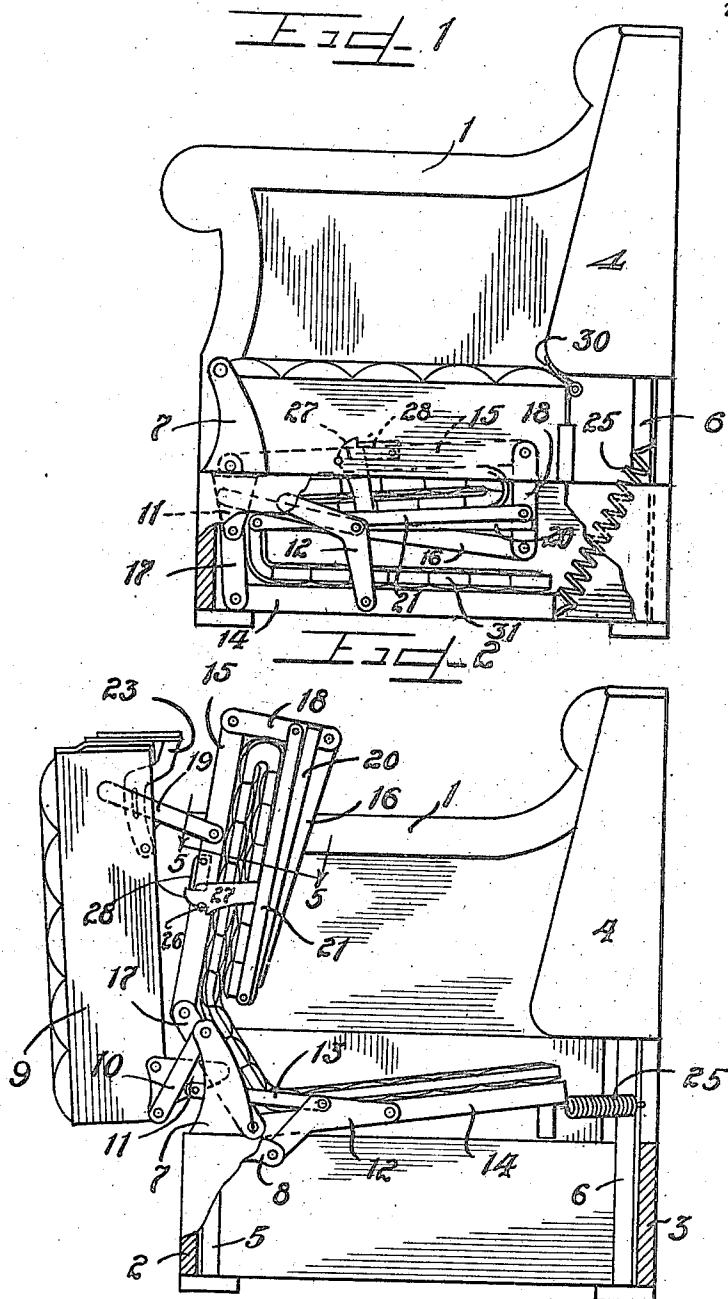


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W. P. SENG.
FOLDING COUCH LOCK.
APPLICATION FILED JULY 9, 1914.

Patented Sept. 11, 1917.
2 SHEETS—SHEET 1.



WITNESSES

Victor Silander.

Leon M. Rubenstein.

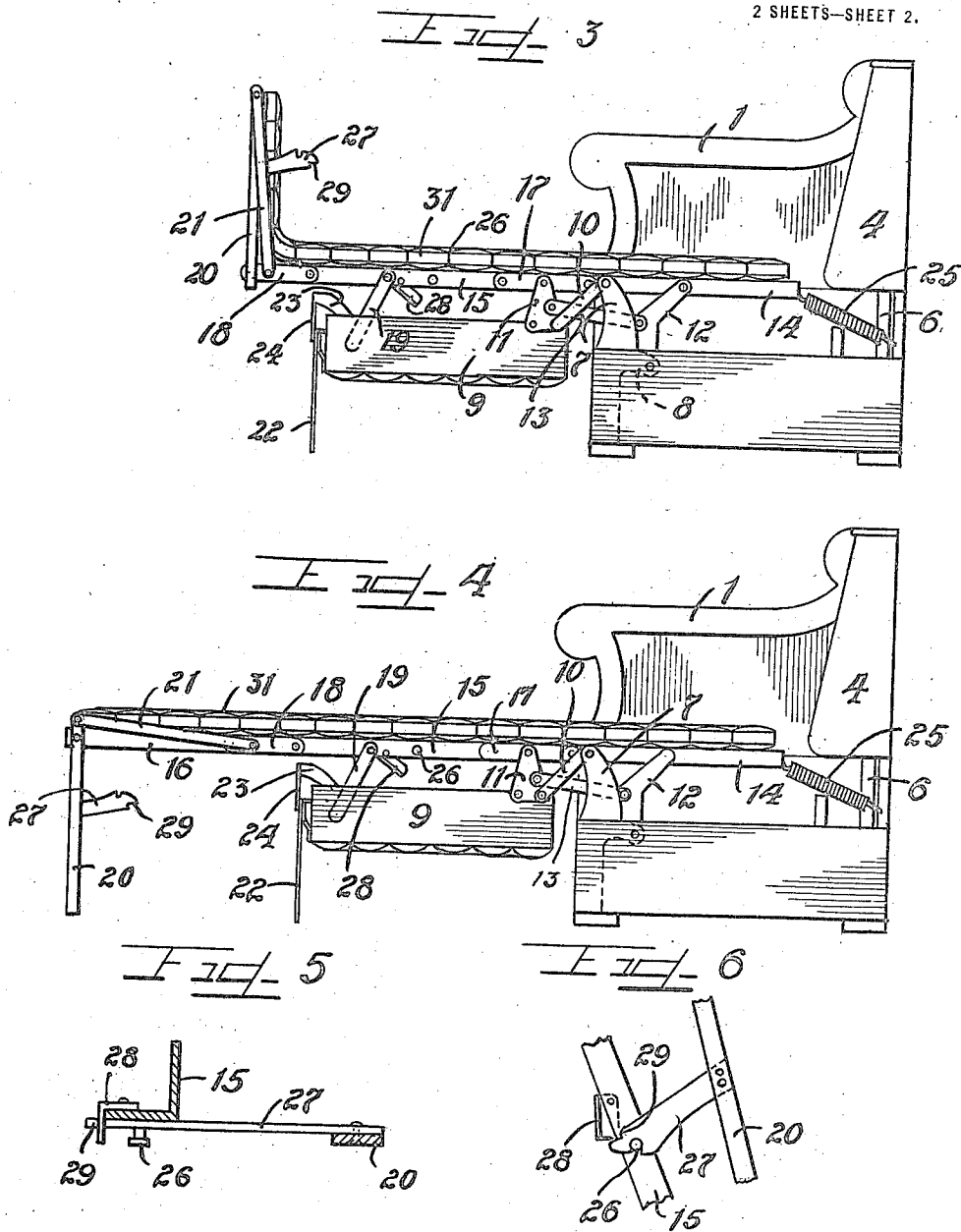
INVENTOR
Wendelin P. Seng.

by Charles W. New
Att'y

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WITNESSES
Victor Siljander
Leon M. Reibstein

INVENTOR
Wendelin P. Seng.
by Charles W. Miller Atty

UNITED STATES PATENT OFFICE.

WENDELIN P. SENG, OF CHICAGO, ILLINOIS, ASSIGNOR TO PETER E. KROEHLER, OF
NAPERVILLE, ILLINOIS.

FOLDING-COUCH LOCK.

1,239,528.

Specification of Letters Patent. Patented Sept. 11, 1917.

Application filed July 9, 1914. Serial No. 849,923.

To all whom it may concern:

Be it known that I, WENDELIN P. SENG, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Folding-Couch Locks; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

One of the prime essentials of a folding couch which, when unfolded, may be used as a bed, is compactness, and the various parts thereof must be so constructed as to easily fold into a confined space and in a manner facilitating easy operation of the device. Various types of latching and locking means have been provided associated with the various hingedly connected members for holding the same folded upon one another prior to or during certain of the folding operations, but in a great number of devices it has been found that, when the device is in normal or folded position, certain of the folded link members which comprise the mattress frame on the underside of the seat of the device, fall away from one another, and thus opening of the device is made very difficult and inconvenient.

This invention relates to a locking means for maintaining the mattress frame sections of the device properly associated with one another during a folding or unfolding operation, and so constructed that mechanisms act automatically to interlock with said locking means to maintain the locking means locked after the device has been completely folded into normal position, thus insuring positive retainment of the parts in their locked folded position. Furthermore said mechanisms, there being one provided at each end of the device, act automatically to disengage from the locking means when the device is unfolded, so that the operation occasions no inconvenience.

It is an object of this invention to construct a folding bed davenport provided with locking means for maintaining certain of the foldable members in folded relation, and with mechanisms acting automatically to interlock with said means to maintain the same in locking position as said mem-

bers and means are revolved into the folded position of the device.

It is also an object of this invention to provide a pivotally mounted gravity acting mechanism mounted on one of the foldable sections of the mattress frame, which coacts with a hook latching member on a foldable leg of the device to hold certain of the mattress frames in folded relation as the same are revolved into the couch frame in position out of use.

It is finally an object of this invention to construct a device provided with automatic locking mechanism which acts efficiently to maintain the various foldable members thereof properly associated during folding and unfolding of the device, and without inconvenience to the operator nor necessitating an extra number of operations, but instead greatly facilitating the folding and unfolding of the device.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is an end elevation of my invention, with one end member broken away to show the construction.

Fig. 2 is a similar view showing the position of the parts during an unfolding operation.

Fig. 3 is another view showing the position of the parts with the device almost entirely unfolded.

Fig. 4 is a view of a device with the parts completely unfolded in position for use.

Fig. 5 is a fragmentary section taken on line 5-5 of Fig. 2 with parts omitted.

Fig. 6 is an enlarged fragmentary detail view showing the relation of the lock and interlocking means therefor.

As shown in the drawings:

The couch frame consists of end members 1, connected to one another along the front of the device by a front board 2, and at the rear, by a back board 3, and with an upholstered back 4, extending above said back board and connected between said end members. Angle iron uprights 5 and 6, are secured at the front and back corners of the couch frame respectively abutting the joint made by the front board and back board respectively with the end members.

The corner angle irons 6, extend upwardly

to the upholstered back 4, as clearly shown in Figs. 1 to 4 inclusive. Secured on each end of the couch frame near the forward side thereof are rigid bracket plates 7, which 5 curve upwardly and outwardly from the couch frame, and are provided with a downwardly and rearwardly directed short extension 8. A seat frame 9, is mounted to fold into and to be supported upon said 10 couch frame when the parts are in normal position with the folding mechanisms comprising the mattress frame hereinafter described, concealed therebeneath. For this purpose links 10, at each end of the device 15 are connected upon said brackets 7, and to the lower end of brackets 11, rigidly secured near the front and on the under side of each end of said seat frame. At each end of the device an elbow link 12, is pivoted at one of its 20 ends to said extension 8, of the bracket plate 7, on the couch frame, and pivotally connected to the middle part of said elbow link is another link 13, which is also pivotally connected upon said seat frame bracket 11.

25 A foldable mattress frame comprising inner sections 14, intermediate sections 15, and outer sections 16, with the inner and intermediate sections connected by means of short sections 17, and the intermediate and outer 30 sections connected by short sections 18, is connected to the couch frame through the elbow links 12, which are pivoted to the inner sections 14. Each of said small sections 17, is pivoted at its middle upon one 35 of the bracket plates 11, of the seat frame, and swinging links 19, one pivoted near the rear and at each end of said seat frame, are pivotally connected with the intermediate sections 15, of the mattress frame, so that 40 said inner and intermediate sections are supported upon the couch frame and inverted seat frame with the parts in the position shown in Fig. 4.

A leg 20, is pivoted on each of the outer 45 frame sections 16, and a link 21, is pivoted to the upper end thereof and to said small frame section 18, so that said leg is positively extended or retracted into extended or folded position, as the case may be, with an 50 unfolding or folding operation of the device. A foldable leg 22, is also pivoted upon the rear wall and near each end of the seat frame 9, so that when the same is in the position shown in Fig. 4, said legs rest upon 55 the floor to support the outer end of the inverted seat frame.

For the purpose of actuating said legs 22, each of the links 19, is connected by means of a pin and slot with a curved link 23, 60 which is pivoted upon the seat frame and is engaged to an eccentric or crank 24, pivotally secured near the upper end of said leg 22, so that when the mattress frame is folded into the device and the seat frame re- 65 volves to normal position, each of said legs

is swung upwardly parallel to the rear surface of the seat frame. A pair of spiral tension springs 25, are connected at each end of the couch frame to the respective 70 corner angle iron uprights 6, and to the inner end of the mattress frame, and act when the device is being folded, to resist the downward movement thereof, thus relieving the operator of a great portion of the 75 load in lowering the device into the normal folded position and also when unfolding the device for use.

A pin or stud 26, having a head thereon is rigidly secured on each of the intermediate sections 15, of the mattress frame and 80 project outwardly therefrom in a position to be engaged by a rigid hook locking member 27, one each rigidly secured upon the foldable legs 20, of the outer mattress frame sections. In order to maintain said hook mem- 85 bers 27, engaged upon the pins 26, after the parts have been revolved into the position shown in Fig. 1, a gravity acting pivoted dog 28, consisting of a short section of angle iron is pivoted upon each of said intermediate sections 15, near the pin 26, with the 90 flange of said dog adapted to swing down to rest upon the edge of said section, and with the web of said dog parallel to the web of said section. Accordingly, as clearly shown 95 in Fig. 6, the rear edge of said hook member 27, is cut away to afford a notch 29, with which the flange 28, of the pivoted dog is adapted to drop into engagement, to hold said hook member tightly engaged upon 100 the pin.

A pulling strap 30, is secured upon the rear side of said seat frame 9, in order to afford a means by which the operator may swing said seat frame outwardly during an 105 unfolding operation of the device.

The operation is as follows:

When it is desired to unfold the device for use the operator seizes the strap 30, swinging the seat frame upwardly, the asso- 110 ciated mattress frame sections attached thereto moving therewith and the parts assuming the position shown in Fig. 2, as the operation proceeds. The outer mattress frame sections 16, at this time are retained 115 folded over and adjacent the intermediate mattress frame sections 15, by the hook members 27, engaging the pins 26, and as the unfolding continues the seat is finally inverted into a horizontal position, the leg 22, 120 automatically swinging down to rest upon the floor and assisting in supporting said seat frame. The seat frame as described is connected through the links 10, and 13, to the couch frame, each of the links 13, being 125 pivoted upon the links 12, which are pivoted to the couch frame, so that the weight of the seat as the same swings outwardly serves to move the links 12, upwardly, and, inas- 130 much as the inner mattress frame sections

14, are pivotally mounted thereon, said inner mattress frame sections are elevated to the proper level for use.

As the intermediate links 15, move beyond a vertical position during an unfolding operation, that is into a position of the parts past that shown in Fig. 2, the pivoted angle iron dogs 28, swing outwardly by gravity from behind the hook members 27, so that after the seat frame has been inverted and is supported upon the floor, the outer mattress frame sections 16, may be swung upwardly, inasmuch as the hook members lift away from the pins by such movement. Of course the links 21, as the outer sections are swung outwardly, cause positive movement downwardly of the legs 20, at each end of the mattress frame to support said outer sections upon the floor.

In Figs. 1 to 4 inclusive I have shown a mattress 31, resting upon a spring strung on the mattress frame, and of course the mattress is adapted to fold up together with the bedding as said sectional mattress frame is folded, and the arrangement of the parts is such that sufficient space is allowed between the mattress frame sections to easily contain the bedding and mattress therebetween. Inasmuch as any stress exerted upon the pivoted dog 28, after the same has dropped into engagement with the hook member, is in line with the pivot of the dog, there is no tendency for the same to swing upwardly out of engagement with said locking hook 27.

I am aware that various details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. In a device of the class described a mattress frame embracing a plurality of sections, a couch frame, a seat frame linked to said couch frame, connections between said sectional mattress frame and said seat and couch frames to permit unfolding of said mattress frame when the seat is inverted, foldable supporting legs on certain of said sections, pins on other of said sections, hook members rigidly secured on said legs adapted to engage said pins, and mechanisms on said last mentioned sections near said pins adapted to act automatically to hold said hook members tightly engaged with said pins and lock certain of said mattress frame sections closely adjacent one another when the device is folded to hold the same supported beneath the seat frame when the latter is in normal position on the couch frame.

2. In a folding couch of the class de-

scribed, a sectional mattress frame consisting of inner, outer and intermediate sections linked to one another, foldable legs on said outer section, hooked locking members rigidly secured thereon, pins on said intermediate section adapted to be engaged by said hooked locking members, and mechanisms pivotally secured on said intermediate section adapted to act automatically to hold said locking members engaged with said pins to lock the sections one to another as the mattress frame is folded into the couch frame into position out of use.

3. In a folding couch of the class described, a sectional mattress frame consisting of inner, outer and intermediate sections linked to one another, legs movably secured on said outer section, hook locking members rigidly secured thereon, pins secured on said intermediate section adapted to be engaged by said hook locking members to lock the outer and intermediate sections one to another as the mattress frame is folded into the couch frame into position out of use, and gravity acting dogs pivoted on said intermediate section adapted to hold said hook locking members engaged with one another when the mattress frame is folded and adapted to automatically unlock said locking members and pins as the mattress frame is unfolded from the couch frame into a position for use.

4. In a folding couch, inner, intermediate and outer sections, legs pivoted to the outer section, locking members secured thereto having a notch on each side thereof, pins on the intermediate section adapted to engage in the notches on one side of the locking members and members pivoted to the intermediate section adapted to automatically engage into the notches on the opposite side of the locking members and to automatically disengage therefrom to lock the sections together and to release the sections to unfold.

5. In a device of the class described, outer, intermediate and inner sections, legs pivoted to the outer section, latching members secured to the legs, and co-acting rigid and swinging members secured to the intermediate section adapted to automatically engage the latching members to lock the sections in folded relation and to automatically release the latching member to release the outer section from the intermediate section in unfolding the sections.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

WENDELIN P. SENG.

Witnesses:

LAWRENCE REIBSTEIN,
LE ROY D. KILEY.