

(No Model.)

2 Sheets—Sheet 1.

D. M. BONE.  
BED BOTTOM.

No. 442,008.

Patented Dec. 2, 1890.

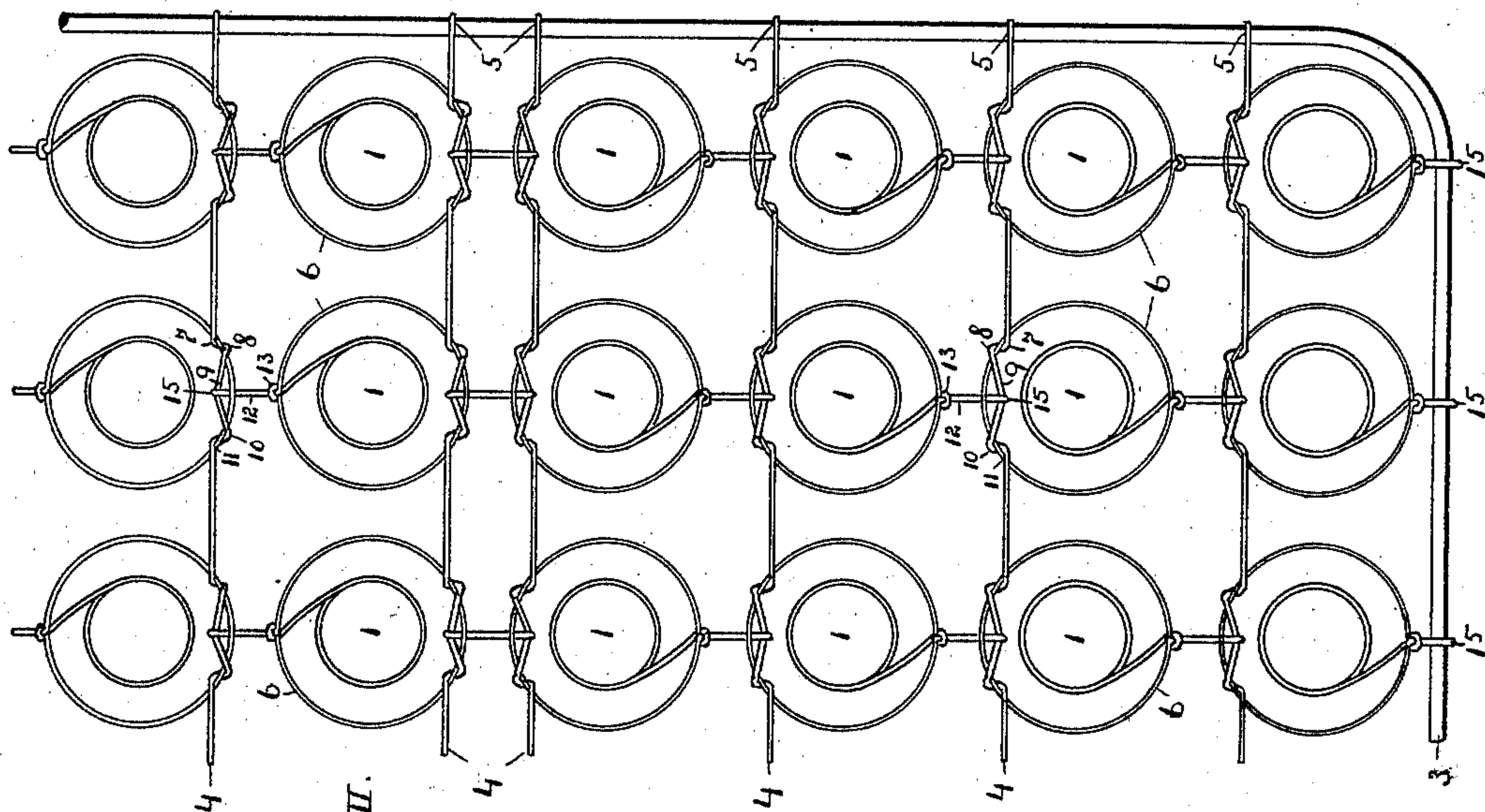
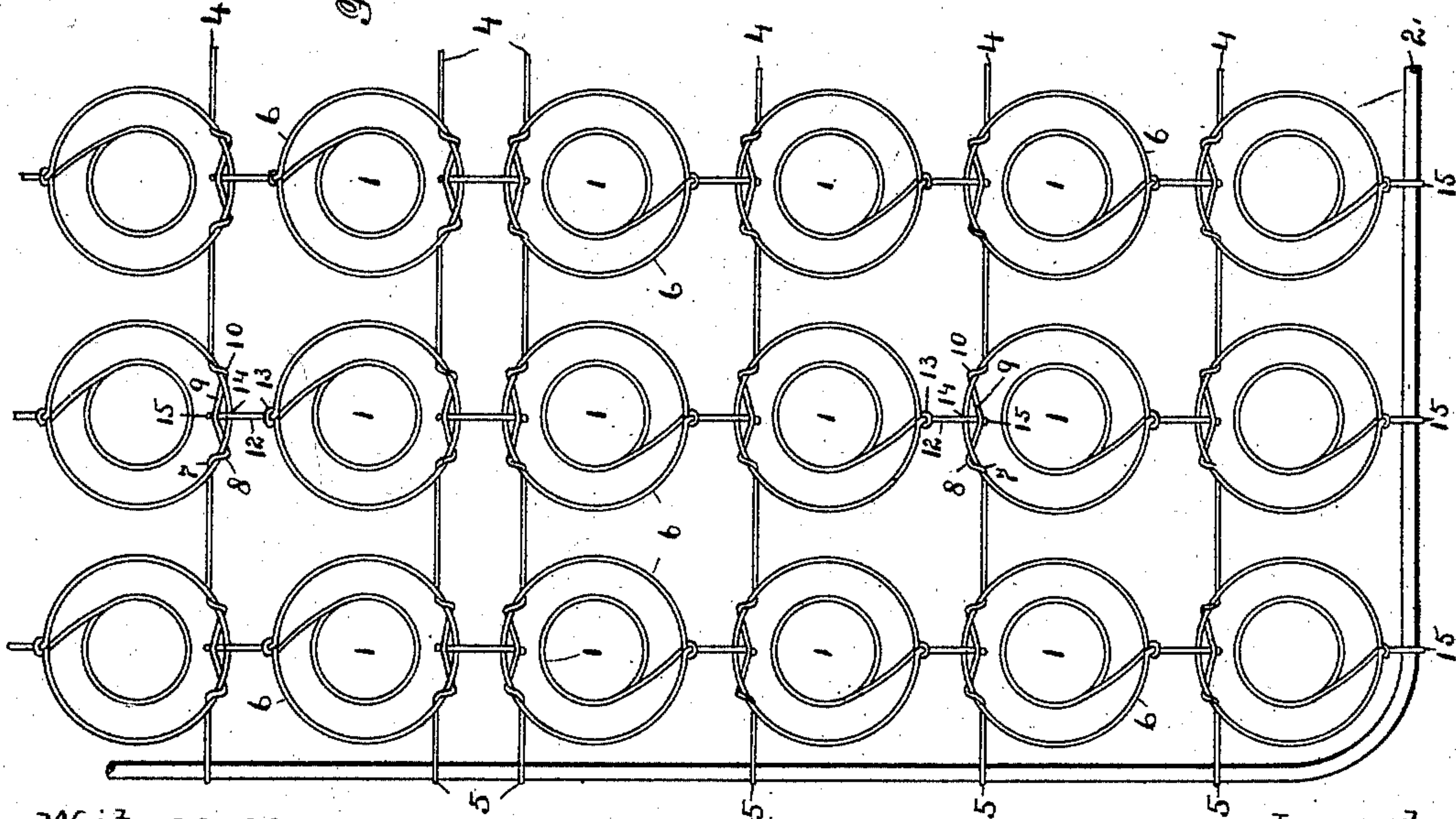


Fig. I Fig. II.



Witnesses:

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& Arthur

Inventor.

David M. Bone

By *Wm. R. R. R.*  
Attys.

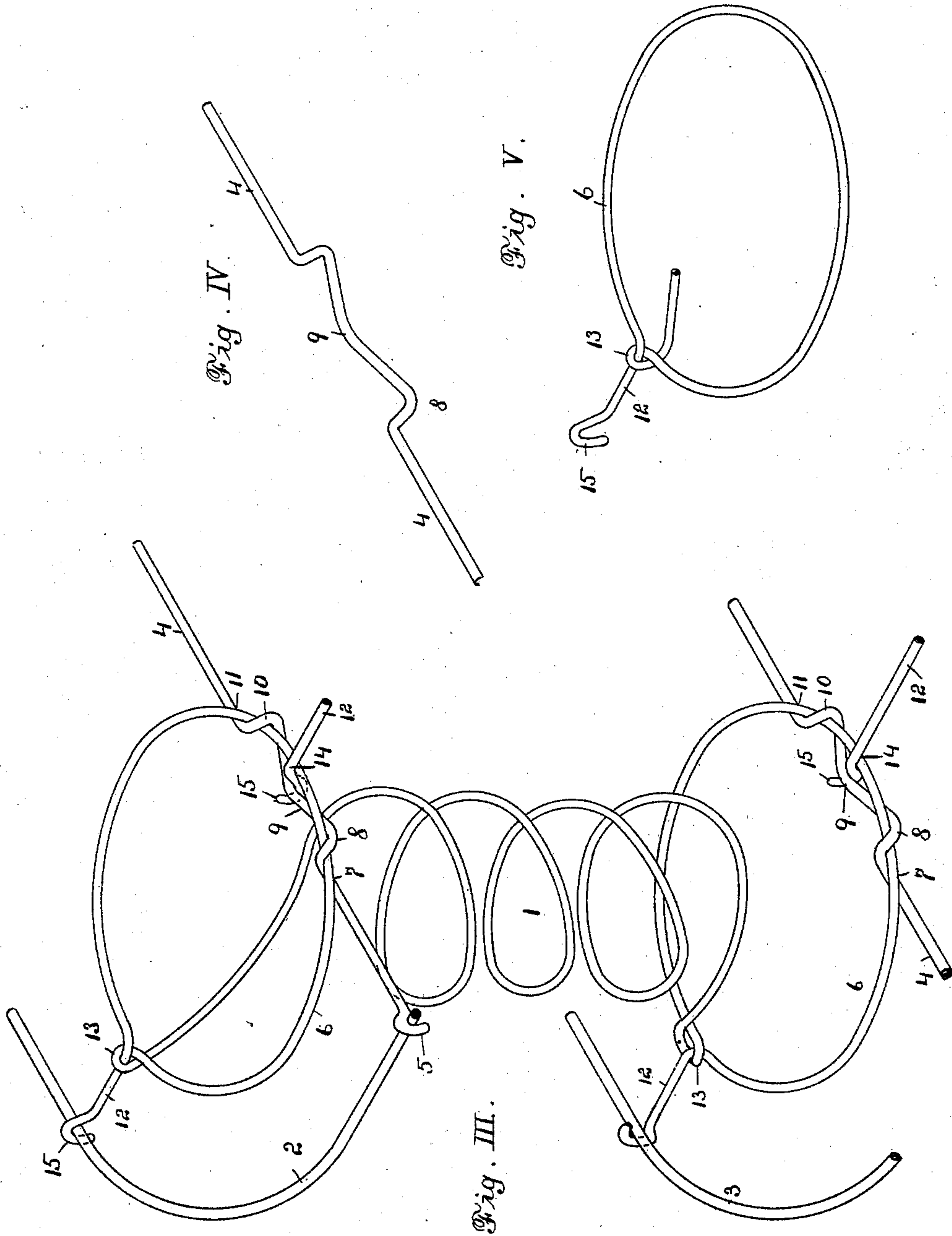
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Witnesses:  
J. G. Fischer  
E. Arthur

Inventor  
David M. Bone  
By Amie R. Bone  
Attys



# UNITED STATES PATENT OFFICE.

DAVID M. BONE, OF KANSAS CITY, MISSOURI.

## BED-BOTTOM.

SPECIFICATION forming part of Letters Patent No. 442,008, dated December 2, 1890.

Application filed June 25, 1890. Serial No. 356,686. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID M. BONE, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Bed-Bottoms, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to certain improvements in spring bed-bottoms; and my invention consists in features of novelty hereinafter described, and pointed out in the claims.

Figure I is a detail view of one side of my improved bed-bottom. Fig. II is a detail view of the reverse side. Fig. III is an enlarged detail perspective of one of the springs and its attachments. Fig. IV is an enlarged detail perspective of one of the tie-rods, showing the **W**-shaped bends. Fig. V is an enlarged detail perspective of the outer coil of one of the springs, showing the vertical loop.

Referring to the drawings, 1 represents the springs, and 2 3 the metal frame, to which the springs and tie-rods are connected at top and bottom.

4 represents the tie-rods, which, as shown in Fig. I, are first secured to the frame 2 by means of the hooks 5 on the ends of the rods. The rods are formed with **W**-shaped bends at suitable intervals, which are first passed under the outer coils 6 of the springs, as shown at 7. They are then looped around the coils 6, as shown at 8, coming to **V**-shaped points within the coils, as shown at 9, from whence they are again looped around the coil, as shown at 10, and pass on with the wires beneath the coil 6, as shown at 11, to the next spring, where the operation is repeated. The tie-rod thus forming **W**-shaped bends, whose outer arms twist around the coil 6, will prevent the tie-rod from slipping on said coil, and thus hold the spring in its proper position.

12 represents extensions on the ends of the springs, which first pass through vertical loops 13 on the coils 6 in the same plane as said coils and then pass over the coils 6 at 14, which form a fulcrum for the same, and are then secured by a hook 15 to a **V**-shaped point 9 of the tie-rod from beneath. It will be seen that as said extensions press down on the coils 6 and raise upon the **V**-shaped points 9 of the

tie-rods, the coils 6 will be securely clamped in said position. The vertical loops 13 will permit the extensions 12 to slip backward or forward in said loops, thereby facilitating the construction of the bed-bottom.

The side of the bed just described I term the "soft" side, as in passing the extensions 12 over the coils 6 instead of under them the springs will be permitted to give slightly, and consequently not form quite so rigid or so stiff a bed as where the extensions pass under said coils.

The stiff side of my bed-bottom, as shown in Fig. II, is constructed substantially the same as the soft side, with the exception that the straight portions of the tie-rods 4 pass over instead of under the coils 6 and the extensions 12 of the springs pass under instead of over the coils 6, with the result that as the springs are pressed down the tie-rods are clamped tightly to the springs by the coils 6 pressing against the extensions 12 and the hooks 15 pressing down on the **V**-shaped portions of the tie-rods. The hooks 15 on the springs next to the side portions of the frame 2 3 engage said frames instead of the tie-rods.

By making a bed-bottom in the manner described I believe I obtain a greater amount of supporting strength in proportion to the weight of wire used than is obtained in other bed-bottoms now in use.

I claim as my invention—

1. In a bed-bottom, the combination of a suitable frame, a series of coil-springs, tie-rods connecting the springs with the frame and with each other, said tie-rods being first secured to the frame, then passing around coils in the springs, then formed into a **V**-shaped portion, then twisted once more around the coils and passing on to the next spring, and extensions 12 on the springs, said extensions passing the coil 6 and then connected to the **V**-shaped portion of the rod by a hook 15, substantially as described, and for the purpose set forth.

2. In a bed-bottom, the combination of a suitable frame, a series of coil-springs, a series of tie-rods, said tie-rods being first secured to the frame, then passing under coils of the springs, as shown at 7, twists 8 around the coils, **V**-shaped portions 9, twists 10 around the coils and then passing on beneath the

coils to the next springs, and extensions 12 on said springs, said extensions passing over the coils and then secured to the V-shaped portions 9 of the tie-rods, substantially as described, and for the purpose set forth.

3. In a bed-bottom, the combination of the springs 1, frames 2 3, tie-rods 4, having W-shaped bends, vertical loops 13 on the springs, extensions 12 on the springs passing through  
10 said loops, and hooks 15 on said extensions, substantially as described, and for the purpose set forth.

4. A tie-rod 4 for bed-springs, formed with hooks 5 at the ends and with W-shaped bends

at intervals between the ends, substantially 15 as described.

5. The combination of a coiled bed-spring formed with a vertical loop 13 and with an outer ring 6, having an extension 12, formed with a hook 15 and passed through the loop, 20 and the tie-rod 4, formed with a W-shaped bend, having its inner arms or V-bend 9 within the ring and its outer arms 8 10 twisted around the latter, substantially as described.

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Witnesses:

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