

T. H. SORLIEN.  
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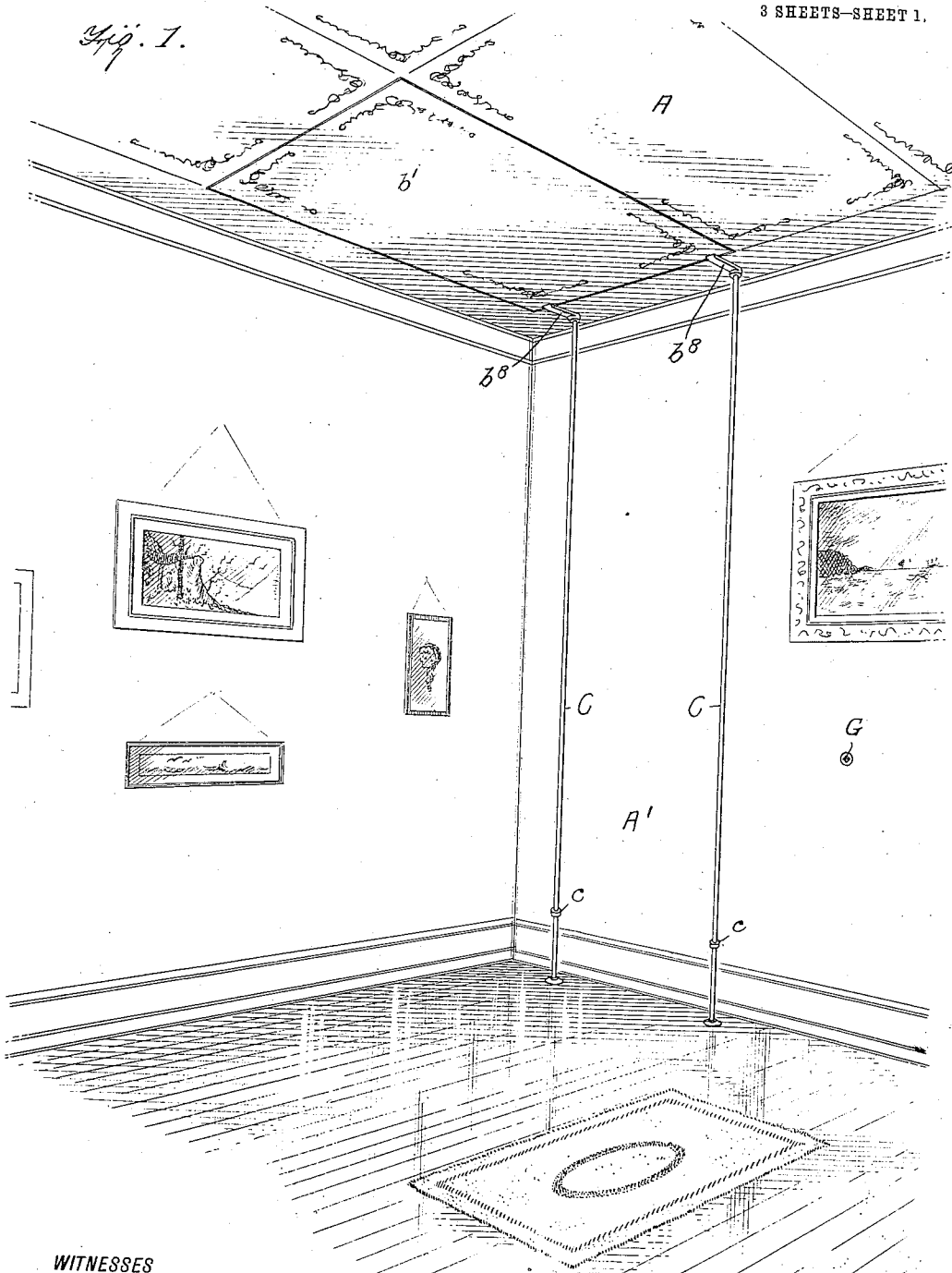
APPLICATION FILED JAN. 30, 1913.

1,065,740.

Patented June 24, 1913.

3 SHEETS—SHEET 1.

*Fig. 1.*



WITNESSES

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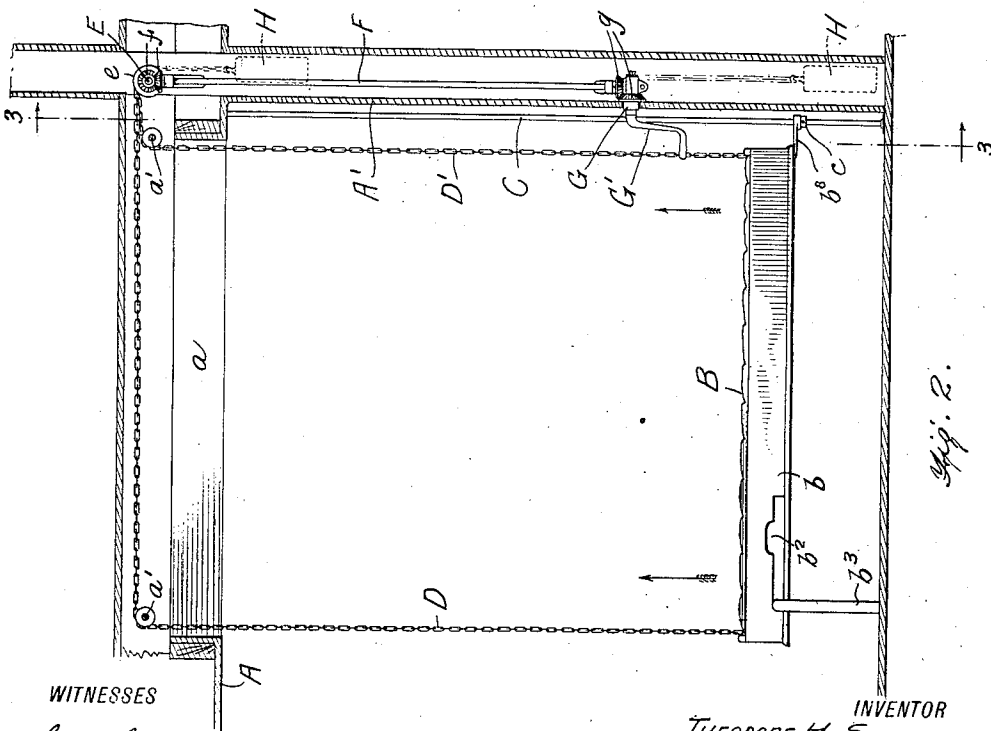
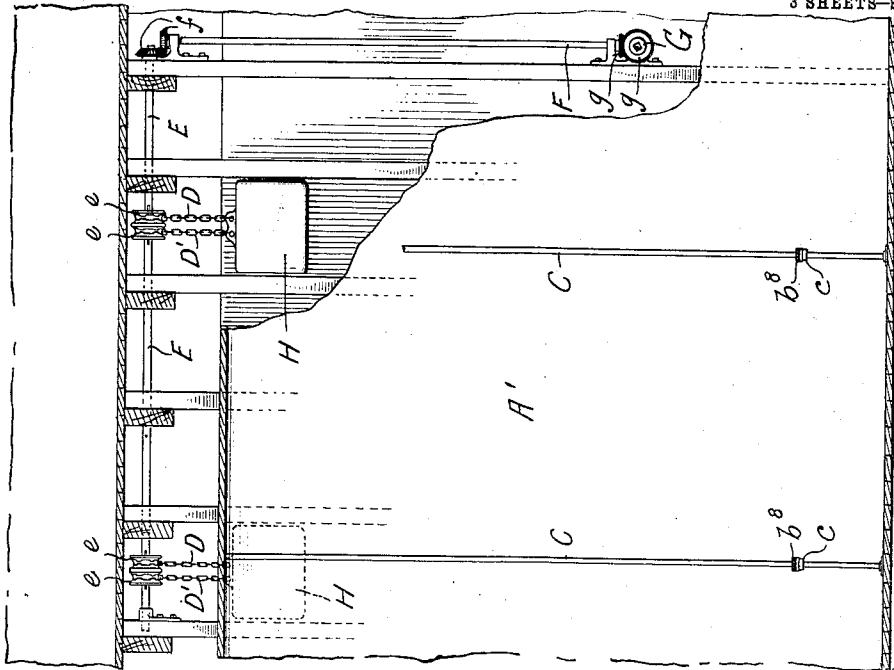
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3 SHEETS—SHEET 2.



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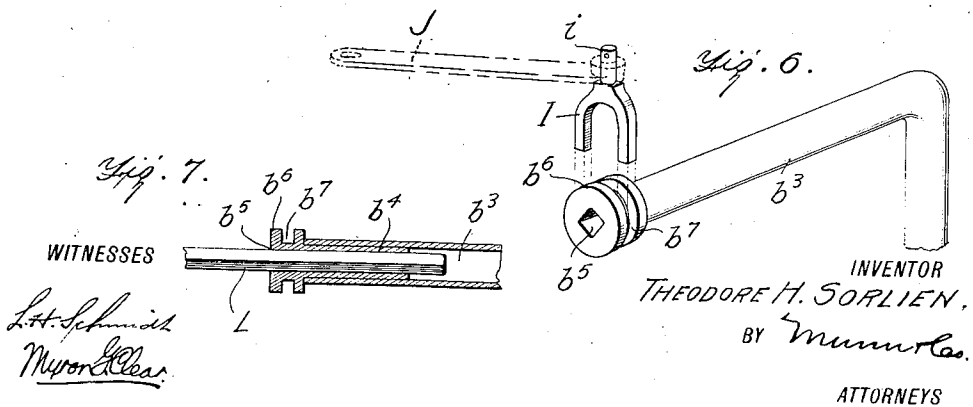
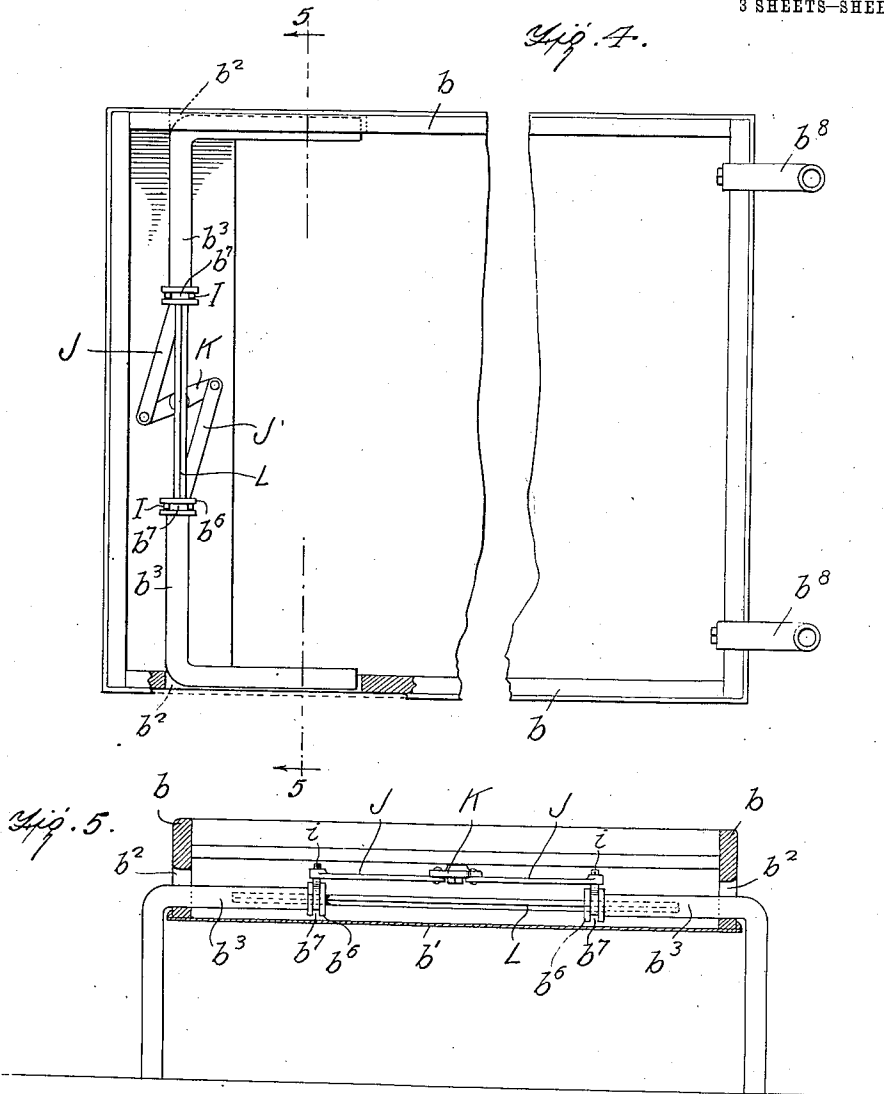
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# UNITED STATES PATENT OFFICE.

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BED.

1,065,740.

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Application filed January 30, 1913. Serial No. 745,118.

To all whom it may concern:

Be it known that I, THEODORE H. SORLIEN, a citizen of the United States, and a resident of Granite Falls, in the county of Yellow Medicine and State of Minnesota, have made certain new and useful Improvements in Beds, of which the following is a specification.

My present invention is an improvement in that class of beds to be elevated or hoisted to the ceiling of a room so that they will not take up any of the floor space, the object of my invention being to provide an arrangement wherein the bed enters an opening in the ceiling and is so constructed that, with the decorations of the ceiling and the bed conforming to one another, the presence of the bed in disuse will ordinarily pass unnoticed.

A further object of my invention is to provide an arrangement wherein the bed is guided to and from its position within the ceiling opening whereby to obviate marring or breaking the ceiling, and a further object of my invention is to provide such an arrangement as will prevent the bed from falling from its raised position should one of the counter-balancing weights become detached.

With the above in mind, my invention resides in the details of construction and arrangement to be now described with respect to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a perspective view showing the interior of a room in which my improved bed has been installed. Fig. 2 is a vertical section taken through a portion of the room longitudinally of the bed. Fig. 3 is a vertical section taken substantially on the line 3—3 of Fig. 2 and partially broken away to more clearly illustrate certain parts. Fig. 4 is a detail plan view of the bed frame. Fig. 5 is a vertical transverse section there-through taken on line 5—5 of Fig. 4, and Figs. 6 and 7 are details of the bed legs to be hereinafter specifically referred to.

Referring now to these figures, *a* represents an opening formed in the ceiling A of a room, preferably adjacent the wall A', the opening *a* being adapted to receive the bed B therein. The bed B essentially consists of a frame comprising sides and ends *b* and a base *b'*, the lower surface of the latter of which I prefer to decorate to conform to the decoration of the ceiling A of the room,

it being my intention to panel the ceiling A as shown in Fig. 1, making each panel of substantially the dimensions of the base of the bed *b'*. At one end, the sides *b* of the bed frame are provided with horizontal slots immediately above the bottom or base *b'*, through which slots the angular legs *b<sup>3</sup>*, may be moved outwardly and then turned downwardly from the folded position shown in Fig. 4 to the operative position as shown in either of Figs. 2 and 5. As will be seen particularly in Fig. 7, the legs *b<sup>3</sup>* are hollow and have tubes *b<sup>4</sup>* rigidly fitted within their inner ends, said tubes having squared bores *b<sup>5</sup>* and enlarged exterior ends *b<sup>6</sup>* provided with annular grooves *b<sup>7</sup>*. Within the grooves *b<sup>7</sup>* loosely extend yokes I, the stems *i* of which are swiveled in the ends of toggle arms J which arms are pivotally connected at their inner contiguous ends to the opposite ends of a toggle lever K centrally pivoted to a portion of the bed frame between the legs *b<sup>3</sup>*. Thus when one leg is withdrawn or folded, the other leg is given a similar movement, the legs being movable on the opposite end portions of a square faced bar L which adjustably connects the legs. From the foregoing it will be seen that when the legs *b<sup>3</sup>* are folded and disposed within the slots *b<sup>2</sup>*, the bed may be raised to the position shown in Fig. 1 and effectively concealed while in disuse through the means just described. The opposite end of the bed B is provided with guide members *b<sup>8</sup>* projecting endwise from its base *b'* and adapted to slidingly engage and bearing on rigid uprights C preferably secured at their lower ends in the floor to rigidly upstand along the side wall A' in the position shown in Fig. 1, said uprights being provided adjacent their lower ends with rigid stops *c* arranged at substantially the height of the guide members *b<sup>8</sup>* when the bed is lowered in position for use and supported at its opposite ends by the legs *b<sup>3</sup>*. In this way both ends of the bed will be rigidly held against lowering.

Mounted within the ceiling A above its opening *a* are a pair of pulleys *a'* and from these pulleys extend chains D and D', connected at one end to opposite ends of the bed B, the other ends of these chains extending over sprocket pulleys *e* mounted upon the horizontal driving shaft E journaled in the upper portion of the side walls A', which shaft receives its rotation to raise and lower

the bed through a vertical connecting shaft F and crank shaft G with connecting bevel gears *f* and *g*, and a handle G' adapted for detachable engagement with the crank shaft.

5 The opposite ends of the chains D and D' are connected to counterbalance the weights H which are slidable vertically in the side walls A'. In view of the fact that chain connections D and D' are provided for the bed and in view of the further fact, as it

10 will be seen from Fig. 3 that the sprocket pulleys *e* are provided with recessed peripheries so as to receive the links of the chains in such recesses, it may be seen that the

15 chains will be effectively prevented from slipping and the bed consequently held against lowering movement if something is placed thereon tending to overbalance the parts or in case one of the weights H should

20 for any reason become detached.

The structure of the several parts renders the movement of the bed to and from an operative position comparatively quick and very convenient and the provision of the

25 uprights C enables the positive guiding of the bed within and from the ceiling opening *a* whereby the sides of the latter need not be marred or otherwise broken in any case. Furthermore, it will be noted from Fig. 1

30 that the bed when raised and disposed within the ceiling opening is practically concealed from view, leaving an unbroken ceiling.

I claim:

35 1. In combination with the ceiling of a room, of pulleys mounted within the ceiling, flexible connections extending over the said pulleys, a bed suspended by said flexible connections, said bed comprising side and end

40 walls and a base, the former of which are provided with slots adjacent one end of the bed, angular legs normally positioned within the bed, a connection between the said legs and upon which the legs are movable

45 outwardly in relatively opposite directions and with which the legs are rotatable to an upright position, other connections extending between the legs and adapted to cause movement of one leg when the other leg is

50 moved, guide members extending from the opposite ends of the bed, means with which the said guide members are engageable whereby to form a support for the end of the bed when lowered in operative position, and means for manipulating the said flexible

55 connections whereby to raise and lower the bed substantially as described.

2. In combination with a ceiling and side wall of a room, the former of which is provided with a bed receiving opening, of a

60 pair of guide rods secured in an upright position along the side wall and adjacent to the ceiling opening, a bed frame having a pair of guide members slidably engaging the rod, pulleys mounted in the ceiling over its open-

65 ing, flexible connections extending over the said pulleys and secured at one end to the bed for suspending the same in position, the said bed comprising a frame, and folding legs at one end of the frame, rigid stops

70 carried by the upright rods and adapted to receive the guide members thereagainst whereby to form a support for the opposite end of the frame, and means engaging the said flexible connections for manipulating

75 the same to raise and lower the bed frame.

3. The combination with the side walls and the ceiling of a room the latter of which is provided with a bed receiving opening, of a guide rod secured in an upright position

80 along one side wall adjacent the opening, a bed frame having a guide member slidably engaging the rod, pulleys mounted in the ceiling over its opening, chains connected at one end to the bed frame and extending

85 over said pulleys, a shaft mounted in the upper portion of one of the side walls, sprocket pulleys secured on said shaft and having recessed peripheries over which the chains also extend whereby they are prevented from

90 slipping, weights in the side walls to which the opposite ends of the chains are fastened, and a crank shaft having connection with the said pulley shaft for rotating the latter.

THEODORE H. SORLIEN.

Witnesses:

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