No. 792,256. PATENTED JUNE 13, 1905.

O. G. FRANKS.

WOVEN WIRE MATTRESS.

APPLICATION FILED OCT. 24, 1903.

Fig. 1.

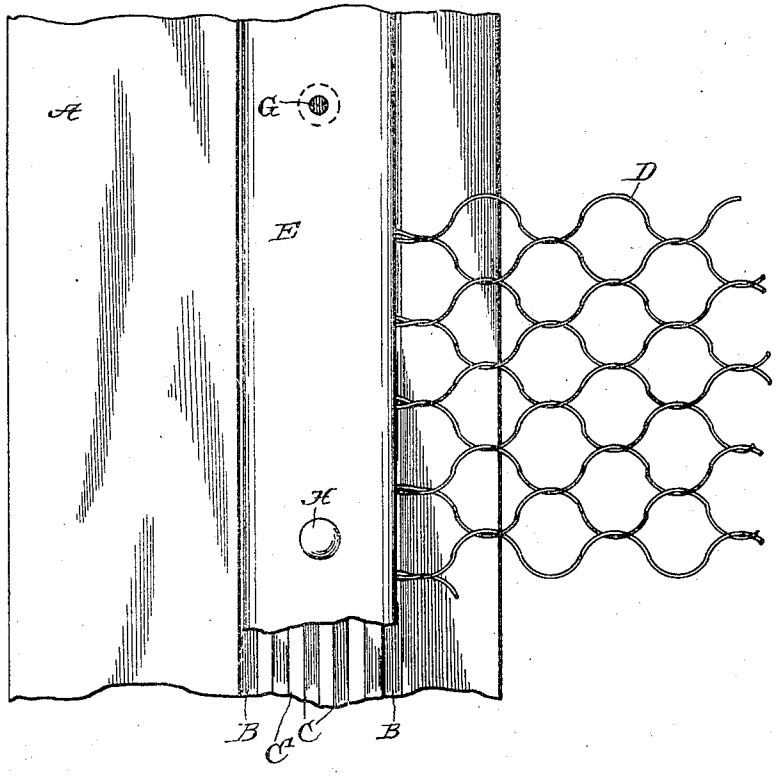


Fig. 2.

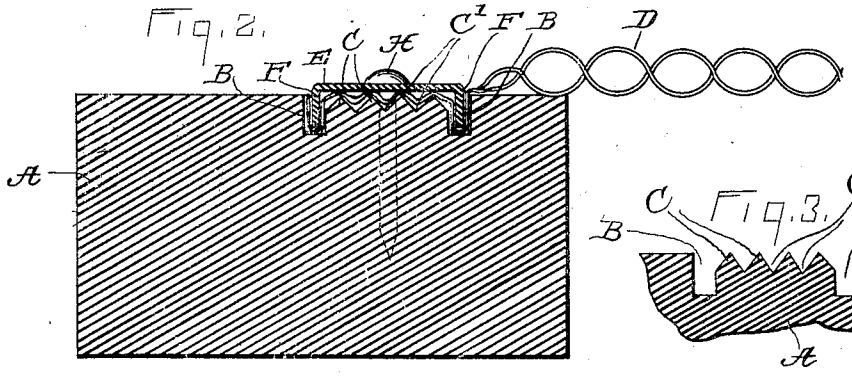


Fig. 3.

Witnesses—

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No. 792,256. Patented June 13, 1905.

UNITED STATES PATENT OFFICE.

ORRIN G. FRANKS, OF SPRINGFIELD, OHIO.

WOVEN-WIRE MATTRESS.

SPECIFICATION forming part of Letters Patent No. 792,256, dated June 13, 1905.

Application filed October 24, 1903. Serial No. 178,324.

To all whom it may concern:

Be it known that I, ORRIN G. FRANKS, a citizen of the United States, residing at Springfield, in the county of Clarke and State of Ohio, have invented a new and useful Improvement in Woven-Wire Mattresses, of which the following is a specification, reference being had to the accompanying drawings.

My improvement relates particularly to means for securing the ends of a coiled woven-wire fabric to the end rails of the frame of a woven-wire mattress.

The object of the invention is to produce a fabric fastening which may be economically manufactured and which will be amply strong and durable.

In the accompanying drawings, Figure 1 is a plan of a portion of one of the end rails and a portion of the woven-wire fabric of a bed-bottom embodying my improvement. Fig. 2 is a vertical section of the portion of the structure shown in Fig. 1. Fig. 3 is a fragment of a portion of the end rail shown in Fig. 2, the fabric and the clamping-plate being omitted.

Referring to said drawings, A is the end rail.

B B are upright channels in the upper face of the end rail. Said channels are parallel to each other and to the length of the end rail and are preferably of considerable depth and relatively narrow. The space between said channels is preferably formed with ribs C and channels C′ parallel to the channels B. Said ribs may be of any suitable cross-sectional form other than the angular form shown in the drawings.

D is the woven-wire fabric, formed in the usual manner of interlinking, parallel, spiral wire coils.

E is a clamping-plate. This consists of a piece of channel iron or steel having a flat body and having at each side a depending flange F, said body being sufficiently wide to separate said flanges to correspond to the distance between the two upright channels B B. Said binding-plate has any desired number of upright holes G for receiving binding-nails H after said plate has been forced into position. For joining the end rail, the fabric, and said clamping-plate the end rail is laid into a suitable powerful press, and one end of the woven-wire fabric is laid upon said rail and parallel to and extending just across the channels B B and the ribs C, the fabric preferably projecting across the outermost channel B a distance approximately equal to twice the depth of said channel. The fabric may, however, merely extend across the outer channel, thus adapting it to be bent downward only between the inner face of the adjacent flange F and the inner wall of said channel, as will be more fully hereinafter explained. Great pressure is then applied to the platen or head of the press and said platen caused to descend into engagement with said clamping-plate and force the latter downward until its flanges rest in the lower portions of the channels B B. In its downward movement the plate E crushes the coils of the woven-wire fabric and presses the wire composing said fabric downward into both channels B and B, the wire folding around the inner flange of said plate and also around the outer flange of said plate if the fabric extended far enough across said channel to afford a sufficient length of wire. The wire is also pressed into the channels C′ between the ribs C. This produces a very powerful gripping or binding engagement of the fabric between the end rail and said clamping-plate. Not only is the wire folded around the inner flange of the clamping-plate, but the inner channel B may be sufficiently narrow to cause the wire to be engaged between the vertical walls of said channel and said flange at each side of the latter. It will be readily understood that by this means a very strong wedging action can be added to the engagement, due merely to the folding of the wire around said flange. At the opposite side of said clamping-plate the wire may be similarly wedged at one or both sides of the flange, according to the length of the wire, thus doubling the engagement effected by means of the inner flange, and between the bottom of the body of said clamping-plate and the upper face of each rib C there is a binding engagement, the effectiveness whereof is augmented by the folding or buckling of the wire into

the spaces between said ribs. While said ribs aid in gripping or binding the wire, as described, they perform another useful function.

As already stated, the platen of the press is moved downward with great force, and it is therefore desirable to introduce elasticity into the operation. This I accomplish by means of said ribs. Said ribs constitute a cushion between the bottom of the clamping-plate body and the main portion of the end rail. The channels between said ribs constitute spaces into which the wire may yield by buckling or bending, and said ribs are themselves adapted to yield by compression of the wood forming their upper faces. It will be observed that the upper face of the clamping-plate E remains higher than the upper face of the end rail, so that the pressure exerted by the press is received by the portion of the rail between the channels B B and by the bottom of said channels. It will be readily understood that if the portion of the rail between the channels B B were solid and continuous there would be no provision for elasticity between said plate and said end rail.

The nails H are driven through the holes G into the rail A to hold the clamping-plate in position.

I claim as my invention—

1. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said rail having channels, B, B, parallel to the length of said rail, a ribbed portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric lying between said rail and said plate, and means for binding said plate to said rail, substantially as described.

2. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said plate having upright, parallel channels, B, B, and a yielding portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric being folded around the inner of said flanges and wedged between the lateral faces of said flanges and the lateral walls of the channel in which said flange rests, and means for binding said plate to said rail, substantially as described.

3. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said plate having upright, parallel channels, B, B, and a yielding portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric being folded around the inner of said flanges and wedged between the lateral faces of said flange and the lateral walls of the channel in which said flange rests, and engaged also between the body of said plate and the portion of said rail between said channels, and means for binding said plate to said rail, substantially as described.

4. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said rail having upright, parallel channels, B, B, and a ribbed portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric being folded around the inner of said flanges and wedged between the lateral faces of said flange and the lateral walls of the channel in which said flange rests, and means for binding said plate to said rail, substantially as described.

5. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said plate having upright, parallel channels, B, B, and a ribbed portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric being folded around the inner of said flanges and wedged between the lateral faces of said flange and the lateral walls of the channel in which said flange rests, and engaged also between the body of said plate and the portion of said end rail between said channels, and means for binding said plate to said rail, substantially as described.

6. In a woven-wire bed-bottom, the combination of an end rail, a fabric, and a metallic, channel-form clamp-plate, said rail having upright, parallel channels, B, B, and a ribbed portion between said channels, and said plate having depending flanges extending into said channels, and the ends of the wires of said fabric lying between said rail and said plate, and means for binding said plate to said rail, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this 17th day of October, in the year 1903.

ORRIN G. FRANKS

Witnesses:

HORACE C. KEIFER,

WARREN K. WILLISS.