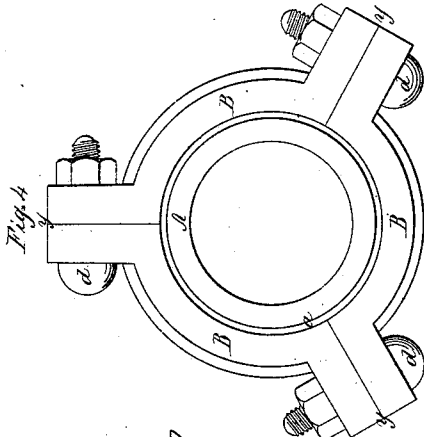


*T. S. Truss,*

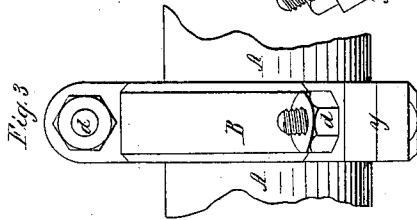
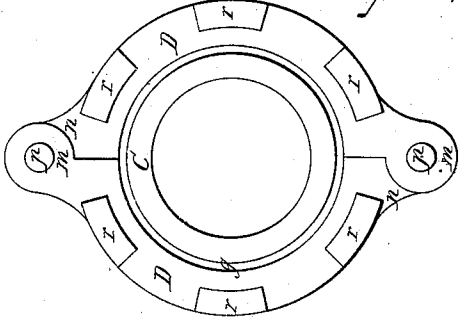
*Pipe Coupling,*

*N<sup>o</sup> 29,731.*

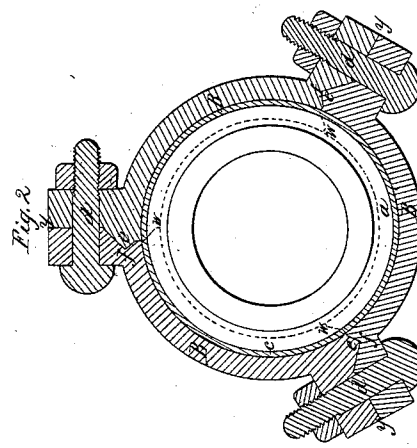
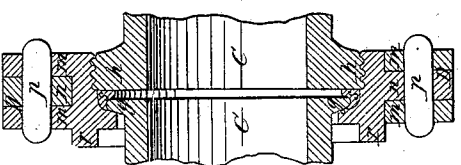
*Patented Aug. 21, 1860.*



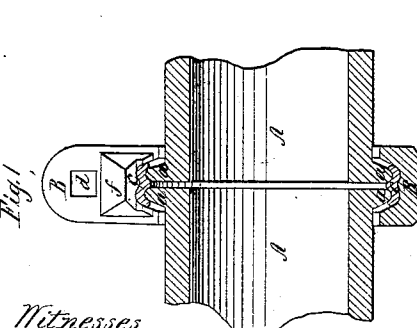
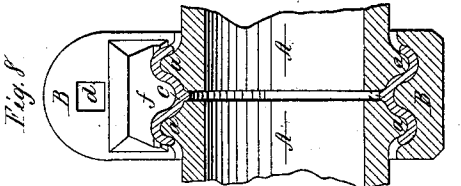
*Fig. 10*



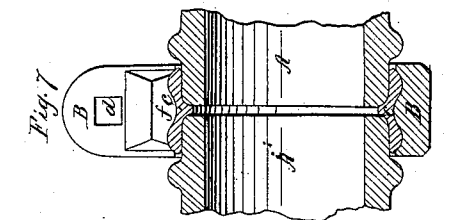
*Fig. 9*



*Fig. 8*

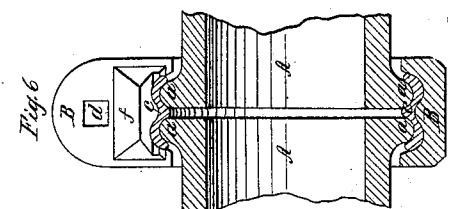


*Fig. 7*

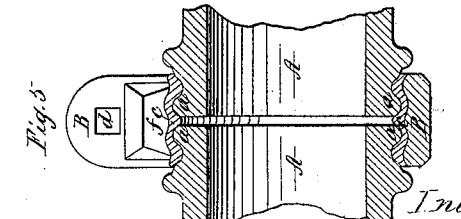


*Witnesses*  
*Wm. H. R. Brown*  
*Wm. Frankiss*

*Fig. 6*



*Fig. 5*



*Inventor*  
*T. S. Truss*

# UNITED STATES PATENT OFFICE.

THOMAS SEAVILLE TRUSS, OF DARLINGTON, COUNTY OF DURHAM,  
ENGLAND.

## IMPROVEMENT IN THE CONSTRUCTION AND JOINING OF PIPES.

Specification forming part of Letters Patent No. 29,731, dated August 21, 1860.

*To all whom it may concern:*

Be it known that I, THOMAS SEAVILLE TRUSS, civil engineer, of Darlington, in the county of Durham, in that part of the United Kingdom of Great Britain and Ireland called England, have invented a new and useful Improvement in the Construction of Pipes and the Mode of Joining the Same; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists of certain adaptations and arrangement of parts for forming the joint for pipes used for the transmission of gas, air, water, steam, and other fluids, whereby an elastic and expansive joint is made, which allows for the end of any pipe so connected to be moved from a given level in any direction, as also for the pipes to be deflected without breaking or otherwise damaging the joint. I also provide for the longitudinal contraction and expansion of pipes which occur to pipes used for the transmission of steam, gas, water, air, or other fluid.

In order that the nature of my said improvements and in what manner the same are to be performed may be more fully understood, I will proceed to describe the several figures on the sheet of drawings hereunto annexed.

Figure 1 is a longitudinal section of portions of two pipes, with a V-formed flange at each end connected together by such an elastic and expansive joint as I have mentioned. Fig. 2 is a transverse section of the same, taken through the center of the joint. Fig. 3 is a side view, and Fig. 4 is an end view, of the same.

A A are portions of two pipes, and *a a* are flanges formed at the ends thereof.

B B are the parts of the coupling-strap. The form of this strap in section is clearly shown at the lower part of Fig. 1. The groove is continued of the same form all around the strap at the upper part of Fig. 1. The end of one of the parts or portions of the strap is shown with the recess *f*, into which fits the projection *e e* of a pyramidal form, as shown in Fig. 2. *c c* is the joint-making material, which in this case is applied upon the outer edge of the flanges.

In the transverse section, Fig. 2, A is the pipe. *a* is the flange on same. B B are the parts of the coupling-strap. *c* is the joint-making material; *d d*, the securing-bolts; *e e*, projections; *f f*, recesses; *w w*, the inner joint of the coupling-strap junctures, and *y y* the level surface or outer joint of the same.

Figs. 5, 6, 7, and 8 are longitudinal sections of arrangements differing somewhat in form from that above described. The letters of reference with which they are marked correspond with the description already given. Fig. 9 is a longitudinal section of another arrangement, and Fig. 10 an end view of the same.

*c c* are portions of two pipes, the one with a plain flange *g* and the other with a screw-flange *h*.

D is the coupling-strap, here shown in two parts. Each part is forked at one end *m m*, and has a projection *n* at its other end, and the projection *n* enters between the parts of the fork *m m*, thus forming what I call a "he-and-she joint." The parts of the strap are held together by pins *p p*. The parts of straps constructed in the manner shown in the figures from 1 to 8 may be held together by pins, applied, as here shown, in the place of and by bolts and nuts, if preferred. *r r* are lugs or ears on the strap, between which instruments are introduced in order to turn the strap when it is desired to screw it upon the screw-flange *h*.

*s* is the joint-making material, which in this case is applied upon the outer edge of the plain flange.

To connect the pipes according to the arrangement shown in Figs. 1 to 8, I proceed by bringing the pipes nearly together. I then apply the joint-making material and place the parts of the coupling-strap around the pipes, and then secure the whole with bolts and nuts. By the arrangement shown in Figs. 9 and 10 I proceed in the same manner, placing the joint-making material upon the plain flange. Then placing the parts of the coupling-strap around the pipe with plain flange I secure the parts together by the pins, and screw the same up as a nut. The packing material which I prefer is india-rubber for connecting pipes used for the transmission of water, steam, or air. I prefer worsted packing previously passed through an alkaline for con-

necting pipes used for the transmission of gas; but I do not confine myself to the exact materials for making the packing.

As my said invention is capable of various modifications without departing from the principle thereof, I do not restrict myself to material, dimensions, or precise form of flanges, where flanges are used, or to the making of the same solid with the pipes, nor to the precise form of the projections on the coupling-strap junctures, nor to the making of such projections solid with the coupling-strap, inasmuch as a recess can be made where the projection is shown in the drawings, and a loose die or block of suitable material may be inserted.

Having now described the nature of my said invention and the manner in which the same is to be performed, I declare that I claim as my invention—

1. The making of an expansive or contractile joint by which pipes (for the transmission of gas, water, steam, or other fluid) are to be secured together by means of a compressing or nut coupling-strap in two or more parts, with packing material upon, between, or

around the ends of the pipes embraced by the strap.

2. As my invention, the making of the junctures of coupling-straps with recesses and corresponding projections or loose blocks.

3. As my invention, the making of pipes with flanges at or adjoining their ends, to be used with or operated upon by a compressing or nut coupling strap, with packing material upon, between, or around the same and embraced by the strap.

I wish it, however, to be distinctly understood that I do not claim pipes with flanges at their ends secured together by bolts, pins, or cotters passing through the same.

In witness whereof I, the said THOMAS SEAVILLE TRUSS, have hereunto set my hand and seal this 11th day of October, in the year of our Lord 1859.

T. S. TRUSS. [L. s.]

In presence of—

JNO. BLYTHE ROBINSON,  
*Solicitor, Beverley.*

WM. FRANKISH,  
*Solicitor, Hull.*