J. F. KOLB.

MEANS FOR FACILITATING THE INSPECTION OF TUBULAR FABRICS.

APPLICATION FILED AUG. 31, 1921.

1,433,555. Patented Oct. 31, 1922.

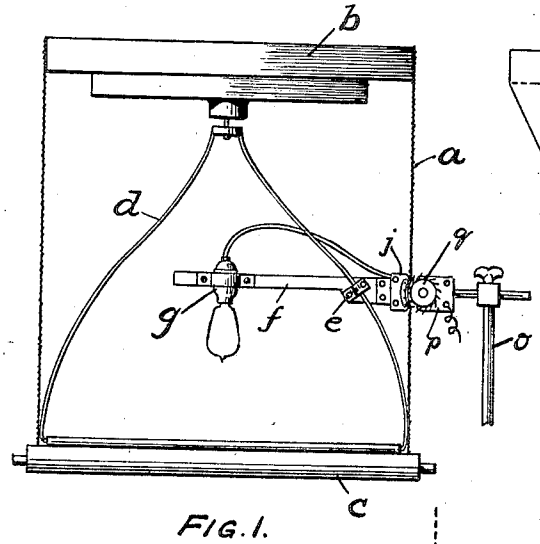



FIG. 1.

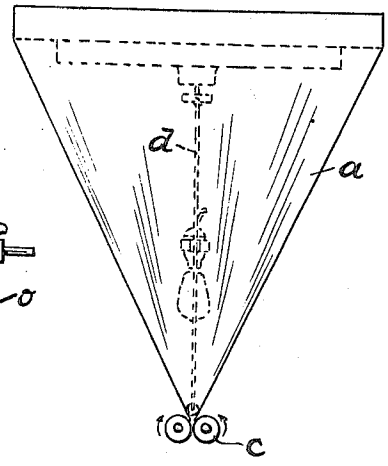



FIG. 2.

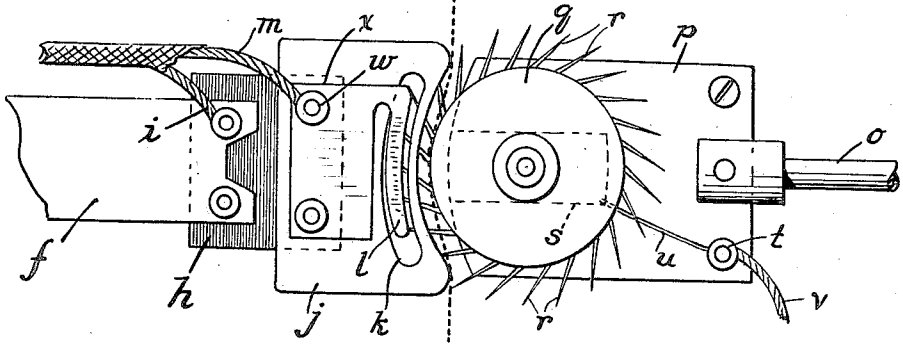



FIG. 3.

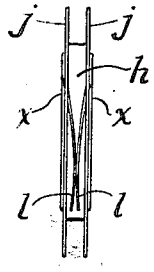



FIG. 5.

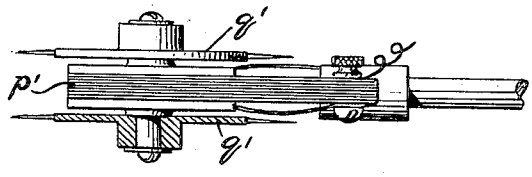



FIG. 4.

WITNESS:

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# UNITED STATES PATENT OFFICE.

JOSEPH FRANK KOLB, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-FOURTH TO HIMSELF, ONE-FOURTH TO JOHN SICHEL, ONE-FOURTH TO GEORGE GRUSHLAW, AND ONE-FOURTH TO ALFRED A. GRUNDY, ALL OF PHILADELPHIA, PENNSYLVANIA.

## MEANS FOR FACILITATING THE INSPECTION OF TUBULAR FABRICS.

Application filed August 31, 1921. Serial No. 497,202.

*To all whom it may concern:*

Be it known that I, JOSEPH FRANK KOLB, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Means for Facilitating the Inspection of Tubular Fabrics, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to means for facilitating the inspection of tubular fabrics.

In the manufacture of tubular fabrics, as, for example, tubular knitted fabric, such as is used in the making of sweaters, it is important that the fabric be carefully inspected for imperfections, and the inspection can be most efficiently and economically made as the fabric leaves the machine upon which it is produced.

Heretofore, in inspecting tubular fabric as it comes from the machine, it has been impossible to inspect with the desired accuracy, since it has been impossible to get a proper light behind the fabric. Customarily a light, as, for example, an electric lamp, is placed on the opposite side of the tube of fabric from that observed by the inspector, with a view to showing up any defects. However, the light necessarily must pass through two thicknesses of fabric and the results are unsatisfactory.

The object of my invention is to provide means whereby a light, as an electric lamp, may be positioned within the tube of fabric at a point adjacent the point of departure of the fabric from the machine, thus permitting the rays of the lamp to penetrate the fabric and enable efficient inspection to be made.

Having now indicated generally the nature and advantages of my invention, I will proceed to a detailed description thereof with reference to the accompanying drawings, in which I have illustrated a preferred embodiment and in which—

Figure 1 is an elevation of a portion of a knitting machine with a device embodying my invention attached.

Figure 2 is an elevation taken at right angles to Figure 1.

Figure 3 is a side elevation of the device embodying my invention.

Figure 4 is a detail view of a modification of my invention.

Figure 5 is a view of a detail of the device shown in Figure 3.

The knitted tubular fabric *a* is drawn from the knitting machine *b* by means of the tension device *c*. A spreader *d* is pivotally secured beneath the machine and serves to spread the fabric, as is shown in Figures 1 and 2.

Secured to one of the arms of the spreader *d*, within the tube of fabric *a*, by means of a suitable clamp, as *e*, is an inwardly extending arm *f* of conducting material which has secured near its inner end an electric lamp socket *g* adapted to receive a lamp. A block of non-conducting material *h* is secured to the outer end of rod *f*, by means of of a bolt which serves as a binding post for a wire *i* leading to one of the terminals of the lamp socket.

To opposite sides of the block *h* are secured guide plates *j*, by means of bolts *w*. The free ends of the plates extend beyond the edge of the block and are cut out on an arc. Adjacent the free edges of the plates *j* are arcuate slots *k*, through which extend spring contacts *l*, *l*, which extend into contact with each other from a pair of conducting plates *x*, *x*, secured respectively to the plates *j*. A wire *m* leading to the second terminal of the lamp socket is connected to one of the conducting plates by means of one of the bolts *w*, which in turn contacts with the other conducting plate *x*.

Adjacent the free ends of guide plates *j*, and outside of the tube of fabric, is adjustably mounted on a standard *o*, a block of insulating material *p*, to which is journalled a wheel of conducting material about the periphery of which are a plurality of pins extending at an angle to the radii of the wheel.

The wheel is spaced from the block $p$ by a block of conducting material $s$, which is connected by a wire $u$ to a binding post $t$, to which in turn is connected a wire $v$ leading to a suitable source of current.

In practice the block $p$ is so adjusted that the pins $r$ will extend through the fabric $a$ between the guide plates $j$, and between the contacts $l$, $l$, forming contact therewith.

In operation, the machine $b$ is grounded in some convenient manner, current will then pass from the source through ground to the machine and into arm $f$ through the spreader, $d$. From arm $f$ current will pass to the lamp through wire $i$, from the lamp the current passes through wire $m$ to contacts $l$, $l$ into the wheel $q$ through pins $r$ and back to ground through the block $s$, wires $u$ and $v$ and the source of current.

The fabric is passed over pins $r$ on wheel $q$ which, as the fabric is taken up by the take-up mechanism, rotates and causes the pins to engage and release the fabric, maintaining contact with contacts $l$, $l$, as will be obvious from an inspection of Figure 3.

If, for any reason, it is undesirable to pass the current through the machine, a pair of wheels $q'$, $q'$ are mounted on opposite sides, respectively, of a block $p'$, as shown in Fig. 4, and an additional set of guide plates and contacts, similar to those described in Figure 3, provided for each of the wheels $q'$, $q'$. Thus one of the wheels $q'$ may be used to introduce the current to the lamp while the other serves to lead it off.

It will now be obvious that in operation the device, in accordance with my invention, includes a light to be operated within the walls of a tubular fabric, without interfering in any way with the passage of fabric from the machine, and thus greatly facilitates the inspection of the fabric.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is—

1. Means for facilitating the inspection of tubular fabrics comprising in combination, with a tube of fabric, a lamp mounted within the tube of fabric, a contact in electrical connection with the lamp positioned within the tube of fabric, a contact positioned without the tube of fabric and means carried by one of said contacts adapted to extend through the wall of the tube of fabric and form an electrical connection with the other contact.

2. Means for facilitating the inspection of tubular fabrics comprising, in combination, with a tube of fabric, a lamp positioned within the tube of fabric, a fixed contact, in electrical connection with the lamp, positioned within the tube of fabric, and a movable contact, in electrical connection with a source of current, positioned without the tube of fabric, said movable contact being provided with a plurality of points adapted to penetrate the fabric and contact with said fixed contact.

3. Means for facilitating the inspection of tubular fabrics, comprising, in combination with a tubular fabric and take up mechanism therefor, a lamp positioned within the zone surrounded by the tubular fabric, a contact, in electrical connection with the lamp, positioned within the tube of fabric, a rotatable contact positioned without the tube of fabric, there being points on the rotatable contact adapted to penetrate the fabric and contact with said first mentioned contact, said last mentioned contact being rotated by the passage of the fabric to the take up mechanism.

4. Means for facilitating the inspection of tubular fabrics, comprising in combination with a tubular fabric, a lamp positioned within the tube of fabric, a fixed contact, in electrical connection with the lamp, within the tube of fabric, a rotatable contact in electrical connection with a source of current positioned without the tube of fabric, and a plurality of pins, extending peripherally from said rotatable contact, and adapted to extend through the fabric and contact with said fixed contact.

5. Means for facilitating the inspection of tubular fabrics, comprising in combination with a tubular fabric, a lamp positioned within the tube of fabric, a fixed contact, in electrical connection with the lamp, within the tube of fabric, a rotatable contact in electrical connection with a source of current positioned without the tube of fabric, and a plurality of pins, extending from the periphery of and at an angle to the radii of said rotatable contact, and adapted to extend through the fabric and contact with said fixed contact.

In testimony of which invention, I have hereunto set my hand, at Philadelphia, Pennsylvania, on this 29th day of August, 1921.

JOSEPH FRANK KOLB.

Witness:
MOLLIE SILVER.