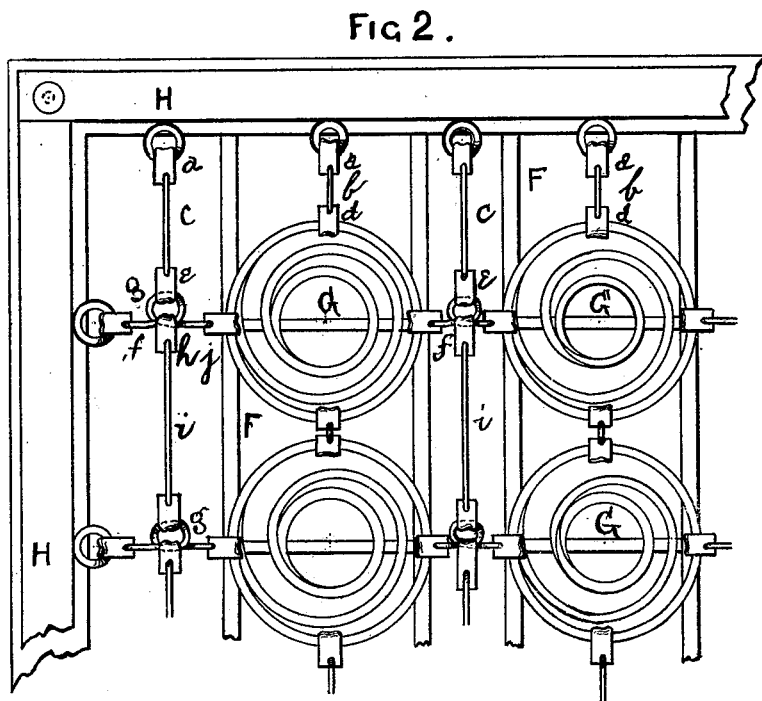
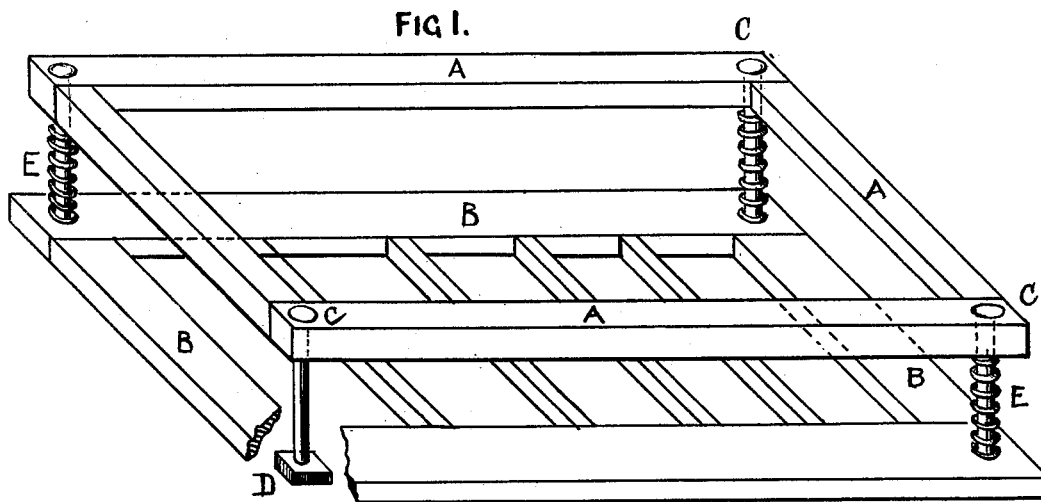


R. M. GRUWELL & C. NEWHOUSE.

SPRING BED-BOTTOM.

No. 187,846.

Patented Feb. 27, 1877.



WITNESSES

H. Monteverde
A. Anthony

INVENTORS

R. M. Gruwell
C. Newhouse
By G. M. Smith
Att'y

UNITED STATES PATENT OFFICE.

ROBERT M. GRUWELL AND CASEY NEWHOUSE, OF STOCKTON, CALIFORNIA.

IMPROVEMENT IN SPRING BED-BOTTOMS.

Specification forming part of Letters Patent No. 187,846, dated February 27, 1877; application filed February 23, 1877.

To all whom it may concern:

Be it known that we, ROBERT M. GRUWELL and CASEY NEWHOUSE, of Stockton, in the county of San Joaquin and State of California, have invented an Improved Spring-Bed; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters marked thereon.

Our invention relates to improved means for connecting the spiral springs of beds together at their tops, and attaching them to the bottom of the frame.

Referring to the drawings for a more complete explanation of our invention, Figure 1 is a perspective view of the frame, with springs removed; Fig. 2, a plan, with part of frame removed.

A and B represent the rails which compose the frame, the corners of which are provided with vertical rods C, which pass through both frames, their upper ends having flat heads, while their lower ends have set-nuts D. A spiral spring, E, is coiled around each of these, so that when the upper portion is pressed upon, and the weight suddenly removed, this frame will immediately assume its original position.

Across the lower half of the frame is placed bars or slats F, set edgewise, to prevent accumulation of dust, upon which the base of the spiral springs which compose the bed are confined. A flat leather strip, G, passes from point to point over the lower coil of the spiral spring, each end of which is nailed firmly to the two slats which carry the spring. By this means the whole of the lower portion of the coil is held firmly in place.

The inner portion of the upper frame is set with a sufficient number of eyelets, H, which screw into the rails. In each of these eye-holes a leather loop, *a*, is placed, from which extend wires *b c* of different lengths, having hooks at both ends. The short hooks *b* engage the leather loops in the eye-holes *a*, before mentioned, and also the leather loops *d* around the spirals of the springs. The long hooks *c* engage the loops *e*, which surround a ring, *g*, of another form of hooks, *f*, placed at

right angles to the hook *c*. The ring *g* is formed by simply making a turn in the wire, and over the knot or tie is placed another loop, *h*, with long hook *i* extending from it and engaging the next series or group, while the two ends of the short hooks *f* engage the loop *j* around the upper coil of the spiral at two opposite points when a group of two springs are placed together, and at the four quarters or points of the spirals when a greater number are grouped, while the long hooks *i* extend from clamp to clamp, or loop to loop, between the several series of springs. Thus, it will be seen, that when weight is applied to the springs they will be borne down with great uniformity, and the surface will not be affected by unequal tension of the springs, so as to leave depressions and elevations, which are now so common in the ordinary construction of spring-beds, as the spaces between the springs lengthwise are filled and tied at right angles at four points, forming a flat pad, which is kept from moving laterally or crosswise by the hooks *b*, *c*, and *i*.

Should any of the springs, however, become weakened by constant use, or the surface of the bed be uneven, it can easily be made uniform by pressing down the upper frame and turning up the set-nuts at the end of the rods, and this may be done so long as there is any spring remaining in the spirals.

It should here be observed that our bed is free from hiding-places for bed-bugs, and needs no canvas as a covering to the springs.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a bed-bottom, substantially as described, the combination, with the rectangular frame and spiral springs, of the rings H, leather loops *a d e j*, hook *b c f i*, and center ring *g*, when the several parts are constructed and arranged substantially as described and shown.

In witness whereof we have hereunto set our hands and seals.

ROBERT M. GRUWELL. [L. S.]
CASEY NEWHOUSE. [L. S.]

Witnesses:

PHILIP MAHLER,
C. W. M. SMITH.