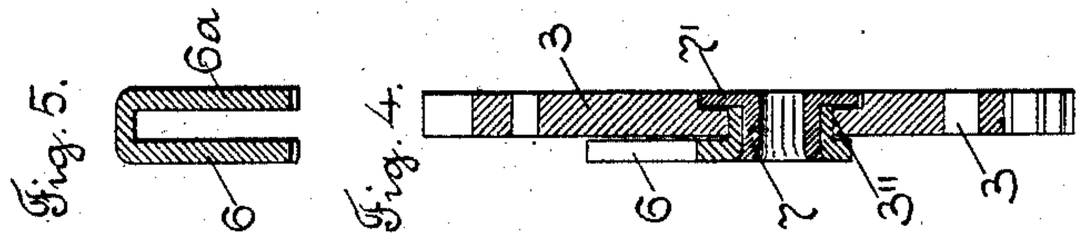
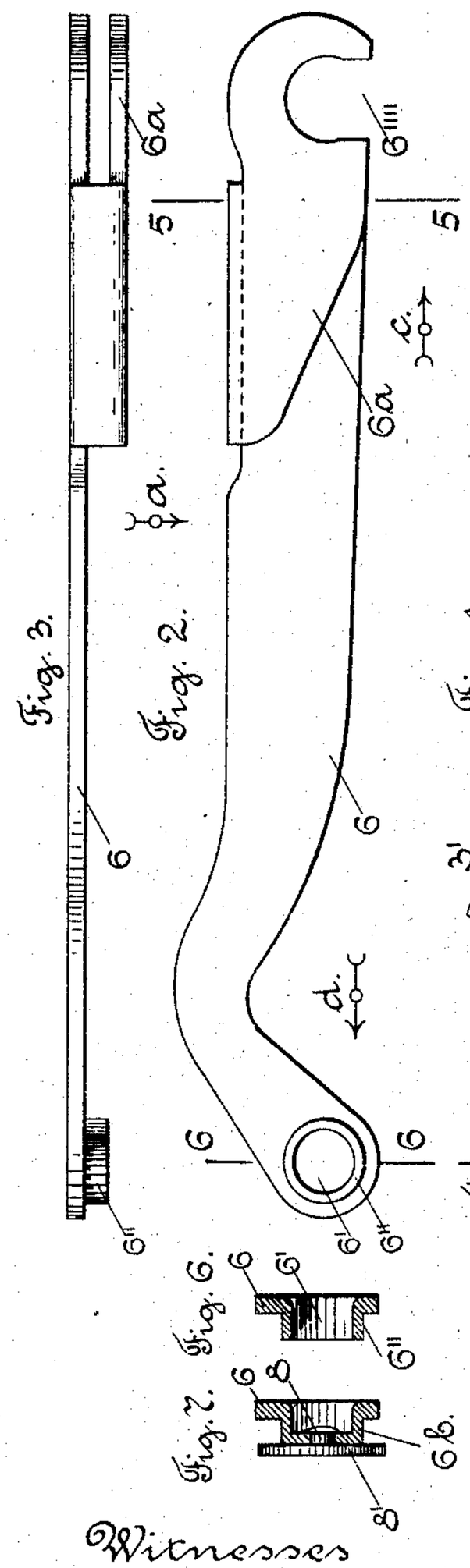
No. 864,541. PATENTED AUG. 27, 1907.

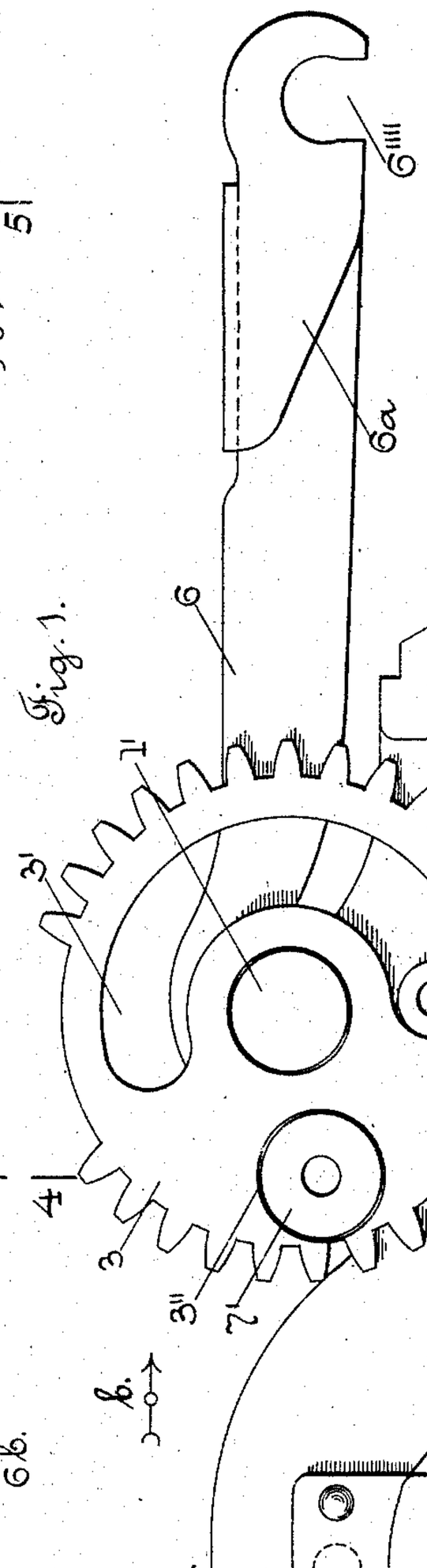
L. B. JENCKES.

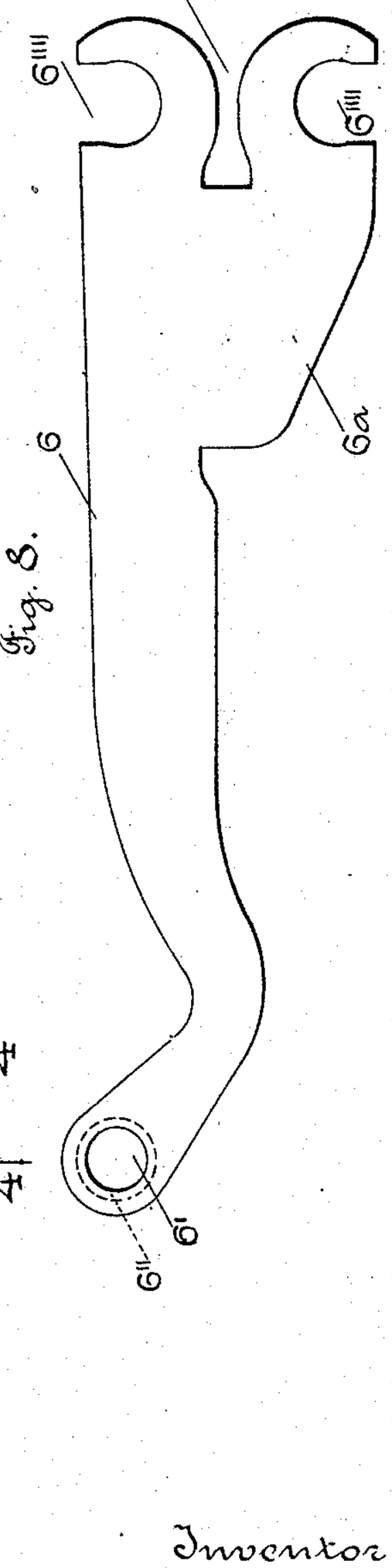
VIBRATOR CONNECTOR.

APPLICATION FILED JAN. 18, 1906.









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UNITED STATES PATENT OFFICE.

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VIBRATOR-CONNECTOR.

No. 864,541. Specification of Letters Patent. Patented Aug. 27, 1907.

Application filed January 18, 1906. Serial No. 296,616.

To all whom it may concern:

Be it known that I, LAWRENCE B. JENCKES, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Vibrator-Connectors, of which the following is a specification.

My invention relates to the vibrator connector, forming a part of the well known Knowles head motion for shuttle box and harness shedding mechanism, shown and described in U. S. Reissue Letters Patent, No. 7,784, and particularly relates to an improved construction of said vibrator connector.

The vibrator connector referred to, is ordinarily made of malleable iron, having a boss or stud cast on one end thereof, to fit into a hole or opening in the vibrator gear and be pivotally secured therein, and having its other end made with a slotted part, to receive the upper end of a box motion lever, or a projection on a harness lever, and also an open end slot therein to receive a pin or stud on the box motion lever, or on the harness lever, to pivotally attach the connector thereto.

It is necessary to make the attaching ends of a vibrator connector quite thin, in order to take up as little room as possible, as there is very little space between the connectors, and consequently the connectors are liable to break at their attached ends.

The object of my invention is to improve upon the ordinary construction of a vibrator connector, above referred to, and more particularly to make a vibrator connector sheet metal, punched or cut out in the desired shape, with a stud or boss formed on one end, and a slotted reinforced part formed on the other end, by bending or shaping the sheet metal at said end.

I have only shown in the drawing a detached part of a Knowles head motion, referred to, and comprising the inner portion of a vibrator lever, a vibrator gear pivotally mounted on said lever, and a vibrator connector of my improved construction, pivotally attached to said vibrator gear.

Referring to the drawing:—Figure 1 is a side view of my improved vibrator connector, and of a vibrator gear to which it is attached, and of the inner end of a vibrator lever on which said gear is pivotally mounted. Fig. 2 shows the vibrator connector shown in Fig. 1, detached. Fig. 3 is a top or plan view of the vibrator connector shown in Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 4 is a section, on line 4, 4, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 5 is a section, on line 5, 5, Fig. 2, looking in the direction of arrow *c*, same figure. Fig. 6 is a section, on line 6, 6, Fig. 2, looking in the direction of arrow *d*, same figure. Fig. 7 shows a modified construction of the attaching end shown in Fig. 6, and, Fig. 8 shows the blank from which the vibrator connector, shown in Fig. 2, is formed.

In the accompanying drawing, 1 is the inner end of a vibrator lever, having in this instance a pattern run 2 attached to its lower edge, and a boss or pivot stud 1′ thereon, on which is loosely mounted, to have a reciprocating or rocking motion, a vibrator gear 3. The vibrator gear 3 has a curved slot 3′ therein, to receive a boss 4 on the vibrator lever 1, all in the usual way employed in the Knowles head motion above referred to.

I will now describe my improvements in vibrator connector.

The vibrator connector 6 is preferably first punched or cut out of sheet metal, preferably in the shape shown in Fig. 8, having preferably a hole 6′ through one end, with a projecting annular flange or lip 6″ around the same, forming an integral hollow stud or boss on one side of the connector, at one end thereof, see Figs. 2 and 6. The other end of the blank has a central slotted or recessed portion 6‴ in its end, and the open end slot or recess 6⁗ on each edge, at the end of the blank. The blank has a side extension 6ª thereon, which is turned or bent over, to extend parallel to the main portion of the blank, as shown in Fig. 2, to form an integral reinforcing strip on the other end of the connector, and making a double thickness of the sheet metal at said end, as shown in Figs. 3 and 5, and also to bring the two open slotted portions 6⁗ opposite each other, to receive the pin on the box motion lever, or on the harness lever, not shown.

The vibrator connector 6 is pivotally attached to the vibrator gear 3, preferably by inserting the tubular stud portion 6″ within the hole 3″ in the vibrator gear 3, see Fig. 4, and then inserting a tubular rivet 7, having a head 7′ extending within a depression or recess in the vibrator gear 3 around the opening 3″ therein, as shown in Fig. 4, through the hole 6′ in the vibrator connector 6, and spreading or heading the inner end of said rivet, to pivotally secure the end of the connector 6 to the vibrator gear 3.

In Fig. 7 is shown a modified construction of the end of the connector 6 which is attached to the vibrator gear. In said Fig. 7, the end of the connector 6 instead of having a hollow stud thereon, has a closed end boss 6ᵇ formed thereon, with a hole therethrough; said boss 6ᵇ extends within the hole 3″ in the vibrator gear 3, and is secured therein by a rivet 8, having the enlarged head 8′, corresponding to the head 7′ of the rivet 7, and the rivet shank, which extends through the central hole in the boss 6ᵇ, and is headed upon its inner end, see Fig. 7.

The advantages of my improvements in vibrator connector will be readily appreciated by those skilled in the art. By making the connector of sheet metal, it may be made quite thin, and particularly the attaching ends thereof.

It will be understood that the details of construction of my improvements in vibrator connector may be va-

ried if desired, and the manner of attaching it to the vibrator gear may be varied if desired. Instead of a boss or stud formed on the connector, a separate boss or stud may be secured in a hole in the connector.

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

1. An improved article of manufacture, a sheet metal vibrator connector for a loom, having a stud or boss at one end, and at its other end a double thickness of the sheet metal, with an open end slot or recess therein.

2. A sheet metal vibrator connector for a loom having a stud or boss at one end, and a reinforcing strip at its other end, making a double thickness of the sheet metal at said other end.

3. A sheet-metal vibrator connector for a loom, having an integral stud or boss on one side at one end, and an integral reinforcing strip on the same side at its other end.

4. A sheet-metal vibrator connector for a loom, having an integral hollow stud or boss at one side, at one end, and an integral reinforcing strip on the same side, at its other end.

5. A sheet-metal vibrator connector for a loom, having an integral hollow stud or boss on one side, at one end, and an integral reinforcing strip on the same side at its other end, making a double thickness of the sheet metal at said other end.

6. The combination with a vibrator lever, and a vibrator gear, of a sheet-metal vibrator connector, having an integral hollow stud or boss on one side, at one end, which is pivotally attached to the vibrator gear, and having an integral reinforcing strip on the same side as said stud or boss, at its other end, making a double thickness of the sheet metal at said end.

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