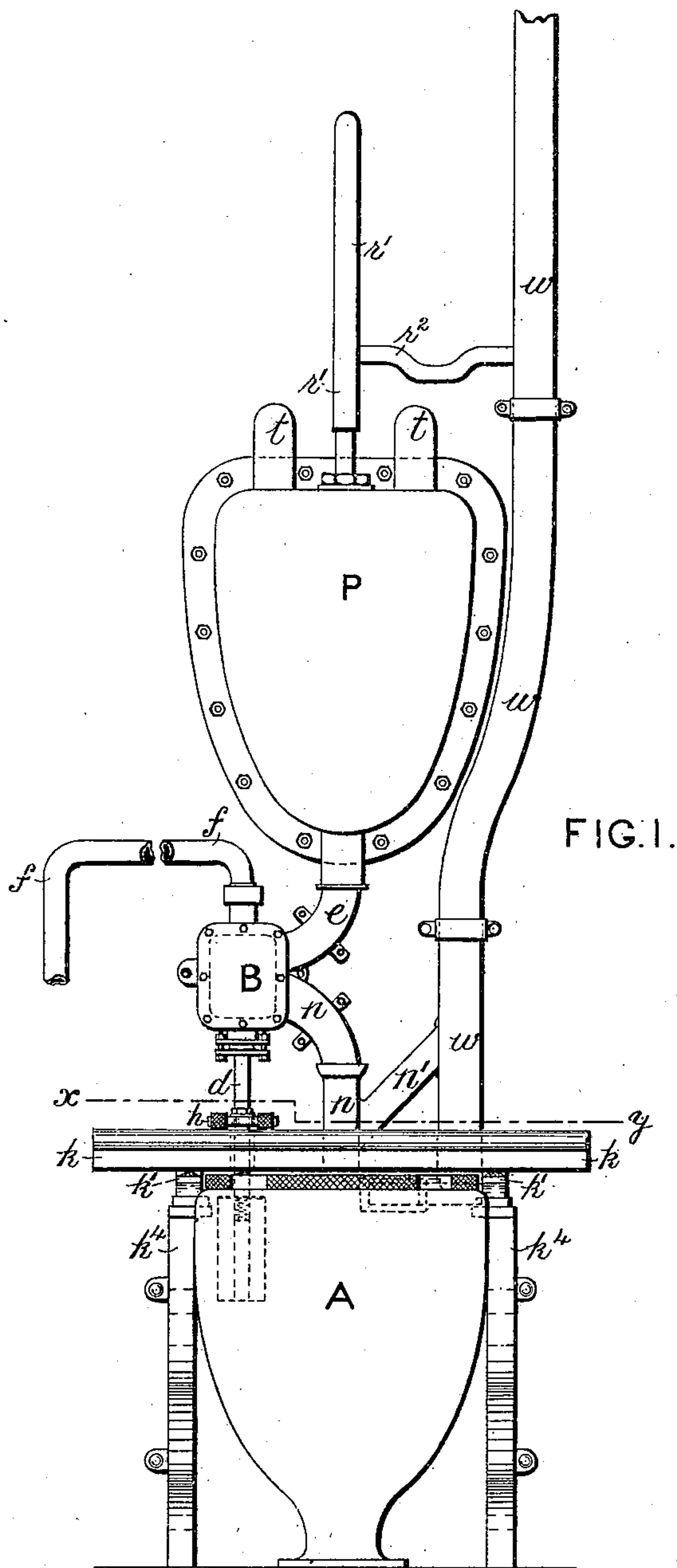
Patented Dec. 27, 1898.

D. HURST.
WATER CLOSET.

(Application filed Oct. 3, 1896.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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D. R. Cowl

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Daniel Hurst
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Attorney

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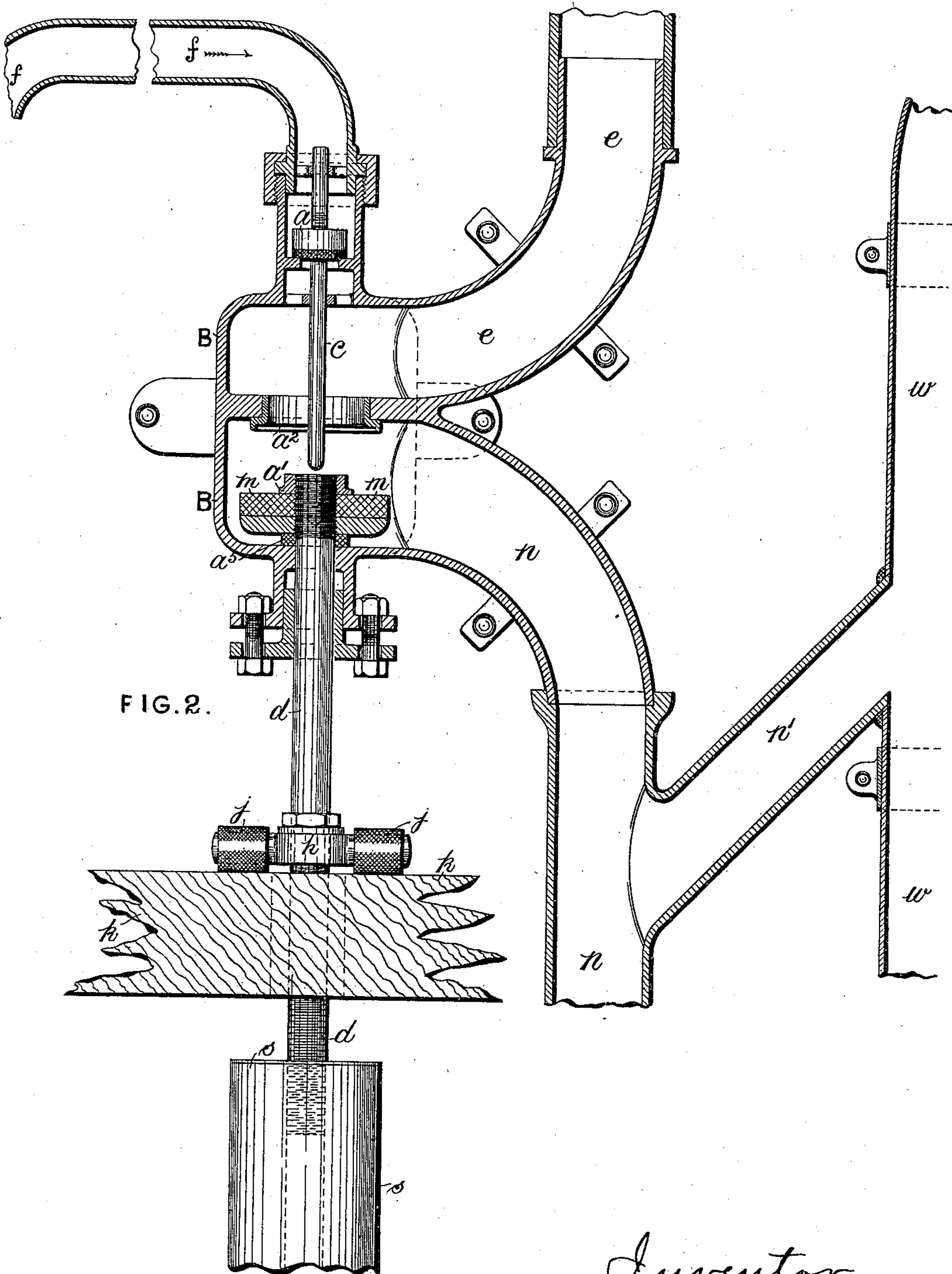
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UNITED STATES PATENT OFFICE.

DANIEL HURST, OF ECCLES, ENGLAND.

WATER-CLOSET.

SPECIFICATION forming part of Letters Patent No. 616,843, dated December 27, 1898.

Application filed October 3, 1896. Serial No. 607,813. (No model.)

To all whom it may concern:

Be it known that I, DANIEL HURST, a subject of the Queen of Great Britain and Ireland, and a resident of 11 Gilda Brook road, Eccles, county of Lancaster, England, have invented certain Improvements in Water-Closets, of which the following is a specification.

My said invention has for its object improvements in or applicable to water-closets.

The first part of my said invention relates to the means for controlling the flow of water from the main supply to the flushing cylinder or cistern and thence to the closet-pan.

In order that my said invention may be more clearly set forth, I will describe the same with reference to the accompanying drawings.

Figure 1 is a front elevation of a water-closet constructed in accordance with my said invention, in which A is the closet-pan, *k* is the seat, and B is the valve-box which controls the supply of water from the water-main *f* to the flushing-cistern P. The ventilating or fume shaft *w* is continued to any convenient outlet from the building. Fig. 2 is a sectional elevation of the valve-box B and its connections.

Before proceeding to the details of the parts I will give a general description, with reference more particularly to Fig. 1. When a person sits on the seat *k*, the latter oscillates so as to raise the valve-spindle *d*, whereby water is allowed to pass from the main *f* to the flushing-cistern P. On the weight of the person being removed the valve-spindle *d* falls and thereby shuts off the water from the main and at the same time permits the water to descend from the flushing-cistern P to the closet-pan. Such a circulation is, however, well known at the present time and of itself forms no part of my said invention, which relates to improvements in the details of such closets whereby they are made much more efficient.

Referring now to Fig. 2, any weight on the fore part of the seat will cause the rear part to lift. On rising the rear part of the seat will press against the cross-head *h* of the valve-spindle *d*. On the valve-spindle *d* ris-

ing the lower valve *a'* will be lifted against the lower seating *a*² and will prevent access of water to the flushing-pipe *n*, which leads to the closet-pan and is connected therewith in the usual manner. The valve-spindle *d* is hollowed to receive the stalk *c* of the upper valve to such a depth that it may rise so far as to nearly touch the seating *a*² before lifting the valve-stalk *c*. On the stalk *c* being lifted the upper valve *a* rises and permits water to flow from the water-main *f* to the branch *e*, leading to the flushing-cistern P, Fig. 1. When the weight of the person is taken away, the valve-spindle *d* falls and opens the valve *a'*, being aided by the weight *s*. On this happening the pressure of the water-supply in the main closes the upper valve *a*. The water in the flushing-cylinder now descends along the branch *e*, through the lower valve, and thence along the branch *n* to the closet-pan.

The stalk or spindle *c* of the upper valve is screwed into the valve *a*, and by this means the distance apart or the lift of the upper valve *a* in proportion to that of the lower valve may be regulated to suit the conditions of the water-pressure in any particular case. The valves are faced with rubber, leather, or other suitable material for such purpose.

I prefer to make the facing *m* of the valve *a'* of india-rubber of considerable thickness and to form a somewhat deep rim on the valve-seating *a*². The object of this is that when the pressure of the water in the flushing-cistern P reaches a certain point the valve *a'* will be thereby depressed to such an extent as will allow the upper valve *a* to descend under the pressure of the main supply and thus to close the valve *a* and cut off the water from the main. The thick rubber and deep rim enable this action to take place without permitting the escape of flushing-water through the lower valve.

On the spindle *d*, under the lower valve *a'*, a collar *a*⁵ of india-rubber or other elastic material is used to act as a buffer on the descent of the lower valve, so as to minimize the shock. Similar elastic buffers are provided at *j* on the ends of the cross-head *h* where it comes into contact with the seat. The cross-

head is screwed on the spindle *d*, so that its position may be varied to suit seats of different heights.

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

The valve *a'* provided with a thick facing of rubber and having its spindle hollowed at the upper end, in combination with the valve-seat *a²* provided with a deep rim opposite the
10 said facing, the valve *a* having a stem which enters this hollow of the other valve-spindle, the valve *a'* closing the discharge into the

pan just before causing the valve *a* to open the supply of the cistern, the thick rubber and deep rim allowing the action without the
15 escape of flushing-water through the lower valve substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DANIEL HURST.

Witnesses:

JOHN HALL,

ROBERT H. DICKINSON.