

PATENT SPECIFICATION



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326,972

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PROVISIONAL SPECIFICATION.

Improvements in and relating to Tube Joints.

I, GEORGE LESLIE WALLIS, a subject of the King of Great Britain, of 26, Derwent Road, Anerley, London, S.E. 20, do hereby declare the nature of this invention to be as follows:—

This invention relates to tube joints and is especially applicable to the formation of joints between tubes and lugs, brackets or the like in the construction of cycle and motor cycle frames.

In the formation of a joint between a lug and a tube in the frame of a motor cycle, for example, it is the usual practice to form the lug with a socket for the reception of the tube, the end of the tube which fits into the socket being generally slightly tapered, or alternatively to form the lug with a stem which fits into the open end of the tube or into a socket therein, the parts in both cases being thereafter secured together by brazing and pinning.

It is found, however, that under racing conditions, for example, the exceptionally heavy stresses set up cause joints of the above types frequently to fail.

The object of the present invention is to provide an improved method of effecting tube joints whereby a joint of substantially increased strength is obtained.

The invention consists in a method of forming a joint between a tube and a part such as a lug, bracket or the like, or a plurality of such parts, according to which the parts to be united are formed with correspondingly tapered or wedge-shaped interfitting portions adapted to be secured by being brazed, soldered or welded and also, if desired, by being pinned.

The invention further consists in the improved method of jointing tubes to lugs, brackets or the like, and the joints so formed to be hereinafter described.

In carrying my invention into effect, according to one form, and as applied by way of example, to the jointing of a tube to a lug on the frame of a motor cycle, the end of the tube to be jointed is flattened, pressed or otherwise formed so as to be of chisel or wedge-shape while

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the lug has a correspondingly shaped slot formed therein.

The end of the tube is then assembled with the lug and the parts united at their adjoining surfaces by brazing, soldering or welding and also if desired, by pinning.

The lug above described may be formed in one piece with the chisel or wedge-shaped slot formed therein by machining or casting, or alternatively, the lug may be constructed in two parts formed as castings or pressings and so shaped that when assembled together a chisel or wedge-shaped slot is formed in the lug.

Again, if it is desired to form a T-joint between two tubes, the tube forming the cross-member of the T is flattened so as to form a double chisel or wedge-shaped portion and to each side of this portion of the tube a double wedge-shaped plate formed to correspond to the shape of this portion of the tube is fitted.

Each plate is provided with an upstanding lug which is so formed that when the plates are assembled with the cross-tube the space between the lugs is tapered so as to correspond to the chisel shaped end of the tube forming the stem member of the T.

The plates are attached to the tube forming the cross-member of the T by brazing, soldering or welding and also, if desired, by pinning, the lugs on these plates being attached to the stem member of the T in a similar manner.

By means of my invention an improved form of tube joint is provided which is of considerably greater strength than the usual form of joint.

Although I have described my invention as applied, by way of example, to a joint between a tube and a lug for the frame of a motor cycle, my invention is not limited to this application as it may also be applied to other tubular structures in which an efficient joint of great strength is required.

My invention may also be applied to joints of angle, Y, cruciform or other shape.

Modifications may be made in the examples of my invention above described.

WILLIAM BRYSON,
Chartered Patent Agent,

Dated the 27th day of February, 1929.

29, Southampton Buildings, London,
W.C. 2.

COMPLETE SPECIFICATION.

Improvements in and relating to Tube Joints.

I, GEORGE LESLIE WALLIS, a subject of the King of Great Britain, of 26, Derwent Road, Anerley, London, S.E. 20, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to tube joints and is especially applicable to the formation of joints between tubes and lugs, brackets or the like in the construction of cycle and motor cycle frames.

In the formation of a joint between a lug and a tube in the frame of a motor cycle, for example, it is the usual practice to form the lug with a socket for the reception of the tube, the end of the tube which fits into the socket generally being slightly tapered, or alternatively to form the lug with a stem which fits into the open end of the tube or into a socket therein, the parts in both cases being thereafter secured together by brazing and pinning.

It is found, however, that under racing conditions, for example, the exceptionally heavy stresses set up cause joints of the above types frequently to fail.

The object of the present invention is to provide an improved method of effecting tube joints, whereby a joint of substantially increased strength is obtained.

The invention consists in a method of forming a joint between a tube and a part such as a lug, bracket or the like, or a plurality of such parts, according to which the parts to be united are formed with correspondingly chisel or wedge-shaped interfitting portions adapted to be secured by being brazed, soldered or welded and also, if desired, by being pinned.

The invention further consists in the improved method of jointing tubes to lugs, brackets or the like, and the joints so formed to be hereinafter described.

Referring now to the accompanying drawings,

Figure 1, shows a side elevation of a tube and a lug prepared for jointing according to my invention, while

Figure 2, shows a similar view of the completed joint,

Figure 3, shows a front elevation of

the joint shown in figure 2.

Figure 4, shows a side elevation and figure 5 an end elevation of a T-joint between two tubes, formed according to my invention, while

Figure 6, shows a plan of the joint shown in figure 4.

In carrying my invention into effect, according to one form and as applied, by way of example, to the jointing of a tube to a lug on the frame of a motor cycle, the end, 1, of the tube, 2, figures 1, 2 and 3, to be jointed is flattened, pressed or otherwise formed so as to be of chisel or wedge-shape, while the lug, 3, has a correspondingly shaped slot, 4, formed therein.

The end, 1, of the tube, 2, is then assembled in the slot, 4, of the lug, 3, and the parts united at their adjoining surfaces by brazing, soldering or edge-welding and also, if desired, by pinning, the completed joint being shown in figures 2 and 3.

The lug, 3, may be formed in one piece with the chisel or wedge-shaped slot formed therein by machining or casting as shown, or alternatively, the lug can be constructed in two parts formed as castings or pressings and so shaped that when assembled together, a chisel or wedge-shaped slot is formed in the lug.

Again, if it is desired to form a T-joint between two tubes, the tube, 5, forming the cross-member of the T is flattened so as to form a double chisel or wedge-shaped portion, 6, and to each side of this portion of the tube a double wedge-shaped plate, 7, formed to correspond to the shape of this portion of the tube, 5, is fitted.

Each of the plates, 7, is provided with an upstanding lug, 8, which is so formed that when the plates are assembled with the cross-tube, 5, the space between the lugs is tapered so as to correspond to the chisel-shaped end, 10, of the tube, 11, forming the stem member of the tube T.

The plates, 7, are attached to the tube, 5, forming the cross-member of the T, by brazing, soldering or edge-welding, and also, if desired, by pinning, the lugs, 8, on these plates being attached to the tube, 11, in a similar manner.

By means of my invention an improved

form of tube joint is provided which is of considerably greater strength than the usual form of joint.

Although I have described my invention as applied, by way of example, to a joint between a tube and a lug for the frame of a motor cycle, my invention is not limited to this application as it may also be applied to other tubular structures in which an efficient joint of great strength is required.

My invention may also be applied to joints of angle, Y, cruciform or other shape.

Modifications may be made in the examples of my invention above described.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A method of forming a joint between a tube and a part such as a lug, bracket or the like, or a plurality of such parts, according to which the parts to be united are formed with correspondingly chisel or wedge-shaped interfitting portions adapted to be secured by being brazed, soldered or welded and also, if desired, by being pinned, substantially as described.

2. Joints formed according to the method set forth in claim 1.

3. An improved method of jointing tubes to lugs, brackets and the like, and joints substantially as hereinbefore described and/or as illustrated by the accompanying drawings.

Dated the 21st day of November, 1929.

WILLIAM BRYSON,
Chartered Patent Agent,
29, Southampton Buildings, London,
W.C. 2.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

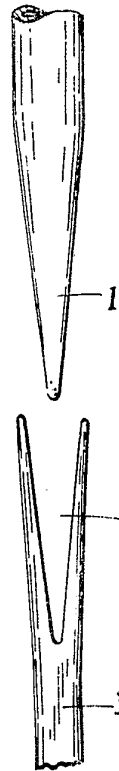


Fig. 2.



Fig. 3.

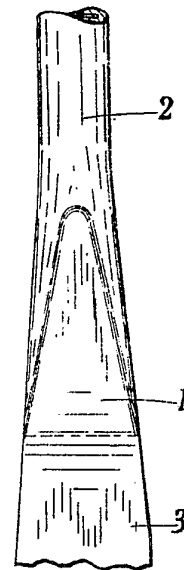


Fig. 4.

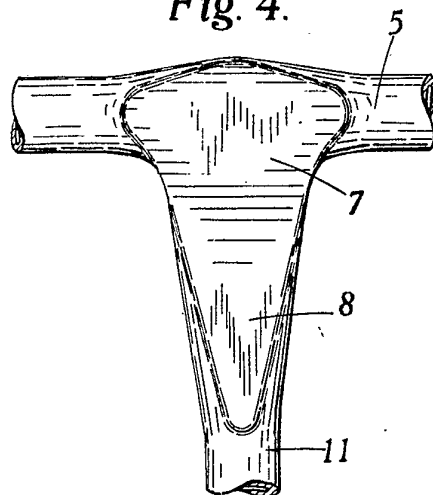


Fig. 5.

