

(No Model.)

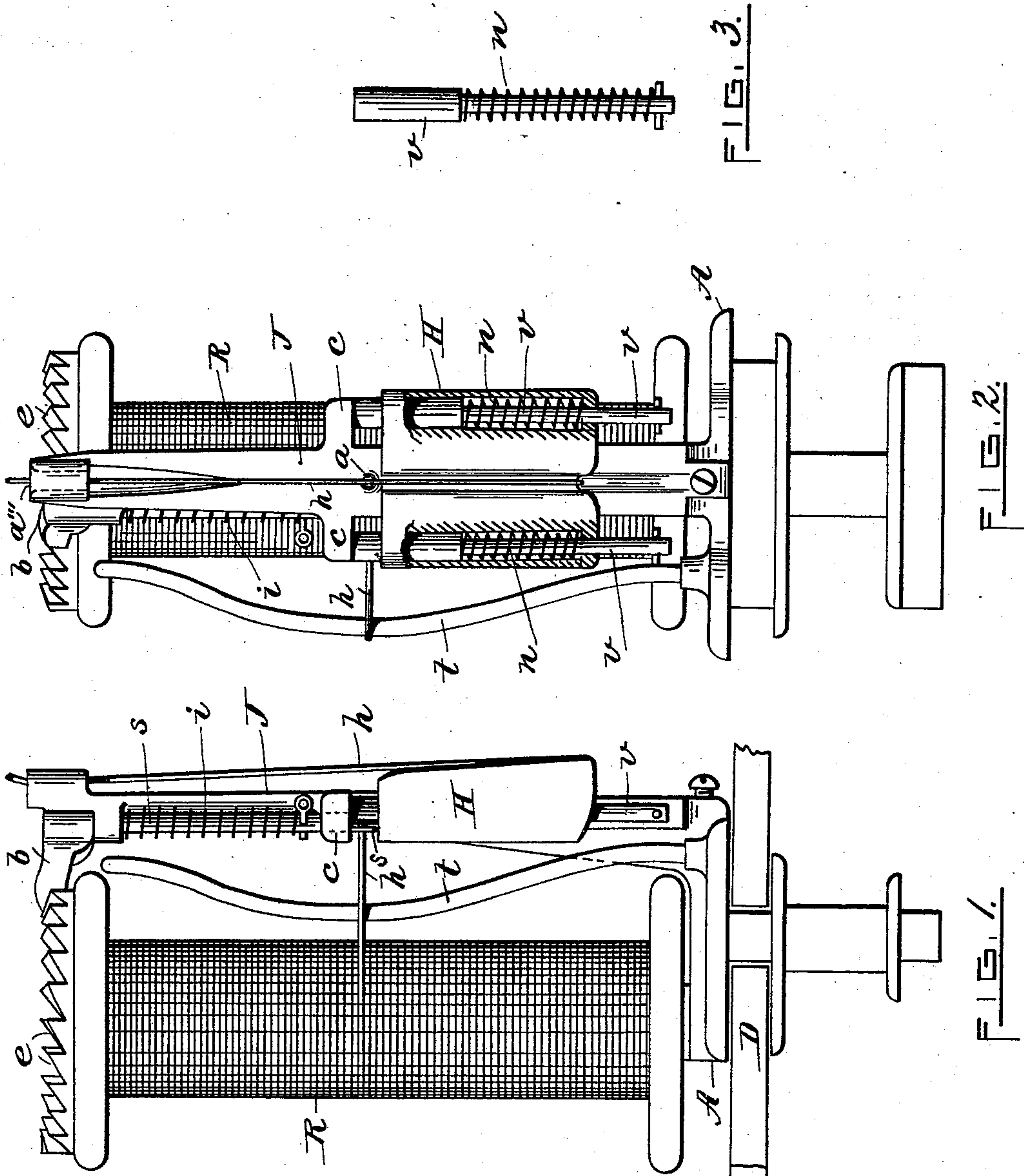
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J. McCahey.

SPOOL CARRIER FOR CORDAGE AND BRAIDING MACHINES.

No. 563,296.

Patented July 7, 1896.



WITNESSES.

Charles J. Hannigan.
L. D. Bush

INVENTOR,

John M. Cahey.
By Benj Arnold
Atty.

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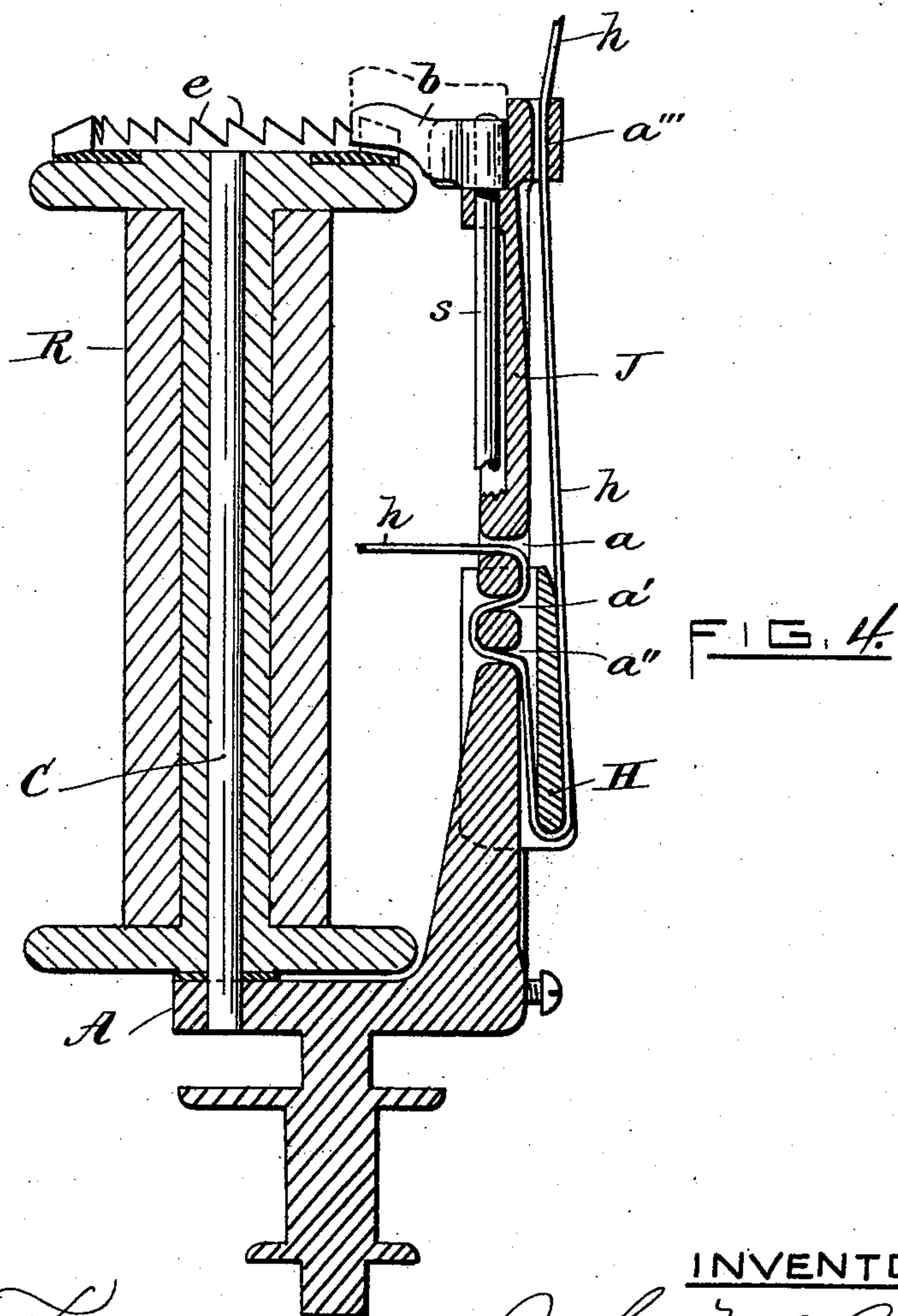
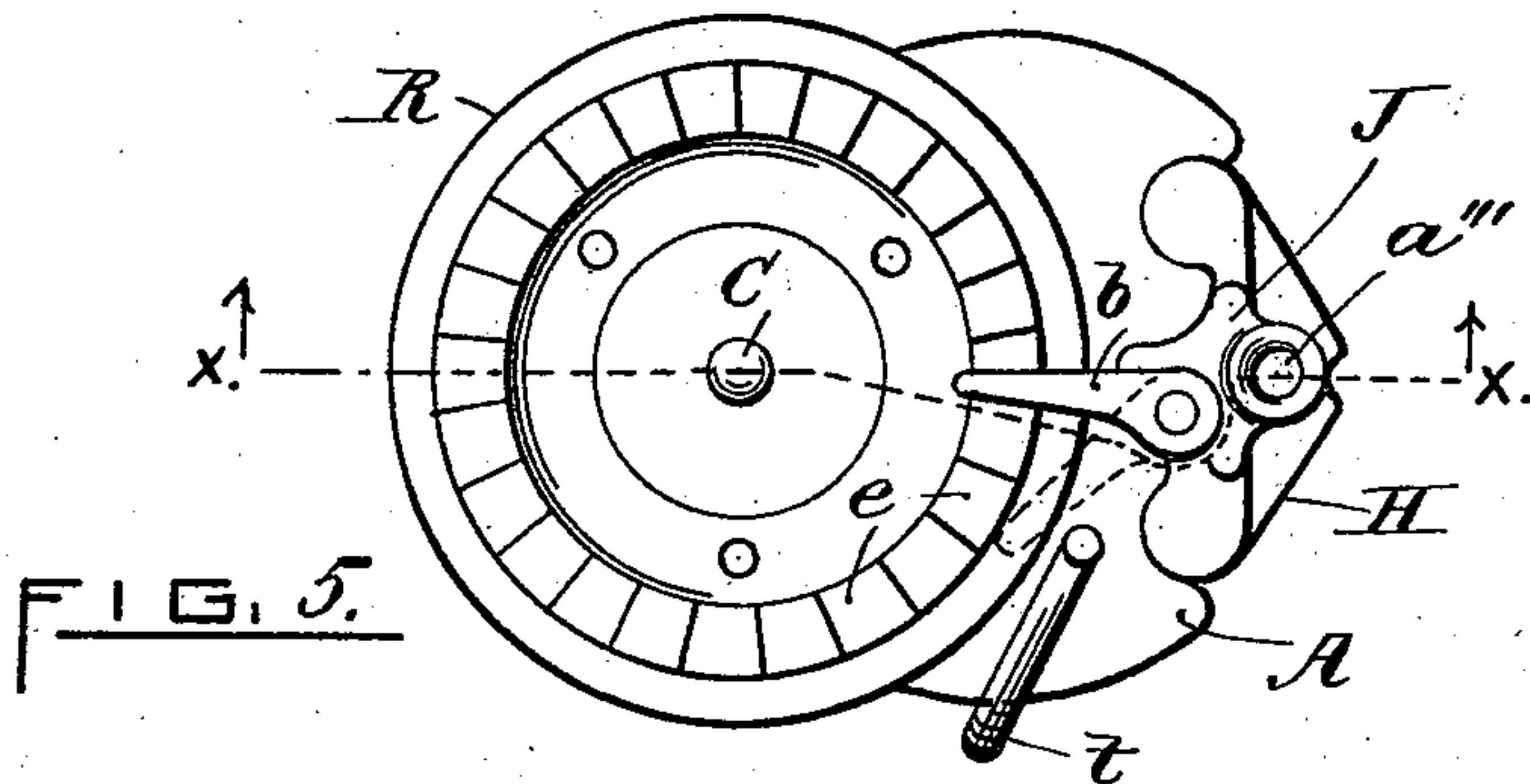
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UNITED STATES PATENT OFFICE.

JOHN McCahey, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE NEW ENGLAND BUTT COMPANY, OF SAME PLACE.

SPOOL-CARRIER FOR CORDAGE AND BRAIDING MACHINES.

SPECIFICATION forming part of Letters Patent No. 563,296, dated July 7, 1896.

Application filed November 25, 1895. Serial No. 570,033. (No model.)

To all whom it may concern:

Be it known that I, JOHN McCahey, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Spool-Carriers for Cordage and Braiding Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to the spool-carriers used on cordage and braiding machines to carry the spools of strand yarn of which the cord is made. It is fully explained and illustrated in this specification and the accompanying drawings.

Figure 1 shows a side elevation of the carrier with a spool in position for use. Fig. 2 is a back elevation of the carrier or the weight side with the back of the weight broken away to show the pins. Fig. 3 shows one of the spring-pins separate from the carrier. Fig. 4 is a vertical cross-section of the carrier on line *x x*, Fig. 5. Fig. 5 shows a top view of the carrier and spool.

The main object of the invention is to lessen the amount of weight necessary for the carriers to carry to keep the proper tension on the strands in laying the cord.

In interlocked cordage-machines the weight for each carrier will range from six to ten pounds as they are usually constructed. This great weight, which greatly limits the speed of the machine and amount of production, is made necessary by reason of the passage of the spool and carrier in around the transfer circles on the race-plate, which slacks up the strand as the carrier approaches the center of the machine, and while the strand is so slacked up, two tight strands are carried over it by other carriers. Then when the slack-carrier returns to the outer circle of the raceway it requires great strain on its strand to draw it straight with the two taut strands over it, so that it will not show a defect in the cord.

The construction is as follows:

A is the foot of the carrier, that slides on race-plate D of the machine.

C is the spindle, that holds the spool R of strand.

J is the standard, that carries the guides and tension devices, of which the weight H is one. A pawl *b* is fastened on the upper end of a vertical rod *s*, held in bearings on the side of the standard J, and engages in the teeth *e e* of the ratchet on the upper end of the spool R. A torsion-spring *i* is placed around the rod *s* with one end fast to the rod and the other end fast to the standard to throw the pawl *b* into engagement with the teeth *e* and to hold the pawl down when not raised by the weight H. The weight H is arranged to slide up and down on the standard J, and has two pins *v v* placed in vertical holes made in the weight, one on each side of the standard J. Each pin *v* is provided with an open spiral spring *n*, the lower end of which rests on a shoulder near the bottom of its hole, and the other end presses against a shoulder on the pin. The pins *v* have holes near their lower ends, which project through the bottom of the weight to receive wire pins to hold them in. The springs *n* push the pins *v* up against two projections *c c*, one on each side of the standard, and consequently push the weight H downward. Guide-holes are made in the standard J to receive the strand *h*, which as it comes from the spool passes over the curved wire *t*, which makes it draw to advantage from a long spool by changing the direction of the draft as the strand comes from near the ends of the spool. From the wire *t* the strand passes through the upper hole *a*, (see Fig. 4,) then back again through the hole *a'*, then down and out again through the hole *a''*, and down under the weight H, and up through the hole *a'''*, in the upper end of the standard J, from whence it passes to the guide (not shown) in the center of the machine, where the cord is laid. It will be seen that the weight H rests in the bight of the strand between the holes *a''* and *a'''* at the top, and the length of the strand drawn down or let up as the weight sinks or rises is twice that of the distance the weight moves. In turning the spool R back to take up slack strand or when changing spools the pawl *b* swings out horizontally, as shown in dotted lines in Fig. 5, but is raised vertically clear

of the teeth (see dotted lines, Fig. 4) when operated by the weight in letting off strand when running. This latter operation is as follows: When the carrier passes in toward
5 the center of the machine, the slack made in the strand is taken up by the falling of the weight H, assisted by the pressure of the springs *n n*, by means of the springs with a
10 obtained a tension of from six to ten pounds or more without increasing perceptibly the centrifugal action of the weight on the carrier, which increase of weight would greatly decrease the speed of the machine. When
15 the tension is sufficient to raise the weight because more strand is needed, the weight pushes up the rod *s* and lifts the pawl *b* out of the teeth *e e*, allowing the spool to turn and let off strand enough to ease the tension,
20 when the pawl will be drawn down into the teeth again by the spring *i*.

Having thus described my improvements, I claim as my invention and desire to secure by Letters Patent—

25 1. In a spool-carrier for the purpose de-

scribed, the combination of a spindle to hold the strand-spool, a standard to carry a weight, side arms on said standard, a weight, springs inclosed in said weight and pressing downward on the weight from said side arms to
30 assist in causing a tension on the strand controlled by the weight, substantially as described.

2. In a carrier for cordage and braiding machines the combination of a spindle to
35 carry a spool, a standard, a rod having a sliding and a turning motion in bearings on said standard a pawl fast on said rod, said pawl having both vertical and horizontal
40 movements to free it from the ratchet-teeth on the spool, and a spring to throw said pawl back into the teeth of the ratchet in either of said directions, with means for making a tension on the strand from the spool, substantially as described.

JOHN McCAHEY.

Witnesses:

BENJ. ARNOLD,
S. J. BUSH.