

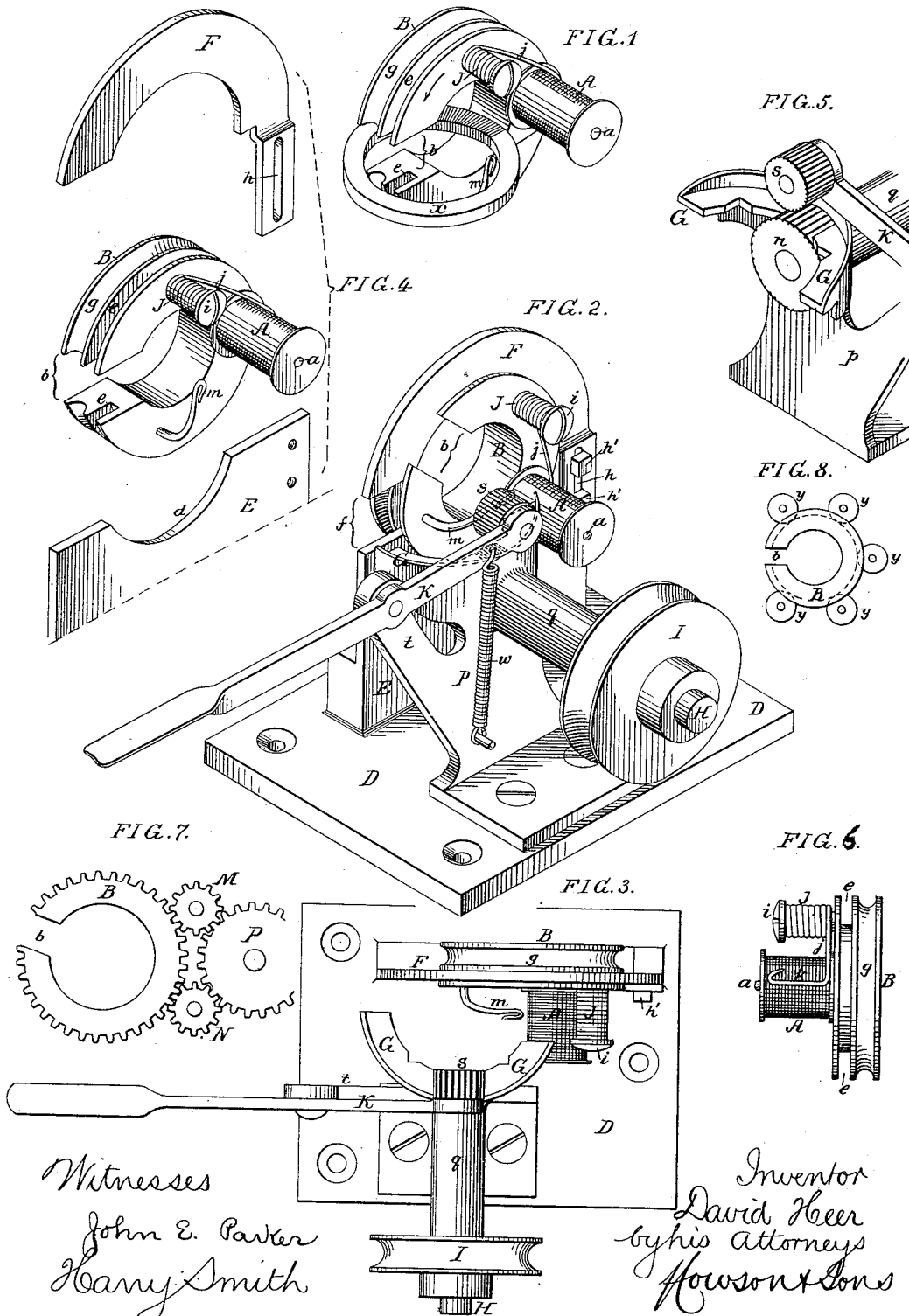
(No Model.)

D. HEER.

MACHINE FOR COVERING RINGS WITH FIBROUS STRANDS.

No. 344,273.

Patented June 22, 1886.



Witnesses

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Harry Smith

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# UNITED STATES PATENT OFFICE

DAVID HEER, OF PHILADELPHIA, PENNSYLVANIA.

## MACHINE FOR COVERING RINGS WITH FIBROUS STRANDS.

SPECIFICATION forming part of Letters Patent No. 344,273, dated June 22, 1886.

Application filed July 11, 1884. Serial No. 137,413. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID HEER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Machines for Covering Rings with Fibrous Strands, of which the following is a specification.

The object of my invention is to construct a machine for covering rings with silk or other  
10 fibrous strands; and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective diagram illustrating the method of covering rings in accordance  
15 with my invention; Fig. 2, a perspective view of an organized machine for carrying out the invention; Fig. 3, a plan view of the same; Fig. 4, a perspective view of the spool-carrier and its bearing, the parts being detached to show their construction; Fig. 5, a  
20 perspective view of the ring supporting and feeding device; Fig. 6, a side view of the spool-holder, its spool, and tension and retaining spring; Fig. 7, a view illustrating the method of driving the spool-holder which is  
25 preferred for accurate work, and Fig. 8 a view of a modified form of bearing for the spool-carrier.

In carrying out my invention the spool A,  
30 on which is wound the strand with which the ring is to be covered, is applied to a pin, *a*, on an annular spool-carrier, B, and in the latter is formed a lateral opening, *b*, through which the ring, *x*, to be covered may be introduced  
35 into the position shown in Fig. 1, this position being such that when the carrier is rotated in the direction of the arrow the spool will be carried through the ring, and thence around the outside of the same, so that the  
40 strand from the spool will be wrapped around the ring, and if the latter is rotated during the winding operation the result will be the complete covering of the ring with the said strand.

In the machine shown in Figs. 2 to 5, D is  
45 a base, at one side of which is a plate, E, the upper edge of the latter having a segmental recess, *d*, for adaptation to a groove, *e*, in the spool-carrier, a segmental plate, F, bolted to the plate E being also adapted to this groove,  
50 and the two serving to form a bearing in which the carrier can turn, the continuity of the

bearing being interrupted at *f*, so as to form an opening coinciding with the lateral opening *b* of the carrier to permit the introduction of the ring *x* into position.

The carrier B has another groove, *g*, for the  
55 reception of a driving-belt, which may pass around any suitable driving-pulley located on that side of the bearing in which the opening *f* is formed.

The plate F has a slot, *h*, for the reception of the confining-bolts *h'*, and the plate can thus be adjusted to compensate for wear.

To a bolt, *i*, on the carrier B is attached one end of a coiled spring, J, the opposite end *j*  
65 of which projects over the spool and is bent outward, so as to form a tension-bar, *k*, bearing on the strand which is wound upon the spool. The arm *j* bears against the inner flange of the spool, and thus serves to prevent  
70 the same from slipping from the pin *a*. (See Fig. 6.) The strand passes from the spool through a hooked guide-finger, *m*, on the carrier, and thence to the ring *x*. The latter is adapted to a segmental guide and support, G,  
75 forming part of a bracket, *p*, secured to the base, this bracket having a bearing, *q*, for a shaft, H, one end of which carries a driving-pulley, I, and the opposite end a serrated feed-wheel, *n*, the upper portion of which is adapted  
80 to an opening in the segmental guide G, as shown in Fig. 5, so that a ring placed in the guide is subjected to the action of this feed-wheel, against which it is pressed by a wheel, *s*, free to turn on a pin carried by the short  
85 arm of a lever, K, hung to an arm, *t*, on the bracket *p*, and acted upon by a spring, *w*, the long arm of the lever being pressed downward, in order to raise the roller *s* and stop the feeding of the ring.

The guide G has a flat bearing for the ring and a flange forming a peripheral bearing  
90 therefor, so that the ring is properly directed through the center of the spool-carrier.

When a belt is used for driving the carrier,  
95 there is a liability of the same to slip, and thus cause irregularity in the covering of the ring; hence when accurate work is required I adopt the method of driving shown in Fig. 7, in which B represents the spool-carrier, having  
100 on the periphery teeth adapted to engage with pinions M and N, so spaced that the opening

*b* in the carrier will not interfere with the steady and continuous driving of the same, one pinion being in gear when the other is in line with the opening. One pinion is preferably driven from the other by an intermediate wheel, *P*; but this is not essential.

The bearing for the spool-carrier may be formed by a number of rollers, *y*, adapted to the groove *e*, as shown in Fig. 8; but the segmental bearing shown in Figs. 2 and 4 is preferred.

When the driving-gear shown in Fig. 7 is employed, the bearing should be such as to properly support the bobbin-carrier *B* and the shafts of the pinions *M* and *N*.

I claim as my invention—

1. The combination of a spool-carrier and its bearing, having lateral openings for the introduction and removal of the ring, means for rotating said carrier, a flanged segmental frame forming at one side of the carrier a horizontal support and peripheral guide for the ring, and a yielding presser, whereby the ring is caused to bear upon said horizontal support without interfering with the ready removal of

said ring laterally from the frame, all substantially as specified.

2. The combination of the spool-carrier and its bearing, having lateral openings for the introduction and removal of a ring, with a segmental guide, *G*, a feed-roll, *n*, adapted to a recess in said guide, and means for rotating said roll and the spool-carrier, all substantially as specified.

3. The combination of a spool-carrier and its bearing, having lateral openings for the introduction and removal of a ring, with thesegmental guide *G*, the feed-roll projecting into a recess therein, the presser-roll *s*, and means for depressing the latter and for rotating the feed-roll and spool-carrier, all substantially as specified.

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

DAVID HEER.

Witnesses:

JOHN E. PARKER,  
HARRY SMITH.