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SPRING OR CUSHION CLAMP

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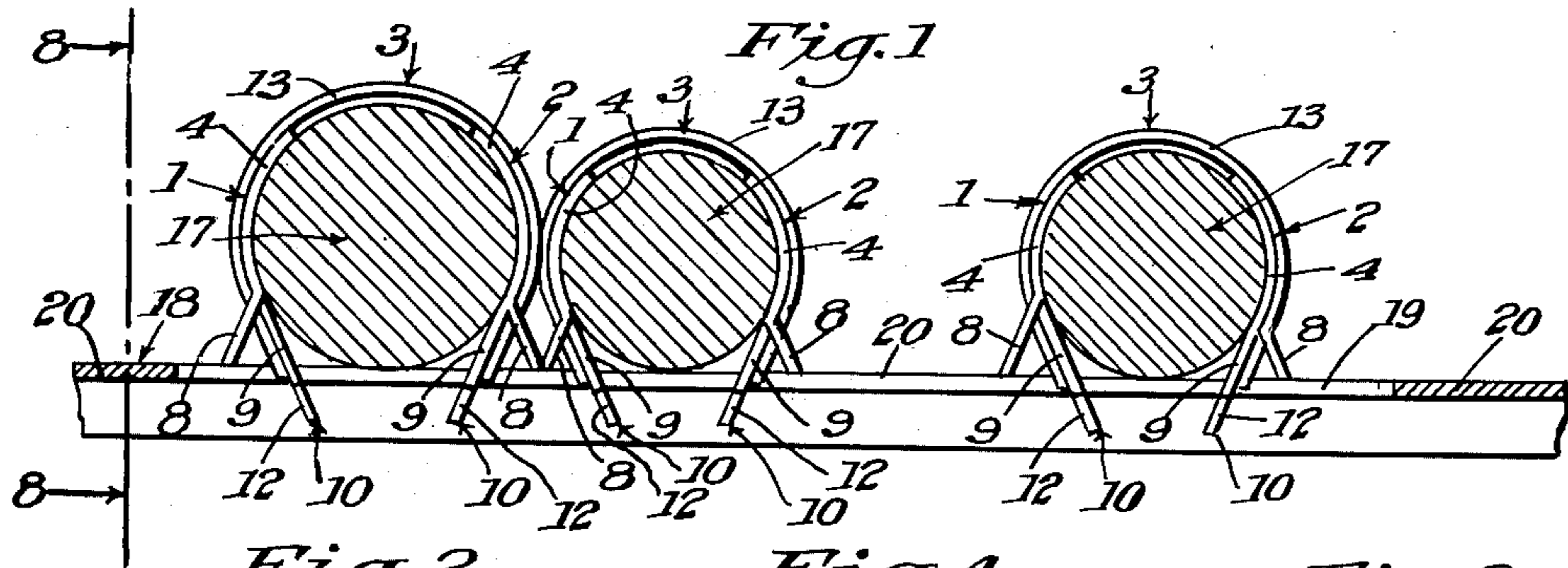


Fig. 2

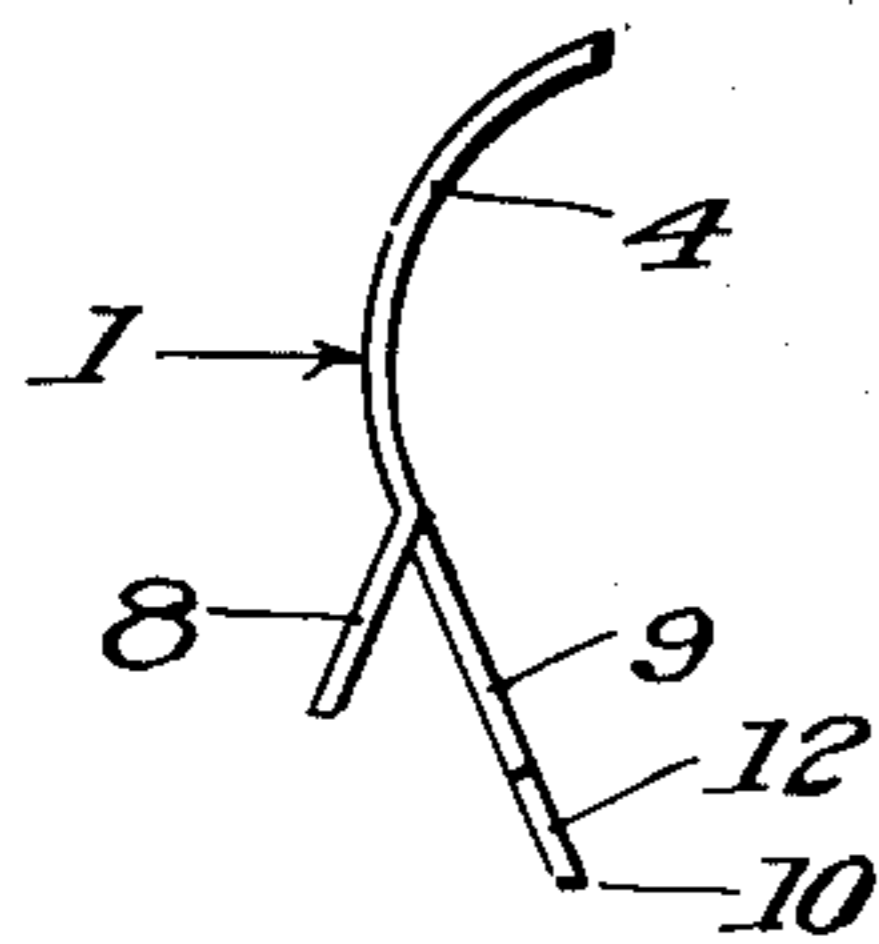


Fig. 4

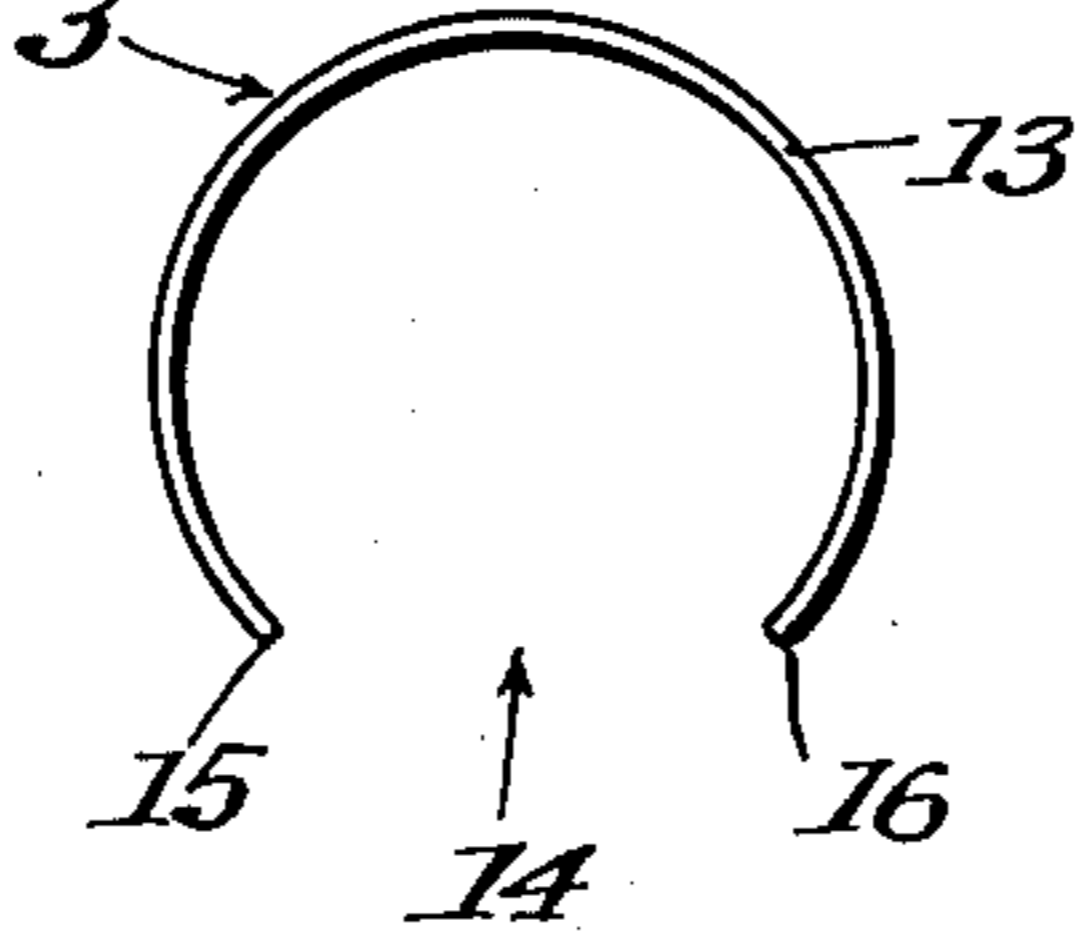


Fig. 3

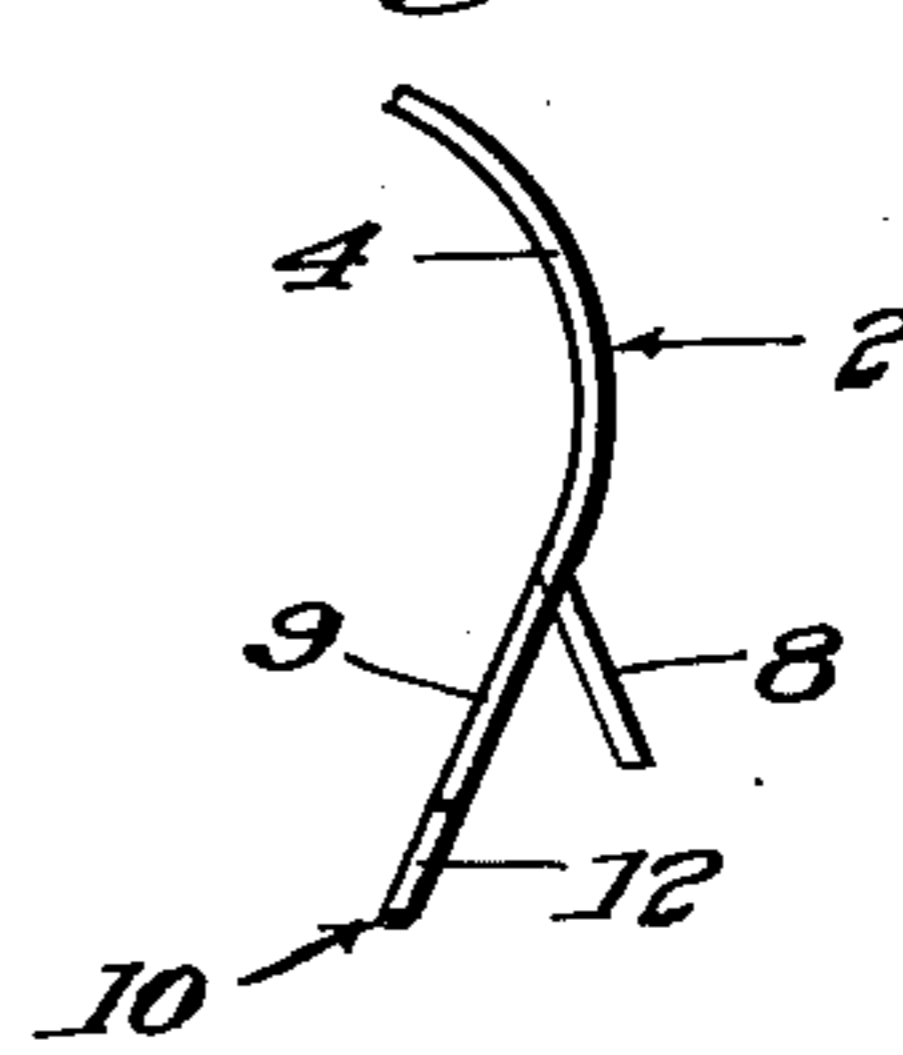


Fig. 5

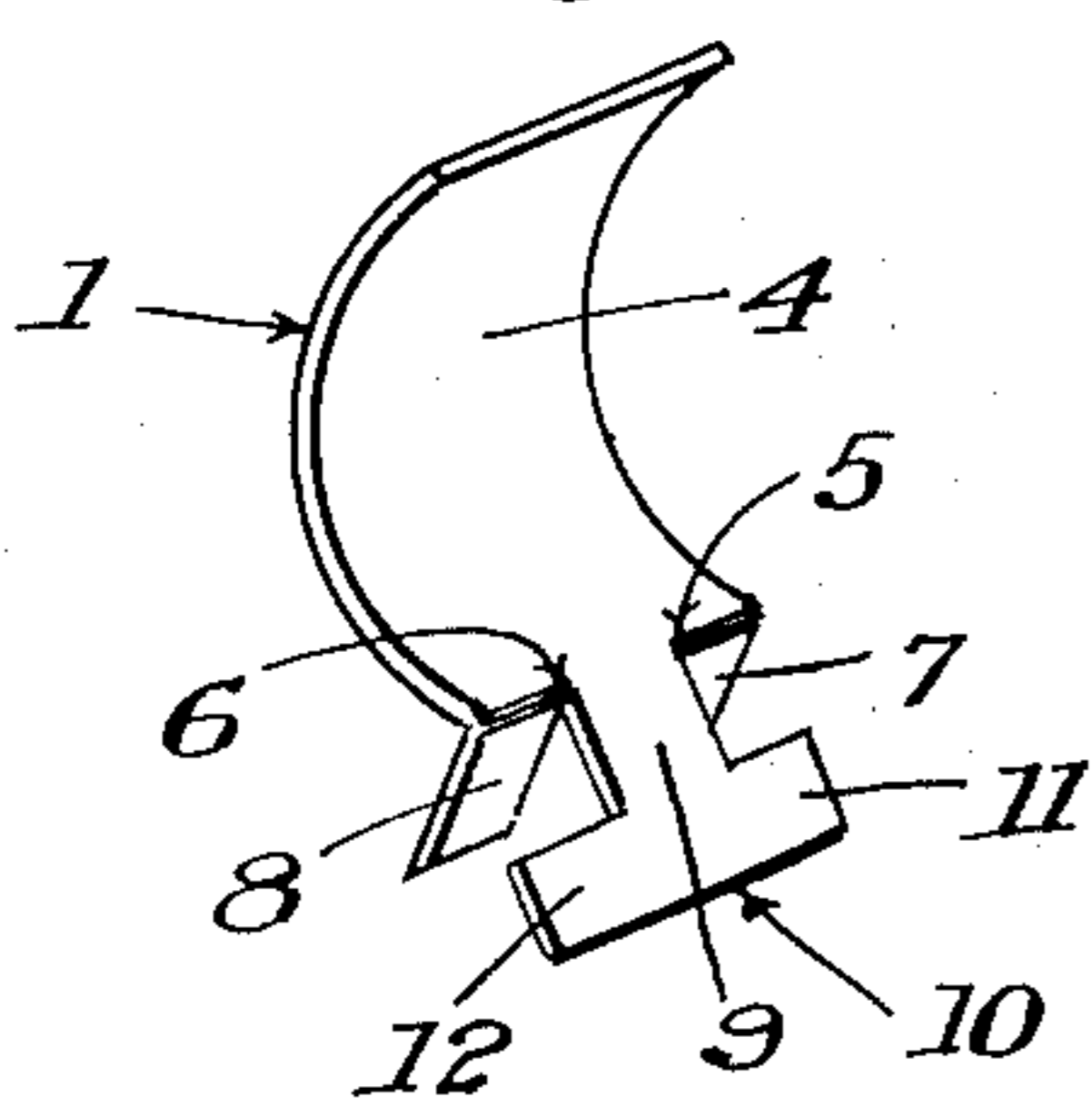


Fig. 7

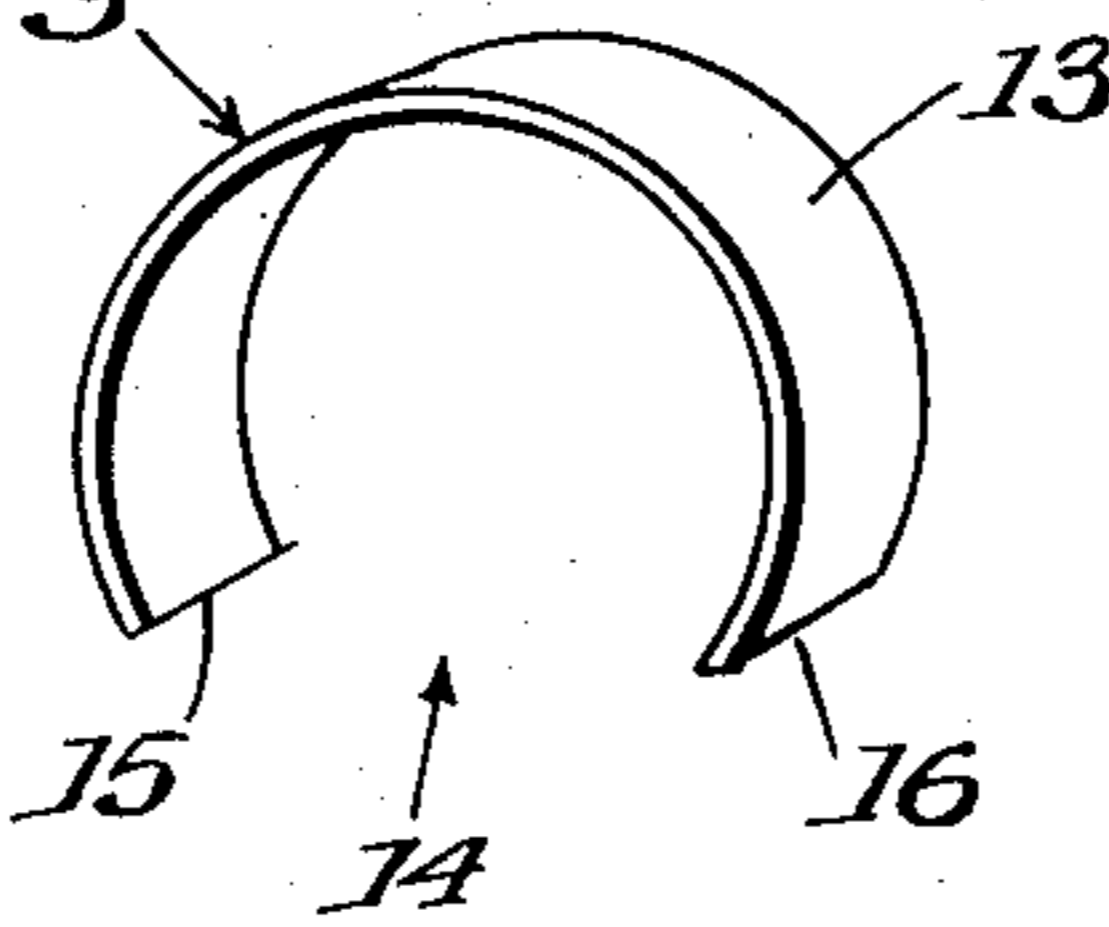


Fig. 6

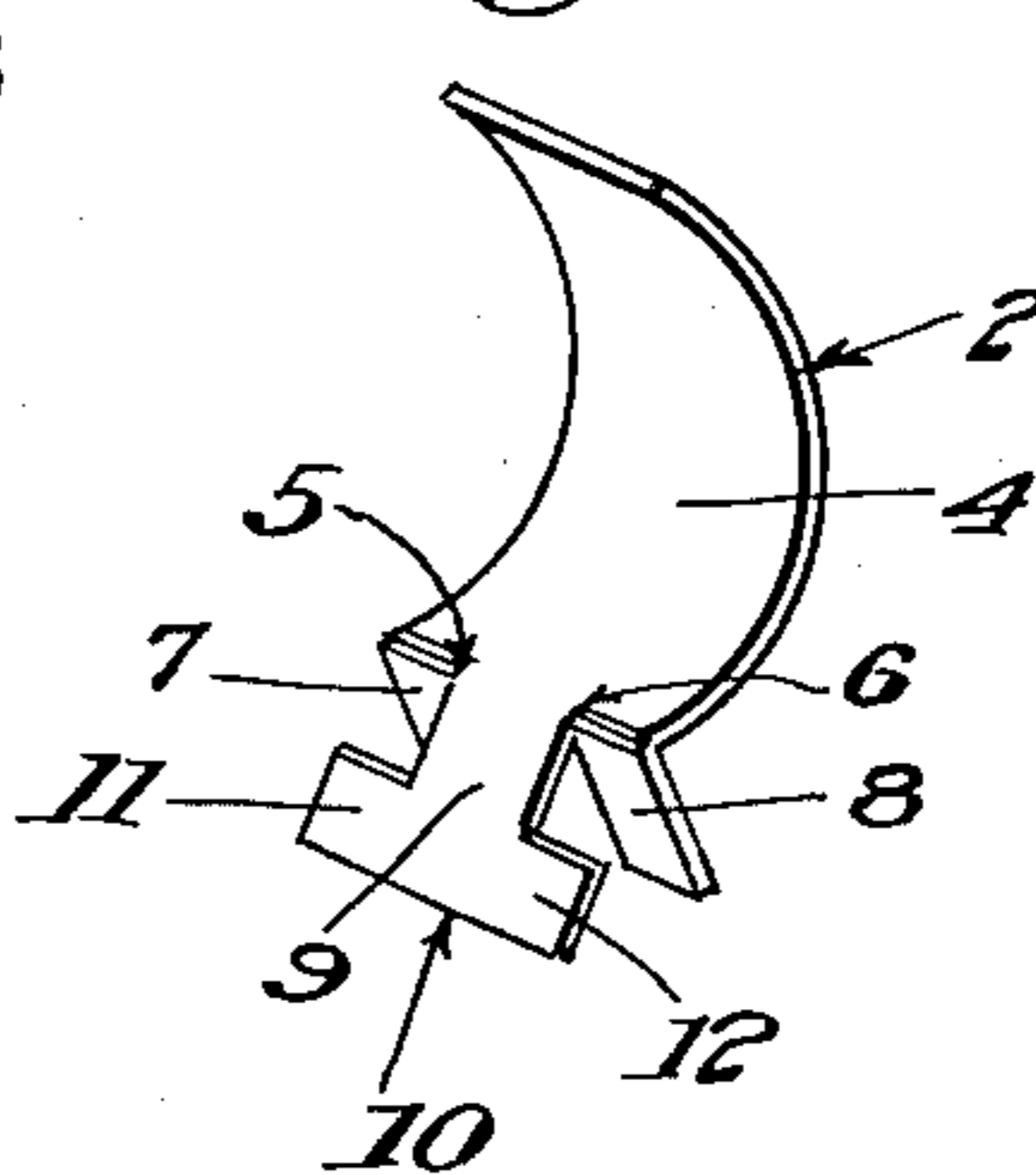
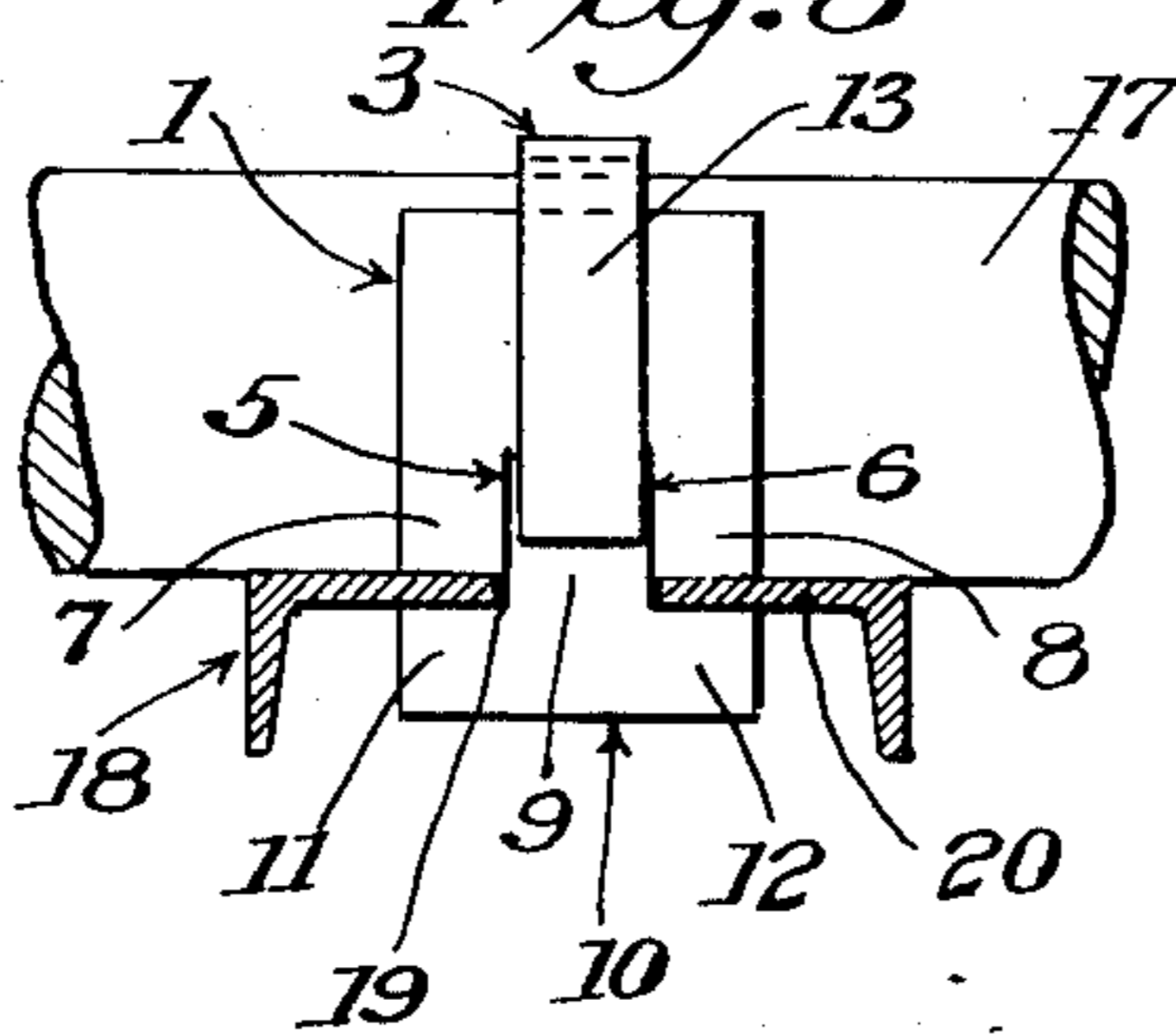


Fig. 8



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2,746,701

SPRING OR CUSHION CLAMP

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3 Claims. (Cl. 248-73)

This invention relates to clamps, and more particularly to spring or cushion clamps for clamping cables, conduits, pipe and the like on a hanger bar or other suitable mounting, which mounting may be supported on a ship, in a building or other suitable support, and this invention is an improvement on our spring cable clamps covered by our application, Serial No. 305,468, filed August 20, 1952.

The shock of the vibration of a battleship, when the big guns of the ship are fired, to clamps which clamp cables and the like in position on the ship, is terrific, and it is one of the principal objects of our invention to provide a cushion clamp for clamping cables and the like on a battleship in such manner as to cushion and absorb substantially the shock of such vibration of the ship applied to such clamps by the firing of the guns of the ship.

Another object of our invention is to provide a cushion clamp of the character stated which will clamp cables and the like on hanger bars or other support under constant spring tension, which clamp may be made of suitable material, such as strip stock spring material or stainless material, and which clamp may be easily assembled and applied to a cable or the like to clamp the same on a suitable mounting.

A further object of our invention is to provide a cushion clamp of the character stated comprising a pair of side spring clamp members which extend upwardly from a hanger bar against opposite sides, respectively, of a cable or the like, but not over the top of same, and a third arcuate clamp member in the form of a spring clip, which may be detachably sprung over the top of the cable or the like and over the outer side of said side spring clamp members, with the ends of said third clamp member under tension clamping against the outer sides of said side spring clamp members.

Other objects and advantages of the invention will appear hereinafter as this specification progresses.

The invention is illustrated in the annexed drawing forming a part of this specification and in which:

Fig. 1 is an end elevation of our invention shown clamping a plurality of cables on a horizontal hanger bar.

Fig. 2 is an end elevation of the left side spring clamp member.

Fig. 3 is an end elevation of the right side spring clamp member.

Fig. 4 is an end elevation of the third intermediate spring clamping member for extending over a cable and said side spring clamp members for engaging the outer sides of said spring clamp members for clamping said cable on a horizontal bar.

Fig. 5 is a perspective of the left side spring clamping member.

Fig. 6 is a perspective of the right side spring clamp member.

Fig. 7 is a perspective of the third intermediate spring clamping member as shown in Figs. 1 and 4.

Fig. 8 is a transverse vertical section of Fig. 1 taken on line 8-8 of Fig. 1.

Referring more particularly to the drawing, in which

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the same parts are designated by the same reference numerals in all of the figures, our invention includes a left side spring clamp member 1, a right side spring clamp member 2, and a third intermediate spring clamp member 3, each of which clamp members is formed of spring sheet material, such as strip stock spring material or stainless material.

The left side spring clamp member 1 is formed with an arcuate engaging member 4, which is split upwardly from its lower end with two spaced slits 5 and 6, forming a pair of depending outer auxiliary legs 7 and 8 of the same length and an intermediate leg 9, which is longer than and extends below the lower ends of the outer shorter auxiliary legs 7 and 8. The legs 7 and 8 are bent outwardly at a slight angle. The lower or outer end of the intermediate leg 9 is formed with a transverse member 10, which makes the leg 9 T-shape, with the ends 11 and 12 of said transverse member 10 extending laterally from opposite sides, respectively, of said leg.

The right side spring clamp member 2 is of the same form as, or is a duplicate of the left side spring clamp member 1.

The third intermediate spring clamp member 3 comprises a segmental arcuate spring metal band 13 provided with an entrance or space 14 at one side thereof between the ends 15 and 16 of said band, through which space the clamp engaging member 4 of the clamp members 1 and 2 engaging a cable 17 may be received within said band with said ends 15 and 16 in spring clamping engagement with said clamp engaging members 4 of the spring clamp members 1 and 2 respectively.

The spring clamp members 1 and 2 may be supported on a channel hanger bar 18 provided with an elongated longitudinal slot 19 in its intermediate supporting wall 20 upon which cables 17 are clamped by our invention, including the clamp members 1 and 2 and the third spring clamp member 3, in a manner hereinafter more fully described.

The operation of our invention is as follows:

A cable 17 being extended across and resting upon the upper side of the intermediate supporting wall 20 of a hanger bar 18, a pair of the clamp members 1 and 2 are placed upon said supporting wall 20, at the left and right sides, respectively, of said cable, with the lower ends of the T-shaped legs 9 of said clamp members 1 and 2 extending downwardly, through the slot 19 in said supporting wall 20 of the hanger bar 18, and with the outer ends 11 and 12 of the transverse arm members 10 of said legs 9 extending transversely under said supporting wall 20 and engaging the under side of said wall at opposite sides, respectively, of the slot 19 in said wall in which position of said intermediate legs 9 and their transverse arms 10, the lower ends of the outer auxiliary legs 7 and 8 engage the upper side of the supporting wall 20 (see Figs. 1 and 9). The clamp members 1 and 2 are then moved along the hanger bar 18, with the legs 9 of said clamp members 1 and 2 passing through the slot 19 in the upper supporting wall 20 of said hanger bar 18 until the arcuate member 1 and the right clamp member 2 engage the left side and right side, respectively, of the cable 17 with the upper ends of said engaging members 4 spaced apart and slightly below the upper side of said cable 17 and with the lower ends of the legs 9 of the clamp members 1 and 2 converging towards each other and the upper edges of the outer ends 11 and 12 of the transverse members 10 at the lower ends of said legs 9, engaging at an angle the under side of the supporting wall 20 of the hanger bar 18 at opposite sides of the slot 19, and holding said clamp engaging members 4 frictionally against movement away from the sides of the cable 17, so that the spring clamp engaging members 4, if required, will yield outwardly and permit the cable 17 to be withdrawn directly upwardly off the

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hanger bar 18, between the upper ends of said clamp engaging members 4. With the clamp engaging members 4 engaging opposite sides of the cable 17, as aforesaid, the lower open side 14 of the third intermediate spring clamp member 3 is introduced downwardly over the upper side of the cable 17 and the outer sides of the engaging members 4 of the clamp members 1 and 2, with the lower ends 15 and 16 of said spring clamp member 3 engaging said outer sides of said engaging members 4 of the clamp members 1 and 2, until said spring clamp member 3 is sprung completely over the upper side of the cable 17 and said engaging members 4 of the clamp members 1 and 2, with the lower ends 15 and 16 of the clamp member 3 in spring engaging contact with said clamp engaging members 4 of the spring clamp members 1 and 2, below the center of the cable 17 clamped between said spring clamp members, whereby the engaging members 4 of the spring clamp members 1 and 2, are firmly clamped by said clamp member 3 in clamping position against the opposite sides of the cable 17, thus detachably clamping said cable firmly in position on the hanger bar, as shown in Figs. 1 and 8 of the drawing.

The third clamp member 3 may be pried off the engaging members 4 of the clamp members 1 and 2 and off the cable 17 by means of a tool such as a screw driver inserted between the upper side of the cable 17 and the under side of the clamp member 3 between the upper ends of the engaging members 4, and then the cable 17 may be withdrawn upwardly from between the clamp engaging members 4 of the clamp members 1 and 2, said engaging members 4 yielding outwardly to permit such withdrawal of said cable.

I claim:

1. In combination, a cable support, a cable clamp comprising a pair of clamp members, legs depending from said clamp members, respectively, elements on the lower ends of said legs, respectively, engaging the under side of said support and holding said clamp members against the

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sides, respectively, of said cable on said support, and a resilient third clamp member extended over said cable and said side clamp members and clamping said side members against the sides, respectively, of said cable and also clamping said cable on said support.

2. A cable clamp as claimed in claim 1, including auxiliary legs depending from said clamp members and engaging the upper side of said support and assisting in maintaining said clamp members in clamping position on said support against the side of said cable.

3. In combination with a hanger bar provided with a longitudinal slot therein, a pair of cable clamp members engaging opposite sides, respectively, of a cable extending across and supported on said hanger bar, a pair of legs depending from said clamp members, respectively, resting upon and engaging the upper side of said hanger bar at opposite sides, respectively, of said slot in said hanger bar and thereby holding said clamp members in engagement with opposite side, respectively, of said cable, a third leg depending from each of said clamp members, respectively, through said slot in said hanger bar, elements on the lower ends of said third legs of said clamp members, respectively, engaging the under side of said hanger bar and holding said clamp members against the opposite sides, respectively, of said cable and on said hanger bar, and a resilient third clamp member extended over said cable and said side clamp members and clamping said side members, respectively, against the sides, respectively, of said cable and also clamping said cable in position on said hanger bar.

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