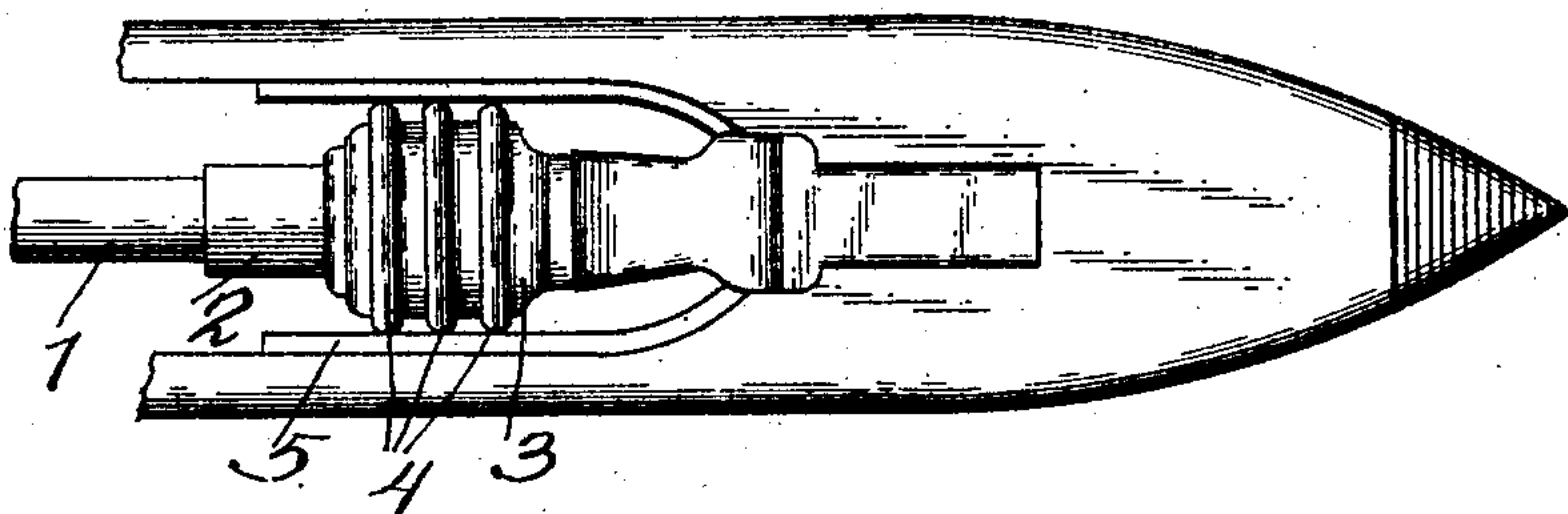


No. 814,709.

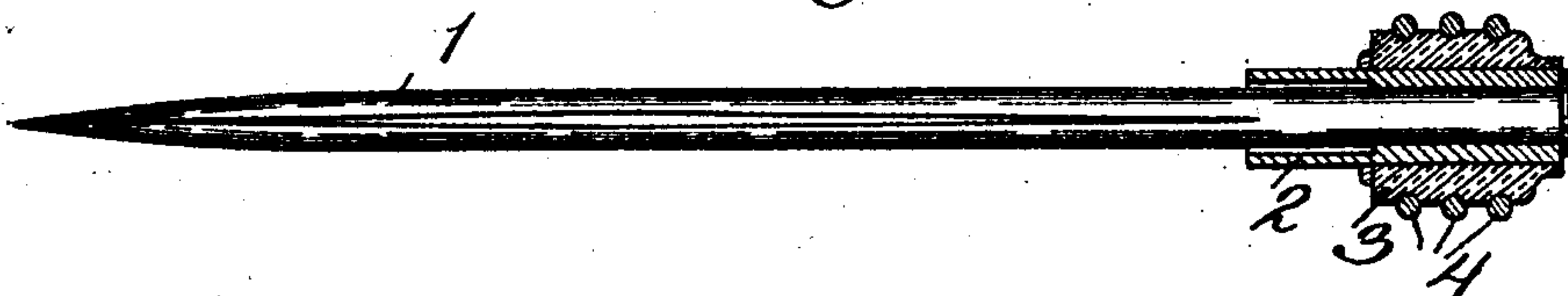
PATENTED MAR. 13, 1906.

F. E. KIP.  
FILLING CARRIER.  
APPLICATION FILED OCT. 3, 1902.

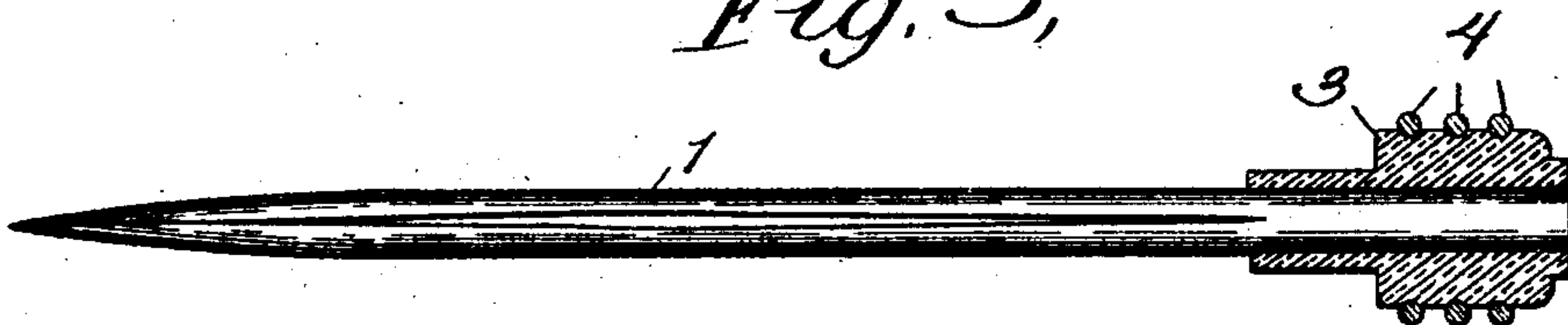
*Fig. 1,*



*Fig. 2,*



*Fig. 3,*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## FILLING-CARRIER.

No. 814,709.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed October 3, 1902. Serial No. 125,812.

*To all whom it may concern:*

Be it known that I, FREDERIC E. KIP, a citizen of the United States, and a resident of Montclair, in the State of New Jersey, have  
5 invented certain new and useful Improvements in Filling-Carriers, of which the following is a specification.

My invention has reference to filling-carriers for looms capable of general application  
10 to any suitable form of shuttle; but I shall describe it with reference more particularly to a skewer employed in connection with looms of that class in which the filling is automatically supplied to the shuttle while the  
15 loom is in motion.

Prior to my invention skewers used in connection with a loom-shuttle of the class referred to have been made with an enlarged head upon the metal blade, said head being  
20 of metal or of wood or of metal surrounded by a collar or jacket of wood. Annular ribs or projections of wire surrounding the head are adapted to be engaged by spring-jaws of a shuttle, which jaws have corresponding  
25 ribs or projections. In a self-threading shuttle in which the skewer is automatically supplied to the shuttle it is essential that the yarn-delivery ends of the skewers should be placed in exactly the same position in the  
30 center of the shuttle. If the skewer is not placed centrally of the shuttle, the yarn or filling-in paying out will break. The all-metal skewer was found unsatisfactory in that the solid-metal head and ribs thereon  
35 presented a too rigid and unyielding body when forcibly pressed between the spring-jaws of the shuttle, with the result that the parts became worn, the rings bent out of shape, and the skewer could not, therefore, be  
40 properly positioned. In that form of skewer in which a metal head surrounded by a jacket of wood grooved to receive the metal rings the metal head was necessarily reduced to accommodate the wood jacket. Such form  
45 of construction has been used extensively for large skewers in which a relatively thick jacket of wood can be placed between the metal head and the rings; but it has been found that with certain classes of cloths  
50 which demand a small shuttle that when the wood jacket is reduced in thickness the rings are not held rigidly in position and that after a comparatively short use the skewer cannot be properly positioned, so that the yarn-delivery  
55 end of the skewer instead of assuming a central position in the shuttle is thrown to

one side or the other, and in consequence thereof the filling breaks in paying off during weaving. As the skewer is from six to eight  
60 inches long, a very slight movement laterally of the rings will throw the delivery end of the skewer one-quarter to one-half inch out of center.

The desirability of properly centering the skewer has long been recognized, and to secure this result the head of the skewer must  
65 possess elasticity, and yet be sufficiently rigid and firm to prevent the rings from being misplaced when the skewer is pushed between the spring-jaws of the shuttle. 70

My invention provides a means which gives the requisite elasticity and rigidity and which overcomes the objections incident to an all-metal or a metal-and-wood skewer-head. 75

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top view of one end of a shuttle containing a skewer. Fig. 2 shows a skewer embodying my invention, the head  
80 being shown in section; and Fig. 3 shows a modification.

Similar numerals of reference indicate similar parts in the several views.

Referring to Fig. 2, 1 designates a metal  
85 blade of the skewer, which may be of any usual form adapted to carry the filling. The metal blade has secured to it by any suitable means a cylindrical block 2, constituting a head, said head in practice being usually  
90 made of metal. The head 2 is provided with a jacket 3, which heretofore has usually been made of wood and ribs or projections 4 of wire laid around said jacket. The form of  
95 shuttle with which this skewer is used is well known, and a detailed description thereof is not necessary, it being sufficient to state that the shuttle receives one after another of a series of skewers contained in a hopper and from which hopper the skewers are pushed  
100 into the shuttle. The shuttle shown in Fig. 1 is provided with yielding or spring jaws 5, adapted to grasp and hold the skewer, the construction being such that the skewer passes into engagement with the jaws at one  
105 open side of the shuttle and passes out of engagement at the other side of the shuttle, all as well known and understood in the art.

The essential feature of my invention consists in making the cylindrical jacket 3 of a  
110 material known in the trade as "vulcanized fiber" or "hard fiber" or generically as



"fiber." This material as found on the market is made from paper, cotton rags, or other vegetable fibrous substance by treating the same with a solution of the chlorids of zinc, tin, calcium, &c., and subsequently subjecting the spongy mass to heavy pressure to render it homogeneous and to separate the mass from the surplus chlorid. Various substances may be introduced into the mass to improve the product, such as graphite or plumbago, resin, hemp, jute, linen, talc, &c. This substance is a well-known commercial article and may be readily obtained in the market under the names above mentioned. It possesses a relatively high tensile strength among materials of like nature, and in using it as a jacket around the metallic head of a loom-skewer I have found that it possesses the requisite elasticity so as to yield when the skewer is pushed into the shuttle, preventing thereby the displacement or bending of the rings, and possesses the requisite rigidity and firmness to hold the skewer central of the shuttle-case.

While I have described my invention with reference to a skewer, it is to be understood that bobbin-heads may be made in the same way. Also I do not intend to limit myself to a skewer employed in connection with a self-threading shuttle or a shuttle of any particular kind except one that has spring holding-jaws, as it is apparent that the invention is capable of general application.

The entire end or head of the skewer may be of fiber, as shown in Fig. 3, said head being secured to the head or end of the skewer in any suitable manner.

In Figs. 2 and 3 the head of the skewer is shown as grooved to receive the rings. This is the preferred mode of construction, though it is possible to shrink the rings on by heating them in a well-known manner, in which case the rings would sink into the fiber sufficiently to be held thereon.

The reference in the specification to the

elasticity of the fiber means that the material used possesses the property of elasticity or resiliency to such extent that it may be compressed slightly, but springs back into its original form without taking a permanent set. In other words, the property of elasticity or resiliency is sufficient to prevent the smashing of the rings or jaws when the skewer is knocked between the latter and still sufficient to hold the rings rigidly to keep the skewer in alinement to thereby allow the yarn to properly thread and pay off.

What I claim, and desire to secure by Letters Patent, is—

1. A loom-shuttle skewer having a head provided with a jacket of artificial substance made from a vegetable fiber, and one or more annular ribs or projections surrounding said jacket.

2. A loom-shuttle skewer having a head provided with a jacket of "hard fiber," and one or more annular ribs or projections surrounding said jacket.

3. A skewer having a head of "hard fiber" and rings or projections surrounding said head.

4. A loom-shuttle skewer having on its head a jacket of artificial fiber and one or more annular ribs or projections surrounding said jacket.

5. A loom-shuttle spindle having on its head a jacket of elastic or resilient material and one or more annular ribs or projections surrounding said jacket.

6. A filling-carrier having a ring or rings and a bed of resilient material between the ring and the carrier in which the ring will embed itself.

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

FREDERIC E. KIP.

Witnesses:

GRACE L. HEASLEY,  
OTTO P. OSMERS.