

C. & O. BARTELS.  
 FLEXIBLE RULER FOR DRAWING CURVES.  
 APPLICATION FILED OCT. 29, 1908.

940,118.

Patented Nov. 16, 1909

Fig. 1

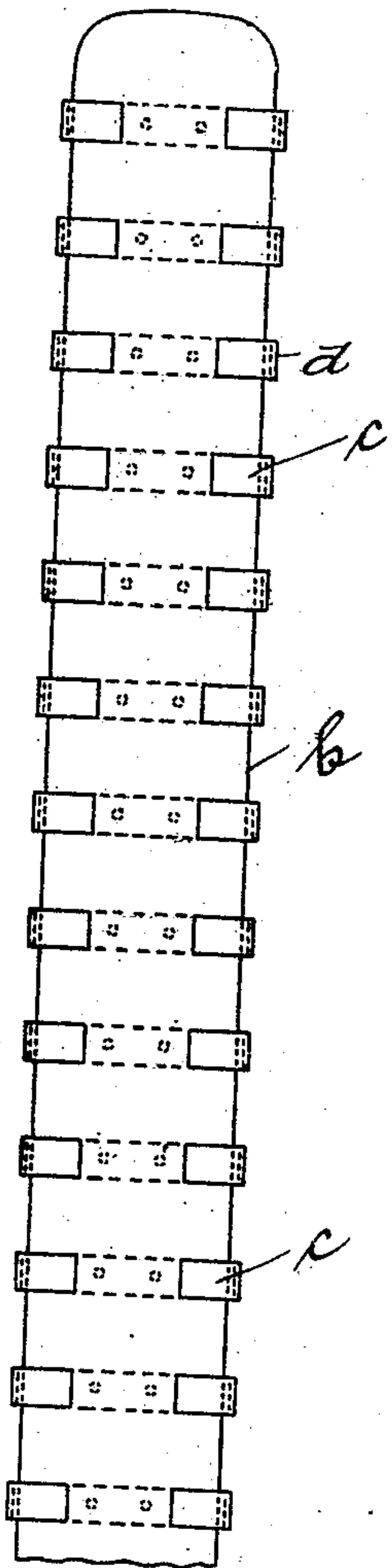


Fig. 2.

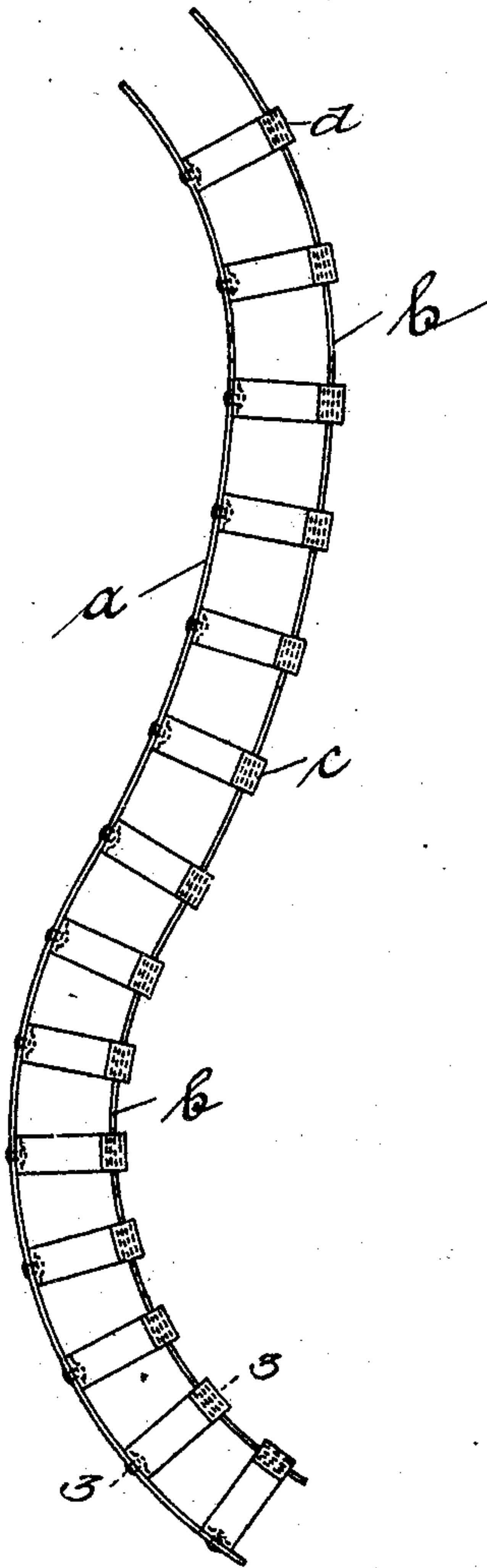
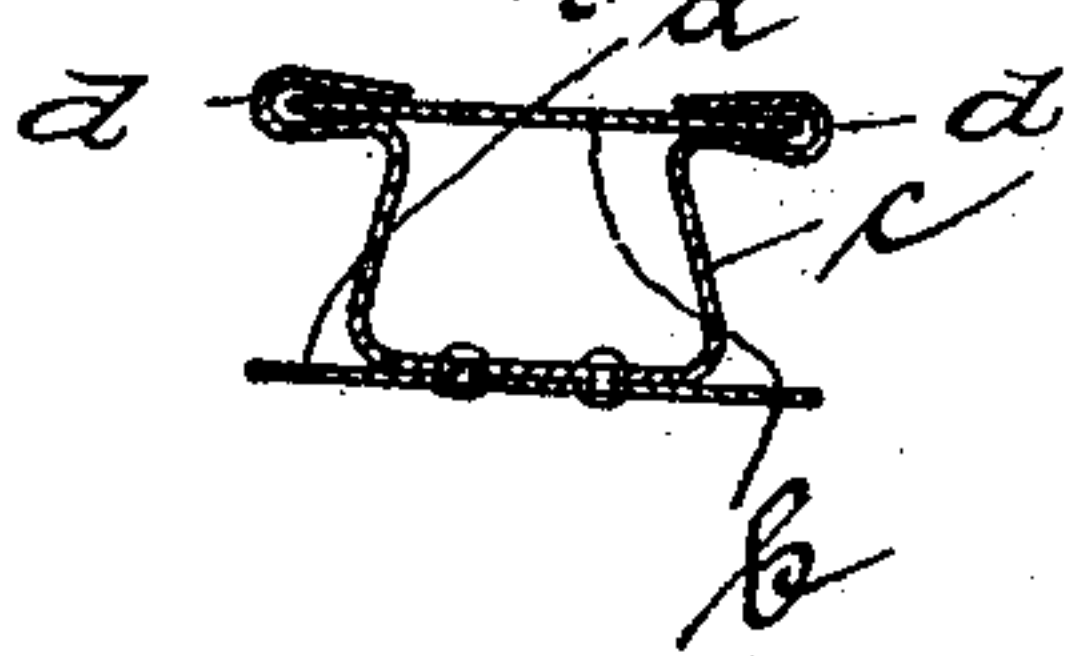


Fig. 3



Witnesses:

*[Signature]*  
*Chas. Kesler*

Inventors  
 Carl Bartels  
 Otto Bartels

By  
*James L. Norris*

*[Signature]*

# UNITED STATES PATENT OFFICE.

CARL BARTELS AND OTTO BARTELS, OF SCHWAAN, GERMANY.

FLEXIBLE RULER FOR DRAWING CURVES.

940,118.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed October 29, 1908. Serial No. 460,051.

To all whom it may concern:

Be it known that we, CARL BARTELS, sculptor, and OTTO BARTELS, sculptor, subjects of the Grand Duke of Mecklenburg, residing at Schwaan, Mecklenburg, Germany, have invented certain new and useful Improvements in Flexible Rulers for Drawing Curves, of which the following is a specification.

10 This invention relates particularly to drawing instruments; and has for its object to provide a cheap, simple and effective ruler which may with ease be bent into any desired single or compound curve and retain  
15 its shape until changed to another form.

With this object in view the invention consists of the novel construction, combination and arrangement of parts hereinafter more fully described and claimed, and illustrated  
20 in the accompanying drawings, in which:—

Figure 1 is a face view of a portion of a ruler embodying our invention; Fig. 2 an edge view of the same showing it bent into a compound curve, and, Fig. 3 a cross sectional view on the line 3—3 of Fig. 2.  
25

Similar reference letters are used for the same parts in all the figures.

In the drawing, *a* and *b* indicate two parallel resilient plates preferably made of thin sheet steel of any suitable length or width,  
30 spaced apart and so held by means of a series of bent separating pieces *c*, riveted to one plate as *a* and slidably connected to the other plate *b*.

35 Each separating piece *c* is formed of a narrow strip of resilient metal, flat at its central portion where it is riveted transversely on the plate *a*. A short distance beyond the rivets, the ends of the strips *c* are bent away from the plate *a* and converge  
40 toward each other, slightly, for a suitable distance, and then bent again outwardly in a plane parallel to said plate. Finally, the ends of the strips are doubled upon themselves to form loops *d* between which the  
45 plate *b* is held by frictional contact.

The plate *b* is made slightly narrower than the plate *a* so that the width between the bent portions of the loops *d* will equal  
50 the width of the plate *a*, thus enabling either edge of the latter plate to stand perpendicular to, and in contact with, any surface on which it may be placed.

To set the ruler, it is bent so that the  
55 plate *a* will partake of the shape desired,

the loops *d* of the pieces *c* sliding over the plate *b* as the plate *a* is curved, said loops grasping the plate *b* with sufficient friction to hold the plates as curved, and prevent them of their own accord from assuming a  
60 straight line or altering their shape.

Having thus described the invention, we claim:—

1. A flexible ruler comprising two resilient plates held in spaced parallel relation, and a plurality of separating strips immovably attached to one plate and slidably connected at each end to opposite edges of the other plate. 65

2. A flexible ruler comprising two resilient plates held in spaced parallel relation, and separating strips having looped ends immovably attached intermediate their ends to one plate and slidably connected by their looped ends to the other plate. 70 75

3. A flexible ruler comprising two resilient plates, and strips immovably attached to one plate and adapted to hold the other plate in spaced parallel relation thereto by loops on the ends of said strips frictionally engaging the second named plate. 80

4. A flexible ruler comprising two resilient plates held in spaced parallel relation, and a plurality of separating strips immovably attached intermediate their ends to one of said plates and having loops formed on their ends to frictionally embrace the edges of the other plate and slide thereon when the ruler is deflected. 85

5. A flexible ruler comprising two resilient plates held in spaced parallel relation, resilient strips fixed immovably on one of said plates and slidably attached to the other plate by self-acting frictional connections. 90 95

6. A flexible ruler comprising two spaced parallel plates, and resilient connecting strips, said strips immovably fastened to one of said plates and having their ends bent into loops to frictionally grasp the other plate and slide thereon. 100

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CARL BARTELS.  
OTTO BARTELS.

Witnesses:

JOHS. WULF,  
JACOB BRILFELDS.