

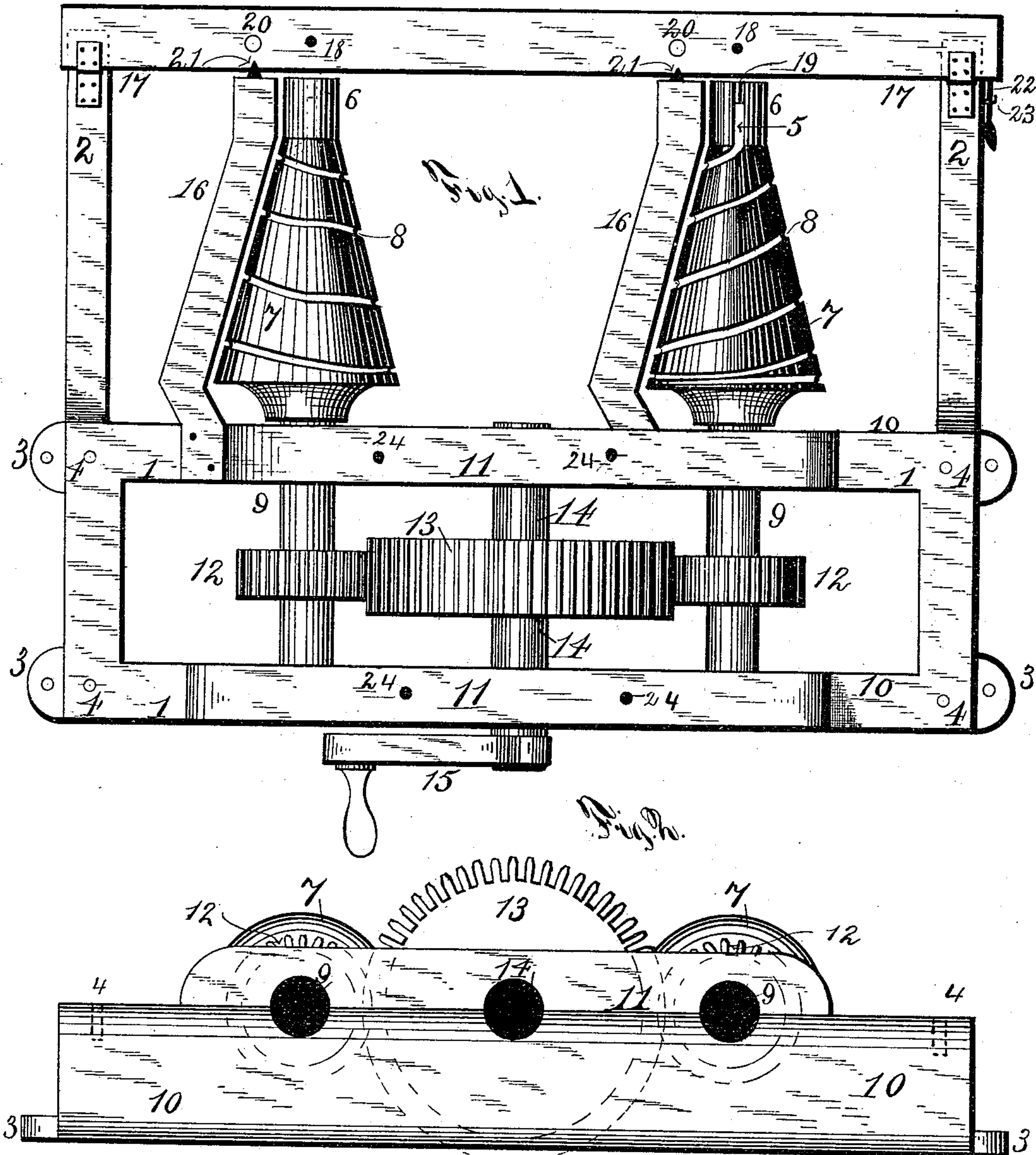
(No Model.)

H. A. BLACKMER.

DOUBLE SPIRAL BED SPRING MACHINERY.

No. 338,702.

Patented Mar. 30, 1886.



Witnesses.
J. Charleston Ingram.
G. S. Cooper.

Inventor.
Henry A. Blackmer
by his atty. J. S. Duffie

UNITED STATES PATENT OFFICE.

HENRY ALLEN BLACKMER, OF CLARKSVILLE, ARKANSAS.

DOUBLE-SPIRAL-BED-SPRING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 338,702, dated March 30, 1886.

Application filed January 16, 1886. Serial No. 188,721. (No model.)

To all whom it may concern:

Be it known that I, HENRY ALLEN BLACKMER, a citizen of the United States, residing at Clarksville, in the county of Johnson and State of Arkansas, have invented certain new and useful Improvements in Double-Spiral-Bed-Spring Machinery; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention has relation to improvements in machinery for the manufacture of twin spiral springs for bed-springs, the novel construction and combination of its parts being as hereinafter set forth in the specification and claims.

In the accompanying drawings, Figure 1 is a top plan view of my invention. Fig. 2 is a rear end view of the same. Fig. 3 is a front end view of one of the conical mandrels.

The construction of my machine is as follows: I make a frame, 1, of cast iron or other suitable material, having extended side rails, 2, and attached to the bottom of said frame 1 are legs or ears 3, by means of which the machine may be attached to a bench, table, or suitable frame. At each of the corners of the said frame I provide a perforation, 4, to enable the operator to easily bend the wire used in the construction of the spring to the required angle for insertion in the groove 5, formed in each of the cylindrical ends 6 of the spirally-grooved conical mandrels 7, by which means the ends of the said wires are tightly held, while the revolution of the said conical mandrels causes the wire to take the form of the spiral groove 8, cut in the periphery of each of the conical mandrels 7, said spiral grooves being a continuation of the grooves 5. The conical mandrels 7 have attached to their rear ends shafts 9, which are journaled on the cross-beams 10 of the frame 1, and are held in place by caps 11, which are fastened to the frame by means of screws, bolts, or rivets 24. On each of the shafts 9 is rigidly secured a cog-wheel, 12, each wheel meshing with a larger cog-wheel, 13, which is rigidly secured on a shaft, 14, journaled in the center of the said

frame and held in place by the caps 11. On the rear end of the shaft 9 I affix a crank-arm, 15, or other suitable means for revolving said shaft, through which the conical mandrels 7 are made to revolve, the motion being communicated thereto by means of said cog-wheels and shafts.

Attached to the inner cross-beam of the frame 1 are two guides, 16, which run parallel with the periphery of the conical mandrels 7, and are for the purpose of keeping the wire in place along the spiral grooves 8.

At or near the ends of the extended side bars, 2, I securely hinge a cross-bar or supporting-piece, 17, having extending from its inner face two pins, 18, said pins fitting in the holes 19, and projecting a short distance therein, thereby giving a support or bearing for the front ends of the conical mandrels 7. I also provide the said cross-bar with holes 20, into which fit the pins 21, projecting from the guides 16. I do not confine myself to having the holes in the cross-bar 17 and pins on the ends of the said guides, but reserve the right to have the pins extend from the said cross-bar and the holes in the guides 16, and the pins 18 may be on the ends of the conical mandrels 7 and the holes 19 in the support 17, the object being to give a suitable support to the ends of the guides and mandrels. By using these supports I am enabled to use much lighter material in making my machine, and the same is held much firmer, and there being bearings at both ends of the cylinders they work much easier and require less power.

On one end of the supporting-bar 17 I secure a spring-lever, 22, which, when the supporter is raised in position, snaps over a pin, 23, and keeps the said supporter from falling down.

The operation of my machine is as follows: I cut the wires required for the springs all the same length. Then taking one of the pieces I bend the ends to the required angle by means of the perforations 4. I then turn the crank-arm until one of the slots in the cylindrical ends 6 comes on top, into which I place one end of the wire, and turn the crank-arm until the other slot comes on top, into which I place the other end of the wire, adjust the supporter and secure it, then turn the crank-arm until the wire fills the entire spiral groove 8,

when they form a complete twin spiral spring joined by an S-bend.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the frame 1, having extended arms 2, perforated feet 3, and caps 11, with shaft 14, cog-wheel 13, rigidly secured on said shaft, cog-wheels 12, meshing with said wheel 13 and rigidly secured on shafts 9, spirally-grooved conical mandrels 7, rigidly secured on the forward ends of shafts 9, and having holes 19, guides 16, securely bolted on said frame, and having pins 21, support 17, hinged to the extended arms 2, and having pins 18 and holes 20, spring-lever 22, and pin 23, all substantially as shown and described, and for the purposes set forth.

2. In a machine for making double spiral springs, as above described, the combination of the extended arms 2, support 17, hinged on the forward ends of said arms, and having holes 20, pins 18, secured in said support and adapted to work in holes 19 in the forward ends

of the conical mandrels 7, and points 21 on the forward ends of guides 16, all substantially as shown and described, and for the purposes set forth.

3. In combination with the frame 1, supporting the shafts 9 and 14, bearing the cog-wheels, as above described, the conical mandrels 7, and guides 16, the support 17, having the pins 18 and holes 20, adapted to support the forward ends of the conical mandrels 7, having the holes 19, and guides 16, having pins 21, spring-lever 22, secured on one end of the support 17, and pin 23, secured in the outer face and forward end of one of the extended arms 2, and arranged to hold support 17 in an upright position, all substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY ALLEN BLACKMER.

Witnesses:

J. L. NELSON,
W. H. STONE.