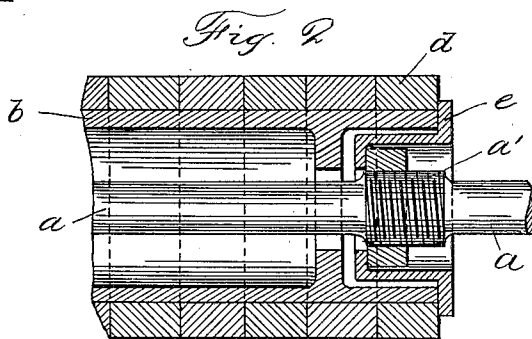
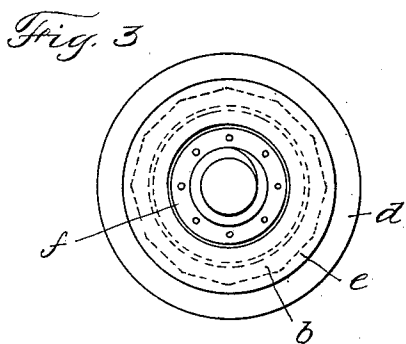
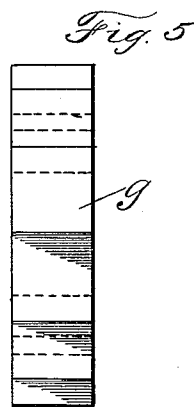
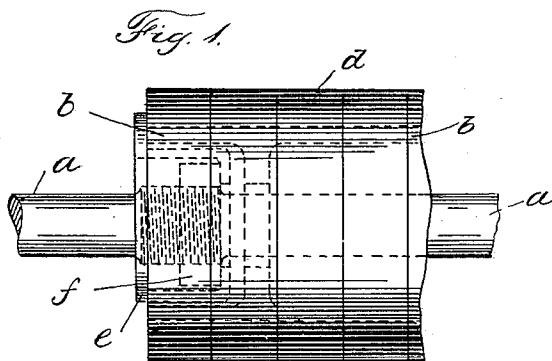
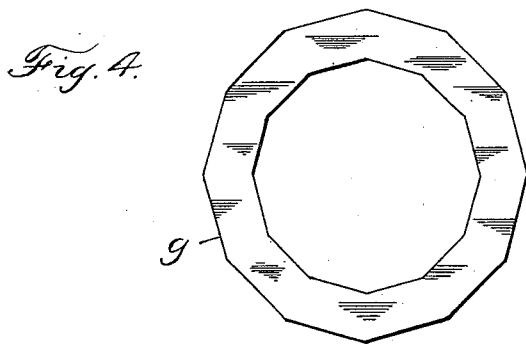
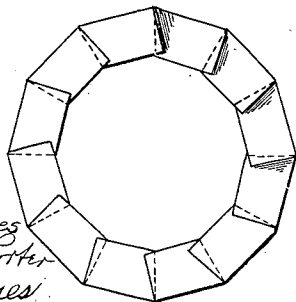


T. H. PEARSE.  
 ROLLER FOR ROLLER GINS.  
 APPLICATION FILED FEB. 15, 1905.

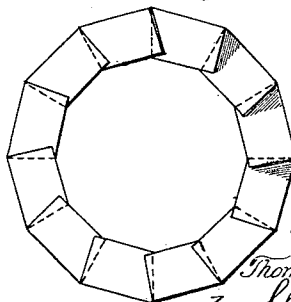


*Fig. 6.*



Witnesses  
 John E. Potter  
 M. A. Jones

*Fig. 7.*



Inventor:  
 Thomas Henry Pearse  
 by Geo. H. Maxwell  
 Attorney.

# UNITED STATES PATENT OFFICE.

THOMAS HENRY PEARSE, OF BOSTON, MASSACHUSETTS.

## ROLLER FOR ROLLER-GINS.

No. 825,344.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed February 15, 1905. Serial No. 245,710.

*To all whom it may concern:*

Be it known that I, THOMAS HENRY PEARSE, a citizen of the United States, and a resident of 89 State street, Boston, in the Commonwealth of Massachusetts, have invented Improvements in and Relating to Rollers for Roller-Gins or Burring Apparatus, of which the following is a specification.

This invention has reference to cotton-gins and wool-burring apparatus of the roller type as distinguished from the saw-gin.

The present invention has for its object the production of an improved covering or operating peripheral surface for such a roller.

It is designed by my invention to produce a roller-covering that shall preserve a rough surface adapted from its elasticity being of a limited extent and from the dissimilar wearing qualities of its component materials to constantly present a bristly face capable of seizing and holding the fibers that are desired to be separated from the seeds or burs and brought within its grasp, and at the same time the roller-surface is sufficiently firm and true to enable it to be brought up to and kept in adjusted position relatively to the under surface of the doctor-blade, with which it has to coöperate throughout its entire length, so that while the tips of the bristly projections are seizing and carrying in the fibers the seeds or burs and solid refuse are not allowed to become embedded in the roller or to pass under the doctor-blade.

The roller-covering material I form of a stiff springy or bristly matter, which I arrange more or less in directions radial to the center of the roll, in use retained by other fabric in such positions and applied over the circumference of the core of the roller and retained thereon by its shape or by a suitable adhesive matter if desirable.

A convenient method of applying the invention is to prepare what I will call, for the purpose of explanation, a "warp" of cotton or other suitable fibrous material and a "weft" of horsehair, and these being woven into a fabric are built up sheet by sheet with oxidized oil, india-rubber, or other suitable agglomerant, and in some cases the whole composition may be pressed and subjected to partial vulcanization.

The details of my invention will more readily be understood by referring to the following description, reference being made to the accompanying drawings, illustrative of a preferred embodiment thereof, and the inven-

tion will be more particularly defined in the claims hereto appended.

Figure 1 shows an elevation of the left-hand portion of a burring or ginning roller with the invention applied. Fig. 2 is a section of the corresponding right-hand portion of such a roller as is delineated in Fig. 1. Fig. 3 is an end view of Fig. 1 looking toward the right hand. Fig. 4 is a side view of a block or annulus of which a series are threaded on an axis to form the roller indicated by Figs. 1 and 2. Fig. 5 is an edge view of Fig. 4. Fig. 6 is a side view of one of the layers or laminae which are superimposed to form a block or annulus, such as is shown in Fig. 4. Fig. 7 shows one of a series of layers or sheets of oxidized-oil "dough," india-rubber, or like composition interposed between each pair of fabric, such as shown by Fig. 6.

*a* indicates the axis; *b*, the hollow metal core of the roller, which core is here shown of twelve-sided configuration externally to conform to the internal configuration of the built-up roller *d*, threaded thereupon in sections until the core of the roller is covered entirely or to the required extent.

*e e* are collars shaped to fit over the ends of the built-up compound roller and of the metal core and to be threaded onto the central axis *a*. These collars are adjustably retained on the axis *a* by nuts *f*, which engage suitable threads formed on the axis *a*, as at *a'*, and the collars *e* in turn serve to keep the whole of the components of the combination in correct relation.

In constructing my new roller I prefer to cut a series of strips or pieces of horsehair and its locking fiber. Each strip I crimp, as indicated by Fig. 6, so as to shape the strip approximately to the conformation of the core-roller, here shown as having twelve equal facial angles, although this form is only one of many available for this purpose. A sufficient number of these folded strips of horsehair fabric and of correspondingly-shaped strips of oxidized-oil "dough" or its equivalent are superimposed, and by pressure in a suitable mold (not shown) of any convenient form usually employed these mixed strips are agglomerated into a block *g*, such as shown by Fig. 4. A series of such blocks *g*, each block made up, as stated, of horsehair fabric and oxidized-oil sheet in alternate layers, are then assembled on the axis and clamped, as stated, and the twelve-sided outer configuration of the roller can be

turned down to a cylindrical figure of circular peripheral section, and from the nature of the construction it will be understood that should any sectional block become damaged or unduly worn such section can be cut out and the adjacent sections closed upon each other to fill the vacancy and a corresponding thickness of fresh sectional block or blocks added at the extremity of the axis, the collar and nut there placed having been removed and replaced as before. The conformation of the strips of horsehair fabric enables me to attain a near approximation to a radial arrangement of the horsehair fibers relatively to the axis *a* in a cheap and simple manner, and the oxidized oil affords a convenient and economical medium for consolidating and securing in position the radial fibers in the rings. The roll, having been formed as described, is then turned up to a true cylindrical surface.

Although I have shown the sectional surface-covering of the roller and its core to be united by the conformation of their contacting faces and the clamping of the collars and nuts on the axis, I can also attain their union by means of keyways and end nuts and cement or either of these alternative means of connection. The number of facial angles may be varied to such particular requirements. The whole face of the covering being then true and even and secured to the roller-foundation, so as to form one piece, with slightly-projecting bristly points of horsehair or whatever fiber they may be composed of, the roller is ready for use. The wear of the locking and holding material being always in excess of the horsehair, the latter is always prominent.

In place of horsehair bristles, cocoanut fiber, or other suitable material may be used for the radial projecting teeth or pin-like parts, and instead of the oxidized oil an equivalent cementitious matter may be used and vul-

canizing or some similar process may be employed to firmly unite the laminae of the woven fabric into a solid sheet impermeable to moisture or climatic influences and the like.

I claim—

1. The herein-described roller for roller-gin and burring apparatus comprising a core having a cylindrical surface-covering made up of section-rings composed of fibrous filaments radially set on end approximately radially of the roller and embedded in a mass mainly composed of an agglomerant such as oxidized oil, the sections being strung upon the core and clamped into a solid covering, substantially as described.

2. The herein-described gin-roller or burring-roller, having a fiber-grasping surface composed of alternating sheets of haircloth and an adherent material such as oxidized oil, agglomerated by compression in a mold into ring-shaped blocks, substantially as described.

3. The herein-described gin-roller or burring-roller, having a fiber-grasping surface composed of a string of compressed ring-shaped blocks, each block built up of alternating sheets of haircloth and oxidized oil, strung upon a core, substantially as described.

4. The herein-described gin-roller or burring-roller, having a fiber-grasping surface composed of a string of compressed ring-shaped blocks, each block built up of alternating sheets of haircloth and an adhesive matter such as oxidized oil, strung upon and secured relatively to an internal core and locked to an axis by locking connections, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

THOMAS HENRY PEARSE.

Witnesses:

CLARENCE ROWLEY.  
E. G. HARRINGTON.