

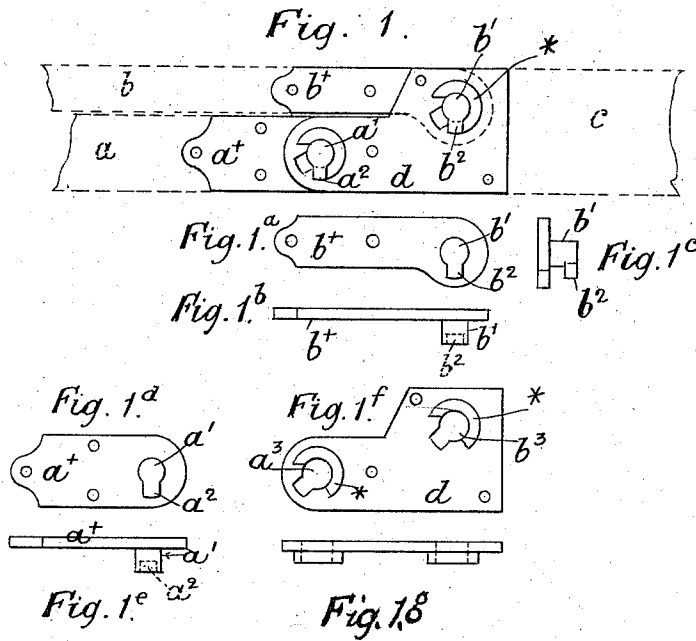
(No Model.)

2 Sheets—Sheet 1.

W. SMITH.
HINGE.

No. 571,408.

Patented Nov. 17, 1896.



(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

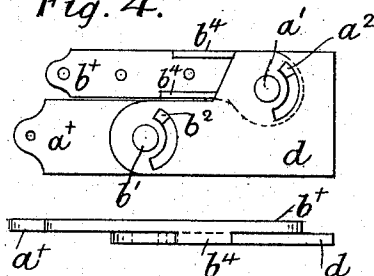


Fig. 5.

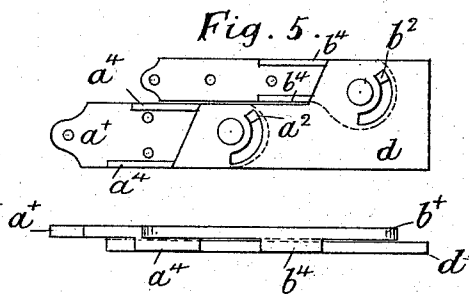


Fig. 6.

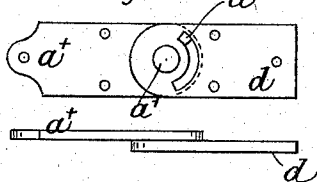
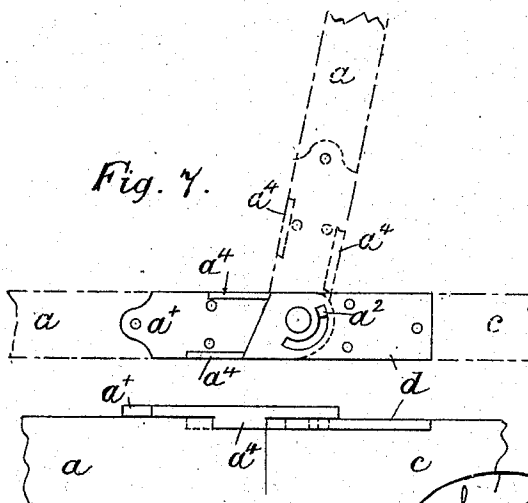


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF ASHTON-UNDER-LYNE, ENGLAND.

HINGE.

SPECIFICATION forming part of Letters Patent No. 571,408, dated November 17, 1896.

Application filed May 28, 1896. Serial No. 593,472. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SMITH, a subject of the Queen of Great Britain, residing at Ashton-under-Lyne, in the county of Lancaster, England, have invented Improvements in Hinges for the Seats and Lids of Water - Closets, Desks, and other Similar Uses, of which the following is a specification.

The principal object of this invention is to provide a simple, durable, and convenient hinge for the seats and lids of water-closets where such seats or lids are hinged singly and an improved arrangement of hinges for hinged water-closet seats and lids combined. The invention is, however, applicable to other lids or covers or to school desks, seats, and the like; and the said invention will be readily understood from the following description on reference to the accompanying drawings.

Figure 1 is an inside elevation of a hinge suitable for a water-closet seat and lid combined. Figs. 1^a, 1^b, and 1^c are detached views of the pivot-plate for the lid. Figs. 1^d and 1^e are detached views of the pivot-plate for the seat. Figs. 1^f and 1^g are detached views of the socket-plate. Fig. 2 is a side elevation of part of the seat-lid and fixture, showing the application and action of the hinge. Figs. 3, 4, and 5 show modified forms of the hinge for combined seat and lid; and Figs. 6 and 7 show hinges made for the seat or lid alone, the letters of reference applying to the seat. On Figs. 3, 4, 5, 6, and 7 the elevations are seen from inside the plates.

The water-closet seat *a* or lid *b*, or the seat *a* and its lid *b*, as shown on Figs. 1 and 2, is or are hinged to a fixed board or rail *c*, as usual; but we provide for application to each side of the seat *a* or its lid *b* (or both) a plate *a*⁺ or *b*⁺, respectively, hereinafter called a "pivot-plate," of suitable metal or material, (say brass,) which will project for a suitable distance beyond the hinder edge of the seat *a* or the lid *b*.

Each pivot-plate *a*⁺ or *b*⁺ is provided or formed at this projecting end with a peg, pin, or stud *a'* or *b'* of suitable diameter and length which, when a pivot-plate *a*⁺ or *b*⁺ is fixed to each side of the seat *a* or lid *b*, will project inward and thereby form pivots for the said seat *a* or lid *b*.

A lug or stop *a*² or *b*² is made to project

from the end of each pivot *a'* or *b'* and at one side thereof, as seen at Figs. 1^a, 1^b, 1^c, 1^d, and 1^e, or the lug or stop *a*² or *b*² may project from the pivot *a'* or *b'*, as seen at Fig. 3.

In the case of a seat *a* and lid *b* combined I fix at each side or end of the fixed rail or board *c* to which they are to be hinged a suitably-shaped plate *d*, hereinafter called a "socket-plate," in which I form at points corresponding to the projecting pivots above described two holes *a*³ *b*³ of such a form as to admit the pivots *a'* *b'* and their lugs or stops *a*² *b*² above mentioned, and, if necessary, I recess the ends of the rail or board *c* to which the socket-plates are fixed to allow of motion of the lugs *a*² *b*² behind the plates *a*⁺ *b*⁺ and form (with the holes *a*³ *b*³ in the socket-plates *d*) sockets for the pivots *a'* *b'*.

In the case of a seat or lid hinged singly only one socket-hole is formed in each socket-plate. (See Figs. 6 and 7.) A pivot-plate *a* or *b* having been fitted to each socket *a*³ or *b*³ thus formed, the said pivot-plates *a* *b* are fixed to the sides of the seat *a* and lid *b*, respectively, and the hinges are thus complete.

In the case shown on Figs. 1^a, 1^b, 1^c, 1^d, 1^e, 1^f, and 1^g I cast or form projections * upon the inner side of the socket-plates, fitting into the recesses in the rail or board and forming fixed stops against which the lugs or stops *a*² *b*² on the pivots come into contact, or I cut a curved recess ** in the pivot-hole *a*³, (see Fig. 3,) and I am thus able to prevent the seat *a* and lid *b* from touching each other in either their raised or horizontal positions, (see Figs. 1 and 2,) and I can further arrange the stops so as to set the seat *a* and its lid *b* parallel to each other, or nearly so, in either position; or instead of the stops *a*² *b*² on the pivots *a'* *b'* I may form the said stops on the inside of the pivot-plates *a*⁺ *b*⁺ near to the pivots *a'* *b'* (see Figs. 4, 5, 6, and 7) and form curved slots in the socket-plates *d*, by which the stops *a*² *b*² are arrested; or I may form stops on the outside of the socket-plates *d*, against which the edges of the pivot-plates will come in contact, or stops *a*⁴ *b*⁴ upon the edges of the pivot-plates *a*⁺ *b*⁺, preferably flush with and clipping the seat or lid, (see Figs. 5, 6, and 7,) which will come in contact with the edges of the socket-plates *d*, which may be beveled, as shown, or a combination of such stops to

limit the action of the seat *a* and its lid *b*. These parts *a*⁴ *b*⁴ are inwardly-extending flanges projecting from the side plate, which fits against the edge of the lid, and by coming
 5 in contact with the upper edges of the pivot-plates *d*, as shown in dotted lines, Fig. 7, they act as stops. This clipping of the seat or lid by the projections *a*⁴ or *b*⁴ forms an important
 10 feature of the hinge, as it prevents any tendency to split the seat or lid to which the pivot-plate is fixed.

By this invention, when applied to water-closets, a well-polished and unscratched surface can be kept upon both seat and lid.

15 This form of hinge, besides being elegant in appearance, is much stronger than butt-hinges and the like, where hinge-pins are employed, and (especially in the case of the lid) is capable of resisting considerable pressure applied by any person leaning against the
 20 lid when raised. The sockets can also be so placed with regard to the thickness of the fixed board or rail to which the seat and lid are hinged that there will be no danger of
 25 splitting the said board or rail, which is especially advantageous in the case of the lids, which are usually much thinner than the seats, the rail or board being flush with the top of the lid when the latter is in its hori-
 30 zontal position. (See Figs. 1 and 2.)

It will be evident that these hinges, al-

though illustrated for water-closet seats, are equally applicable to articles such as school desks and seats and the like.

I claim as my invention—

1. In combination, the socket-plate, and the pivot-plate, said pivot-plate being secured to the lid and the socket-plate to the frame, the said socket-plate having a pivot-opening and an opening adjacent thereto to form a stop
 40 and the pivot-plate having a pivot-pin with a projection adjacent thereto, said pivot and projection extending into the pivot-opening and stop-opening of the socket-plate, substantially as described. 45

2. In combination, a socket-plate fitted against the side of the seat and a pivot-plate having a pin engaging the same, said plate being fixed to the side edge of the lid and having inwardly-extending flanges *a*⁴, to clip
 50 the lid, said flanges being in the plane of the edge of the socket-plate to engage the same when the lid is thrown back and thus act as a stop for said lid, substantially as described.

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

WILLIAM SMITH.

Witnesses:

J. E. HUGHES,
 JNO. HUGHES.