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G. A. FREDENBURGH.

THREAD GUIDE ATTACHMENT FOR SPINNING MACHINES.

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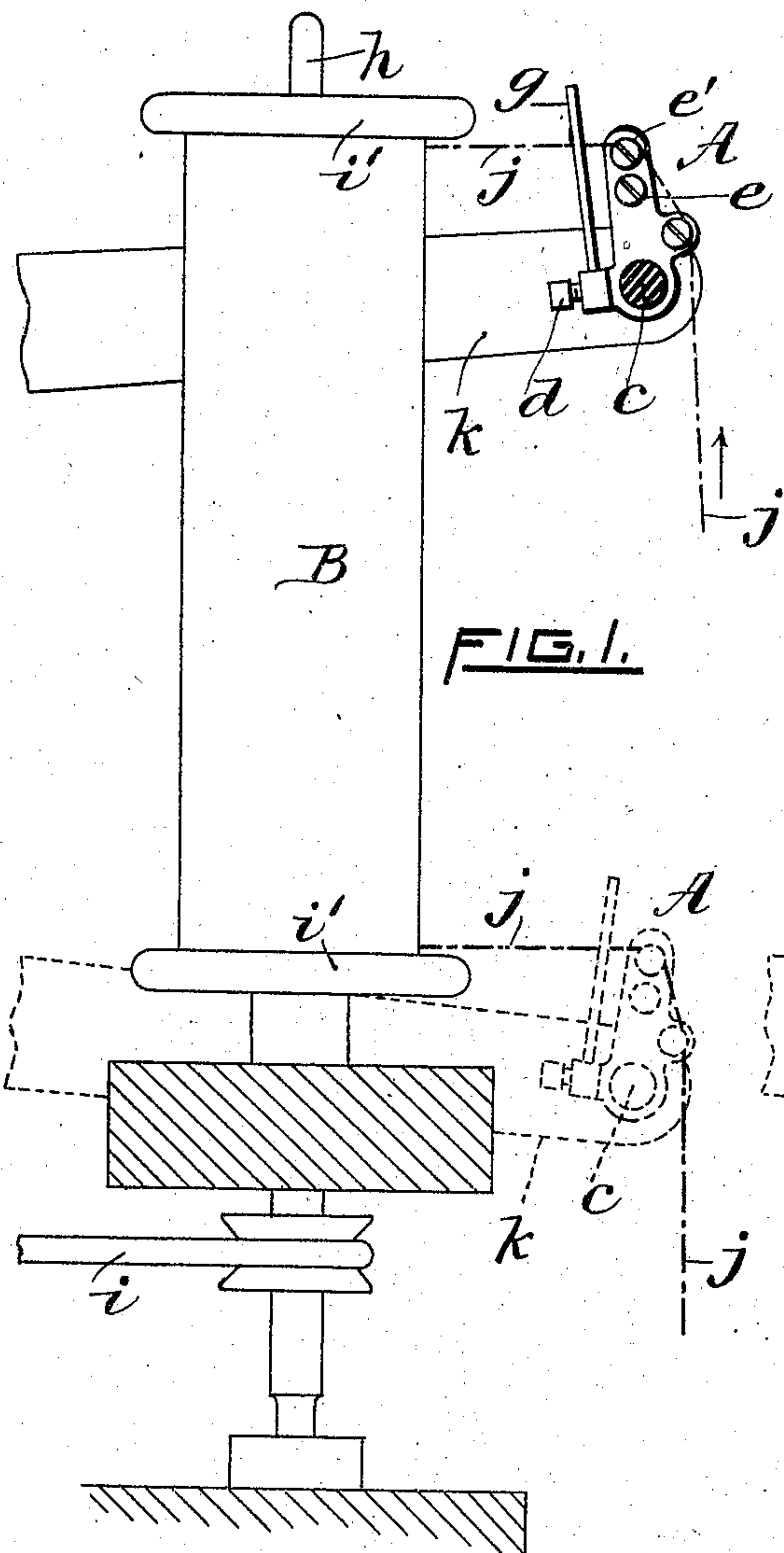


FIG. 1.

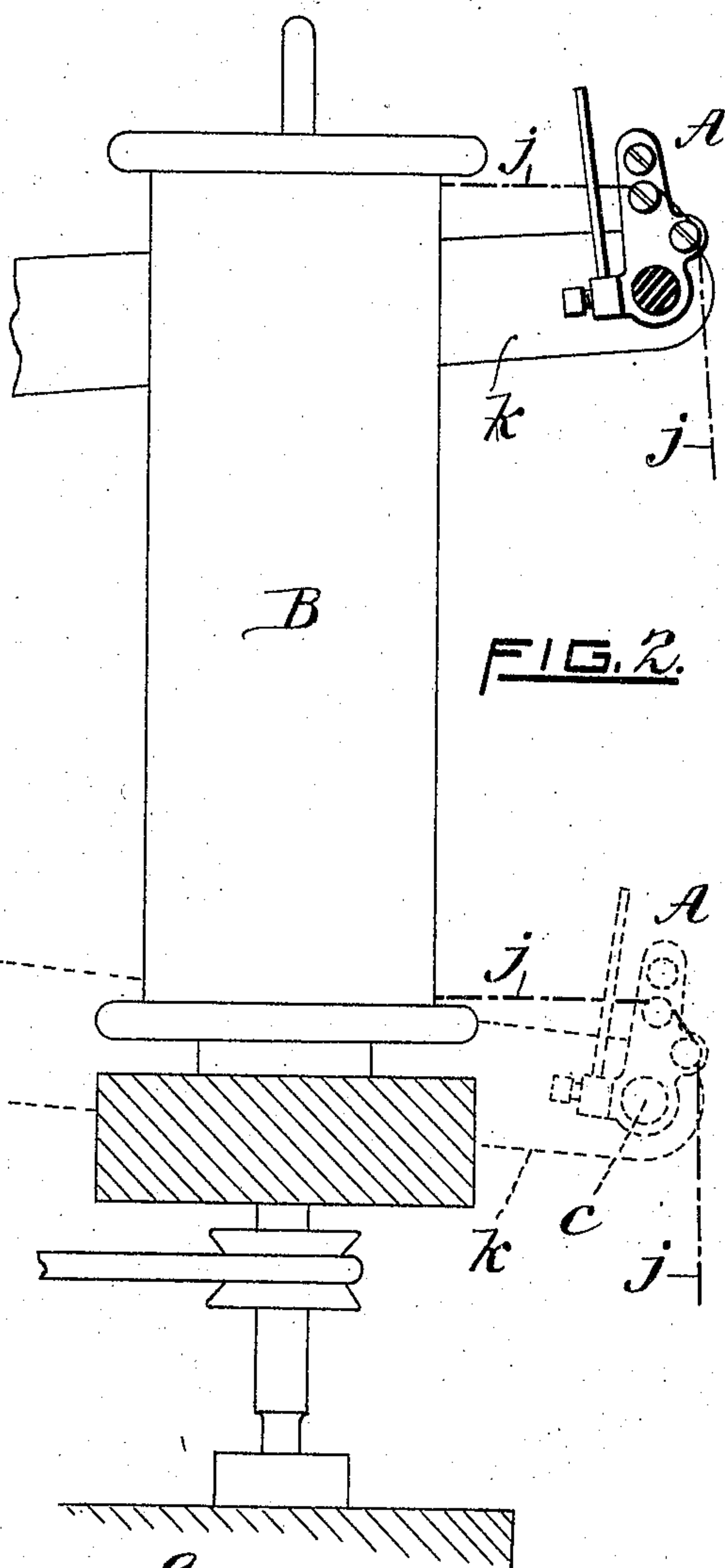


FIG. 2.

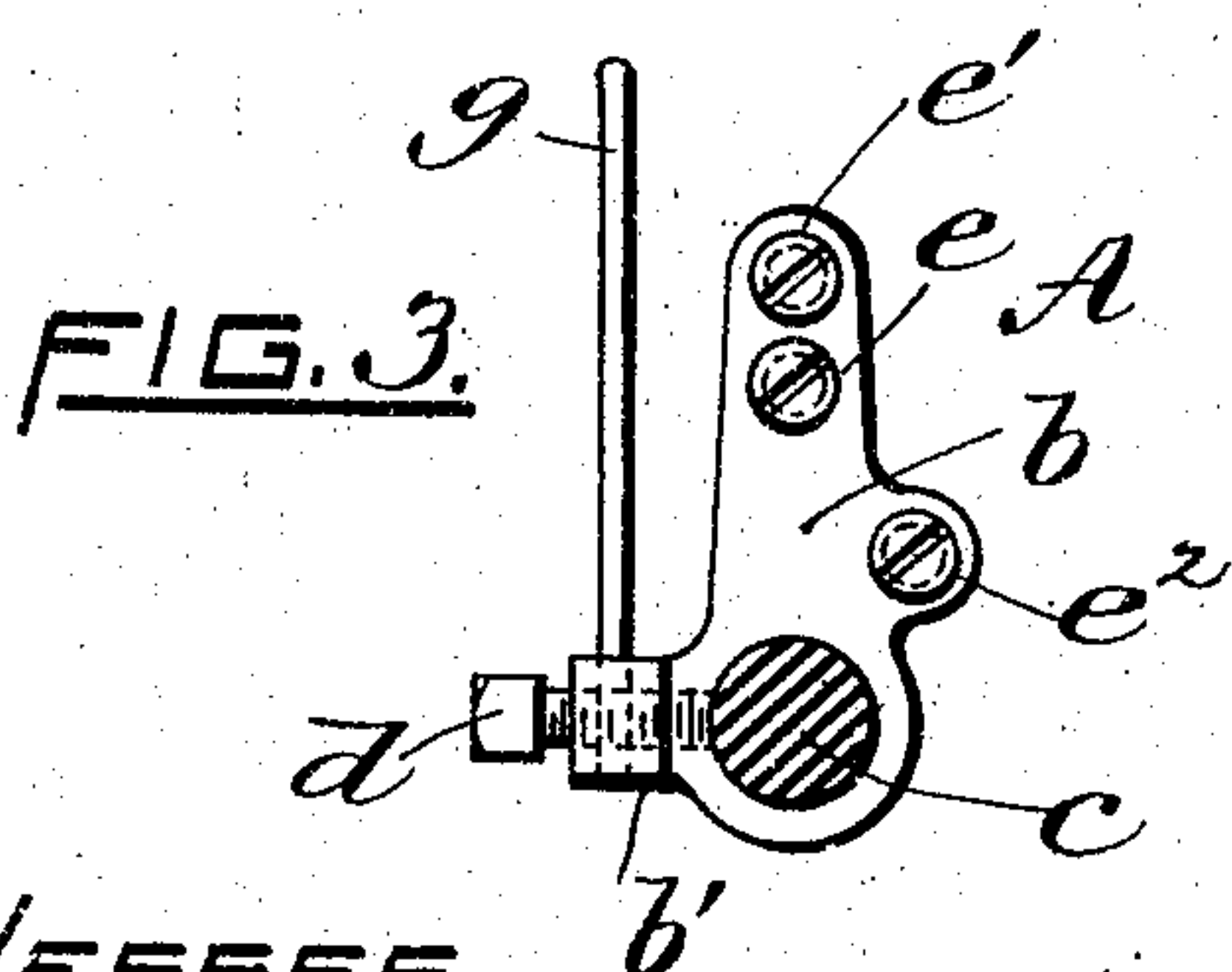


FIG. 3.

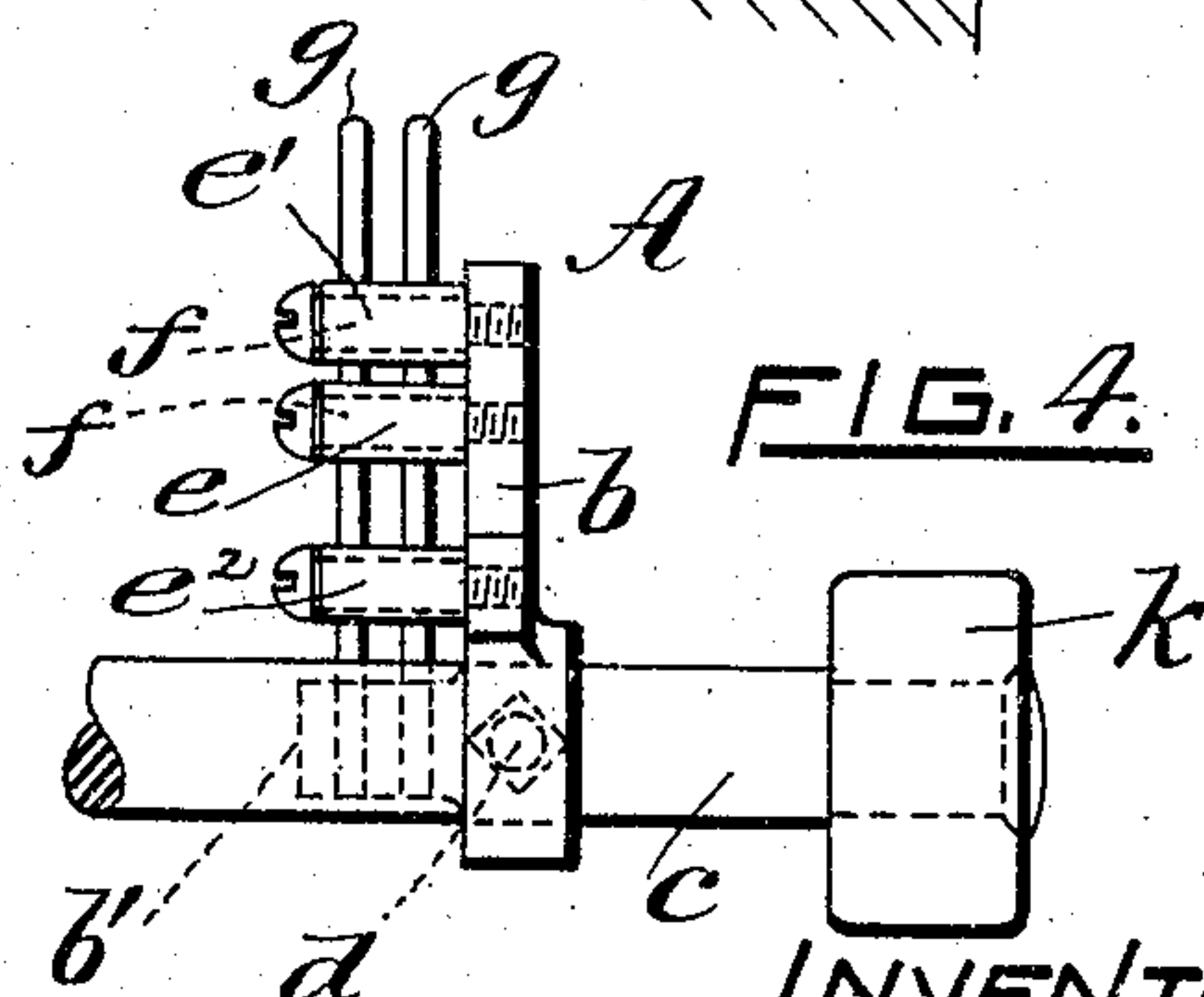


FIG. 4.

WITNESSES.

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THREAD-GUIDE ATTACHMENT FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,259, dated May 30, 1905.

Application filed March 14, 1904. Serial No. 198,137.

To all whom it may concern:

Be it known that I, GEORGE A. FREDENBURGH, a citizen of the United States, residing at the city of Pawtucket, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Thread-Guide Attachments for Spinning-Machines, of which the following is a specification.

My invention relates to a yarn or thread guide adapted for the traversing mechanism of spool-spinning machines; and the object of my invention is to provide an attachment adapted to be mounted on the swinging shaft of a traversing mechanism and capable of being adjusted to various degrees of angular position to cause the travel of the thread to terminate close to each flange of the spool when spools of different lengths between their flanges or of different-length hubs are used.

A further object of my invention is to provide means for reducing the friction of the yarn or thread in its movement from the attachment to the spool.

With these ends in view my invention consists of the novel construction and combination of parts, as hereinafter described, and specifically set forth in the claims.

In the accompanying sheet of drawings, Figure 1 illustrates by full and dotted lines the upper and lower positions, respectively, of my attachment and its traversing shaft as used when the thread is directed between the flanges of a spool. Fig. 2 shows the thread applied in a different position upon the attachment when the thread is directed between the flanges of a spool having a shorter hub than that illustrated in Fig. 1. Figs. 3 and 4 are views of my thread-guide attachment in detail, Fig. 3 being a side elevation of the attachment as mounted on the swinging shaft of a traversing mechanism, and Fig. 4 a front elevation of the same.

Like characters of reference indicate like parts.

Referring to Figs. 3 and 4, A represents my thread-guide attachment as a whole, comprising an arm *b*, which at one end is fixedly secured upon the swinging shaft *c* of a traversing mechanism by a set-screw *d*, and this arm

has an integral extension *b'* offset from and projecting parallel to said shaft *c*. At the upper extremity of the arm *b* are two cylindrical sleeves or thread-rollers *e* and *e'*, extending in parallel alinement with the axis of the shaft *c*, and said sleeves or rollers are rotatably mounted on pins *f f*, which have enlarged circular heads at one end to prevent lateral displacement of the sleeves or rollers, while the opposite ends of said pins *f f* have reduced screw-threaded portions to engage threaded openings formed in said arm *b*. In like manner a cylindrical sleeve or thread-roller *e²* is mounted on the arm *b* opposite its extension *b'*, and said roller *e²* is parallel to the shaft *c* and rollers *e* and *e'*. *g g* are two thread-guide wires which have one of their ends made fast in the extension *b'* of the arm *b* and their opposite ends projecting beyond the upper sleeve or thread-roller *e'*. Said wires *g g* are parallel to each other and situated in a plane approximately parallel to and at the rear of the rollers *e*, *e'*, and *e²*.

Referring to Fig. 1, B is a yarn or thread spool which is mounted on a spindle *h* and driven by means of a band or cord connection *i* from the whirl-driving shaft of the machine in the usual manner. These thread-spools vary in length between their flanges, being constructed by different manufacturers, so that where a certain make of spool is mounted in position upon a spindle to receive the thread the traversing mechanism has to be adjusted to suit the distance of the travel of the thread in order to have it properly placed, thus causing considerable delay before the machine is ready to operate.

My attachment when mounted upon the traversing shaft *c* is designed to have its thread-guide wires *g g* located between said shaft and the spool B. The yarn or thread (indicated by broken lines and designated by reference-letter *j* in Fig. 1) passes up in front of and in contact with the surfaces of the sleeves or rollers *e²* and *e'*, respectively, thence between the wires *g g*, which direct the thread to the spool. The sleeve or roller *e²* is offset from the sleeves or rollers *e* and *e'* to prevent the thread in its upward movement from coming in contact with the shaft *c*. The traverse-

arms *k*, which carry the shaft *c*, vibrate between definitely-limited positions upon the machine, the radius of the arc described by said shaft remaining always the same. The
 5 centers of the spools when in position to receive the thread should be located midway the extremes of travel of the thread.

When a spool which has a long or extra-length hub is mounted in position to receive
 10 the thread, the traverse-arms are first brought to their uppermost position on the machine. The thread is then placed upon the top roller *e'*, after which the attachment is secured in such a position upon its shaft *c* by the set-
 15 screw *d* that the thread in its feeding movement is directed in a horizontal plane from said roller *e'* to the spool B, and at each end of the traverse movement of the arms *k* the travel of the thread terminates close to each
 20 flange of the spool in the manner shown in Fig. 1. When another make of spool is mounted to receive the thread—as, for example, a spool having a short hub—the traverse-arms *k* are again brought to their uppermost
 25 position on the machine. The thread is then placed upon the next lower roller *e*, after which the attachment is secured upon its shaft, so that it inclines inwardly toward the spool in the proper angular position to direct the
 30 thread in its feeding movement in a horizontal plane from said roller *e* to the spool and close to its flanges in the manner shown in Fig. 2. The thread-spools may also vary in the distance between their flanges, as illustrated in the drawings, and to accommodate
 35 the attachment for the different lengths between flanges I swing the attachment about the traverse-shaft as a pivot to so adjust it as to feed the thread immediately adjacent each
 40 spool-flange at the limits of said traverse, as will be obvious. By this construction and arrangement of parts I form an attachment that contains in itself all that is necessary to cause the thread to be properly placed on spools of
 45 different lengths, and at the same time by having the attachment provided with rollers the friction of thread in its movement on the thread-guide is much lessened, so that there is less liability of breakage of the thread in
 50 its movement to the spool.

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

1. The herein-described attachment, comprising an arm having an integral extension
 55 at one end thereof, and said arm provided with a circular opening extending parallel to

its extension; a screw mounted in said arm and entering the opening therein; three pins secured in said arm and having enlarged integral heads at their outer portion and each
 60 of said pins extending parallel to the longitudinal axis of the opening in said arm, two of said pins being situated above the opening in said arm while the other pin is offset below the first two pins; a sleeve or thread-
 65 roller mounted on each of said pins; two thread-guide wires fixed in the extension of said arm and extending parallel to each other and situated in a plane approximately parallel to and at the rear of the uppermost two of
 70 said pins, substantially as shown and for the purpose specified.

2. In a machine having thread-spools and a traversing mechanism carrying a fixed shaft, the combination of a thread-guide attachment
 75 comprising an arm mounted on the traversing shaft and having an integral extension at one side thereof; three sleeves or rollers properly supported on said arm and extending parallel to the axis of said shaft, two of
 80 said sleeves or rollers being situated above said shaft while the other sleeve or roller is situated below and offset from the first two sleeves or rollers; two thread-guide wires fixed in the extension of said arm and extend-
 85 ing parallel to each other and situated in a plane approximately parallel to and at the rear of the uppermost two of said sleeves or rollers; and a set-screw in said arm to hold the same in the position desired upon said
 90 shaft, substantially as set forth.

3. In a spinning-machine having traverse-arms carrying a fixed shaft which vibrates between definitely-limited positions and spools
 95 whose centers are midway the extremes of travel of the thread, the herein-described attachment adapted to be mounted on the traverse-shaft and having antifriction thread-rollers and wires for guiding the thread from
 100 said rollers to the spool, and means for securing said attachment in various angular positions upon said shaft so as to cause the travel of the thread to terminate close to each flange of spools of different lengths, substantially as
 105 set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

GEORGE A. FREDENBURGH.

Witnesses:

FRANK F. LADD,
 D. E. LOCKE.