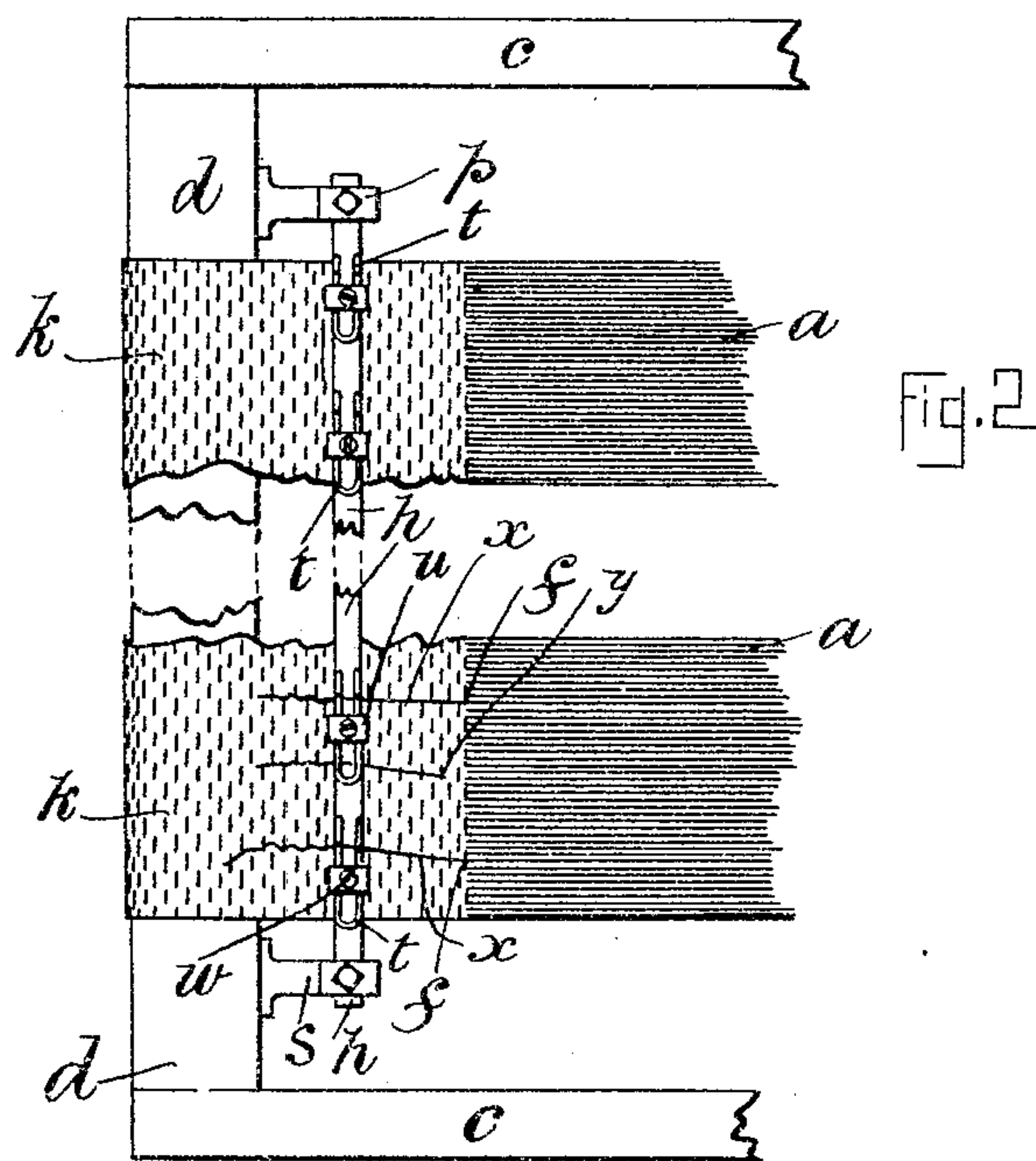


PATENTED JAN. 10, 1905.

# WARP THREAD HOLDER FOR LOOMS.

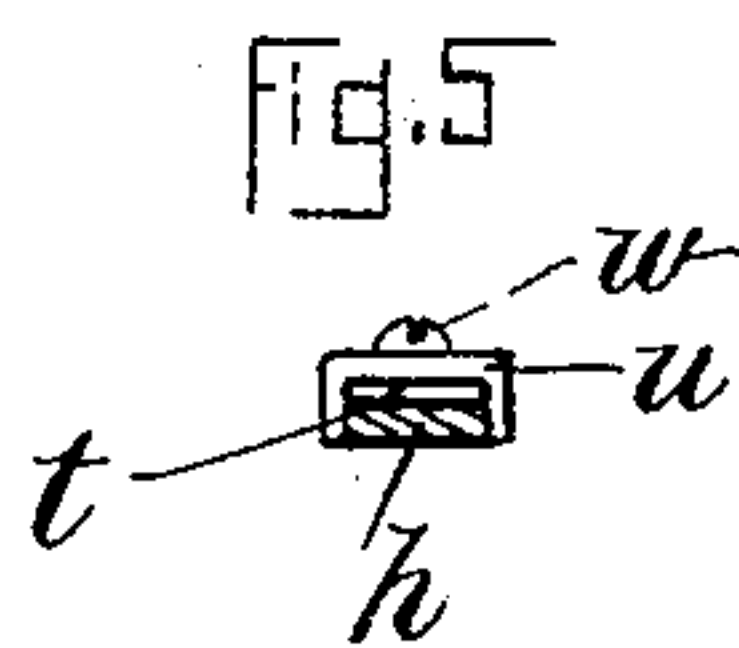
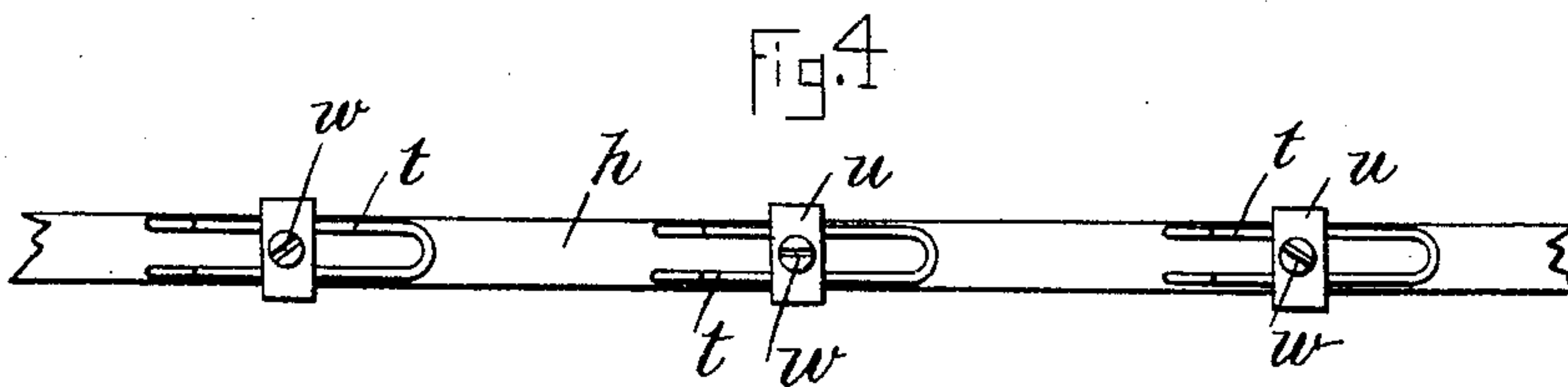
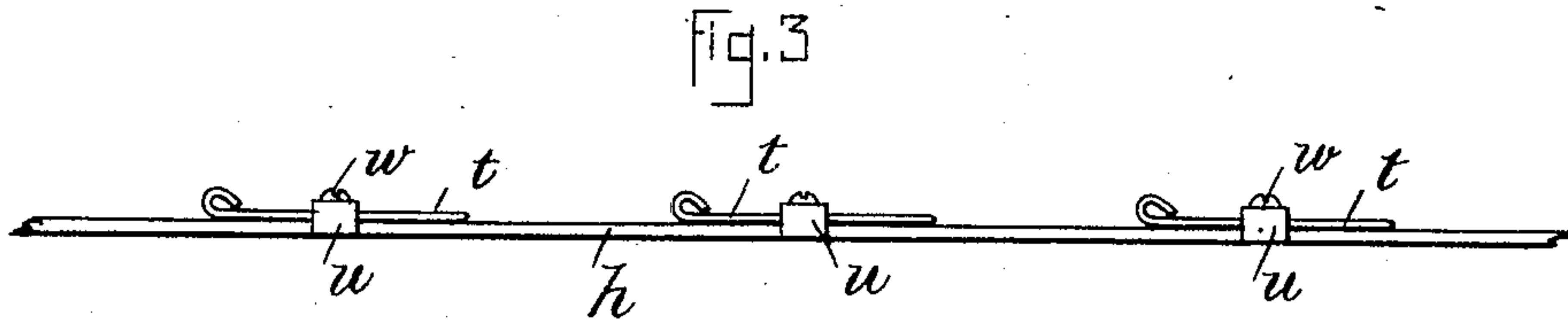
2 SHEETS—SHEET 1.



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WARP THREAD HOLDER FOR LOOMS.  
APPLICATION FILED OCT. 15, 1904.

2 SHEETS—SHEET 2.



Witnesses  
P. H. Pizzatti  
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# UNITED STATES PATENT OFFICE.

HAROLD LEE, OF MANCHESTER, ENGLAND.

## WARP-THREAD HOLDER FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 779,944, dated January 10, 1905.

Application filed October 15, 1904. Serial No. 228,505.

*To all whom it may concern:*

Be it known that I, HAROLD LEE, a subject of the King of Great Britain, residing at Fairfield, Broughton Park, Manchester, in the county of Lancaster, England, have invented a certain new and useful Warp-Thread Holder for Looms, of which the following description, in which reference is made to the accompanying drawings, is a specification.

During the process or operation of weaving when several of the warp-threads for any reason or from any cause are broken or otherwise fail to be in continuity considerable inconvenience and delay is caused the weaver to hold them when being repaired in suitable positions until they are finally held by being woven into the fabric. Especially is this inconvenience experienced in connection with looms having what are known as "warp stop-motions," because the continuity of action of the loom depends upon every thread of warp therein being held in a certain state of tension. Hence the necessity of means for enabling the repaired threads to be temporarily secured under the conditions required. To provide means whereby this object may be attained, and that without the addition of parts which would be disadvantageous to the freedom of the weaver's actions while carrying out his or her duties, is the object of this invention. To attain this object use is made of the devices hereinafter described, and as illustrated by the accompanying sheets of drawings, wherein—

Figure 1 is a longitudinal section, parts being in elevation, showing the outline of the end frame of a loom from the back to the front of which is stretched the warp in connection with which my thread-holding device is used. Fig. 2 is a view of certain of the front parts of a loom with my device applied thereto, as seen from above. Figs. 3, 4, and 5 are side, plan, and end views, respectively, showing my holding device in detail, drawn to an enlarged scale.

As is well known, the warp *a* in a loom stretches from the rail *b*, which is fixed at the back part of the end frame *c* to the rail *d*, fixed on the front part thereof, and when any of

the threads of said warp *a* are broken or cease to be in continuity on being repaired they have to be held firmly by their loose ends, which extend toward the rail *d*, until they are woven into the fabric, as at the point *f*. The holding of these threads at the necessary tension is more particularly imperative when any relaxation or slackening of them would allow the parts, such as the detectors *g g*, to operate and bring about the stoppage of the loom, as is the case when such remission of tension is utilized for detecting broken threads, so that it is desirable to have ready means for securing these loose ends to retain the threads at the desired tension no matter at what part of the fabric being woven may such threads be situated.

My holding device consists of the bar *h*, which extends from one side to the other over the fabric *k* to be firmly mounted upon the brackets *p s*, which are secured to the front rail *d*. Upon this bar *h* are secured the series of clips *t* by means of the spanning-pieces *u* and the screws *w*. The ends of these clips *t* are free, so that the extending parts of the thread *a* which have been repaired may be passed while being held in a state of tension laterally under said clips, where by the resilience of these latter they are held against the bar *h*, the position of the newly-repaired thread when held by one or other of the clips being somewhat as shown at *x*, while that of a repaired thread partly woven into the fabric is as shown at *y*.

It will be observed that by constructing the clips as above described, provided the weaver neglects to remove from them the threads that had been retained by them after such threads have been woven into the fabric, no undesirable results take place, for the reason that by the continued weaving operations the threads retained by the clips are withdrawn therefrom as the woven fabric passes along.

Such being the nature and object of my said invention, what I claim is—

1. In a loom a thread-holding device consisting of a bar extending from side to side of the fabric being woven, brackets for supporting the ends of said bar, and holding-clips

mounted on said bar and having free portions arranged to receive and lay hold of threads which are passed laterally beneath them substantially as herein set forth.

- 5 2. In a loom a thread-holding device consisting of a bar extending across the fabric being woven and means whereby the bar is supported, and clips mounted on said bar, said clips having their ends free for the passage

under them of the threads to be held, substantially as herein described. 10

In testimony whereof I have affixed my signature in presence of two witnesses.

HAROLD LEE.

Witnesses:

SAMUEL HEY,  
JOHN WHITEHEAD.