

(No Model.)

2 Sheets—Sheet 1.

E. A. & F. M. JEFFERY.
SPRING BED OR BED BOTTOM.

No. 332,082.

Patented Dec. 8, 1885.

Fig. 1.

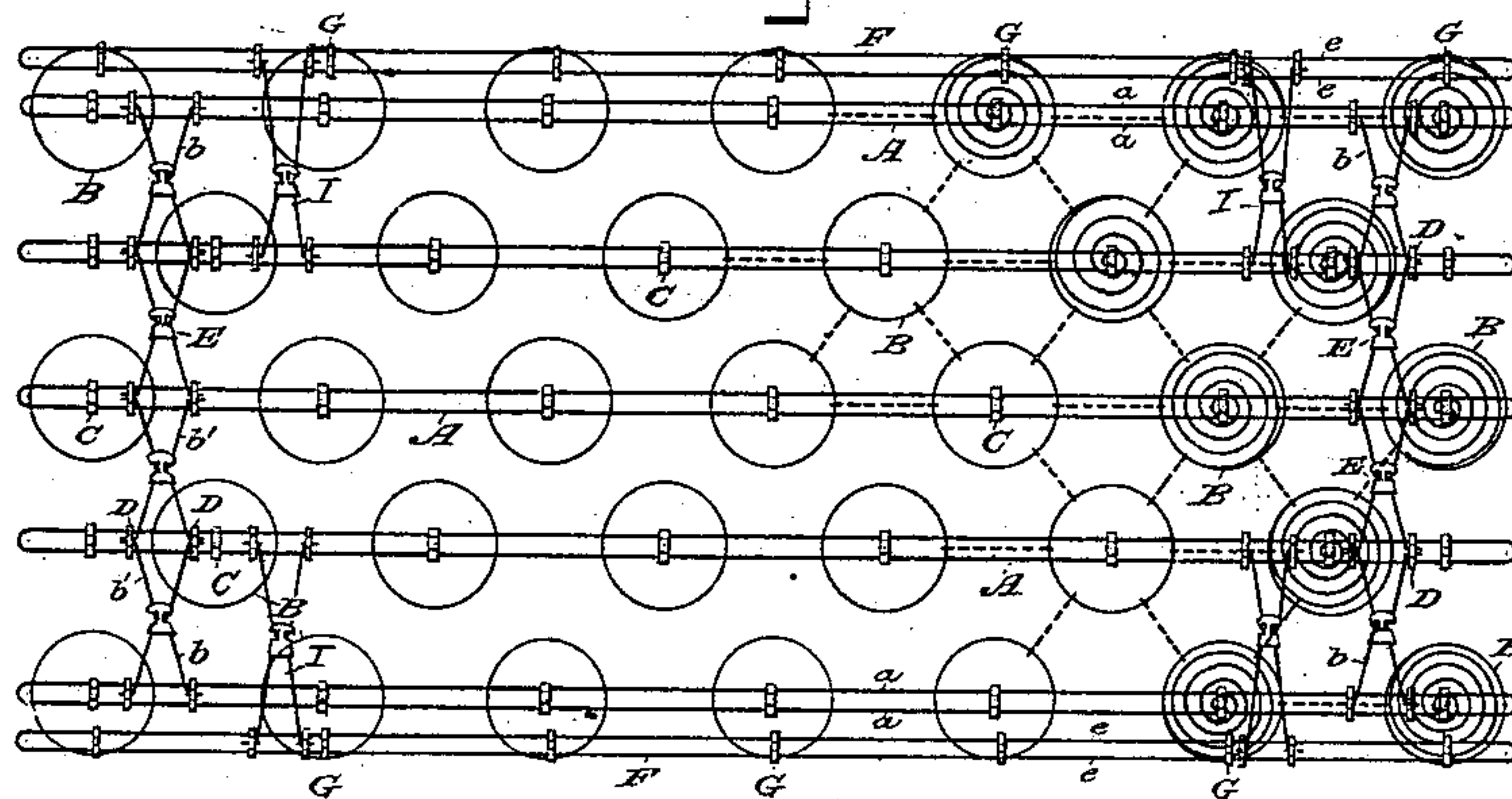


Fig. 2.

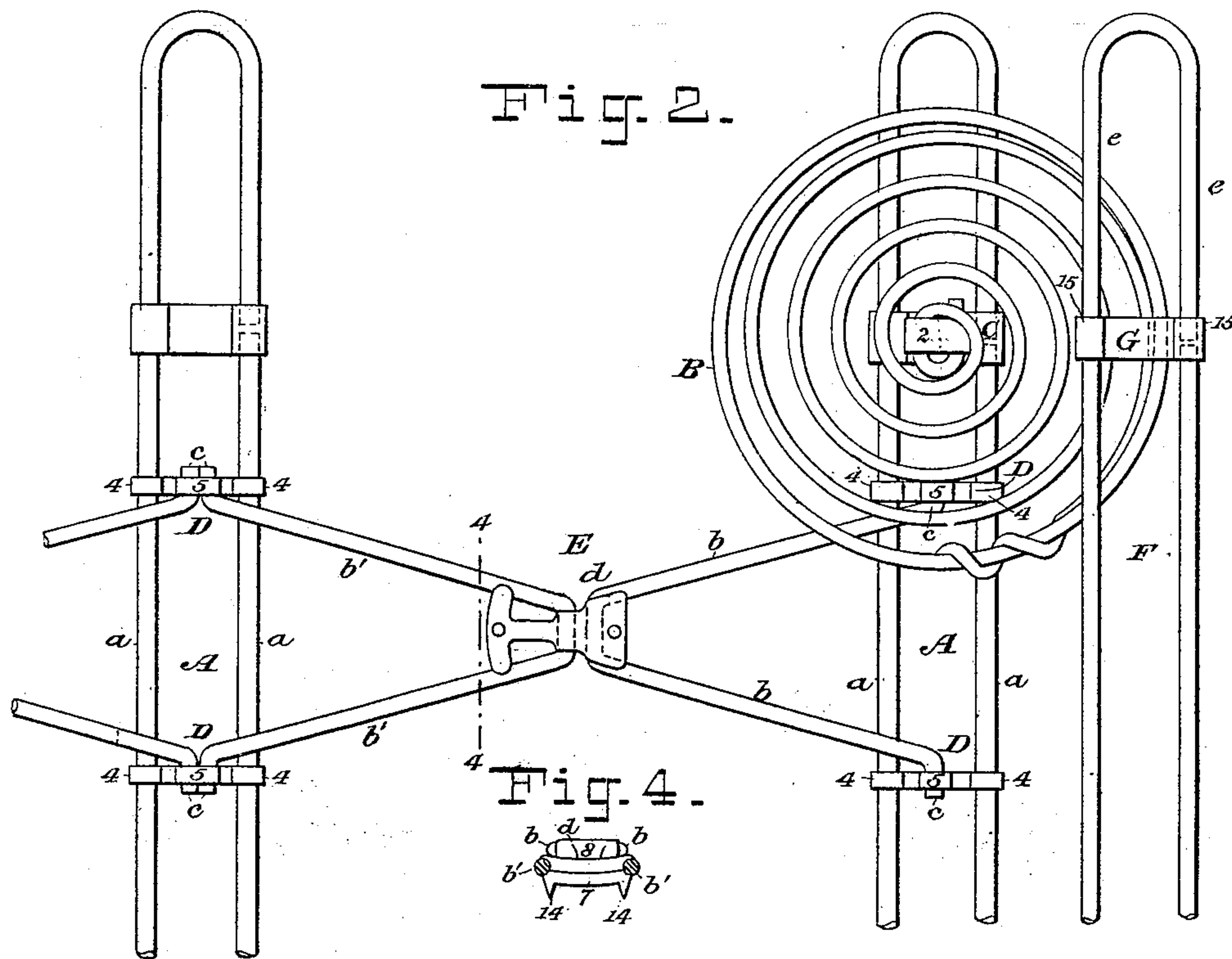


Fig. 4.

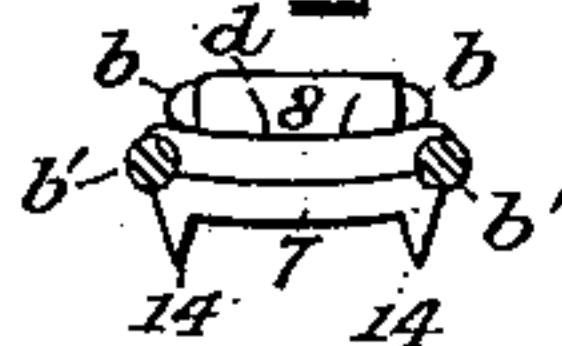


Fig. 6.

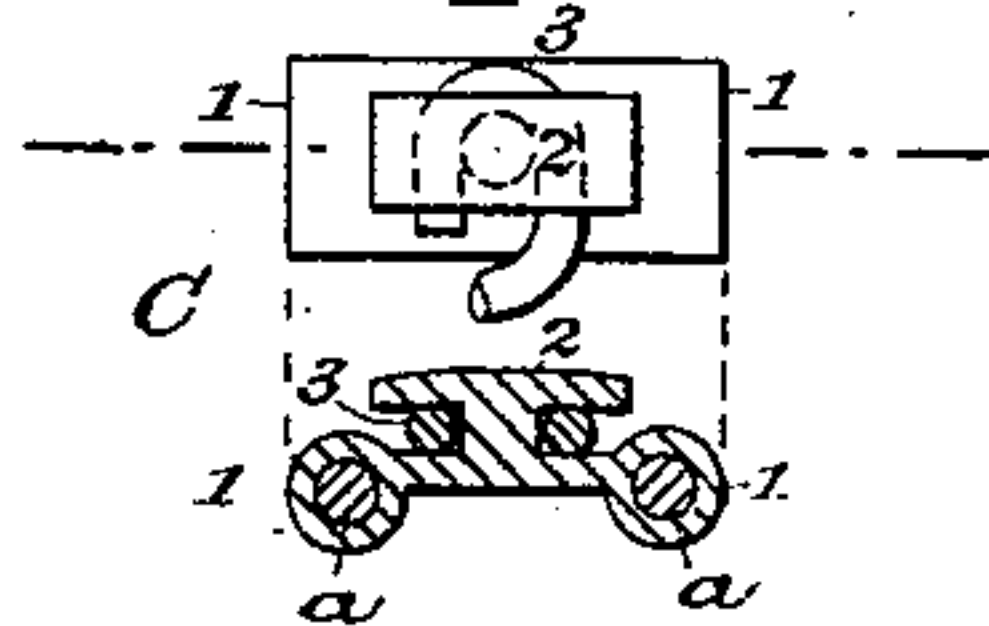


Fig. 8. Fig. 8.

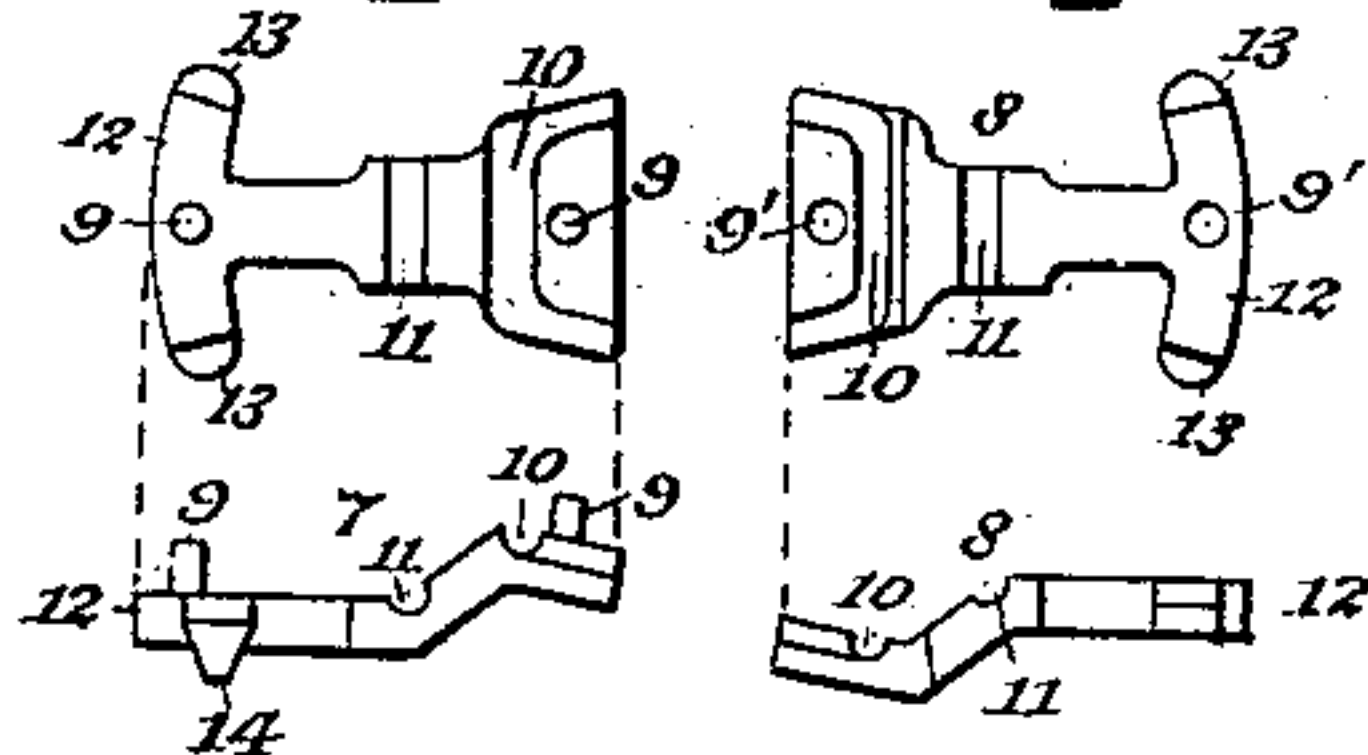
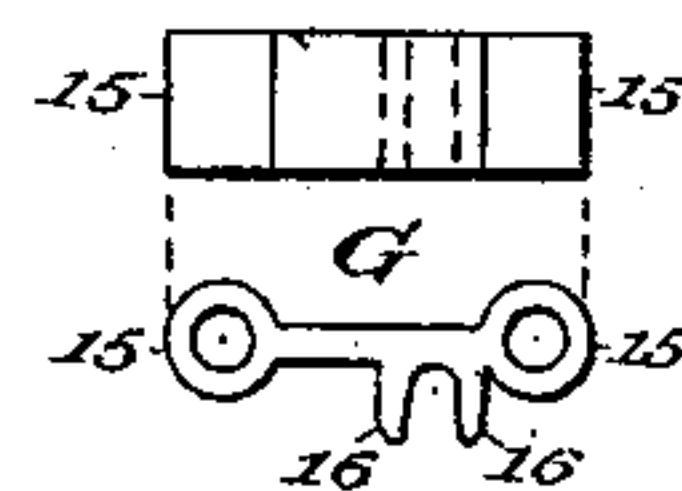


Fig. 7.



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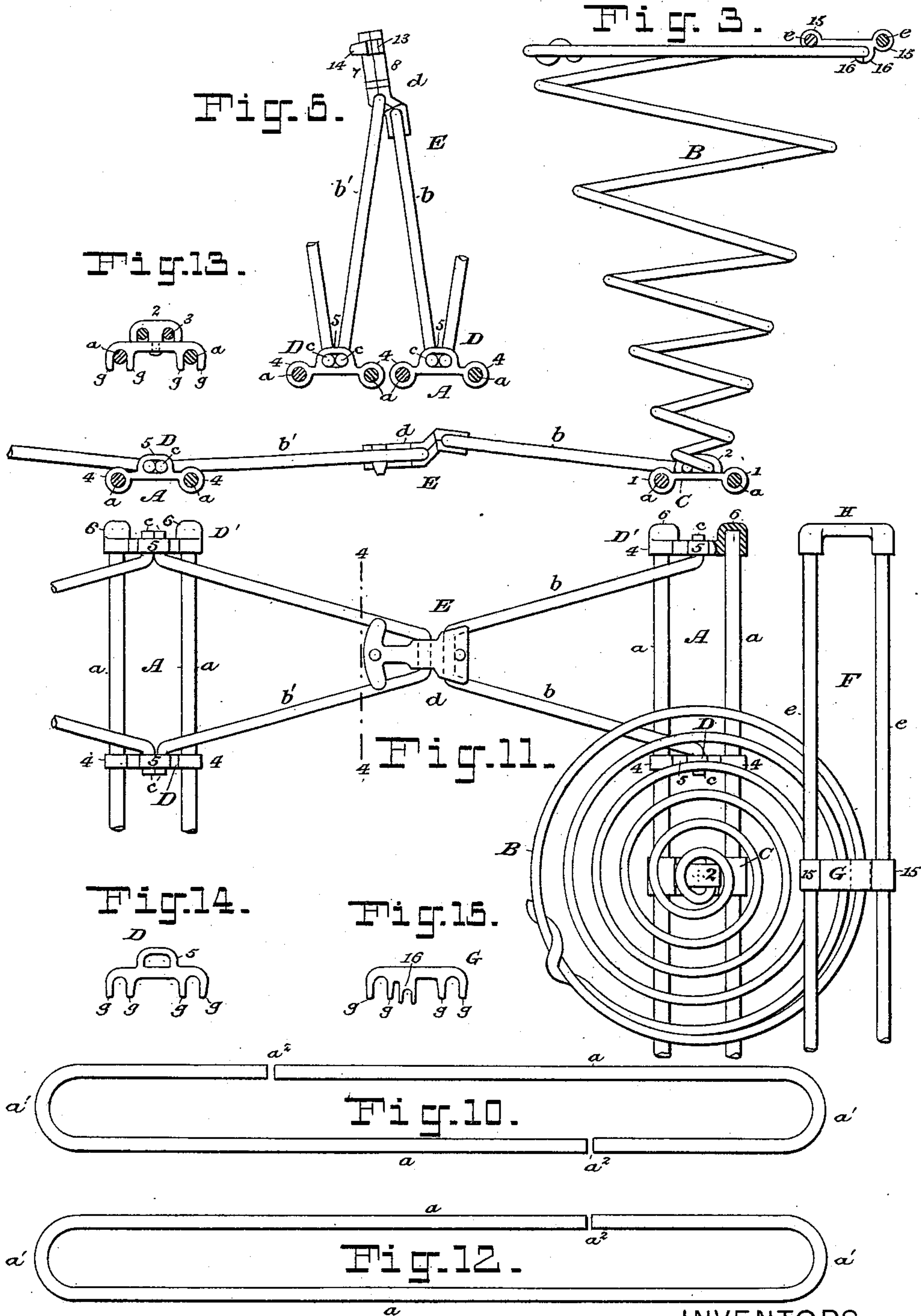
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UNITED STATES PATENT OFFICE.

EDWIN A. JEFFERY AND FRANK M. JEFFERY, OF JERSEY CITY, NEW JERSEY.

SPRING BED OR BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 332,082, dated December 8, 1885.

Application filed March 6, 1885. Serial No. 157,893. (No model.)

To all whom it may concern:

Be it known that we, EDWIN A. JEFFERY and FRANK M. JEFFERY, both citizens of the United States, and residents of Jersey City, Hudson county, New Jersey, have invented certain Improvements in Spring Beds or Bed-Bottoms, of which the following is a specification.

Our invention relates to that class of spring beds or bed-bottoms usually made wholly of metal, which comprise a series of slats, on which the springs are mounted, said slats being connected and distanced by links. It has been common to make the slats of thin steel strips or plates, to mount the springs on these, and to connect the springs at their tops by chains. It has also been common, as shown in a former patent to E. A. Jeffery, No. 245,174, to connect the slats by links hinged to the slats and at their middles, and provided with locking devices to make them rigid when the bed is in use. Such beds have also had top side slats mounted on the marginal rows of springs. These have formerly been made of thin steel plates, but in a pending application of ours we have shown a top side bar made from a cylindrical steel rod or wire.

We are aware that the springs of a spring-bed have been connected at their bottoms by wire slats or base-pieces common to two or more springs and arranged to rest on the ordinary slats of a bedstead; and we are also aware that it has been proposed to connect together the "hour-glass" springs, so-called, of a spring-bed in groups, and connect the springs of each group together at top and bottom by inner and outer bands or hoops formed of steel wire and secured to the end convolutions of the springs by clips. Our construction differs from these, as will be explained.

The object of our present invention is to provide a light, substantial, and economically-constructed bed, made wholly of metal and capable of being rolled up or collapsed, as desired. It comprises a novel form of slat to support the springs, constructed of two parallel rods, usually of steel, and novel clips for securing the springs thereto; a novel form of top side bar constructed of two parallel rods, usually of steel, and novel clips for securing said bar to the tops of the marginal

springs, a novel form of link for connecting the slats and novel clips for hinging said links to the slats.

Our invention will be hereinafter more fully described, and its novel features carefully defined in the claims.

In the drawings which serve to illustrate our invention, Figure 1 is a plan view on a small scale of our improved spring-bed as a whole. In this figure we have only indicated the position of some of the springs. Fig. 2 is a plan view on a much larger scale of one corner of the bed. Fig. 3 is a sectional elevation of a part of the bed, being substantially that part shown in Fig. 2. Fig. 4 is a cross-section of the link, taken in the plane indicated by line 4 4 in Fig. 2. Fig. 5 illustrates the folding of the hinged link when the bed is collapsed. Fig. 6 is a plan and section of the bridge-clip for securing a spring to a slat. Fig. 7 is a plan and elevation of the bridge-clip for securing the top side bar to the marginal spring. Figs. 8 and 9 illustrate the locking-hinge which couples the two parts of a link between the slats. Fig. 10 illustrates more in detail the construction of the slat and side bar of two pieces. Figs. 11, 12, 13, 14, and 15 illustrate modifications, which will be hereinafter described.

Referring first to Figs. 1 to 10, A A are the slats on which the springs are mounted. Each slat is made up of two wires or rods, *a a*, arranged substantially parallel and extending the length of the bed.

Fig. 10 illustrates the preferred mode of constructing the slat, which is by forming bends *a'* in the two rods *a*, and securing these at the joints *a''* by clips that will be hereinafter described.

B B are the springs, of the usual construction, mounted on the slats A.

C is the bridge-clip for securing the spring to the slat. This is shown detached in Fig. 6. It is usually made of malleable iron, and is provided with two loops or eyes, 1 1, through which the rods *a a* are threaded, and a T-threaded stud, 2, to secure the spring in place. The spring has, at the bottom, a U-shaped loop, 3, bent in its end, which embraces the neck of the stud 2, and the wings or clips on the stud are then clinched down

over the loop 3, as seen in Fig. 3. This clip C is arranged to embrace the rods *a* at the joints *a*², and thus secure them rigidly together.

5 D is the hinging-clip for the slat-link. This is best seen in Fig. 5. It is usually made of malleable iron, and has loops or eyes 4 4, through which the rods *a* *a* are threaded, as in the case of clip C. On its top is formed an elongated loop or eye, 5, to form a keeper to receive the hinging branches of the link. All of these clips are secured in place on rods *a* *a* by compression or setting in with a punch, by preference; but other means, as soldering, may be employed, if preferred.

15 E is the slat-connecting link. This link comprises two bent-wire semi-links; *b* *b'*, provided at their ends with hinging branches *c* *c* bent on them at the proper angle. These branches have bearings in the clips D D. Between the slats A the two parts *b* *b'* are hinged together by a hinge-lock, *d*, the elements of which are shown detached in Figs. 8 and 9. We will describe this lock, referring to Figs. 2, 3, 4, 8, and 9.

25 7 is the lower plate, (shown in plan and elevation in Fig. 8,) and 8 is the upper plate. (Shown in plan and elevation inverted in Fig. 9.) These plates are almost exactly alike, except that they are reversed, and when put together, as in Figs. 2, 3, and 4, they are secured by rivets. We usually form studs 9 on one plate, and holes 9' on the other plate, in order to effect the riveting without the necessity of using extraneous rivets. When the lock is made of malleable iron, these studs will rivet down properly. In both plates of the lock are formed half-round grooves 10 10, which are shaped to receive and fit the bight of semi-link *b*, so that when the two plates are riveted together the lock *d* will be rigidly secured to this part; and in both plates are also formed half-round cross-grooves 11 11, to receive the bight of the semi-link *b'*. This connection forms the hinge in the link, and is usually arranged midway between the two slats. On the free projecting end of the lock is formed a T-head, 12, usually formed half on each plate, and in the ends of the lateral branches of this head are formed recesses 13 13, to engage the two branches of the semi-link *b'*, and form a lock or fastening. As these branches of the link are somewhat elastic, the locking is effected by simply pressing down the T-head 12, when inclines 14 14 (seen in Fig. 4,) take between the branches of semi-link *b'* and wedge them apart until the head has descended far enough for them to spring into recesses 13. The link-hinge will then be locked and the link rigid; but by an exertion of a little force the branches of the link may be again disengaged from the recesses 13, when the link will turn on its three hinges—ends and middle—and the slats may be brought together, as seen in Fig. 5. This enables the bed to be collapsed.

In order that the slats may be brought close together, as in Fig. 5, we prefer to give the lock *d* the angular form seen in the several side views.

70 F is the top side bar. This bar we also construct of two metal rods, *e* *e*, usually of steel, arranged substantially parallel and connected by bridge-clips. As this bar is a counterpart in construction of the slat A, Fig. 10 will serve to illustrate the form of its rods *e* *e*. The bar is mounted on and secured to a marginal row of springs.

80 G is the clip which is employed to connect and distance the two rods *e* *e* of the bar F. This clip is shown in plan and elevation detached in Fig. 7, and in plan and elevation applied in Figs. 2 and 3. It has two eyes, 15 15, through which the rods *e* *e* of the bar are threaded, and clips 16 16 to embrace the wire of the spring B, and be clamped down thereon.

85 We will now describe the modification illustrated in Fig. 11. This view corresponds to Fig. 2, and shows the slats A and side bar, F, composed each of two straight rods, *a* *a*, and *e* *e*, respectively. These rods are distanced, connected, and braced by the several clips C, D, and G, as shown; but in addition to these we provide the slats A with end caps, D', which form parts of the hinging-clips for the links E, or which may form parts of the same when the links are set close to the ends of the slats, as in Fig. 11. The side bar, F, in this construction has a socket-piece, H, at each end. These end sockets may be secured by any well-known means, as by soldering, for example.

90 Fig. 12 shows a modified form of the slat A and bar F illustrated in Fig. 10. In this construction the ends of the single bent rod are brought together and united by being clamped within one of the clips. In the case of the slat A we prefer to clamp the ends in a clip, C, that serves to secure a spring, B, to the slat. In the case of the bar F, the ends may be clamped in a clip, G. We do not limit ourselves to this mode of securing the ends. They may have a separate fastening-clip, or be scarfed and soldered together, or be otherwise fastened. It is obvious, however, that when we employ an endless elongated loop of this kind for the slat and side bar we cannot conveniently form eyes in the clips C, D, and G. In lieu of eyes, we provide clinching-clips, as shown in Figs. 13, 14, and 15, which illustrate, respectively, the spring-attaching clip C, the hinging-clip D for the links, and the clip G for attaching the side bar, F, to the spring. In all of these views *g* *g* represent clinching-clips to be clinched or hammered down on the rods.

115 The spring-attaching clip C shown in Fig. 13 differs from that shown in Fig. 6 in having the T-head 2 made separate from the main portion or bridge-piece and riveted thereto.

120 In Fig. 1 we have shown on a small scale the brace I, which extends from the top side bar, F, to the second slat of the bed in the usual way. This brace is constructed pre-

cisely like one of the links E, being hinged, respectively, to the side bar and slat, and provided at its middle with a lock-hinge constructed like the lock-hinge *d* in the link E. This brace will, then, require no more minute description.

Having thus described our invention, we claim—

1. In a spring bed or bed-bottom, the combination, with the springs, of the slat A, composed of two parallel cylindrical rods, and the clips C, provided with clinches for securing the springs thereto, and with eyes 1 1, to embrace the rods of the slat, whereby the said rods are distanced and rigidly held in position and the springs are mounted thereon at a point midway between said rods, substantially as set forth.

2. The combination, in a spring bed or bed-bottom, of the side row of springs, the top side bar, F, formed of two parallel rods and mounted on the tops of said springs, as shown, and the clip G, provided with clinches or eyes at its ends to embrace and hold the two rods forming the bar, and clinches 16 between its ends for securing it to the upper convolution of the spring, substantially as set forth.

3. The combination, in a spring bed or bed-bottom, of the side row of springs, the top side bar, F, composed of two parallel rods, *e e*, mounted on the tops of said springs, and the clip G, for securing said bar to the tops of the springs and rigidly distancing the rods *e e*, said clip having eyes or clinches at its ends to embrace said rods, and clinches 16 between its ends, as shown, to embrace the wire of the spring, substantially as set forth.

4. The clip C, for securing the spring to the slat, provided with eyes 1 1, to embrace the members of the slat, and with a T-head, 2,

on its upper side to embrace the wire of the spring, substantially as set forth.

5. In a spring bed or bed-bottom, the slat-connecting link comprising the semi-links *b b'*, and the lock-hinge *d*, the said lock-hinge provided with the lateral recesses 13 13, to engage the branches of the semi-link, substantially as set forth.

6. The combination of the hinge-lock *d*, constructed of the two plates 7 and 8, provided with grooves 10 10, to receive the bight of the semi-link *b*, with grooves 11 11, to receive the semi-link *b'*, and with the recesses 13 13 and the said semi-links, substantially as described.

7. The clip G, for securing the top side bar to the spring, provided with eyes 15, to embrace the rods of the bar, and with clips 16, to clinch onto the spring, substantially as set forth.

8. The combination, with the slat formed of two rods, as described, and the spring provided with a loop, 3, at its bottom, of the clip C, provided with a T-head, 2, and eyes 1 1, substantially as set forth.

9. A brace, I, for the top side bar of a spring-bed, provided with a lock-hinge, *d*, at its middle, substantially as described.

10. A top side bar, F, for a spring-bed, composed of two rods, *e e*, and socket-pieces H, for securing said rods together at their ends, and distancing them, substantially as set forth.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

EDWIN A. JEFFERY.
FRANK M. JEFFERY.

Witnesses:

HENRY CONNETT,
ARTHUR C. FRASER.