

F. THUN & W. J. LÜCKE.  
BRAIDED FABRIC.  
APPLICATION FILED OCT. 9, 1907.

936,492.

Patented Oct. 12, 1909.

Fig. 1.

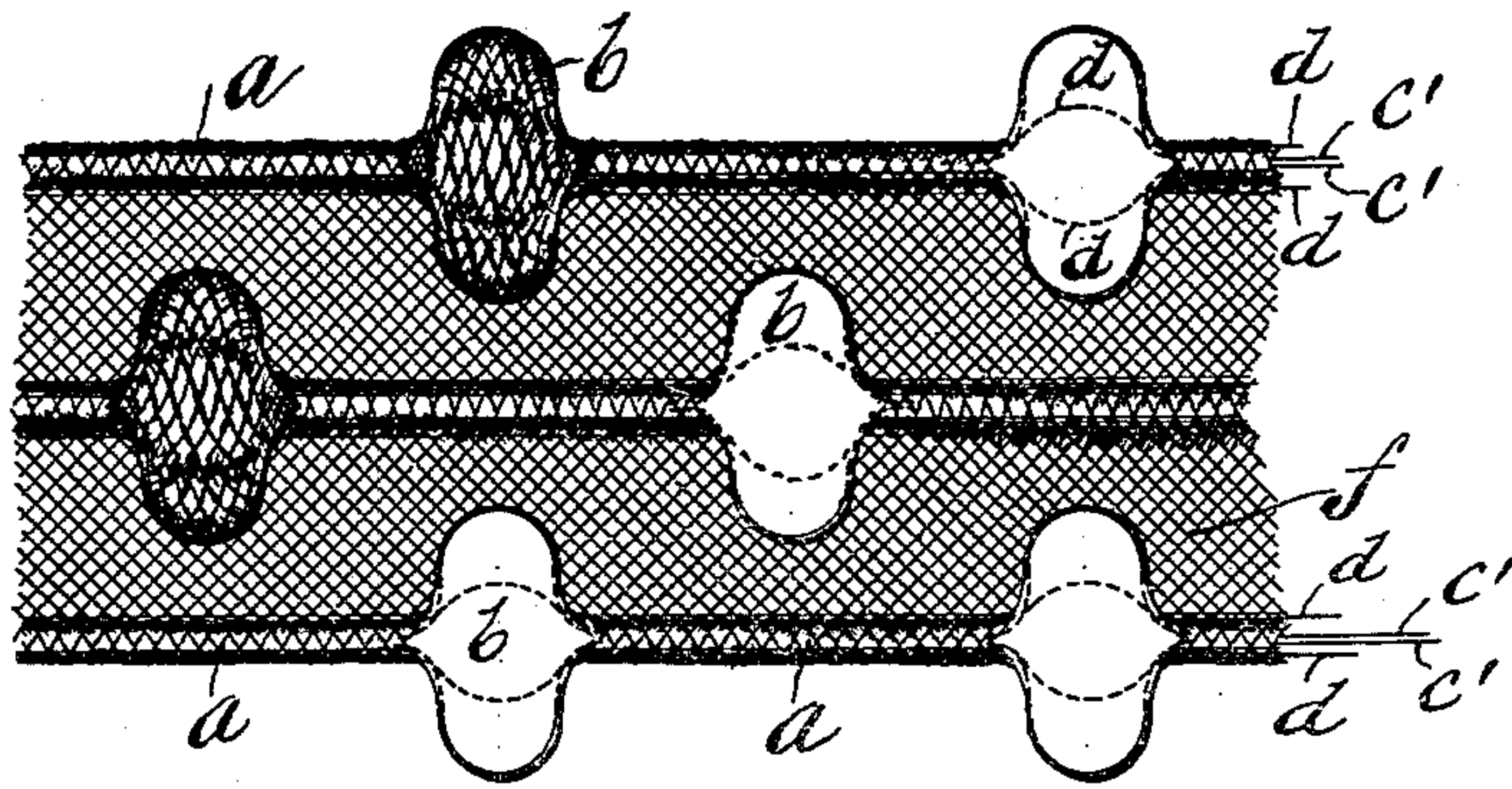
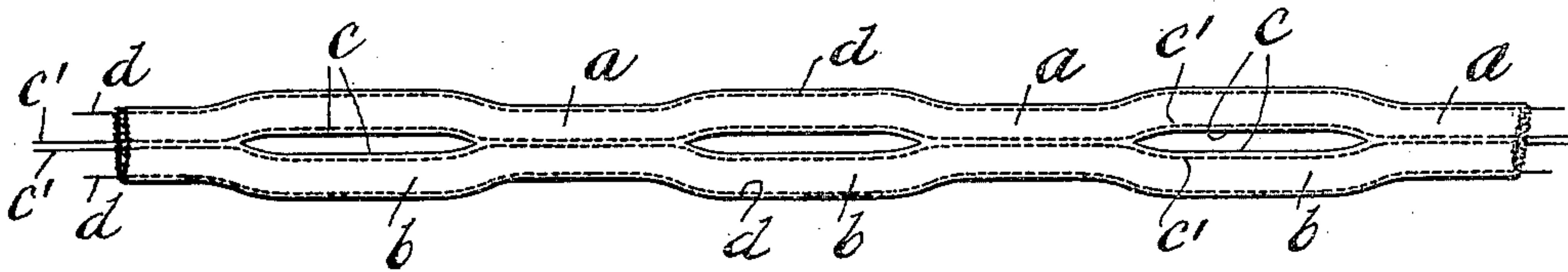


Fig. 2.



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Witnesses  
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By

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# UNITED STATES PATENT OFFICE.

FERDINAND THUN AND WILLIAM J. LÜCKE, OF WYOMISSING, PENNSYLVANIA, ASSIGNORS TO NARROW FABRIC COMPANY, OF WYOMISSING, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## BRAIDED FABRIC.

936,492.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed October 9, 1907. Serial No. 396,638.

To all whom it may concern:

Be it known that we, FERDINAND THUN and WILLIAM J. LÜCKE, both citizens of the United States, and residents of Wyomissing, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Braided Fabrics, of which the following is a specification.

Our invention relates particularly to so-called millinery braids, and consists in an improved braided fabric comprising alternately flat-braided and tubular-braided portions with connecting warp threads whereby the flat-braided portions are ornamentally shaped to produce novel trimming effects, as fully described in connection with the accompanying drawings and specifically pointed out in the claims.

Figure 1 shows a shaped composite braid embodying our complete invention. Fig. 2 shows as a separate product the alternately tubular and flat braid which forms part of the composite braid shown in Fig. 1; the warp threads being shown as lying normally in practically parallel lines as when the braid leaves the machine, but being adapted to serve as pull-strings whereby either the complete composite braid or this independently usable element thereof may be ornamentally shaped as indicated in Fig. 1.

In a pending application of Ferdinand Thun, Serial No. 316,237, is described a braiding machine adapted to produce a continuous fabric having alternate tubular and flat braided portions with the texture varied by relatively tighter braiding of the tubular portions; such fabric being intended particularly for shoe lacings or the like having an intermediate portion of one braid structure and end portion of the other.

Our present invention consists in utilizing this alternate - tubular - and - flat braiding in the production of a novel form of millinery braid adapted for ornamental trimming and the like, by forming a connected series of short tubular and flat braided sections alternately arranged and provided with warp threads which serve as pull strings whereby the sections may be ornamentally shaped so as to adapt the fabric for trimming purposes, either as an independent braid or embodied in a composite braid, as indicated in the drawings.

Fig. 2 shows our improved alternate-

tubular-and-flat braided fabric as a separate article of manufacture, in the form in which it leaves the braiding machine; *a a a* representing short tubular braided portions; *b b b* "flat braided" portions having their separated edges *c c*, *c c*, lying approximately parallel and running at each end into the connected tubular portions; *d d* being continuous warp threads, preferably spaced apart the full width of the flattened tubular braided portions and lying intermediate of the full width of the flat braided portions, at one quarter of the width thereof, from the respective edges, as shown; and *c' c'* being additional continuous warp threads lying close together in fixed relation in the tubular braided portions and serving respectively to reinforce the separated edges *c c* of successive flat braided portions. This simple braided fabric, as well as the composite braid of which it forms an integral part as hereafter described, may be conveniently furnished to the milliner or decorator in rolls or packages of indefinite length, from which sections may be cut as required for forming desired lengths of the finished braid. The novel finished braid, either in its simple form or in the composite form indicated in Fig. 1 of the drawings will, as readily understood, be produced by merely pulling together the flat braided portions *b b b* upon the intermediate warp threads *d d*, thus ornamentally bulging the central portion of such flat braided portions, and laterally spreading the edge portions thereof between their connections to the tubular braided portions on the middle line of the braid. The edges *c c* will normally assume a semi-circular form as shown, which may be ornamentally varied if desired by arbitrarily bending the reinforced edges *c c* from the normal shape which they assume, as readily enabled by making the warp threads of wire or like material.

In the composite form of braid shown in Fig. 1 as embodying our complete invention, the alternately tubular and flat braid shown in Fig. 2 and above specifically described, is combined with a flat braid *f* so as to form a novel species of what is well known as corded braid, in which the flat braid is formed with a continuous tubular braided edge or intermediate ornamental rib. By substituting for this ordinary cord



edge or rib our improved alternately-tubular-and-flat braid formed integral with the main braid portions *f*, we are enabled to produce a novel form of ornamental braid, the shaping of which as indicated in Fig. 1, is effected by means of the warp threads in the alternately-tubular-and-flat-braided cord portion or portions thereof in the same manner as when such portions are used independently, as previously described; the main braid being readily contracted in length, with a corresponding widening thereof, by the ornamental spreading of the alternately arranged flat braided sections of the cord portion, in producing the effect illustrated. Any desired number of these cord portions may be embodied in the complete braid as indicated in Fig. 1, the same being preferably integrally formed in a single braiding operation.

What we claim is:—

1. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions.

2. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps lying equidistant from the respective edges of the flat-braided portions.

3. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps lying at a distance from the respective edges of the flat-braided portions equal to one-quarter of the width of such portions.

4. A braided fabric comprising alternate flat-braided and tubular-braided portions having continuous warp-threads reinforcing the respective edges of the flat-braided portions.

5. A braided fabric comprising alternate flat-braided and tubular-braided portions having continuous warp-threads of wire or similar stiffening material reinforcing the respective edges of the flat-braided portions.

6. A braided fabric comprising alternate flat-braided and tubular-braided portions having two spaced-apart pull-string warps running parallel with and at some distance from the respective edges of the flat-braided portions, and additional warps reinforcing said edges.

7. A braided fabric comprising alternate flat-braided and tubular-braided portions having two spaced-apart pull-string warps running parallel with and at some distance from the respective edges of the flat-braided portions, and additional warps of wire or similar stiffening material reinforcing said edges.

8. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps run-

ning intermediate of the width of the flat-braided portions, said flat-braided portions being centrally bulged and their edges laterally curved by shortening said portions upon the pull-string warps.

9. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions and additional warp-threads reinforcing the respective edges thereof, said flat-braided portions being centrally bulged and their reinforced edges laterally curved by shortening said portions upon the pull-string warps substantially as set forth.

10. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions and additional warp-threads of wire or similar stiffening material reinforcing said edges, said flat-braided portions being centrally bulged by shortening the same upon said pull-string warps and having their reinforced edges shaped as desired by bending the wire warps.

11. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps lying at a distance from the respective edges of the flat-braided portions equal to one-quarter of the width of such portions, the tubular-braided portions being of tighter texture than the flat-braided portions.

12. A braided fabric comprising alternate flat-braided and tubular-braided portions having two spaced-apart pull-string warps running parallel with and at some distance from the respective edges of the flat-braided portions, and additional warps reinforcing said edges, the tubular-braided portions being of tighter texture than the flat-braided portions.

13. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions, the tubular braided portions being of tighter texture than the flat-braided portions, said flat-braided portions being centrally bulged and their edges laterally curved by shortening said portions upon the pull-string warps.

14. A braided fabric comprising alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions and additional warp-threads reinforcing the respective edges thereof, the tubular-braided portions being of tighter texture than the flat-braided portions, said flat-braided portions being centrally bulged and their reinforced edges laterally curved by shortening said portions



upon the pull-string warps substantially as set forth.

15. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions.

16. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps lying equidistant from the respective edges of the flat-braided portions.

17. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps lying at a distance from the respective edges of the flat-braided portions equal to one-quarter of the width of such portions.

18. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having continuous warp-threads reinforcing the respective edges of the flat-braided portions.

19. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having continuous warp-threads of wire or similar stiffening material reinforcing the respective edges of the flat-braided portions.

20. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having two spaced-apart pull-string warps running parallel with and at some distance from the respective edges of the flat-braided portions, and additional warps reinforcing said edges.

21. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having two spaced-apart pull-string warps running parallel with and at some distance from the respec-

tive edges of the flat-braided portions, and additional warps of wire or similar stiffening material reinforcing said edges.

22. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions, said flat-braided portions being centrally bulged and their edges laterally curved by shortening said portions upon the pull-string warps.

23. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions and additional warp-threads reinforcing the respective edges thereof, said flat-braided portions being centrally bulged and their reinforced edges laterally curved by shortening said portions upon the pull-string warps substantially as set forth.

24. A corded braid the cord portions of which comprise alternate flat-braided and tubular-braided portions having spaced-apart pull-string warps running intermediate of the width of the flat-braided portions and additional warp-threads of wire or similar stiffening material reinforcing said edges, said flat-braided portions being centrally bulged by shortening the same upon said pull-string warps and having their reinforced edges shaped as desired by bending the wire warps.

In testimony whereof, we affix our signatures, in the presence of two witnesses.

FERDINAND THUN.  
WILLIAM J. LÜCKE.

Witnesses:

D. M. STEWART,  
W. G. STEWART.