

D. H. STEPHENS.

Improvement in Rule Joints.

No. 114,987.

Patented May 16, 1871.

Fig. 1.

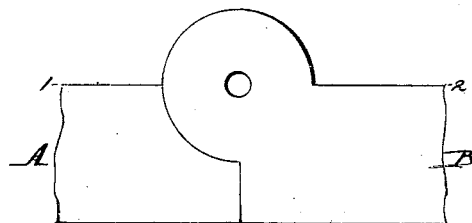


Fig. 2.

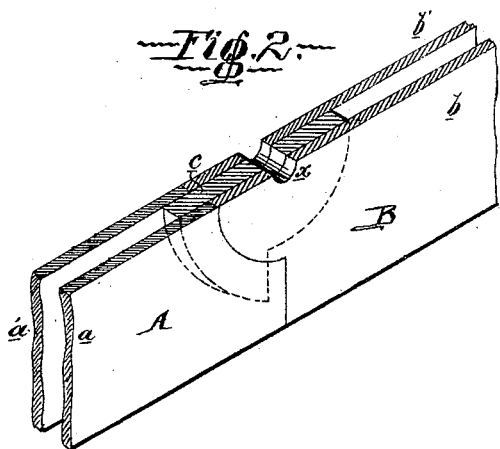


Fig. 4.

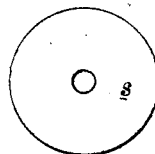
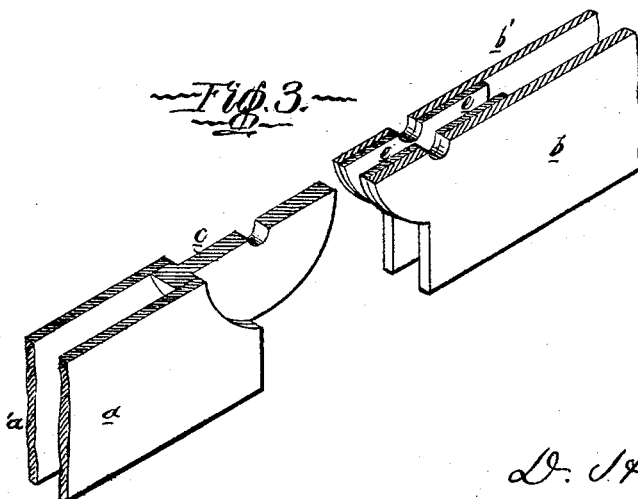


Fig. 3.



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D. H. STEPHENS, OF RIVERTON, CONNECTICUT.

Letters Patent No. 114,987, dated May 16, 1871.

## IMPROVEMENT IN RULE-JOINTS.

The Schedule referred to in these Letters Patent and making part of the same.

I, D. H. STEPHENS, of Riverton, Litchfield county, Connecticut, have invented an Improved Rule-Joint, of which the following is the specification.

### *Nature and Object of the Invention.*

My invention consists of a rule-joint, constructed in the peculiar manner fully described hereafter, with the view to the attainment of strength and rigidity of parts which are usually weak, and for the purpose of rendering the joint more easy in its movement and free from liability to be abraded and worn.

### *Description of the Accompanying Drawing.*

Figure 1 is a side view of the jointed portion of an ordinary two-foot rule; or it may represent a portion of my improved rule;

Figure 2, a sectional perspective view of the joint of an ordinary rule on the line 1 2, fig. 1;

Figure 3, a sectional perspective view on the same line illustrating my improved joint; and

Figure 4, a view of one of the disks or washers of my improved joint.

### *General Description.*

In order that my invention may be more readily understood, it will be advisable to describe, in the first instance, an ordinary rule-joint, such as is shown in figs. 1 and 2.

To the opposite sides of one-half, A, of the rule, are secured two plates, *a* and *a'*, and to the opposite sides of the other half, B, are secured two plates, *b* and *b'*, which embrace the intermediate plate C, a portion of the latter being riveted to and between the plates *a* and *a'*, and the joint being formed by the portions of the plates *b* and *b'* which embrace the plate C, and by that portion of the latter which is embraced by the said plates.

The pin which secures the joint is passed through the hole *x* and then fastened by riveting the opposite ends.

It will be observed that the intermediate plate C is of the same thickness throughout, and that this necessitates the employment of very thin plates, *b* and *b'*. They are so thin, in fact, that they cannot well resist the process of riveting to which the opposite ends of the pin are subjected. In fact, the riveting causes the plates to yield, or so distorts and weakens them as to render the joint in many cases imperfect and insecure.

To reduce the intermediate plate in thickness

throughout its whole length, and increase the thickness of the plates *a* and *a'* and *b* and *b'*, would involve the necessity of reducing and weakening the wooden portions of the rule between the plates, and the portion of the intermediate plate between the plates *a* and *a'* would not be of the substantial character necessary for properly securing it by rivets to the said plates.

In order to overcome these difficulties I reduce on each side so much of the intermediate plate C, fig. 3, as is embraced by the plates *b* and *b'*, the portion of the plate C between the plates *a* and *a'* retaining its usual thickness.

So much of the plates *b* and *b'* as have to embrace the plate C I re-enforce in thickness in the following manner to the extent equal to that of the reduction of plate C:

I punch from a plate, both sides of which have been tinned, or coated with tin or other anti-friction metal or alloy, disks *e e*, and apply one of these disks to the inside of each of the plates *b* and *b'*, subjecting both to such heat as will melt the coated surface and cause the adhesion of the disk to the plate, which is thus increased in thickness and rigidity; for the junction of the disk with the plate is so thorough as to render the two combined equivalent to a solid mass of metal, and capable of resisting the riveting process to which the pin is subjected.

The coating of the sheet from which the disks *e* are punched may be of tin or other metal or alloy, presenting an anti-friction surface far better adapted for making an effective and easy-moving joint than a surface of bare brass, of which alloy the plates are usually composed.

It will be seen that, while the main objects are attained by my invention, namely, strength and rigidity of the plates *b* and *b'* at the point where such qualities are most needed, and a joint the surfaces of which are of anti-friction metal, the strength of the intermediate plate C is preserved at the point where it is riveted to the plates *a* and *a'*.

### *Claim.*

A rule-joint, in which intermediate plate C, reduced as shown and described, is combined with the plates *b* and *b'*, strengthened by disks *e e* coated with anti-friction metal and soldered to the said plates, as specified.

Witnesses:

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