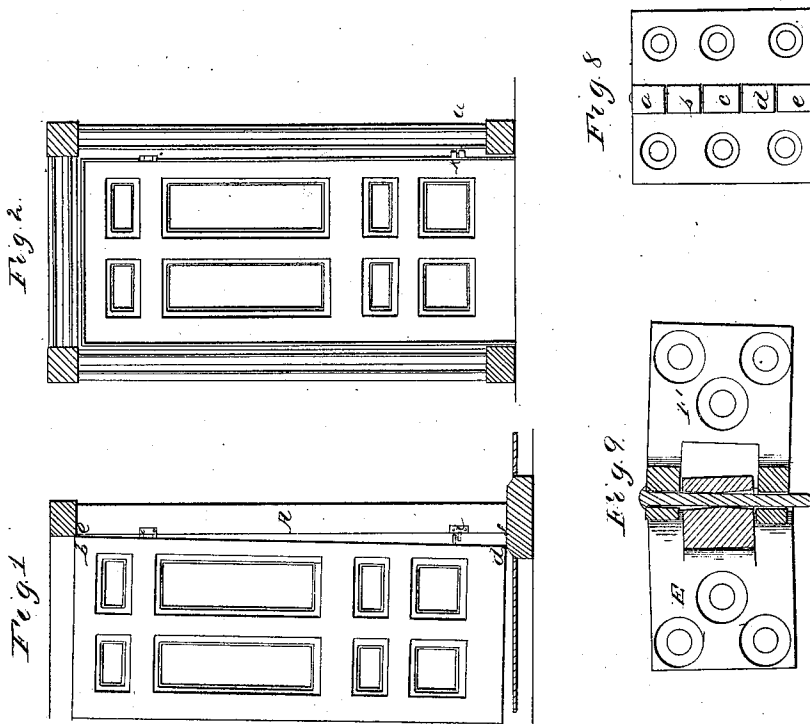
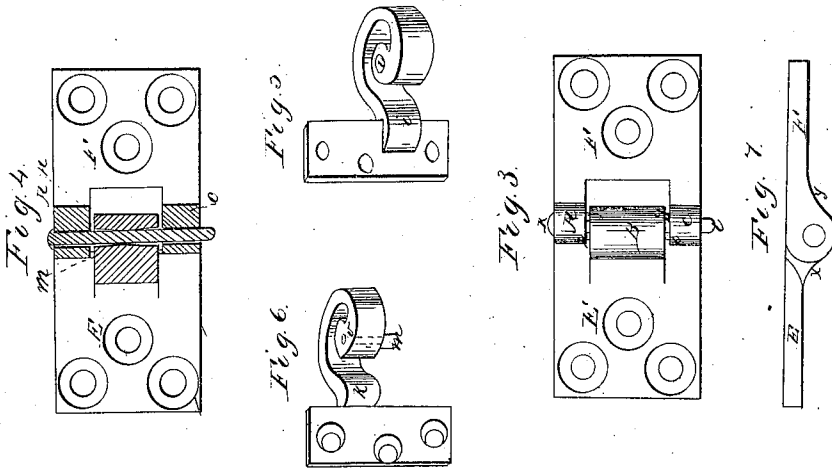


G. W. Wilson,

Hinge.

N^o 1678.

Patented July 10, 1840.



UNITED STATES PATENT OFFICE.

GEO. W. WILSON, OF NASHUA, NEW HAMPSHIRE, ASSIGNOR TO WM. D. BEASON AND
E. G. REED.

METHOD OF HANGING DOORS.

Specification of Letters Patent No. 1,678, dated July 10, 1840.

To all whom it may concern:

Be it known that I, GEORGE W. WILSON, of Nashua, county of Hillsboro, and State of New Hampshire, have invented a new and useful Method of Hanging Parlor and other Doors by Means of an Improvement in the Hinges Applied to the Same.

The said improvement, the principles thereof, and manner in which I have contemplated the application of the same, by which it may be distinguished from other inventions of a like character, together with such parts or combinations I consider new and claim as my invention, I have herein after set forth and described, which description taken in connection with the accompanying drawings herein referred to composes my specification.

Figure 1, represents a door open at an angle of ninety degrees, together with a section of the partition wall A and door opening. Fig. 2, is the same shut or closed. The remaining figures are sketches of my improved hinges.

It will be seen by inspection of Fig. 1, that when the door is open, the lower part or corner *d* sets off at a greater distance from the casing *e f* than the upper corner *b* does from the same. This is done by placing the lower hinge or point of support, somewhat out of a perpendicular, dropped from the upper hinge, either more or less front or away from the casing of the door as represented in Fig. 1, and more or less to the left or toward a point *a* Fig. 2, according to the angular position in which it is desirable the door shall remain or stand still when open. By thus regulating the peculiar position of the lower hinge, by setting its center or axis, more or less out of a perpendicular dropped from the upper hinge, the door when opened to the required angle, will so remain, but if not opened so far it will fall back or shut by its own weight. This angular position at which the door shall stand still, when open, should be rather greater than the angle to which it is generally opened in passing in and out the same.

It will readily be perceived on opening a door, which is hung with the lower hinge projecting beyond the casing, a greater distance than the upper, as before described—that the plane of the door is slightly inclined to a horizontal plane, which inclina-

tion changes according to the angle to which the door is opened. Although this change of inclination is small, yet were we to hang the door in this manner with common butt hinges fitted square to the casing and door in the usual way (allowing the lower to project somewhat beyond the upper), on attempting to open the door, the hinges would bind, and in most cases the pressure of the parts would be so great, as to immediately break or destroy the hinges.

For the above reasons it is necessary to construct the hinges in such a manner, that there may be sufficient looseness or play between the joints, to allow the opening of the door without the friction and binding of the parts, to such an extent as will be productive of injurious consequences.

Also, at the same time, it is desirable that the parts should be so fitted to each other, that while they satisfactorily operate in the above manner they shall be in such contact, or shall so accommodate themselves to each other when the door is opened to any angle, that there may be no unnecessary shake or looseness. This is effected by the following method of constructing the hinges. The lower hinge or support is formed of two pieces of metal *i k* Figs. 5 and 6 shaped as seen in the drawing or otherwise suitably formed, the former of which is screwed to the casing, while the latter is screwed to the door. The part *i* is placed below the part *k* and has a hollow or conical socket or step *l* which receives the pivot *m* of the upper part *k* Fig. 6, the said pivot resting and moving in the same when the door is opened. By drilling a hole *v* down through the top *x* of the hinge into and through the pivot *m* oil may be passed through the same into the step *l*, which will retain the same for a long time, and thus lubricate the joint of the hinge, and greatly diminish friction and wear in the same.

I construct the upper hinge as exhibited in Figs. 3 and 4, the latter of which represents a vertical section through the joint of the hinge, or taken on the line *x, y*, in the end view Fig. 7. This joint is formed in three parts A B C Fig. 3, whereas the common butt hinge generally has five viz *a b c d e* Fig. 8. The length *f g*, of B Fig. 3, is generally about a sixteenth or an eighth of an inch less, than the length *h i*, of the space between the two parts A and C, and

the hole through the middle part B through which the pin *k l* passes, is rimmed out, from each extremity toward the center, so as to be of a double conical bore as exhibited in section Fig. 4, at *m n o p—g r o p*, the diameter of the bore at *o p* being equal to that of the holes through the parts A and C. Thus it will be seen, that the half E of the hinge, will swivel about on the circular bearing *o p*, so as to bring the two halves E, F into angular position with each other as represented in Fig. 9. As the part B is not so long by a sixteenth of an inch or thereabouts, as the space or distance between the parts A and C, and also as the joints should be fitted loosely on all sides in apposition, the lower hinge represented in Figs. 5 and 6, as well as the upper, can be fitted "square" (to use the technical term employed by carpenters), upon the casing and door, and when the door is swung open, the double conical bore of the part B, will permit the door to open without any injury to the hinge, while, at the same time, the upper hinge, by means of it, will suffer the pin *k l* to accommodate itself, or change its inclination or position, according to the situation of the door. And furthermore it will be seen, that in order to fit the hinge "square" to the casing, and to adapt it to the angular position of the pivot of the lower hinge, said pivot being arranged to such an angle to which we wish the door to open, and there remain, and when opened to a less angle, to close by its own weight, or when opened to a greater angle to fall back and remain open, it is necessary that the parts A B C be constructed as above described. Therefore, one great object of my invention is to give to the upper hinge such a construction, that, both it and the lower may be fitted to the door and casing by any carpenter, (as there are not many who can fit common butt hinges so that their axes shall be out of the perpendicular as before described, without their having a very awkward and unsightly appearance,

when the door is hung, and operating with much friction), and thereby by fitting the upper and lower hinges square, to make good work.

As doors are generally hung, whenever any settlement of a building or partition takes place, and causes the door to bind or bear hard on the threshold or sides of the frame, so as to render the operation difficult, it generally becomes necessary to withdraw the screws of the hinges, in order to take down the door, to plane off or otherwise reduce the edges. Removing the same a few times, destroys the adhesion of the hinge screws to the wood, and of course, affects the proper movement of the door. By using my improved hinges, it will only be necessary to draw out the pin *k l* of the upper hinge, and bringing the upper part of the door, a little forward, it may be easily and at once lifted from its support *i* Fig. 5, and when repaired, can be replaced with as little trouble and without the necessity of removing the screws of the hinges.

In case of fire, valuable doors may be easily saved if hung with my improvements, whereas, as generally hinged to the frame or casing, they cannot be taken down with facility, and are most always burned with the dwelling.

Having thus described and set forth the nature of my improvements, I shall claim in the same,

The construction of the upper hinge, in combination with the lower hinge, arranged and operating together, substantially in the manner and for the purposes herein above described.

In testimony that the above is a true description of my said invention and improvement I have hereto set my signature this nineteenth day of June in the year of our Lord eighteen hundred and forty.

GEO. W. WILSON.

Witnesses:

R. H. EDDY,
EZRA LINCOLN, Jr.