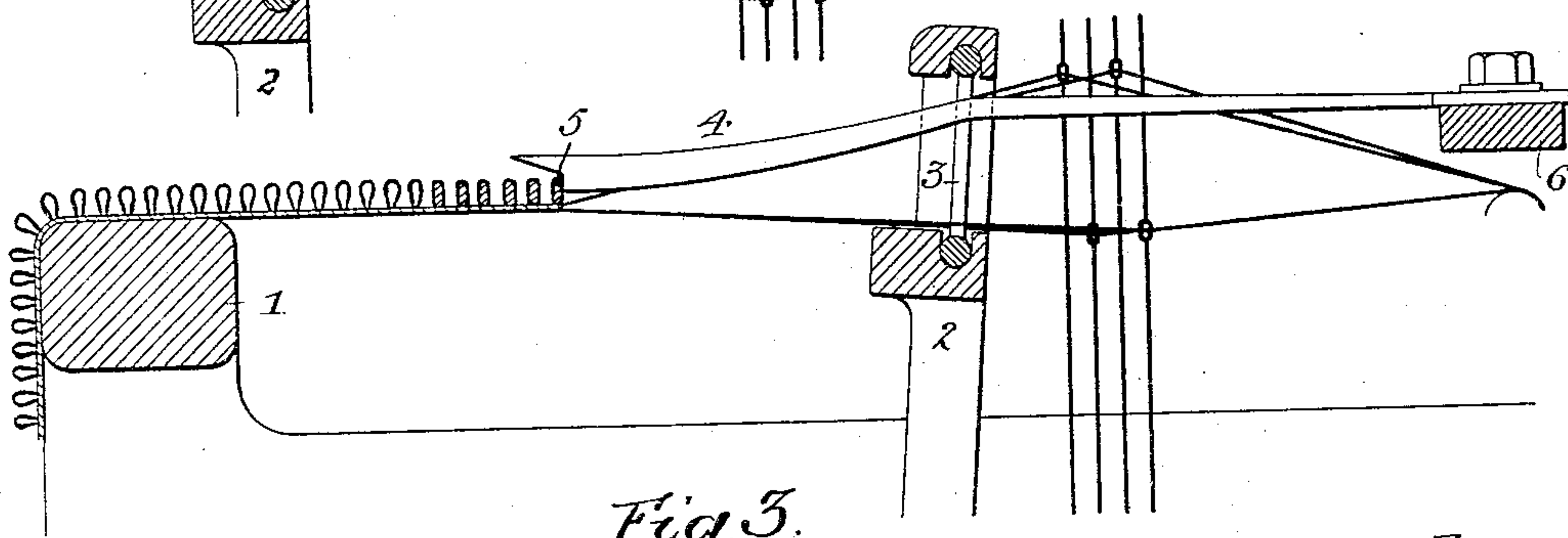
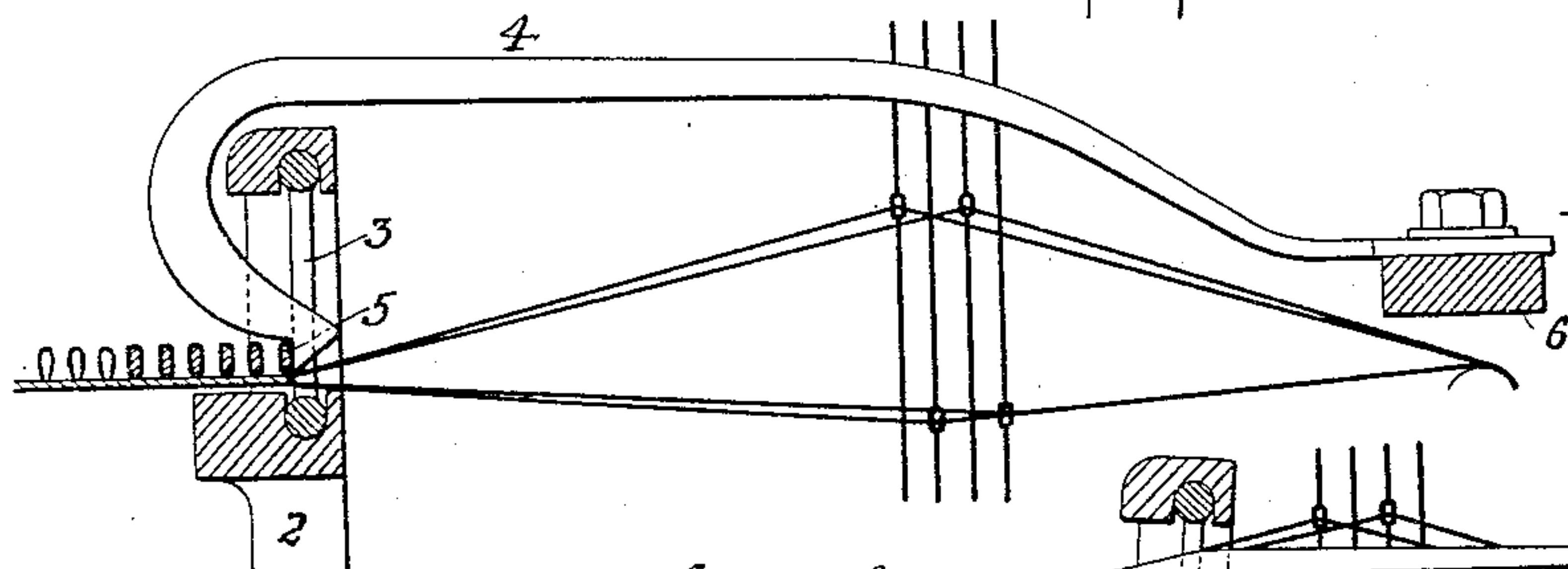
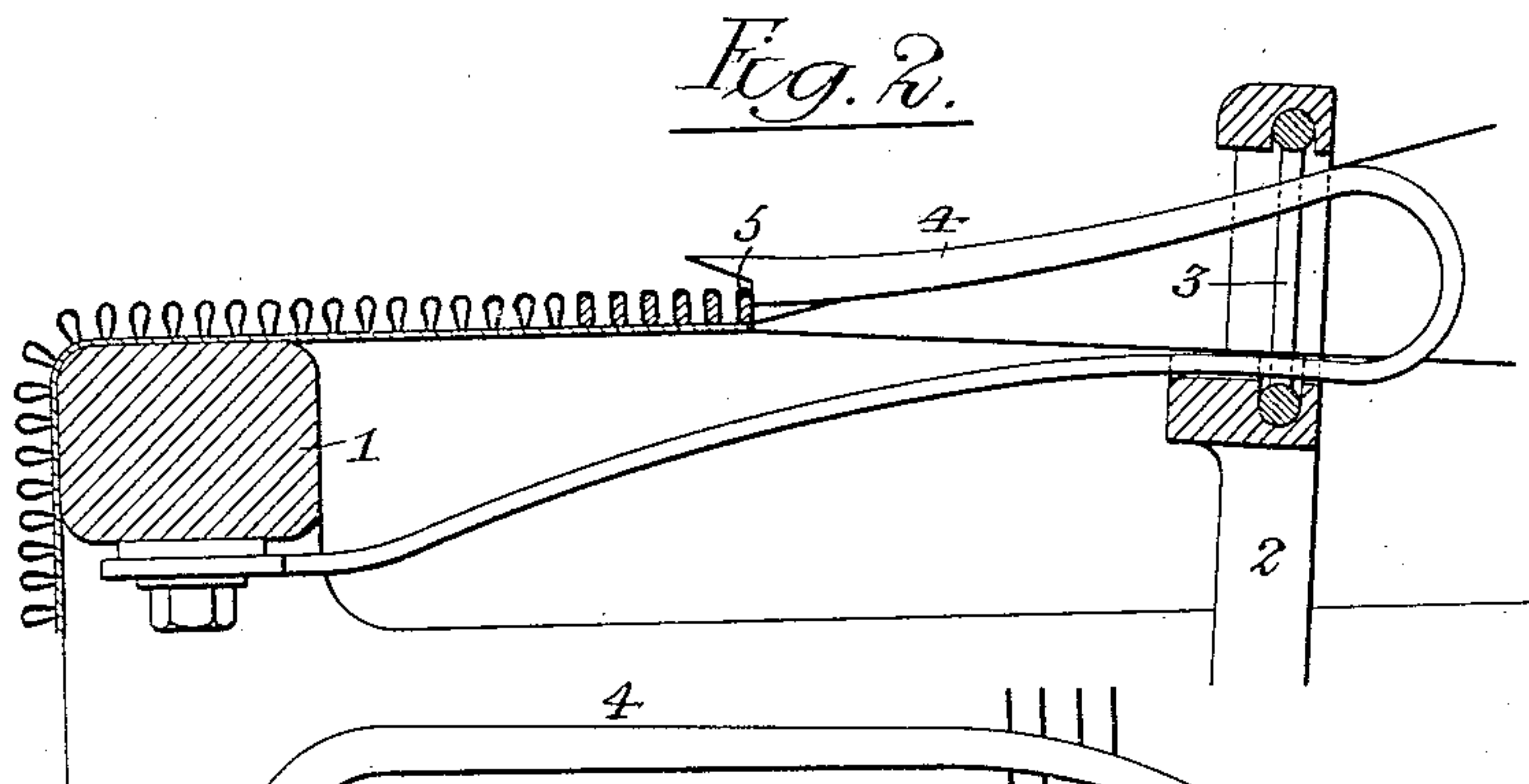
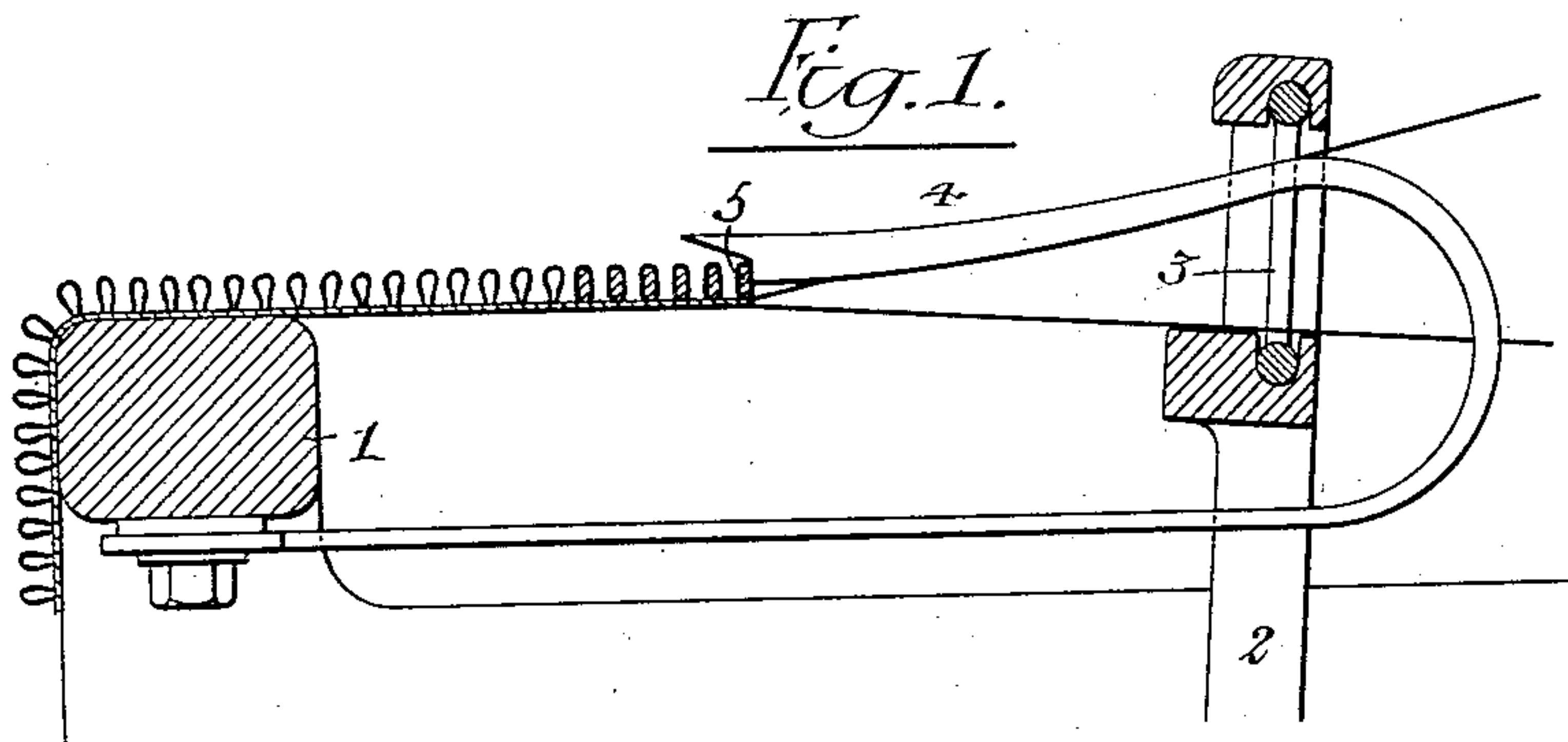


No. 738,031.

PATENTED SEPT. 1, 1903.

H. HARDWICK.
PILE WIRE RETAINER FOR LOOMS.
APPLICATION FILED JUNE 25, 1903.

NO MODEL.



Witnesses:-

Hamilton D. Turner
Herman E. Mettius

Inventor:-

Harry Hardwick,
by his Attorneys;
Howson & Howson

UNITED STATES PATENT OFFICE.

HARRY HARDWICK, OF PHILADELPHIA, PENNSYLVANIA.

PILE-WIRE RETAINER FOR LOOMS.

SPECIFICATION forming part of Letters Patent No. 738,031, dated September 1, 1903.

Application filed June 25, 1903. Serial No. 163,065. (No model.)

To all whom it may concern:

Be it known that I, HARRY HARDWICK, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain
 5 Improvements in Pile-Wire Retainers for Looms, of which the following is a specification.

My invention consists of certain improvements in the pile-wire retainer for looms
 10 shown in my previous Letters Patent No. 529,615 and dated November 20, 1894, the object of my present invention being to so mount the retainer that inspection of the woven fabric or access thereto will not be
 15 obstructed by the support for the retainer.

In the accompanying drawings, Figure 1 represents sufficient of a loom to illustrate the application of my improved form of pile-wire retainer thereto, and Figs. 2, 3, and 4
 20 are similar views illustrating other embodiments of the invention.

The pile-wire retainer forming the subject of my before-mentioned Letters Patent consisted of a series of hooked fingers projecting inwardly from a bar mounted above the breast-beam of the loom, said hooked fingers being so disposed as to engage the last-inserted pile-wire of the series and maintain the same in the upright position against the
 30 pull of the pile-warp threads thereupon, thereby preventing the deflection or bending downward of any portion of said wire, and thus insuring the formation of the desired upstanding row of pile-loops across the fabric. The presence of the supporting-bar above the fabric was, however, objectionable in some cases, because it interfered with a complete view of the fabric in its passage from the beating-up point to and over the
 40 breast-beam and also prevented free access to all parts of this portion of the fabric. In order to overcome this objection, therefore, I have now devised a plan of supporting the retainers which without interfering in any
 45 way with the performance of their intended functions leaves the woven fabric as free for inspection or access as that of an ordinary loom.

In the drawings, 1 represents the breast-

beam of the loom, and 2 part of the swing- 50
 ing lay with its reed 3.

In the construction shown in Fig. 1 each of the pile-wire retainers 4 (of which as many may be employed as the necessities of the case suggest) is supported upon the under 55
 side of the breast-beam and extends thence to a point which is in the rear of the lay when the latter is fully retracted, at which point the retainer is curved upwardly to a position adjacent to the top of the reed and is then 60
 carried forwardly through one of the spaces of the reed, terminating finally at the beating-up point, so as to properly engage with the last-inserted pile-wire 5 and maintain the same in the upright position, each succes- 65
 sively-inserted pile-wire acting upon the under face of the hooked retainer, so as to lift the same, and the hook, owing to the resiliency of the retainer, then snapping back of the pile-wire when the latter reaches the 70
 beating-up point. By thus mounting the hooked retainer the same has a longer shank than the retainer set forth in my former patent. Hence the resiliency of the retainer as regards vertical movement is increased, 75
 added resiliency being due to the curve of the shank. This vertical resilience, however, detracts in no material measure from the longitudinal rigidity of the retainer, which enables it to resist the strain upon the pile- 80
 wire, tending to turn the same from the upright position.

In that embodiment of my invention shown in Fig. 1 the shank of the retainer is carried beneath the shuttle-race of the lay; but in 85
 the construction shown in Fig. 2 the shank of the retainer is bent upwardly and passes through a slot or recess in the shuttle-race before being curved upwardly at the back of the reed, all that is necessary in this case 90
 being to insure sufficient space between the upper and lower members of the retainer to permit of the passage of the shuttle through the open shed of warps.

In that embodiment of my invention shown 95
 in Fig. 3 the shank of the retainer is mounted upon a bar 6 in the rear of the heddles or harness and passes thence forwardly between

adjoining wires, threads, or bars of said heddles or harness and through one of the spaces of the reed, terminating, as before, at the beating-up point, so as to engage with the last-inserted pile-wire 5.

In each of the constructions shown in Figs. 1, 2, and 3 that portion of the retainer which passes through the reed serves to prevent lateral deflection of the retainer in the same manner as the projecting end of the retainer shown in my former patent. This, however, is not absolutely essential to the proper carrying out of my invention, and in Fig. 4 I have shown a construction in which a retainer mounted at the rear of the loom passes over the top of the reed and is bent down in front of the same at the beating-up point, so as to engage the pile-wire.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the lay and its reed with a pile-wire retainer having a portion for engaging the last-inserted pile-wire, said retainer passing to the rear of the reed, and a support for said retainer, substantially as specified.

2. The combination of the lay and its reed with a pile-wire retainer having a portion for

engaging the last-inserted pile-wire, and a support for said retainer, said retainer passing through the reed, substantially as specified.

3. The combination of the lay and its reed with a pile-wire retainer mounted upon a support below the woven web, said retainer extending from its support to the rear of the lay and being thence carried forwardly through one of the spaces of the reed and terminating in a wire-engaging portion at the beating-up point of the loom, substantially as specified.

4. The combination of the lay, having a slotted shuttle-race and a reed, with a pile-wire retainer mounted upon a support beneath the woven web, extending thence through the slot in the shuttle-race to the rear of the reed, thence forwardly through one of the spaces of the reed and terminating in a wire-engaging portion at the beating-up point of the loom, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HARRY HARDWICK.

Witnesses:

F. E. BECHTOLD,
JOS. H. KLEIN.