No. 729,021.

PATENTED MAY 26, 1903.

F. J. & W. C. VAN CISE.

SPRING BED.

APPLICATION FILED MAY 17, 1902.

NO MODEL.

Fig. 1.

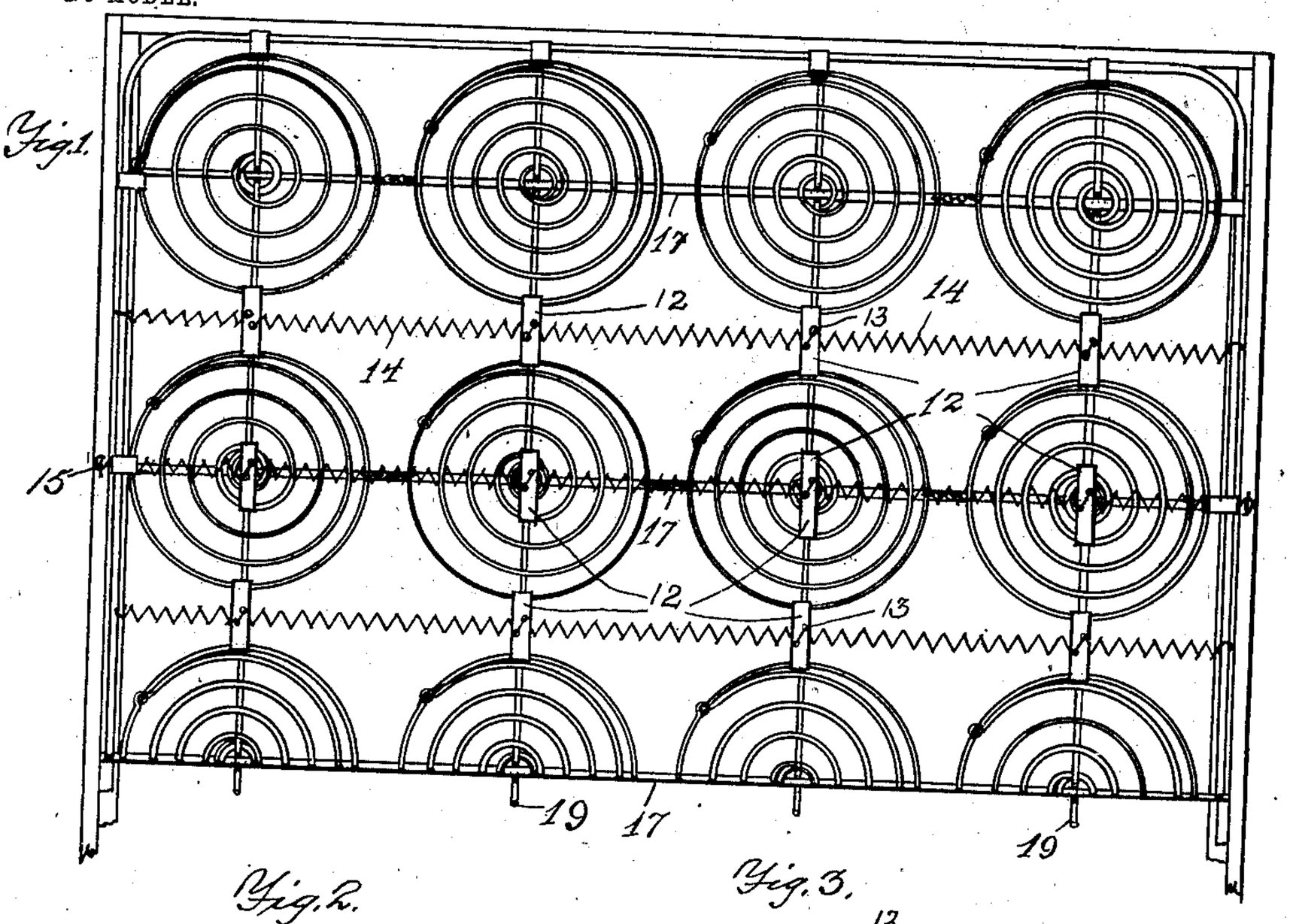


Fig. 2.

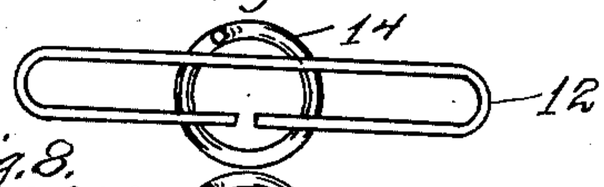


Fig. 3.

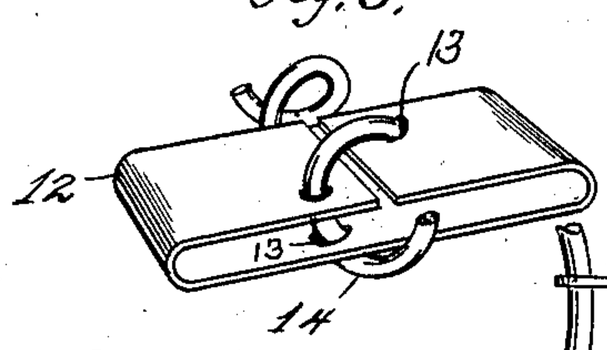


Fig. 8.

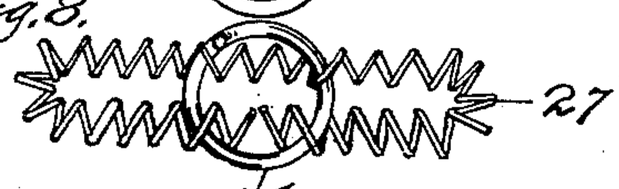


Fig. 9.

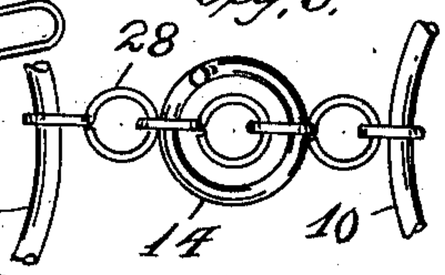


Fig. 4.

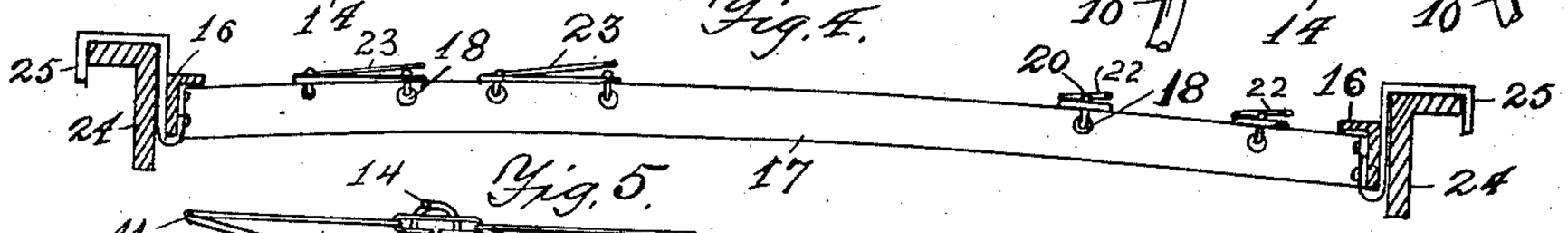


Fig. 5.

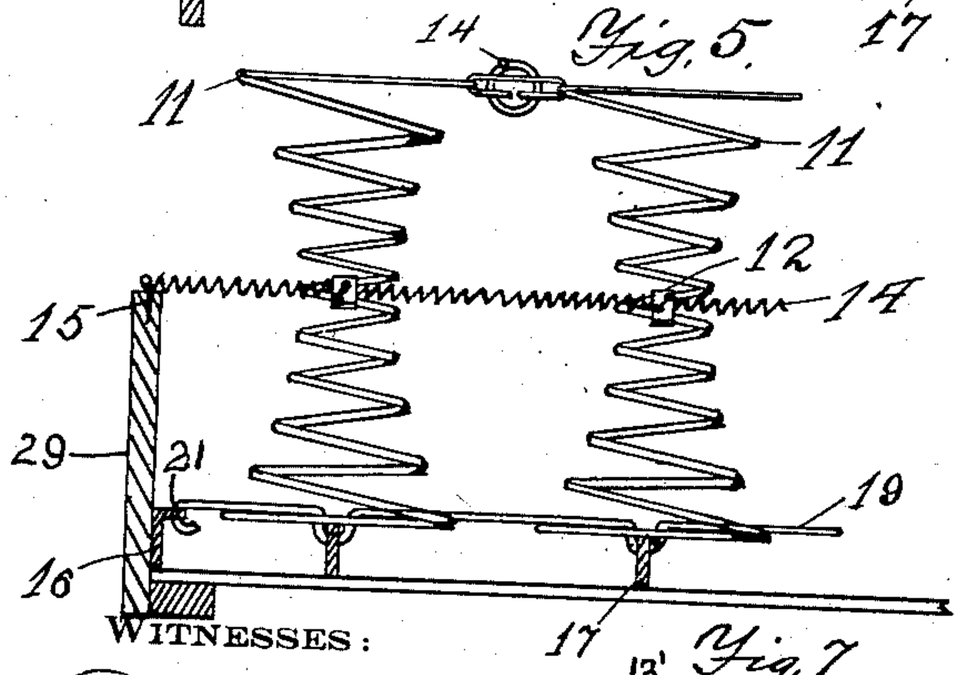


Fig. 6.

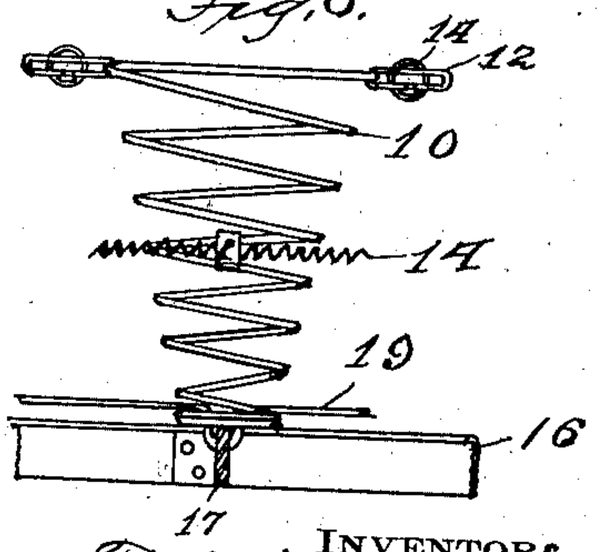
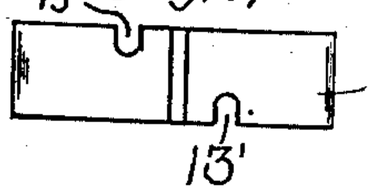


Fig. 7.



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No. 729,021. Patented May 26, 1903.

UNITED STATES PATENT OFFICE.

FREDERICK J. VAN CISE AND WILLIAM C. VAN CISE, OF MAYVILLE, NEW YORK.

SPRING-BED.

SPECIFICATION forming part of Letters Patent No. 729,021, dated May 26, 1903.

Application filed May 17, 1902. Serial No. 107,750. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK J. VAN CISE and WILLIAM C. VAN CISE, citizens of the United States, and residents of Mayville, in the county of Chautauqua and State of New York, have invented a new and useful Spring-Bed, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to springs for beds, couches, chairs, and other articles on which springs are used; and our main object is to do away with the use of cords and materials which are easily abrasive and substitute our coiled-wire connections and improved locked connection or clip both for connecting the spring-centers, their outer rims, or wherever a permanent spring connection is desired to hold the cone-springs in shape, and also to provide a strong metallic base or frame for our spring.

Our present construction is an improvement on a connection or clip as shown in a former patent, No. 641,660, of January 16, 1900, to William C. Van Cise.

In the drawings, Figure 1 is a plan view of part of a lounge-spring having our improvement. Fig. 2 is a side elevation showing form of locking-clip and a section of spiral spring in the clip, and Fig. 3 is a perspective view of the under side of the clip and spiral. Fig. 4 is a sectional view of iron bed-rails, the arched metal cross-piece for the spring, and hangers for suspending the base on the rails. Fig. 5 is a sectional view of a portion of a double-cone spring and wood couch-frame. Fig. 6 is a detail of single-cone spring as attached to metal base. Figs. 7, 8, and 9 show modifications of locking-clip.

Similar numerals refer to corresponding parts.

Numeral 10 is a single-cone spring, and 11 is a double-cone spring. Spring 10 is used mostly for bed-springs, and spring 11 is used more for lounges, seats, and the like, though they may be used interchangeably for these purposes.

Numeral 12 is our locking connection or clip, being made double instead of single, as in the former construction, and having holes 13 punched through both sides at the angle of coil of the spiral coil 14, so that coil 14 may be turned through the four holes in clip 12, locking the clip fast. We have found that the single clip as formerly made would pry off from the wire under great strain, and have therefore made our clip undetachable, the only method of removal being by turning coil 14 out of holes 13. We find that this locked clip acts equally well for connecting the center of double-cone springs, like 11 in Fig. 5. This is specially applicable in lounge-springs, where an open and highly-resilient spring is desired to make an easy seat. Such a spring, however, is hard to hold in place, and it has been customary to tie such springs with strong cords. The cords, however, are easily abraded and cut by the wire and break in a comparatively short time. The lounge must then be sent to the shop for repairs. Our spiral coil connection and locking-clip connects the spring centers and is stapled to the lounge-frame 29, as at 15. The coil 14 allows the spring to give, yet draws it back to place at once when released, and is also used for connecting the tops, bottoms, or centers of rows of springs. It will be seen, therefore, that no cords are necessary. The connections are locked to place, and no matter how hard the usage accorded them the springs cannot get out of place. Spiral coil connections 14 are shown attached to both the bed-frame and a binding-wire in Fig. 1. It is also apparent that coil 14 would serve a good purpose if its ends were unattached after passing through the outer clips, since the spiral angle of the coil locks the coil fast in the clips, so that it cannot be removed except by turning out of the holes, and a slight twist of the end will stop even this means of removal. It therefore forms a complete connection for springs in which it is not desirable to attach to an outside support or binding-wire.

Numeral 16 is the outer angle-iron rim of my iron frame or base for the spring. Numerals 17 17 are flat iron cross-bars which are riveted to iron rim 16 and on which the springs are fastened by punching holes 18 near the upper edge and running binding-wires 19 over the bottom spring-wire 20 and through holes 18, the end of wire 19 being fastened in iron 16, as at 21 in Fig. 5. We use a single bind-

ing-wire 20 for holding the bottom of a single-cone spring, as at 22 in Fig. 4, and two binding-wires, as at 23, for holding a double-cone spring. We punch the holes 18 near the upper edge of cross-bars 17 larger than would be necessary for the insertion of cross-wires 19 for a purpose. It is an old and well-known fact that punching the holes 18 near the edge of bars will curve the bars to that side, and of course the larger the holes are made the greater the curve, and the holes 18 must be punched and not drilled to curve bar 17. By turning this curve upward in the frame for the bed-bottom an arched and much stronger construction is given to these cross-bars 17, as shown in Fig. 4, without added expense. A cross-bar 17 supports each row of springs, and binding-wires 19 run at right angles thereto through said bars and springs, attaching the springs firmly on the bars. The bed-bottom is supported on the side rail 24 of the bedstead by a number of hooks or hangers 25 on each side.

The modification 26 of locking clip or link 12 (shown in Fig. 7) is made the same as clip 12, with the exception that notches 13′ are cut in place of holes 13 to receive the spiral connecting-wire 14. The notches serve the purpose in certain cases; but we usually prefer holes 13, since they form a complete lock.

The modification 27 of locking clip or link 12 (shown in Fig. 8) is a lesser spiral than 14, which is bent to form a link, as shown, and spiral 14 is turned through coils of link 27, locking the ends and opposite sides firmly to coil 14. This form of connecting-clip is advantageous where easy or exceedingly resilient springs are desired, since it is apparent that the spiral double link or clip 27 will spring or give the same as coil 14.

The modification 28 of locking clip or link 12 (shown in Fig. 9) is a simple link chain, such as is common for connecting the cone-springs in spring-beds. We turn our spiral coil 14 through the openings in the links, thus locking all fast and forming a fair substitute for clip 12.

Our reason for preferring clip 12 is its cheapness, durability, security, and the ease with which it can be adjusted on the center or outer coils of a cone-spring.

It is apparent that the bottom coils of the double-cone springs 11 could be stayed or held by clips 12 and spiral 14, the same as the top coils, as shown in Fig. 5, and that if the centers and outer ends of the cone-springs 11 were so stayed it would form a serviceable spring for many purposes without the iron base.

The arching or upward curving of the cross-bars 17 serves a double purpose, besides greatly strengthening the cross-bars, as is apparent in all arched constructions. It so forms our metal base that it does not need support except under the side bars 16, and if level supports are supplied for sides 16 the bed-base will rest firm and solid.

We claim as new—

1. A spring-bottom for beds having cone-springs, double metal clips attached to the central or outer coils of said cone-springs, openings in said clips, suitable wire stays to engage said openings in said clips.

2. A spring-bottom for beds having cone-springs, flat metal links for connecting said cone-springs, openings in said links at an angle suitable to receive a spiral coil, and coiled wire stays which pass through said openings and lock said links.

3. A spring-bottom for beds having cone-springs, double metal clips or links for attachment to the central or outer coils of said cone-springs, openings in said clips to receive spiral stays, spiral stays which pass through said openings and lock said clips, a suitable frame for said beds, the ends of said spiral stays secured to said frame, substantially as and for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FREDERICK J. VAN CISE.
WILLIAM C. VAN CISE.

Witnesses:
GEO. F. WARD,
W. F. HEALY.