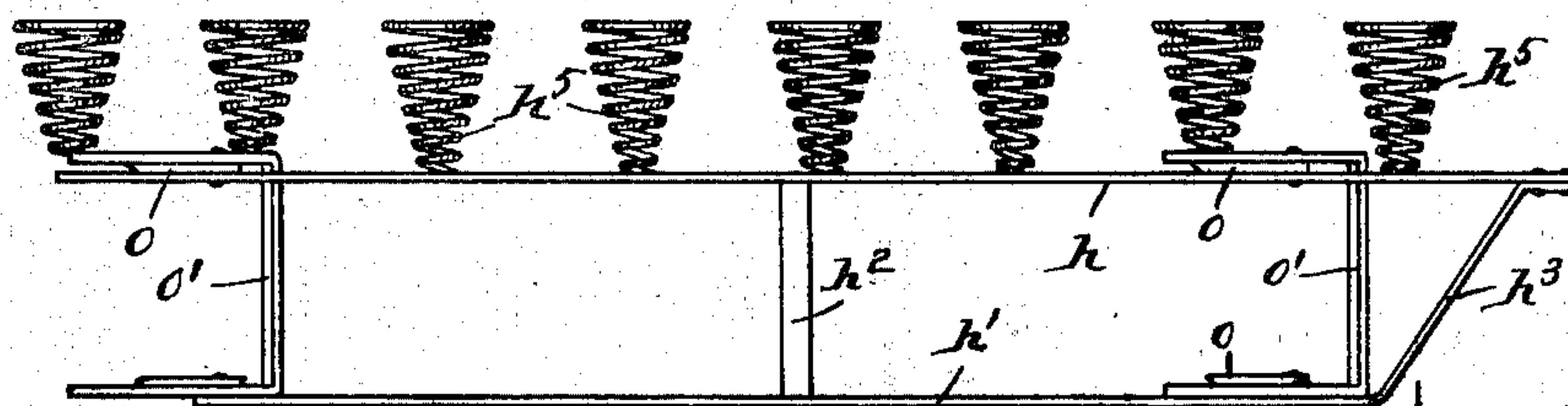
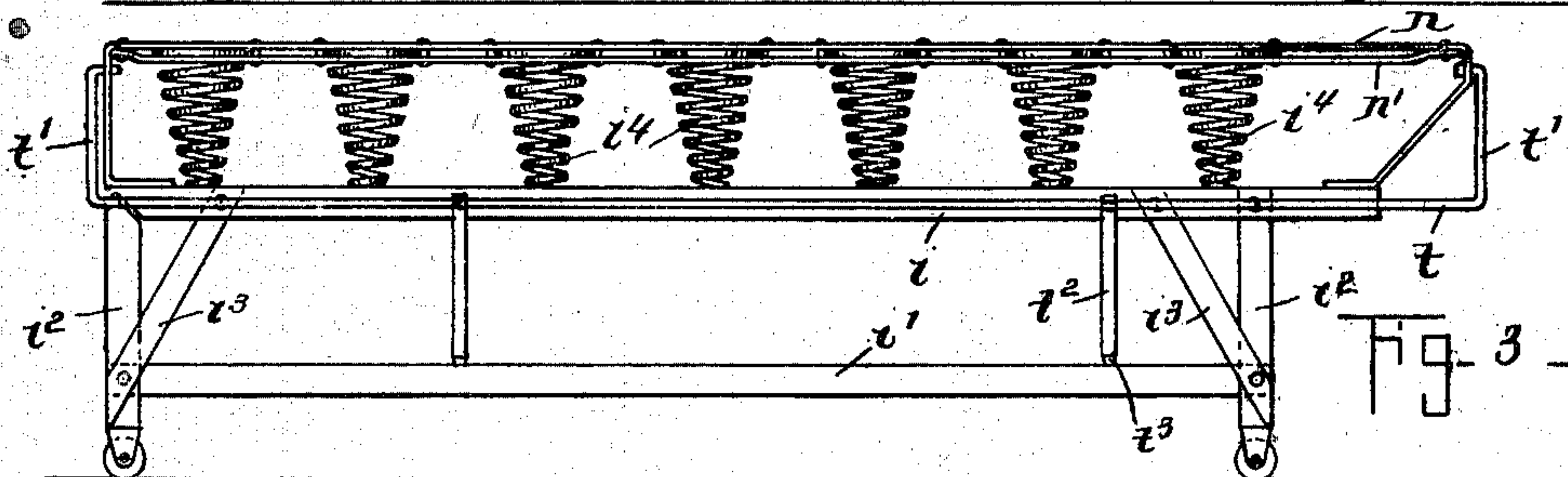
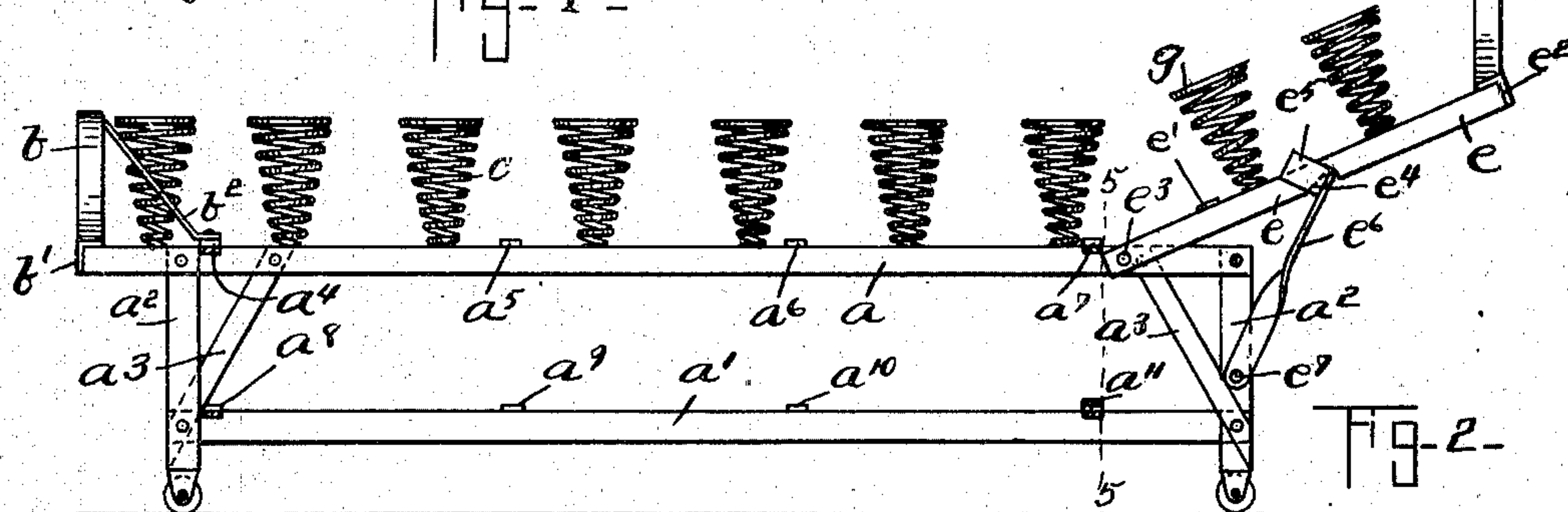
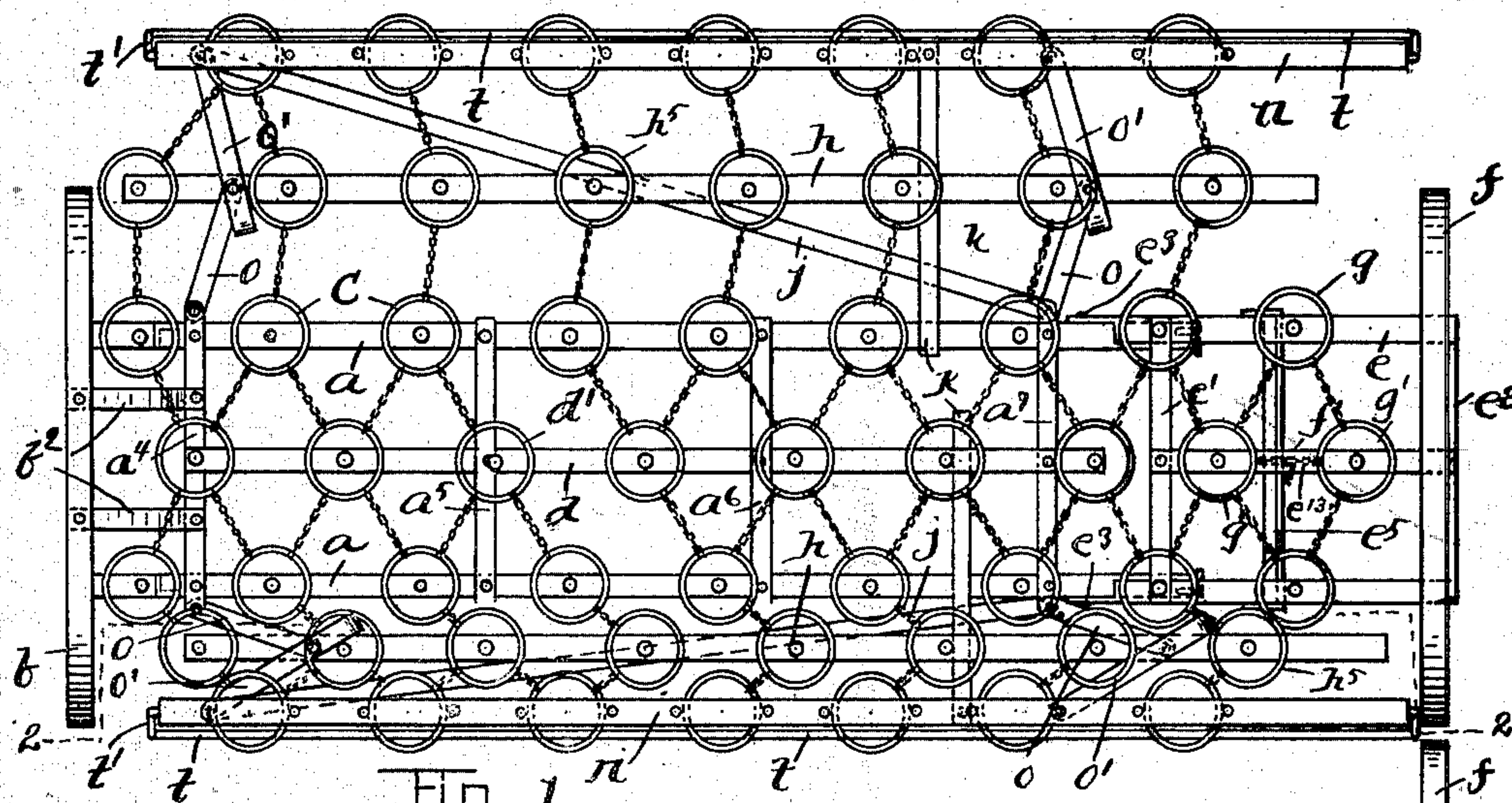


**W. S. BOWIE.**  
**COUCH BED.**

(Application filed Oct. 29, 1900.)

**2. Sheets—Sheet 1.**



Witnesses:

H. B. Davis.

John W. Bierow.

79-4-

Inventory:

William S. Bowie

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att'y.



**No. 681,187.**

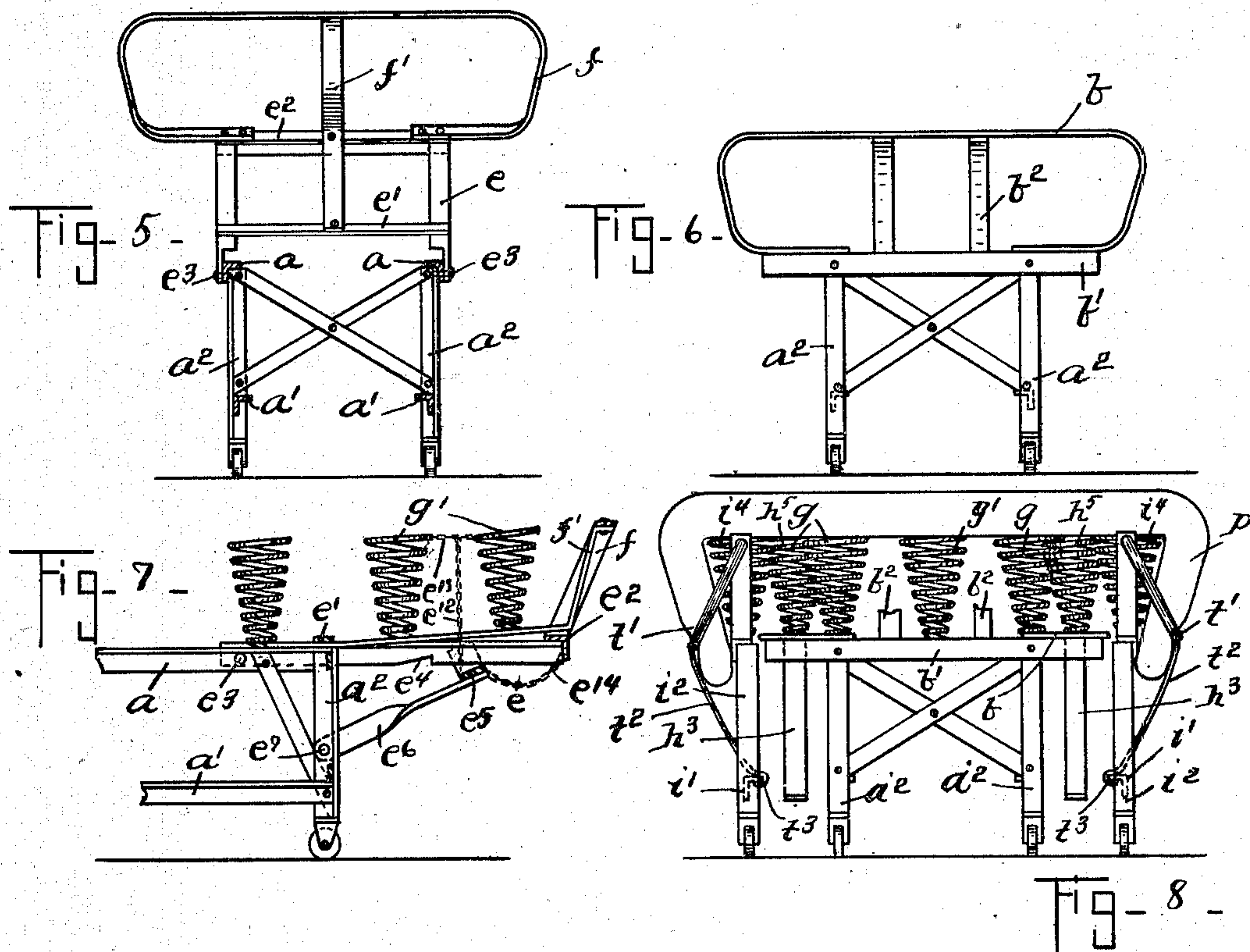
**Patented Aug. 27, 1901.**

**W. S. BOWIE.**  
**COUCH BED.**

(Application filed Oct. 29, 1900.)

(No Model.)

**2 Sheets—Sheet 2.**



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John W. Brewster

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f



# UNITED STATES PATENT OFFICE.

WILLIAM S. BOWIE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF  
TO GEORGE T. HORAN, OF SAME PLACE.

## COUCH-BED.

SPECIFICATION forming part of Letters Patent No. 681,187, dated August 27, 1901.

Application filed October 29, 1900. Serial No. 34,776. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM S. BOWIE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Couch-Beds, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to couch-beds, and has for its object to improve and simplify the construction of the same in many particulars.

In accordance with this invention a middle section and two extensible side sections are provided, which when extended produce a full-width bed and when closed up produce a couch.

The middle section of the bed is composed, essentially, of a pair of longitudinal upright metallic frames bearing springs, said frames being rigidly secured together and each having suitable legs or supports, and a spring-supporting frame located between and connected to said upright spring-bearing frames. The springs borne by the upright frames and by the spring-supporting frame are properly disposed for ease and comfort.

The extensible side sections are made substantially alike, and each consists of a pair of upright spring-bearing frames disposed in parallelism with the middle section, and the inner upright frame of each pair is loosely connected with the middle section and the outer upright frame of each pair is loosely connected with the inner upright frame, so that the frames of each side section will be loosely connected together and loosely connected to the middle section, and the outer upright frame of each pair is provided with suitable legs or supports. The upright frames of the side sections are adapted to be moved outward in parallelism with the middle section when it is desired to convert the couch into a bed.

Foot and head pieces will be provided on the middle section, the former being rigidly secured thereto and the latter being pivotally connected thereto.

Means are provided for insuring the proper working of the frames of the side sections and their relative position to each other. Means are also provided for holding the side

edges of the mattress down when the apparatus is closed up as a couch.

Figure 1 shows in plan view a couch-bed embodying this invention, one of the extensible side sections being extended and the other being closed up. Fig. 2 is a longitudinal section of the couch-bed shown in Fig. 1, taken on the dotted line 2 2, showing in side elevation the middle section and the rigidly-connected footpiece and pivoted headpiece. Fig. 3 is a side elevation of the outer upright spring-bearing side frame of one of the side sections. Fig. 4 is a side elevation of the inner upright spring-bearing side frame of one of the side sections. Fig. 5 is a vertical section of the middle section of the couch-bed, taken on the dotted line 5 5, Fig. 2, showing particularly the pivoted headpiece. Fig. 6 is an end view of the middle section of the couch-bed, showing particularly the rigidly-connected footpiece. Fig. 7 is a detail showing the pivoted headpiece occupying a horizontal position. Fig. 8 is an end view of the couch-bed closed up as a couch and having a mattress thereon.

The middle section consists, essentially, of two metallic upright frames, (see Figs. 1, 2, 5, and 6,) comprising a top cord or bar  $a$  and a bottom cord or bar  $a'$ , both made of angle-iron and disposed in parallelism and rigidly connected together by end posts  $a^2$ , also made of angle-iron, and by upright braces  $a^3$ . The end posts  $a^2$  are extended below the bottom cord  $a'$  for a short distance to serve as legs. These two upright frames are rigidly connected together by a number of cross-bars  $a^4 a^5 a^6 a^7$ , connecting the top cords  $a$ , and by a number of cross-bars  $a^8 a^9 a^{10} a^{11}$ , connecting the bottom cords  $a'$ . The middle section when thus constructed will present in itself a rigid structure and will have four legs, each of which may, and preferably will be, provided with a caster.

To the foot of the middle section a footpiece is rigidly connected, which is herein shown as a loop-like strap  $b$ , (see Fig. 6,) the ends of which are attached to a horizontal bar  $b'$ , of angle-iron, secured to the ends of the top cords  $a$  of the upright frames of said middle section, and diagonal bars  $b^2$  are attached to the cross-bar  $a^4$  and to the upper part of said



loop-like strap. The top cords  $a$  of the upright frames are extended beyond the bottom cords thereof, so that the foot of the middle section bearing the footpiece may project beyond the base.

On top of each upright frame of the middle section a row of springs  $c$  are secured, so that said upright frames serve not only as coöperative parts of the framework of the middle section, but also as supports for the springs. Between said upright frames a spring-supporting frame is provided for supporting a number of additional springs, and, as herein shown, said spring-supporting frame consists of a longitudinal bar  $d$ , secured to the several cross-bars  $a^4 a^5 a^6 a^7$ , being supported by said cross-bars, which form a coöperative part of said spring-supporting frame, as well as connecting-bars for rigidly connecting the two upright frames together. On said longitudinal bar  $d$  a row of springs  $d'$  are secured, properly disposed relatively to the springs  $c$ .

At the head of the middle section a pivoted headpiece is provided which is adapted to occupy two essential positions—viz., an inclined and a horizontal position—the former position being intended for use when the apparatus is used as a couch and the latter position being intended for use when the apparatus is used as a bed. The pivoted headpiece consists, essentially, of a pair of parallel side bars  $e e$ , connected together by cross-bars  $e' e^2$ , and the forward ends of said bars  $e e$  are pivotally connected at  $e^3$  to the top cords  $a$  of the upright spring-bearing frames of the middle section. Each one of the side bars  $e e$  has a notch  $e^4$  in its under side, and a prop is provided which, as herein shown, consists of a horizontal cross-bar  $e^5$ , attached at its ends to a pair of arms  $e^6$ , pivoted at  $e^7$  to the upright posts  $a^2$ . The prop is adapted to engage the notches  $e^4$  of the side bars  $e$  when holding the headpiece elevated and to disengage the same to permit said headpiece to be moved into horizontal position. A chain  $e^{12}$  connects the cross-bar  $e^5$  with a chain  $e^{13}$ , which is connected to the top of two of the springs  $g'$  on the bar  $f'$ , and said cross-bar is thereby held in elevated position and in continuous engagement with the side bars  $e e$ . A chain  $e^{14}$  connects said cross-bar  $e^5$  with the end cross-bar  $e^2$ , and by pulling upon this chain by hand the cross-bar  $e^5$  will be removed from engagement with the side bars. The side pieces  $e e$  are made of angle-iron, and one side of each piece is cut away for a short distance at its forward end to permit them to be turned up on their pivots, and when the headpiece is moved into horizontal position the said pieces  $e e$  will rest upon the ends of the top cords  $a$  of the upright frames of the middle section. The loop-like strap  $f$  (see Fig. 5) is attached at its ends to the cross-bar  $e^2$ , which may be made of any suitable shape and size, which serves as an upright end piece on the headpiece. A longitudinal bar  $f'$  extends lengthwise the pivoted

headpiece, one end of which is attached to the cross-bar  $e'$  and the other end to the upper part of the loop-like strap, said bar being bent at a point intermediate its length for attachment to the cross-bar  $e^2$ . Springs  $g$  are mounted on top of the side bars  $e e$ , and springs  $g'$  are mounted on top of the longitudinal bar  $f'$ .

At each side of the rigid spring-bearing middle section an extensible side section is provided, adapted to support a number of springs which when extended converts the apparatus into a full-width bed and when closed up converts the apparatus into a couch. The two extensible side sections are made alike or substantially so, and each consists of a pair of longitudinal upright frames loosely connected together and to the middle section.

The inner upright side frame, (see Fig. 4,) which is disposed next to the middle section, consists, essentially, of a top cord  $h$  and a bottom cord  $h'$ , and for rigidly securing said top and bottom cords together an upright brace  $h^2$  is provided between them, or a number of such braces may be provided, and also one end of the bottom cord  $h'$  is turned up, as at  $h^3$ , and connected with the top cord. A row of springs  $h^5$  are provided on top of the top cord  $h$ . This upright longitudinal frame is therefore essentially a spring-bearing frame.

The outer upright side frame consists, essentially, of a top cord  $i$  and a bottom cord  $i'$  and end posts  $i^2$ , rigidly connecting the ends of said top and bottom cords together, and upright braces  $i^3$ , any number of which may be provided. The end posts  $i^2$  are made long enough to project below the bottom cord  $i'$  for a short distance to form legs. Thus it will be seen that each extensible side section has one pair of legs which are adapted to bear casters. A row of springs  $i^4$  are secured to the top of the top cord  $i$ . The outer side frame thus supports the outer or side row of springs, and means are provided for stiffening said row of springs, which, as herein shown, consists of a flat strip  $n$ , of metal, passing along the tops of said springs, which is turned down at both ends and attached to the top cord  $i$  of the upright frame, and another strip  $n'$ , of metal, passing along through said springs just beneath the uppermost convolution thereof, which is attached at its ends to the strip  $n$ .

The inner upright spring-bearing side frame is loosely connected with the middle section by links  $o$ , there being a pair of such links at each end of the side frame, the upper link of each pair connecting the top cord  $h$  with the top cord  $a$  and the lower link of each pair connecting the bottom cord  $h'$  with the bottom cord  $a'$ . The outer upright spring-bearing side frame is loosely connected with the inner side frame in a similar manner, there being two pairs of links  $o'$  provided, one at each end of said outer side frame, yet the links  $o'$  of each pair are connected together or formed integral with each other, thereby



presenting a loop having a vertical or upright central portion, provided at each end with a horizontal arm, said arms serving as the links. The links *o'* are connected to the inner upright side frames by the same pivots which connect the links *o* with said side frames, and as a result the vertical central portion is adapted to strike the links *o* to limit the outward movement of the outer frame, and thereby limit the outward movement of the extensible side section.

It is intended that the side sections shall be manipulated by hand, being drawn out or pushed in, as occasion requires, and it will be seen that as they are thus operated they will move in parallelism with the middle section, to which they are loosely connected. In order to insure proper working of said side frames and maintain their relative positions, a guide-bar *j* is provided for each side section, which is loosely connected at one end to the middle section—as, for instance, to the bottom cord thereof—and is loosely connected at the opposite end to the bottom cord of the outer side frame, and said guide-bar also serves to stiffen and strengthen the bed. To further insure the proper working of the side sections, a flat bar *k* is attached at one end to the top cord of the outer side frame. Said bar is made long enough to overlie the top cord of the inner side frame and also overlie the top cord of one of the upright frames of the middle section when the side sections are drawn out.

The side frames of the side sections are made substantially as long as the full length of the middle section and headpiece pivoted thereto, so that when extended a full-length bed will be provided.

To securely hold the edge of the mattress turned down over the edge of the couch, a locking device is provided, which, as herein shown, consists of a rod or bar *t*, having its opposite ends upturned, as at *t'*, and pivotally connected to the frame—as, for instance, to the downturned end portions of the strip *n*—and straps *t<sup>2</sup>* are attached to said rod or bar *t*, which are provided at their ends with hooks *t<sup>3</sup>*, which engage the bottom cord *i'* of the side frame. A bail-shaped locking device having straps for holding it down is thus provided.

I claim—

1. In a couch-bed, the combination of a middle section comprising rigidly-connected longitudinal upright frames bearing springs and having legs or supports, and a pair of longitudinal upright side frames disposed at each side of said middle section and loosely connected thereto, the frames of each pair being loosely connected together and the outside frame of each pair having legs or supports, substantially as described.

2. In a couch-bed, the combination of a middle section comprising rigidly-connected longitudinal upright frames bearing springs and having legs or supports, a spring-supporting

frame located between said upright frames and rigidly secured thereto, and a pair of longitudinal upright spring-bearing side frames disposed at each side of said middle section and loosely connected thereto, the frames of each pair being loosely connected together, and the outside frame of each pair having legs or supports, substantially as described.

3. In a couch-bed, the combination of a middle section comprising longitudinal upright frames bearing springs and having legs or supports, cross-bars connecting said frames together, a longitudinal spring-supporting bar secured to said cross-bars between said upright frames, and a pair of longitudinal upright side frames bearing springs located at each side of said middle section and loosely connected to said middle section, the frames of each pair being loosely connected together and the outside frame of each pair having legs or supports, substantially as described.

4. In a couch-bed, the combination of a middle section comprising two longitudinal upright frames each composed of a top cord, a bottom cord, and upright end pieces which extend below the bottom cord and form legs, a row of springs secured to the top cord of each frame, a spring-supporting frame located between said upright frames and rigidly secured thereto, and a pair of longitudinal upright spring-bearing side frames located at each side of said middle section and loosely connected thereto, the frames of each pair being loosely connected together, substantially as described.

5. In a couch-bed, the combination of a middle section comprising longitudinal upright spring-bearing frames rigidly connected together, a spring-supporting frame located between said upright frames and rigidly secured thereto, and a pair of longitudinal upright spring-bearing side frames located at each side of said middle section and loosely connected thereto, the frames of each pair being loosely connected together, each spring-bearing side frame comprising a top cord and a bottom cord rigidly connected together, and springs secured to and projecting from said top cord, substantially as described.

6. In a couch-bed, the combination of a middle section comprising longitudinal upright spring-bearing frames rigidly connected together, a spring-supporting frame located between said upright frames and rigidly connected thereto, and a pair of longitudinal upright spring-bearing side frames located at each side of said middle section and loosely connected thereto, the frames of each pair being loosely connected together, each spring-bearing side frame comprising a top cord and a bottom cord rigidly connected together, springs secured to and projecting upwardly from said top cord, the outermost side frame of each pair having upright end pieces which extend below the bottom cord and form legs, substantially as described.



7. In a couch-bed, the combination of a middle section comprising a pair of longitudinal upright frames, each composed of a top cord, a bottom cord and upright braces joining said cords, a row of springs secured to the top cord of each upright frame, a spring-supporting frame located between said upright frames and rigidly secured thereto, head and foot pieces connected to the ends of said upright frames, and upright side frames at each side of said middle section loosely connected together and also loosely connected to said middle section and springs borne by them, substantially as described.

8. In a couch-bed, a middle section comprising longitudinal upright spring-bearing frames rigidly secured together, a pair of longitudinal upright spring-bearing side frames located at each side of and loosely connected to said middle section, and a guide-bar at each side of said middle section loosely connected at one end to said middle section and at the other end to the outermost side frame, substantially as described.

9. In a couch-bed, a middle section and extensible side sections, and a mattress made the full width of the extended bed, and means for holding down the sides of said mattress when the apparatus is closed up consisting of a longitudinal bar upturned at each end and pivotally connected to the opposite ends of the side sections, and means for locking said bar down, substantially as described.

10. In a couch-bed, a middle section, and extensible side sections, at opposite sides thereof, each having a bottom cord, a mattress made the full width of the extended bed, and a bail-shaped locking device at each side of the bed, pivoted to the side sections having straps attached to it provided with hooks which engage the bottom cord of the side section, substantially as described.

11. In a couch-bed, a middle section and extensible side sections, at opposite sides thereof, each having a bottom cord and a mattress made the full width of the extended bed, and means at each side of the bed for holding down the sides of said mattress when the apparatus is closed up consisting of a longitudinal bar upturned at each end and pivotally connected to the opposite ends of the side section and straps attached to said bar having hooks at their ends adapted to engage one of the cords of the side section to lock said bar down, substantially as described.

12. The main body portion having a pivoted headpiece provided with spiral springs *g, g*, and with notched side bars, the bail-shaped locking device for said pivoted headpiece, a connection between said locking device and spiral springs *g, g*, for holding the locking device in engagement with the notched side bars, and means for disengaging said locking device, substantially as described.

13. The main body portion having a pivoted headpiece provided with spiral springs *g, g*, and with notched side bars, the bail-shaped locking device including the cross-bar *e<sup>5</sup>*, for said pivoted headpiece, a connection between said locking device and spiral springs *g, g*, for holding the locking device in engagement with the notched side bars, and a chain connecting said cross-bar *e<sup>5</sup>* with a cross-bar of the headpiece, substantially as described.

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

WILLIAM S. BOWIE.

Witnesses:

B. J. NOYES,  
H. B. DAVIS.