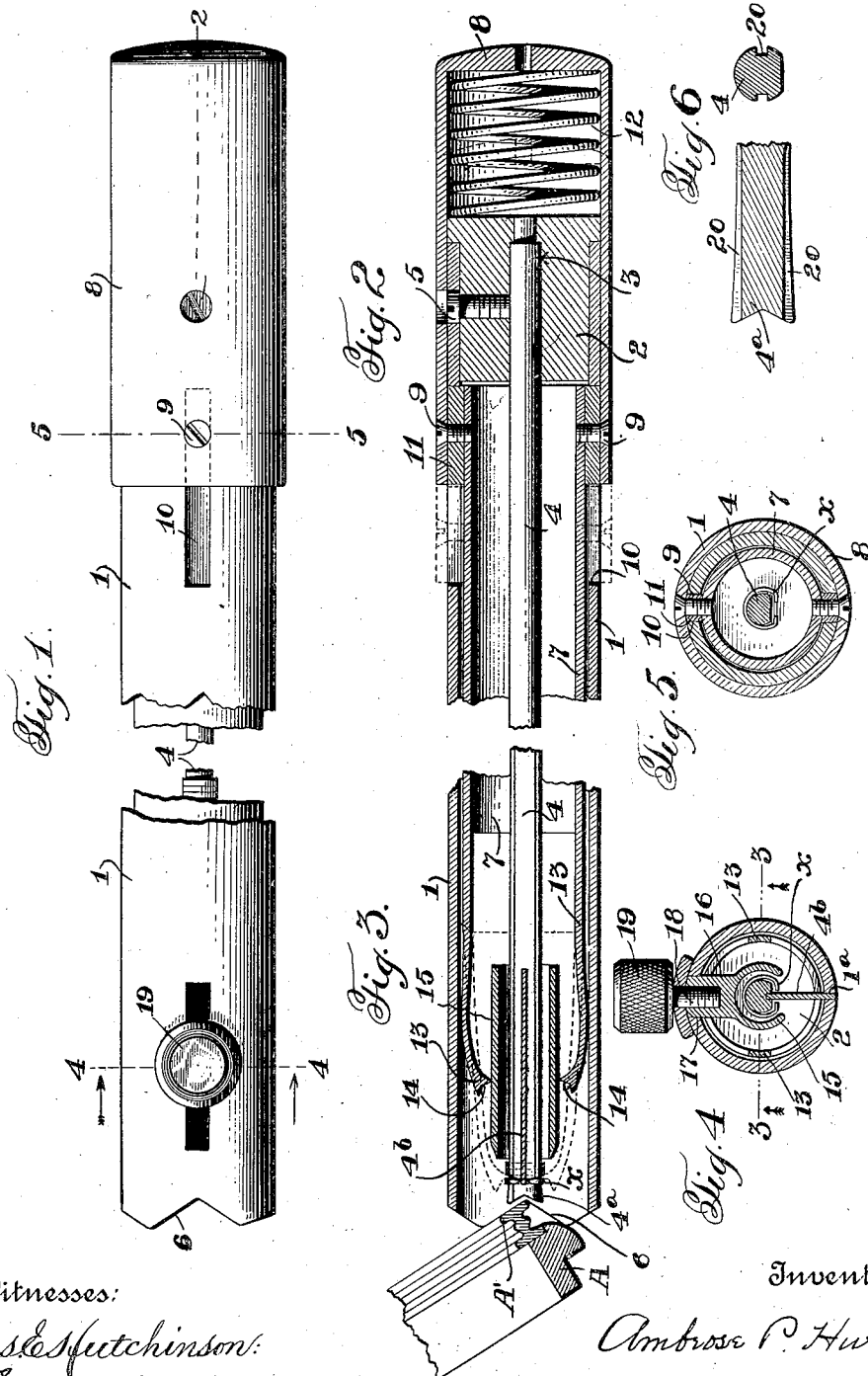


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 DEVICE FOR PLACING TRAVELERS ON RINGS OF SPINNING MACHINES.
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1,110,690.

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UNITED STATES PATENT OFFICE.

AMBROSE P. HURT, OF ANDERSON, SOUTH CAROLINA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HOWARD D. COLMAN, LUTHER L. MILLER, AND HARRY A. SEVERSON, COPARTNERS DOING BUSINESS AT ROCKFORD, ILLINOIS, AS BARBER-COLMAN COMPANY.

DEVICE FOR PLACING TRAVELERS ON RINGS OF SPINNING-MACHINES.

1,110,690.

Specification of Letters Patent. Patented Sept. 15, 1914.

Application filed June 21, 1909. Serial No. 503,494.

To all whom it may concern:

Be it known that I, AMBROSE PETER HURT, a citizen of the United States, residing at Anderson, in the county of Anderson and State of South Carolina, have invented certain new and useful Improvements in Devices for Placing Travelers on Rings of Spinning-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a device for placing travelers on the rings of spinning machines. As is well known, the so-called rings of spinning or twisting machines are provided with what are known in the art as "travelers," the same being small flat wire devices substantially of half circular formation, the end parts being bent toward each other, leaving a space between so that the travelers may embrace the flange of the ring. Heretofore in placing these travelers on the flanged rings, it has been customary to take the same in the fingers and spring them over the flange, on which they are loosely held. Owing to the fact that the travelers are very small, measuring approximately one quarter of an inch in their greatest diameter, it will be readily understood that to properly handle these small devices, much care has had to be exercised on the part of the operator, as they have to be sprung over the retaining flange. To properly place these travelers on the rings, an operator is required to become somewhat expert in the handling of the small devices and, as experience has shown, many of the travelers are dropped and lost, owing to the imperfect methods heretofore employed in applying the same to the ring. It has been the general experience in factories, that the majority of these small travelers will be lost and wasted by the failure of the operator to properly spring them onto the flanged edges of the rings. It is this condition of the art that my present invention is intended to improve and in that particular generally speaking, the invention is designed to effect the placing of the travelers on the rings expeditiously and with accuracy.

The invention generally speaking, comprehends a carrier with means for holding

a multitude of travelers and having means for liberating the travelers consecutively as the same are placed in position for attachment to the ring.

The invention also comprehends a device for applying travelers to a ring which will avoid the necessity of the operator handling the individual travelers in the act of applying the same to the rings.

The invention comprises in its general characteristic, a holder adapted to receive a series of travelers which are arranged to move toward the delivery end of the holder, and an injector or means for forcing the individual travelers from the holder in a manner that they may be sprung onto the flanged edge of the ring.

In the accompanying drawing, I have shown an embodiment of the invention, but desire it understood that in so far as the appended claims are concerned, the invention is not limited to the specific form and arrangement shown and described, as many changes in the general features, special arrangements and specific form of the parts can be made and substituted for those shown without departing from the nature and principle of the invention. In this particular, I wish it understood, that so far as I am now advised, I am the first in this art to ever produce a device which will enable the operator to properly position the travelers on the spinning machine rings in a manner to render the operation simple and effective and to avoid the usual waste of travelers, and therefore I appreciate that the invention can be embodied in structures differing widely from that shown and described and yet come well within the spirit of my invention.

In the accompanying drawings, Figure 1 is an elevation partly broken away of a device embodying the features of my invention; Fig. 2 is a longitudinal central section through the rear part of the device, taken in the plane of dotted line 2 of Fig. 1; Fig. 3 is a longitudinal central section through the forward portion of the device taken in the plane of line 3—3 of Fig. 4; Fig. 4 is a cross-section on line 4—4 of Fig. 1; Fig. 5 is a similar section on line 5—5 of Fig. 1;

Fig. 6 represents respectively a detail longitudinal section and a cross-sectional view of the end of the traveler-carrying rod.

The embodiment of my invention which I have herein shown by way of example, comprises an outer casing 1 in the form of a tube, the rear end of which is closed by means of a plug 2 having a central opening or bore 3 therein. Positioned longitudinally within the casing 1 is a carrier 4 in the form of a rod, which is adapted to slidably support a series of travelers. The rear end of the rod 4 fits within the bore 3 of the plug 2 and is held therein by means of a set screw 5. One side of the rod 4 is preferably flattened, as shown in Figs. 4, 5 and 6, to conform to the outline of the travelers. The forward end of the rod 4 may be held in proper relation to the casing by means of a spline 4^b fixed to the flattened side of the rod near its forward end and adapted to frictionally engage in a slot 1^a in the wall of the casing 1 as shown in Fig. 4. The travelers *x* as they move along the rod 4 "straddle" the spline 4^b. The forward end 4^a of the rod 4 is preferably somewhat enlarged in diameter so that the travelers will not accidentally slip off said end of the rod. The forward end of the casing 1 has recesses or notches 6 in opposite walls thereof to receive the upper portion of a spinning ring A; and the end of the traveler-carrying rod 4 may also be notched or recessed to fit the top flange of said spinning ring.

The means for moving the travelers off the end of the rod 4 and onto the flange A' of the spinning ring A comprises in the present instance a member 7 in the form of a tube lying within the outer casing 1 and surrounding the traveler-carrying rod 4. The member 7 is arranged to be slid longitudinally of the casing 1 by means of a cap 8 fitting about the rear end of the casing 1, said cap being connected with the member 7 by means such as screws 9 extending through the slots 10 in the outer casing 1. Filler pieces 11 may be inserted between the cap 8 and the member 7. A coiled spring 12 positioned within the cap 8 is arranged to bear at one end upon the end wall of the cap and at its other end against the plug 2, said spring tending to hold the cap 8 and therefore the member 7 in the rearmost position. The forward end of the member 7 is provided with a pair of spring arms 13 having teeth 14 at their forward ends adapted to engage the rearmost traveler on the rod 4 and push said traveler over the enlarged end 4^a of the rod 4 and spring it onto the flange A' of the spinning ring. By reference to Fig. 3 it may be seen that the position of the travelers *x* upon the rod 4, and the relation of the forward end of said rod to the flange A' is such that when a traveler is pushed off the end of the rod 4 the ends of

the traveler "straddle" the first edge of the flange A', so that by further movement of the ejecting means the traveler will be sprung over the farther edge of the flange A'. A guard member 15 is adapted to partially surround the forward end of the rod 4, and serves to raise the teeth 14 out of engagement with the travelers upon the rearward movement of the member 7. The guard member 15 may be adjustably supported in any suitable way, as for instance by providing a shank 16 extending through a slot 17 in the casing 1, a screw 18 having a nut 19 thereon being adapted to clamp the guard member 15 in proper position upon the casing 1. The guard member 15 may be fixed upon the casing with its forward edge in proper position to permit the teeth 14 in their forward movement to engage only the foremost traveler upon the rod, the position of said guard member depending upon the size of travelers being handled. The forward edge of the guard member 15 is preferably beveled, and the underside of the teeth 14 may be rounded so that said teeth may be more easily raised in their rearward movement out of engagement with the travelers. The enlarged end 4^a of the traveler carrying rod 4 may have grooves 20 therein, adapted to receive the teeth 14 of the spring arms 13 carried by the slidable member 7 so that said teeth may more efficiently engage the travelers in forcing them off the rod 4.

In loading the device with travelers, the set-screw 5 may be loosened and the rod 4 withdrawn through the forward end of the casing 1. After a suitable number of travelers have been strung upon the rod it is replaced in the casing and the set screw 5 tightened against the rear end or shank thereof. Another manner of loading the device is to provide a feed bar adapted to carry a series of travelers, one end of said bar being of substantially the same cross-section as the enlarged end 4^a of the carrier rod 4. When the said ends of the feed bar and the carrier have been properly associated, the travelers may be quickly and easily slid from the feed bar onto the carrier rod.

It will be understood that carrier rods may be provided having bodies of different sizes to accommodate travelers of various sizes, the shank portion of the rods remaining the same size to fit the bore 3.

In the use of the device, the recessed forward end thereof is fitted upon the edge of the spinning ring, and the cap 8 pushed forward to carry the teeth 14 off the forward end of the guard plate 15 and into engagement with the foremost traveler upon the rod 4. In their continuing movement, the teeth 14, as hereinbefore stated, push the foremost traveler off the enlarged end of the rod, the ends of the traveler passing

at opposite sides of the outstanding flange and the traveler being finally sprung over the opposite end of said flange.

I claim as my invention:

5 1. In a device for placing travelers on the rings of spinning machines, in combination, a body comprising a portion shaped to engage the ring, a carrier within said body adapted to slidably support a series of
10 travelers, the discharge end of said carrier being arranged close to the ring-engaging portion, and means adapted to engage a traveler on said carrier and spring it onto the flange of the spinning ring, the said
15 parts being so related that said means first causes the traveler to straddle the nearer edge of said flange and then springs the traveler over the farther edge of said flange.

2. In a device for placing travelers on the
20 rings of spinning machines, the combination of a hollow casing carrying a portion shaped to engage the ring, a rod disposed longitudinally within said casing and adapted to slidably support a series of travelers,
25 the discharge end of said rod being arranged close to the ring-engaging portion, and means adapted to engage the foremost traveler of said series and move the traveler into position to first straddle the nearer edge
30 of the spinning ring flange, and then spring over the farther edge of said flange.

3. In a device for placing travelers, the combination of a tubular casing having a
35 portion shaped to engage a spinning ring, a rod disposed longitudinally within said casing and adapted to slidably support a series of travelers, a spline extending along said rod and engaging the casing, the travelers
40 straddling said spline, and means slidably mounted in said casing and adapted to engage the foremost traveler on said rod and force it onto the flange of the spinning ring.

4. A device for placing travelers on spinning rings, comprising means for obliquely
45 presenting a traveler to a spinning ring, and means to force the traveler onto the ring while so presented.

5. A device for placing travelers on spinning rings, comprising means for supporting
50 a traveler adjacent to a ring and in a plane inclined to the horizontal, and means to force the traveler onto the ring while so supported.

6. In a device for placing travelers upon
55 the rings of spinning frames, the combination of an outer casing adapted to engage a ring, a traveler-carrying rod within said casing, the discharge end of said rod being close to the ring-engaging portion of the casing,
60 and means carried by said casing and slidable longitudinally of said rod, said means being adapted to engage a traveler and move it off the end of said rod and onto the spinning ring.

7. In a traveler-placing device, the com-

bination of an outer casing having a recess in its forward end adapted to receive a spinning ring, a traveler-carrier extending longitudinally within said casing, a member
70 slidable longitudinally of said carrier within said casing, said member being adapted to engage a traveler and force it from said carrier and onto a spinning ring, and means outside of said casing adapted to operate said member.

8. In a device for placing travelers, the combination of an outer casing having a
75 portion adjacent its forward end adapted to fit against a spinning ring, a carrier within said casing adapted to hold a plurality of travelers, and means slidable longitudinally of said carrier and operable from without said casing to force a traveler from said carrier onto the spinning
80 ring.

9. In a device for placing travelers, the combination of a tubular casing, a rod extending longitudinally within said casing and adapted to slidably support a series
85 of travelers, a member slidable within said casing and longitudinally of said rod, said member having teeth adapted to engage a traveler and force it from said rod and onto a spinning ring, and means without said casing for sliding said member.

10. In a device for placing travelers, the combination of a tubular casing, a rod positioned longitudinally within said casing and adapted to slidably support a series of
90 travelers, a tubular member surrounding said rod within said casing, toothed arms at the forward end of said member adapted to engage a traveler and force it from said rod onto the spinning ring, a cap surrounding
95 the rear end of said casing, said casing having a slot therein and means extending through said slot and connecting said cap with said member whereby said member may be slid to eject a traveler.

11. A device for placing travelers on spinning rings, comprising a rod adapted to
100 carry a traveler, means for supporting the rod obliquely with relation to a ring and with its lower end close to the ring, and means to force a traveler off said rod and onto the ring while in such position.

12. A device for placing travelers on spinning rings, comprising means for successively presenting the travelers adjacent to
105 one flange of a ring, and means engaging the foremost travelers successively for causing the traveler-arms to straddle the mentioned flange and for springing the upper traveler-arm over the other flange of the ring.

13. In a device for placing travelers, the combination of a rod adapted to slidably support a series of travelers, the forward end of said rod being recessed to receive the
115 flange of a spinning ring, and means slidable

longitudinally of said rod and adapted to force a traveler off said end and onto said flange.

14. In a device for placing travelers, the combination of a rod adapted to slidably support a series of travelers, a member slidable longitudinally of said rod, a spring-tooth carried by said member and adapted to engage a traveler and spring it onto the flange of a spinning ring, and a member adjacent said rod adapted normally to hold said spring tooth out of position to engage a traveler.

15. In a device for placing travelers, the combination of a tubular casing, a rod disposed longitudinally within said casing and adapted to slidably support a series of travelers, the forward end of said rod being enlarged and being recessed to receive the flange of a spinning ring, a member slidable longitudinally within said casing, and a pair of spring-toothed members carried by the last mentioned member, said members being adapted to engage a traveler and force it over said enlarged end of the rod and onto the spinning ring flange, said enlarged end having grooves therein in which said toothed members travel.

16. In a device for placing travelers, the combination of a tubular casing having its forward end recessed to fit against a spinning ring, a plug closing the rear end of said casing, a traveler-carrying rod within said casing, and having its rear end mounted in said plug, a tubular member slidably mounted within said casing and surrounding said rod, spring-toothed members at the forward end of the last mentioned member adapted to force a traveler off said rod and onto the flange of the spinning ring, and means for reciprocating the first mentioned member, comprising a cap surrounding the rear end of said casing, and connections between said cap and said member.

17. In a traveler-placing device, the combination of a rod adapted to slidably support a series of travelers, a spring-pressed toothed member adapted to engage a trav-

eler and move it off the end of said rod and onto the flange of a spinning ring, and a guard member positioned between said rod and said toothed member, the said guard member being adjustably mounted to position its forward edge so that said toothed member may in its reciprocation move off said forward edge and engage a single traveler.

18. In a traveler-placing device, the combination of a casing notched to fit upon a spinning ring, a carrier within said casing adapted to slidably support a series of travelers, said carrier conforming in cross-section to the shape of the travelers, the discharge end of the carrier being close to the notched portion of the casing, and means slidably mounted in the casing for ejecting a traveler.

19. A device for applying travelers to spinning rings, comprising a body having a tip recessed to engage the flange of a ring, a carrier to supply travelers one by one adjacent the recess of the tip, and a pusher for springing the traveler adjacent the tip over the top of the ring.

20. A device for applying travelers to spinning rings, comprising a carrier for holding a plurality of travelers, and means adapted for removing the foremost of said travelers from said carrier, said removing means being so constructed that it may apply said traveler to a spinning ring as it removes it from said carrier.

21. A device for placing travelers on spinning rings, comprising means for supporting a traveler with the ends of the arms adjacent to one flange of a ring, and means for moving one of the traveler-arms under said flange and for springing the other traveler-arm over the other flange of the ring.

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

AMBROSE P. HURT.

Witnesses:

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