No. 768,149. PATENTED AUG. 23, 1904.

H. & F. RUMPF.

SPRING BED OR SEAT.

APPLICATION FILED FEB. 23, 1904.

NO MODEL.

Fig. 1.

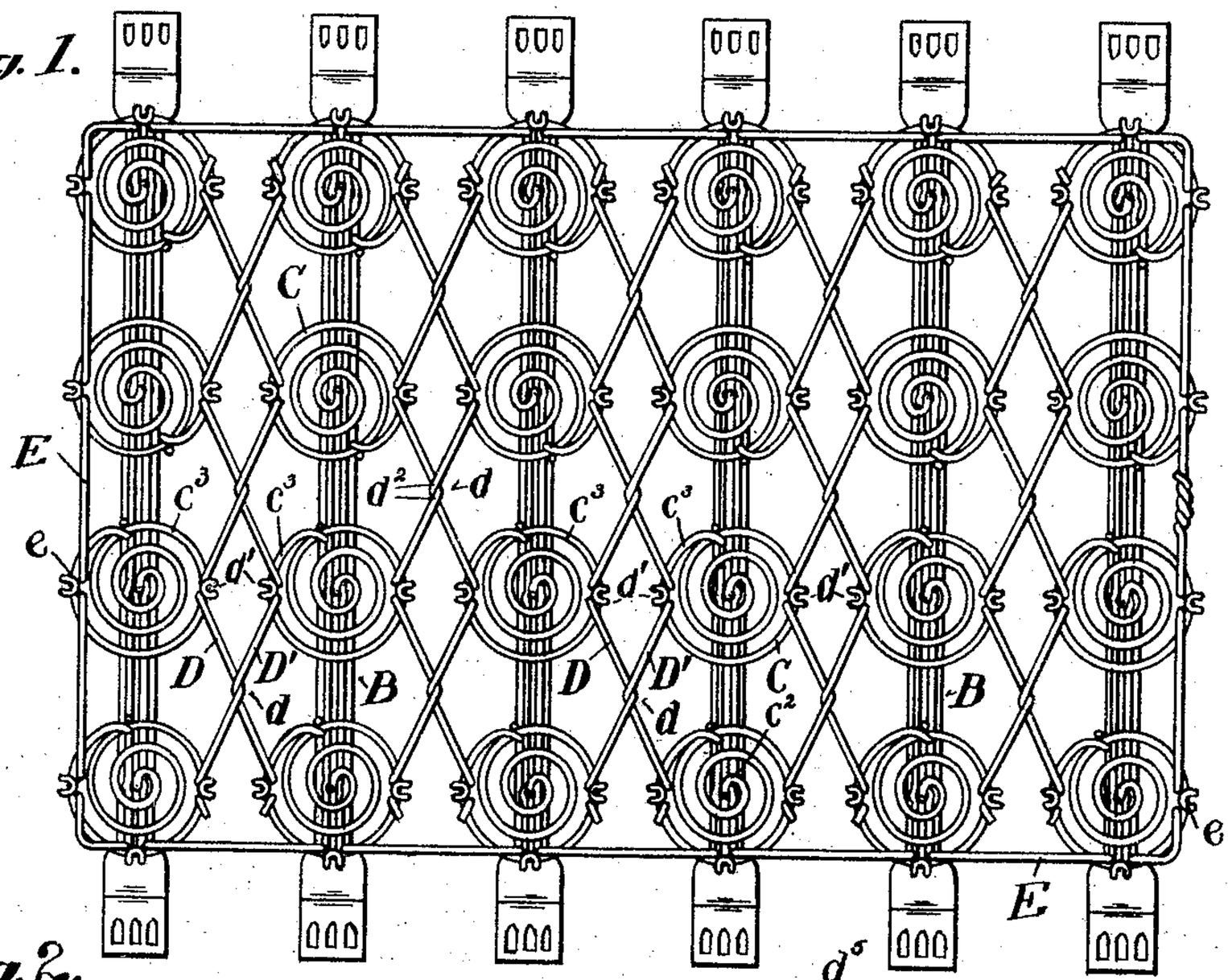


Fig. 2.

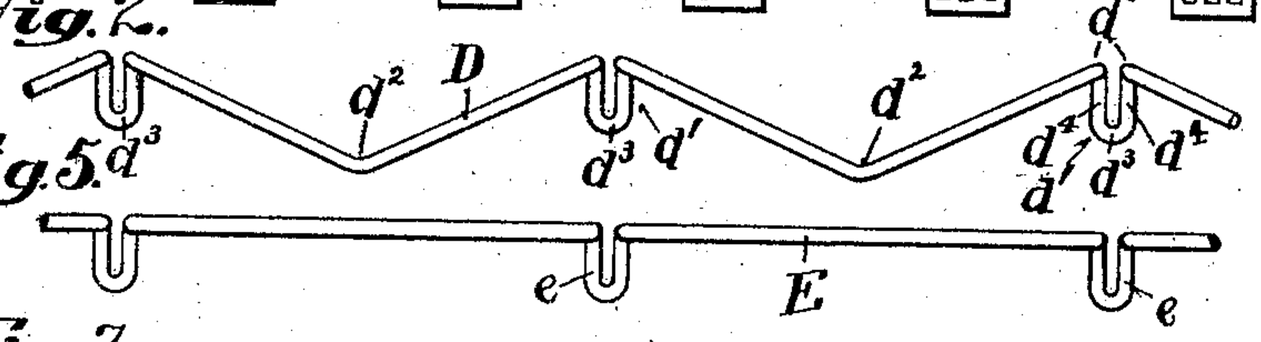


Fig. 5.

Fig. 3.

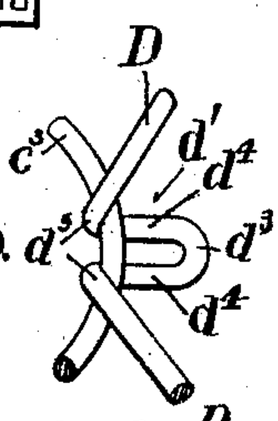


Fig. 4.

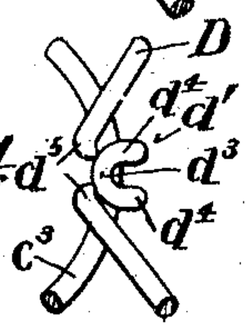


Fig. 7.

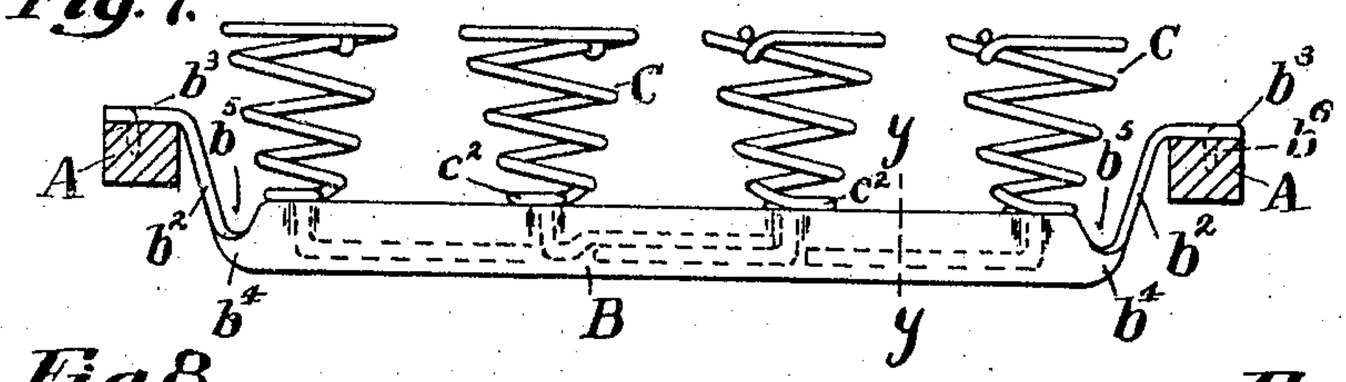


Fig. 8.

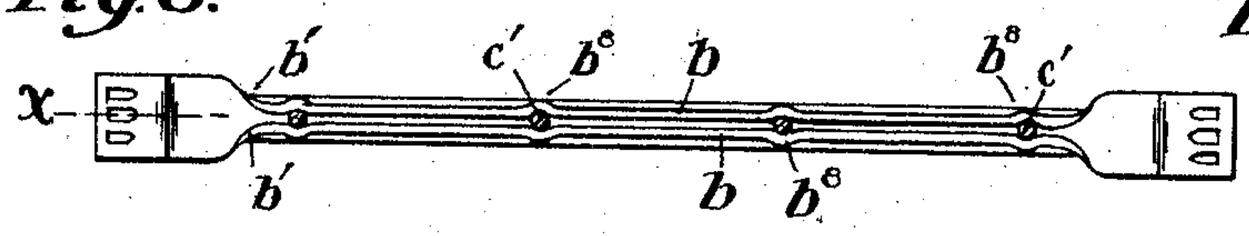


Fig. 9.

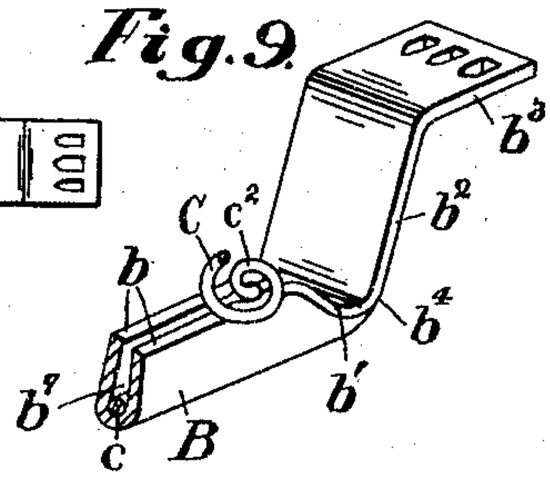


Fig. 10.

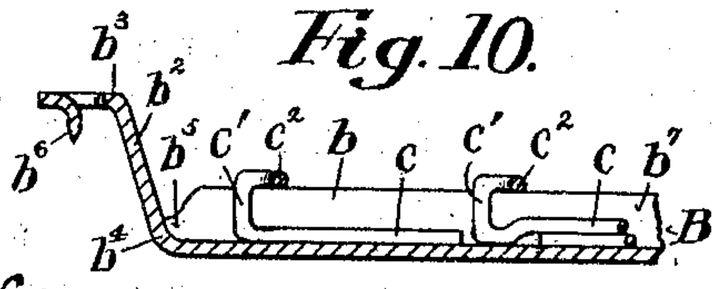
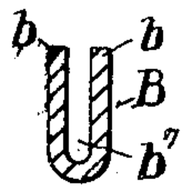


Fig. 6.



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No. 768,149. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

HERMAN RUMPF, OF BELLEVUE, AND FREDERICK RUMPF, OF NEWPORT, KENTUCKY.

SPRING BED OR SEAT.

SPECIFICATION forming part of Letters Patent No. 768,149, dated August 23, 1904.

Application filed February 23, 1904. Serial No. 194,800. (No model.)

To all whom it may concern:

Be it known that we, HERMAN RUMPF, residing at Bellevue, and FREDERICK RUMPF, residing at Newport, in the county of Campbell and State of Kentucky, citizens of the United States, have jointly invented certain new and useful Improvements in Spring Beds or Seats, of which the following is a specification.

Our invention relates to spring beds or seats, and has for its object the providing of a device of this character consisting of few parts and constructed for obtaining the maximum strength from the metal employed.

Our invention consists in providing a cross-strip or stirrup of novel construction for supporting the springs, in novel means for securing the springs thereto, and in novel connections for the upper ends of the springs; and the invention will be readily understood from the following description and claims and from the drawings, in which—

Figure 1 is a plan view of our improved device. Fig. 2 is a plan view of a detail of the inner bracing-wire for connecting the springs. Fig. 3 is a perspective view of a detail of the same, showing its connection with the spring preparatory to clamping its tongue about a coil of the spring. Fig. 4 is a perspective view of the same, showing the tongue clamped about the coil of the spring. Fig. 5 is a plan view of a detail of the outer or frame wire. Fig. 6 is a cross-section of the cross-strip or stirrup on a line corresponding to the line *y y* of Fig. 7, showing the form of the stirrup in cross-section preparatory to receiving the springs. Fig. 7 is a side elevation of the cross-strip or stirrup with the springs seated therein shown connected with the frame of the bed or seat, the latter being shown in cross-section. Fig. 8 is a plan view of the cross-strip or stirrup with the springs broken away. Fig. 9 is a perspective view of one end of the stirrup with the spring broken away. Fig. 10 is a central vertical longitudinal section of one end of the stirrup, taken on the line *x* of Fig. 8 with the springs broken away.

A represents the supporting-frame of the mattress, seat, or the like, to which the metal parts of our improved device are adapted to be secured.

B represents cross-strips or stirrups arranged to support the springs C. The cross-strips are formed up out of flat sheet-metal strips and preparatory to the insertion of the springs are formed up into a substantially U-shaped structure, with the mouth of the U extending upwardly, as shown in Fig. 6, forming a trough or channel in which the springs are received in manner hereinafter explained, the lips *b b* of the structure being pressed toward each other for securing the springs. Toward the end of the stirrup the lips *b b* of the channeled structure are spread, as shown at *b'*, for merging the channeled structure into the flat end of the strip, the flat end being bent upwardly, as shown at b^2, and outwardly, as shown at b^3, for forming a hanger at each end of the strip. It will be noted that the hanger is bent at b^4 toward the mouth of the channeled structure in the general direction of the course of flexure of the metal, thereby preventing flawing, cracking, rupture, or breakage of the metal at the bend, forming a small cup b^5 at the bend. At the ends of the cross-strips prongs b^6 are struck from the body of the metal and bent downwardly at right angles to the superficial plane of the end for being driven into the supporting-frame A and fastened to it thereby.

The springs are formed with a lateral extension *c*, adapted to rest in the trough b^7 of the cross-strip. An upright shank *c'* preferably connects the extension *c* with the first coil c^2 of the spring. The lateral extensions are placed within the trough, and the lips of the channeled structure are then forced toward each other by suitable means, as by suitable dies in a press, and caused to take about the shank *c'*, forming a bend b^8 about the shank and positioning the shank longitudinally on the cross-strip. The cross-strip is thereby given a form which is capable of resisting great strains, the wire of the lateral extensions of the springs in the interior of the cross-strip reinforcing the structure, the structure being integral intermediate of its hangers without being weakened by perfora-

tions. When assembled, the lowest coil of the spring preferably rests upon the upper edge of the cross-strip, giving the spring a firm seat.

In our improved construction no preparation of the cross-strip for receiving any definite number of springs is necessary. The strips may be formed up into substantially U-shaped form preparatory to receiving the springs without regard to the number of springs they shall receive, and the same strips may be employed for supporting different numbers of springs. Thus in the drawings we have shown the springs spaced so that the stirrups are provided with four springs each. If desired, however, the same strips of the same length may have three or five springs attached to the same by simply setting the springs closer together or farther apart, causing the lips of the U-shaped structure to approach each other about the shanks of the springs that may be placed in the trough irrespective of their number. The lateral extensions may be extended in either direction in the trough. Thus in Figs. 7 and 10 we have shown the extensions all projecting toward the middle of the stirrup, the extensions of the inner springs overlapping, and thereby providing additional strength for the middle of the stirrup.

In forming a mattress, seat, or the like a suitable number of stirrups, with their springs attached, are placed side by side, and we have provided improved means for interconnecting the various springs of which the mattress, seat, or the like may be composed. Adjacent rows or series of springs are adapted to be connected by inner bracing-wires D D′, the wires D connecting with one row of springs and the wires D′ connecting with the adjacent row of springs, the wires D D′ being interlaced between adjacent springs of the respective rows or series of springs, as shown at *d*. The wires D D′ are duplicates and are formed with tongues d', adapted to take about the upper coils c^3 of the springs, and with bends d^2, at which they may be interlaced, the tongues being spaced apart a distance corresponding to the spacing of the springs. The tongues are formed by a sharp bend d^3, forming parallel shanks d^4, curved from the main body of the wire at d^5 for projecting the tongue in a plane substantially parallel with the plane of the body of the wire, the bend d^3 forming the extreme end of the tongue, as shown in Figs. 2 and 3, the curved part being arranged to receive the coil of the springs. The tongues are formed in the wire, so as to register with the springs, respectively, the strands of wire projecting from the respective springs at an obtuse angle relatively to each other and resting upon and radiating from the spring, the tongue formed by a reverse bend in the wire taking under the upper coil of the spring from its inner side and being formed with a looped outer end taking about the outer side of the said upper coil. The extreme end of the tongue is bent around said upper coil, so as to project toward said curves d^5 and rest upon the upper surface of said upper coil, so as to be located in said obtuse angle formed by said radiating strands of the wire and in horizontal plane with said strands of wire. In assembling the wires D D′ are interlaced or twisted at the bends d^2 and placed upon the upper coils c^3 of adjacent series of springs, the tongues d' being caused to take under said coils. The tongues are then bent around the wires forming the coils by a suitable implement, taking the form shown in Figs. 1 and 4, and firmly binding together the upper ends of the springs, the connection described between the springs and wires forming a secure lock between the same.

An outer or edge wire E is arranged to edge the nest of springs and is provided with tongues *e*, similar to the tongues d'. These tongues *e* are spaced apart a distance corresponding to the spacing of the springs. The wire E passes over the outer portions of the upper coils of the outer springs, the tongues *e* taking under said outer portions and being bent upwardly around the upper coils of the springs. This forms a substantial structure of few parts, the construction being such that slippage of the wires relative to the springs is obviated.

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

1. In combination, a stirrup for a spring-mattress, spring-seat, or the like, formed from a sheet-metal strip into longitudinally-channeled form and forming a trough having a curved bottom in the longitudinal middle of said stirrup and sides extending upwardly from said bottom above said bottom and forming lips, and having ends bent upwardly toward said lips and extending upwardly past said lips, forming hangers for said stirrup, and springs having shanks at their lower ends extending between said lips in the longitudinal middle of said stirrup, said lips being clamped toward each other with said shanks between them for positioning said springs longitudinally of said stirrup, substantially as described.

2. In a device of the class described the combination of a channeled strip having its mouth extending upwardly and having ends turned upwardly past said mouth for forming hangers from which to suspend said strip, and springs having lateral extensions secured within the channel of said strip, substantially as described.

3. In combination, a stirrup for a spring-mattress, seat, or the like, formed from a sheet-metal strip into longitudinally-channeled form having upwardly-extending lips, springs provided with lateral extensions, said

extensions being in the channel of said stirrup, said lips approaching each other and thereby positioning said springs longitudinally of said stirrup, substantially as described.

4. In a spring-mattress, spring-seat, or the like, the combination of a cross-strip formed from sheet metal into longitudinally-channeled form having upwardly-extending lips, springs provided with lateral extensions respectively extending from the lowest coil of said springs, said extensions being in the channel of said cross-strip, said lips approaching each other for positioning said springs longitudinally of said cross-strip, the lowest coils of said springs respectively resting on the upper edges of said lips, substantially as described.

5. A stirrup for a spring-mattress, spring-seat, or the like, formed from a sheet-metal strip into a trough having a curved bottom in the longitudinal middle of said stirrup, said bottom being curved downwardly from the sides thereof toward said longitudinal middle, the sides of said trough curving upwardly from said bottom at both sides of said bottom and extending above said bottom, said trough being open at its top, said sides forming lips extending above said bottom between which springs are arranged to be clamped, the ends of said strip being spread and extending to both sides of the longitudinal middle of said stirrup and forming hangers for said stirrup, substantially as described.

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

HERMAN RUMPF.
FRED. RUMPF.

Witnesses:
HERBERT F. HARDEN,
A. F. HERBSLEB.