D. S. SEYMOUR.

CONNECTING ROD.

APPLICATION FILED SEPT. 29, 1914.

1,280,878. Patented Oct. 8, 1918.

Fig. 1.

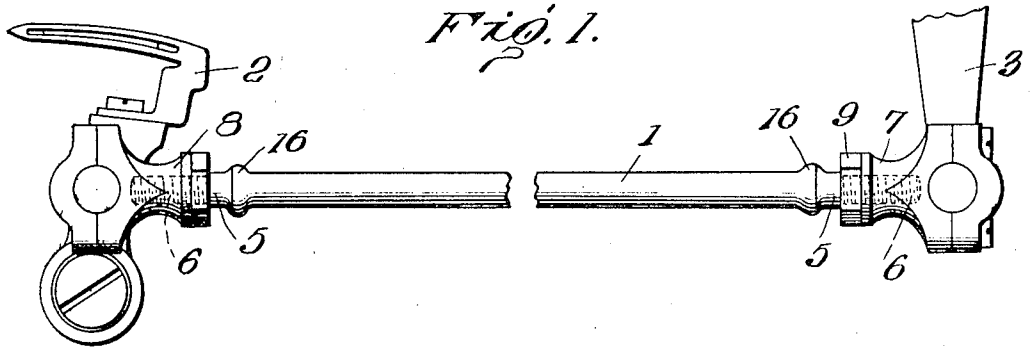


Fig. 2.

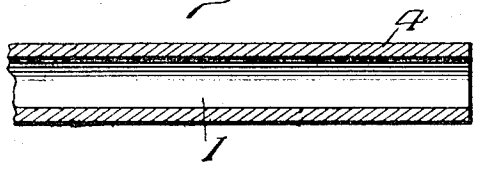


Fig. 3.

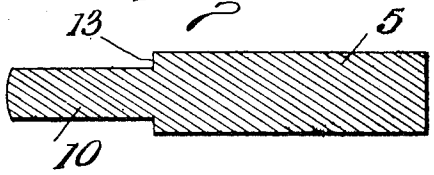


Fig. 4.

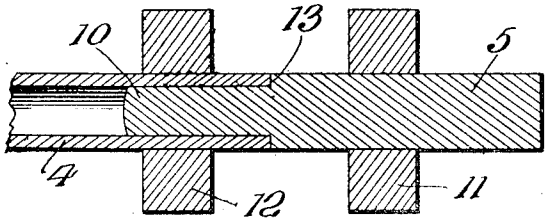


Fig. 5.

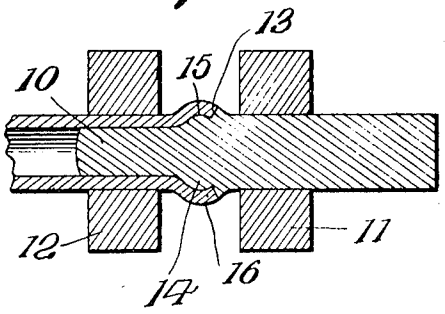


Fig. 6.

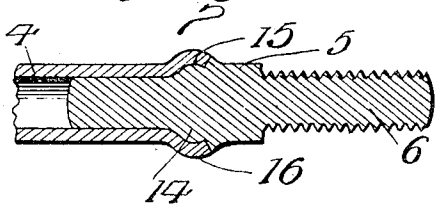
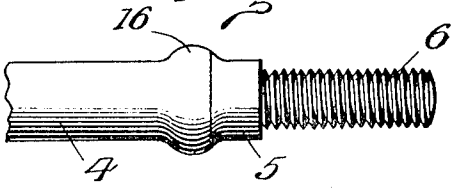


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CONNECTING-ROD.

1,280,878. Specification of Letters Patent. Patented Oct. 8, 1918.

Application filed September 29, 1914. Serial No. 864,099.

To all whom it may concern:

Be it known that I, DUDLEY S. SEYMOUR, a citizen of the United States, residing at Oak Park, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Connecting-Rods, of which the following is a description, reference being had to the accompanying drawing and to the figures of reference marked thereon.

The present invention relates to new and useful improvements in the formation of connecting rods, links or pitman rods. One object of the invention is to provide a connecting rod, pitman or link which shall be of few parts and durable in construction, while a further object is to provide such a connection wherein a tubular body is joined to a solid head at each end thereof by means of an integral enlargement on the head fitting within a pocket formed in an integral enlargement in the tubular body portion. The present invention has been particularly designed with reference to the formation of looper rod connections for sewing machines, that is, the link or rod which connects the looper to the means for oscillating the same.

I have hereby shown and described by way of illustration an embodiment of the invention as applied to the manufacture of a looper rod connection but it will be understood that I do not wish to be thus limited.

In the drawings which show by way of illustration one embodiment of the invention;

Figure 1 shows more or less diagrammatically a looper rod connection for oscillating a looper from a needle lever extension which connection embodies my invention;

Fig. 2 is a sectional view of a part of the tubular body portion;

Fig. 3 is a sectional view of the solid head before it is joined to the body portion;

Fig. 4 shows the parts clamped ready for welding and for end pressure for joining the parts;

Fig. 5 is a view similar to Fig. 4 showing the parts joined;

Fig. 6 is a sectional view through the joined parts;

Fig. 7 is a side elevation showing one end of the finished looper rod connection.

The invention consists generally in forming a rod connection by joining a solid head to each end of a tubular body portion by welding and by pressure exerted upon the heated parts so as to form an enlargement in the stem of the head and also a pocket in the end of the tubular body portion which pocket has a somewhat restricted neck at the end of the tubular body portion for interlocking the parts in addition to the welding. The tubular body portion is also enlarged in the region of the pocket so that the thickness of the wall of the body portion about the pocket is substantially uniform.

Referring more in detail to the drawings, I have shown in Fig. 1 a looper rod connection 1 which joins the looper carrier 2 to the needle lever extension 3 so that the oscillations of the needle lever extension are imparted to the looper carrier.

This looper rod connection consists of a tubular body portion 4 at each end of which is a solid head 5. This solid head 5 after it has been secured to the tubular body portion is provided with a thread 6. The threaded portion 6 at one end of the looper rod connection engages a coupling 7 which is pivoted to the needle lever extension, while the other end of the looper rod connection engages a coupling 8 pivotally connected to the looper carrier.

The thread at the opposite ends of the looper rod connection are right and left hand threads so that the position of the looper carrier relative to the needle lever extension may be varied by turning this looper rod connection. Lock nuts 9 engage the threaded portion 6 and are adapted to be set up against the couplings for holding the looper rod connection in adjusted positions.

The present invention consists more particularly in the way in which these solid heads are connected to the tubular body portion of the looper rod connection. The solid head 5 is formed with a stem 10 which is adapted to be inserted within the end of the tubular body portion 4. After the parts have been thus assembled they are clamped by suitable clamps 11 and 12 as shown in Fig. 4 of the drawings. It will be noted that the end of the stem 10 extends into the part of the tubular body portion which is engaged by the clamp 12 and the shoulder of the stem 13 bears against the end of the tubular body portion and is located at a point midway between the clamps 11 and 12. After the parts have been thus assembled and clamped as above described the portion of the same be-

tween the clamps is heated electrically or otherwise for the purpose of welding the parts together and while these parts are heated endwise pressure is exerted on the heated parts by moving the clamps 11 and 12 toward each other. This endwise pressure causes the stem 10 to shorten and enlarge forming a substantially spherical enlargement 14. This movement of the clamps also enlarges the tubular body portion 6 forming a substantially spherical pocket 15 which closely fits the enlargement 14 for the reason that the production of the enlargement 14 causes this pocket to form in the tubular portion. The shoulder 13 on the solid head engaging the end of the tubular body portion assists in this formation of the parts. The parts are preferably clamped and heated in such a manner that the end of the pocket 15 is slightly less in diameter than the parts immediately in the rear thereof, and this forms in a measure, a restricted neck which holds the parts interlocked in addition to the welding connection between the same.

The enlargement 16 at the end of the tubular body portion which contains the pocket 15 is turned down so as to form a substantially spherical rib as shown in Figs. 6 and 7 and the end of the solid head is threaded as at 6. This spherical rib is preferably so shaped that the wall of the tubular body portion surrounding the pocket is substantially uniform in thickness throughout and also of substantially the same thickness as the wall of the tubular body portion back from its end. By this construction for uniting the parts I am able to join the solid head of the body portion not only by welding but by an interlocking of the parts which makes a strong and durable connection. The looper rod connection as above described is also light in weight as the body portion is tubular substantially from end to end.

While as above stated I have described my rod connection as a looper rod connection, it will be obvious that the same may be used as a connecting link for imparting motion from one part to the other wherever desired. It will also be obvious that minor changes may be made in the details of construction without departing from the spirit of the invention as set forth in the appended claims.

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

1. A connecting rod, comprising a tubular body portion of substantially the same thickness throughout and a solid threaded head, said tubular body portion having an enlargement at its end forming a substantially spherical pocket and said solid head having a stem with an integral enlargement fitting said pocket.

2. A connecting rod, comprising a tubular body portion of substantially the same thickness throughout and a solid threaded head, said tubular body portion having an enlargement at its end forming a substantially spherical pocket and said solid head having a stem with an integral enlargement fitting said pocket, said enlargement in said tubular body portion being constructed so that the wall of the tubular body portion is of substantially uniform thickness throughout.

In testimony whereof I affix my signature in the presence of two witnesses.

DUDLEY S. SEYMOUR.

Witnesses:
S. GEORGE TATE,
HAROLD C. EDWARDS.