

No. 828,123.

PATENTED AUG. 7, 1906.

W. J. KELLY.
LOCKING HINGE CONSTRUCTION.

APPLICATION FILED AUG. 8, 1905.

2 SHEETS—SHEET 1.

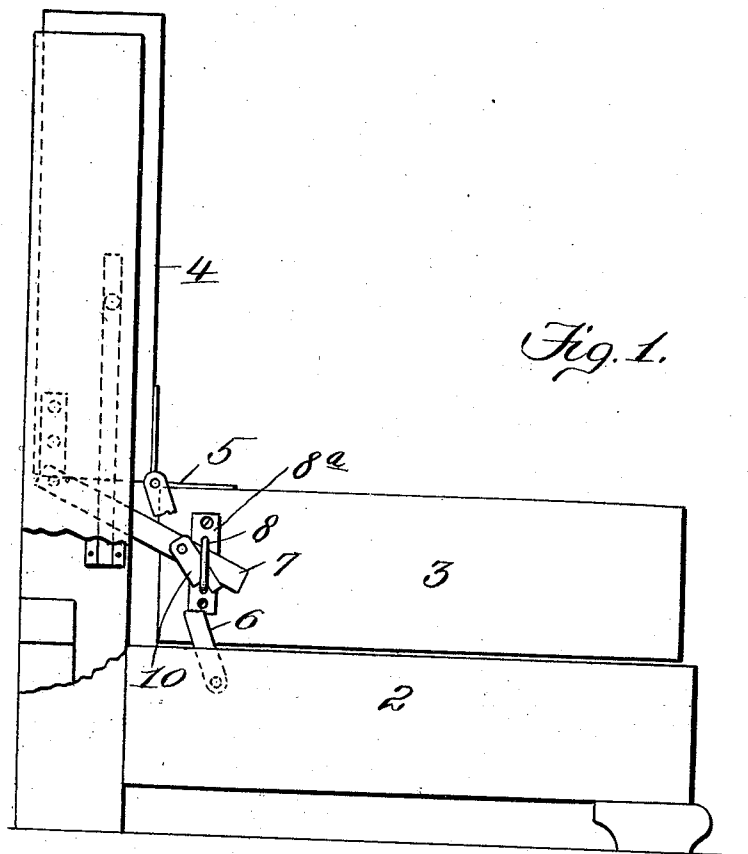


Fig. 1.

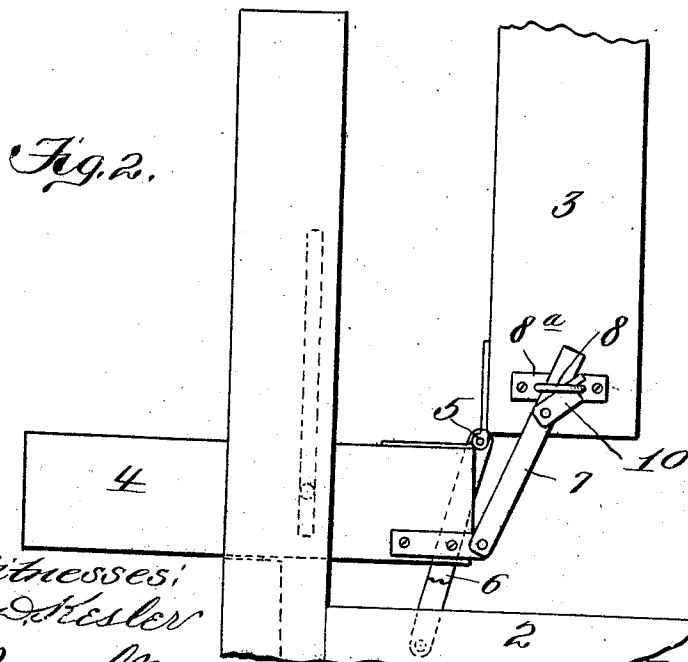


Fig. 2.

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By *James L. Norris*
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2 SHEETS—SHEET 2.

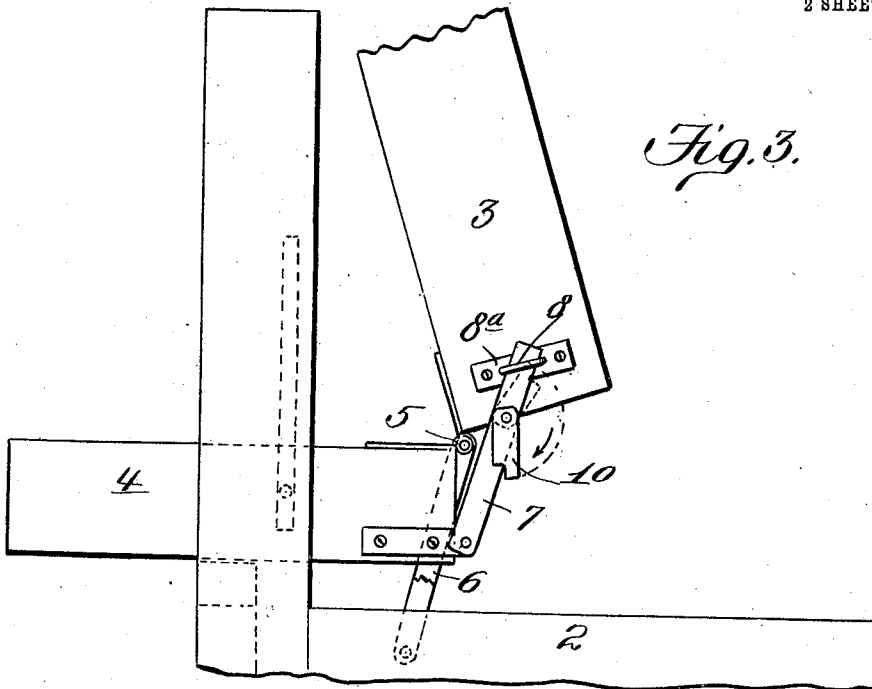


Fig. 3.

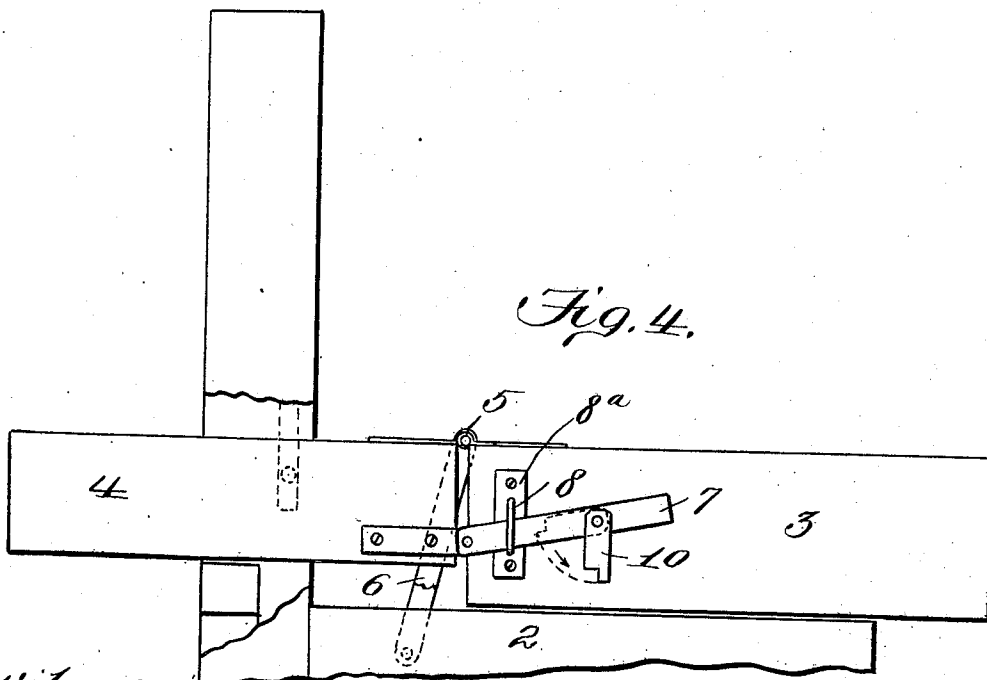


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM J. KELLY, OF CLINTON, IOWA, ASSIGNOR TO J. A. KELLY & BROS., OF CLINTON, IOWA, A CORPORATION OF IOWA.

LOCKING-HINGE CONSTRUCTION.

No. 828,123.

Specification of Letters Patent.

Patented Aug. 7, 1906.

Application filed August 8, 1905. Serial No. 273,288.

To all whom it may concern:

Be it known that I, WILLIAM J. KELLY, a citizen of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented new and useful Improvements in Locking-Hinge Constructions, of which the following is a specification.

This invention relates to a locking-hinge construction; and it may be advantageously employed in several connections, one of which is as a part of an article of furniture, which may be a chair or sofa-bed.

I will describe a locking-hinge construction involving my invention as incorporated in a sofa-bed. In this particular use it positively and effectually maintains the back thereof normally in an upright position against rearward motion. The construction, however, is of such a character that the back and seat can be adjusted to bring them into a common horizontal plane and can be restored to their primary relation, the locking device on the motion of the back and seat being wholly automatic.

In the drawings accompanying and forming a part of this specification I illustrate a simple form of embodiment of the invention, which to enable those skilled in the art to make and practice the same I will set forth in detail in the following description, while the novelty of said invention will be included in the claim succeeding the description.

In the drawings; Figure 1 is an end elevation of part of a sofa-bed involving my invention. Figs. 2, 3, and 4 are similar views of the back and seat thereof and illustrating the different relative positions assumed by these parts in converting an article of furniture, such as a sofa-bedstead, from a sofa to a bed.

Like reference characters refer to like parts throughout the several figures.

I have illustrated in Fig. 1 of the drawings a portion of a sofa-bed, and in this figure the body portion of the bed is denoted by 2, the seat by 3, and the back by 4, the seat and back being hingedly connected, for which purpose a hinge, as 5, of the ordinary type, is illustrated. Normally the seat 3 rests upon the body portion 2, the back rising from the rear of the seat. The seat and back may be arranged for simultaneous swinging motion, for which purpose they may be carried at the upper end of complementary links, as 6, fol-

tion. I have only shown one of the links 6, as I deem this to be all that is necessary for a proper understanding of the invention. The organization just outlined is familiar in the art of furniture and has only been briefly set forth to indicate the purpose of my invention, which will now be set forth.

I movably connect to one of two hingedly-connected members, such as a seat 3 and back 4, an arm, as 7. Said arm is shown as pivoted at or near one end to the back 4. The opposite end of the arm 7 is shown as cooperative with a catch or keeper, as 8, upon the seat 3. The catch 8 is shown as a staple, the ends of which extend through a reinforcing-plate, as 8^a, and into the seat 3. Said plate may be fastened to the seat in any desirable way, as by screws. The arm 7 extends through the staple or catch 8 and is adapted, as will hereinafter appear, to longitudinally traverse the lower branch or leg thereof, which lower branch or leg constitutes the effective portion of the catch or staple.

Movably connected with the arm 7 is a dog, as 10. The dog is shown as pivoted upon the pivoted arm and is notched at its free end to engage the staple or catch 8 or, more accurately, the lower branch of said staple. The dog is of the gravitative type—that is, when it is carried out of engagement with the keeper or catch 8 it will assume at once automatically a vertical position. In Fig. 1 I have shown the dog 10 as being in its working relation, the notch thereof receiving the lower portion of the catch or staple 8. The staple or catch 8 prevents the upward swing of the arm 7 in order to maintain the dog 10 in engagement with said staple or catch and prevent the back 4 from dropping rearward. It will be seen that the free end of the arm 7 extends forward beyond the corresponding portion of the dog 10, and the reason for this will now appear. It will be assumed that it is desired to convert the sofa into a bed. To do this, the back will be swung down to a horizontal position, and as the seat at this time is in locked relation with the back the latter is brought to a vertical position, as shown in Fig. 2. The seat is now moved toward the back, and as it does so the arm 7 by its weight will fall away from the upper branch of the staple 8 and against the lower branch thereof. On a continued slight movement of the seat toward the back

the dog 10 is carried out of engagement with the staple and at once assumes a vertical position. When the dog is free of the staple, the seat is free to move to a horizontal position in alinement with the back. As the seat is swung down to a horizontal position the arm 7 is slid along the staple 8, so as to swing the dog 10 with its notch rearward toward the pivot of the arm 7 and in alinement with the said arm. Just before the seat reaches a horizontal position the dog will move free of the staple 8, so that it can assume a vertical position and be in readiness to engage the staple when the back is elevated. When the back is elevated, the arm 7 is slid rearward and in contact with the lower branch of the staple, carrying, of course, the dog therewith. When the dog strikes the staple, it will be brought into alinement with the arm as the seat is elevated, with its notch facing toward the free end of the arm 7. When the seat is vertical, the dog will by its own weight assume its primary position or that indicated in Fig. 1. When in said primary position, the upper side of the arm 7 abuts against the upper branch of the staple 8, while the notch of the dog engages the lower branch of said staple, so that the back 4 is securely held against rearward tilting movement. When the seat is operated relatively to the back, so that the two can be put into horizontal alinement, as shown in Fig. 4, the arm 7 will traverse the catch 8, but will not be disengaged therefrom, whereby I assure that the dog is maintained at all times in readiness to engage the staple. That part of the arm 7 which traverses the staple 8 is plain or un-

notched. Said arm is shown as being pivoted near the outer edge of the back 4, whereby when the parts are arranged as shown in the drawings the operation hereinbefore described is assured. This pivotal mounting of the arm 7, however, is not essential, for the parts may be so proportioned as to relate the arm 7 with the back 4 in other ways within the scope of my invention covered by the following claim.

Having described the invention, what I claim is—

The combination of a seat and a back mounted for simultaneous and independent swinging motion, an arm pivotally connected with the back, a staple attached to the seat and to receive said arm, said arm being adapted to traverse the staple when the back is moved relatively to the seat and that part of the arm which traverses the staple being plain throughout its entire length, and a gravity-dog pivotally mounted on the arm, the free end of the arm extending beyond the free end of the dog and the dog being notched in a corner to fit the lower part of the staple, the arm extending at all times through the staple, said arm having a movement sufficient to carry the dog to opposite sides of said staple.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM J. KELLY.

Witnesses:

W. J. BURKE.

E. J. LAWLER.