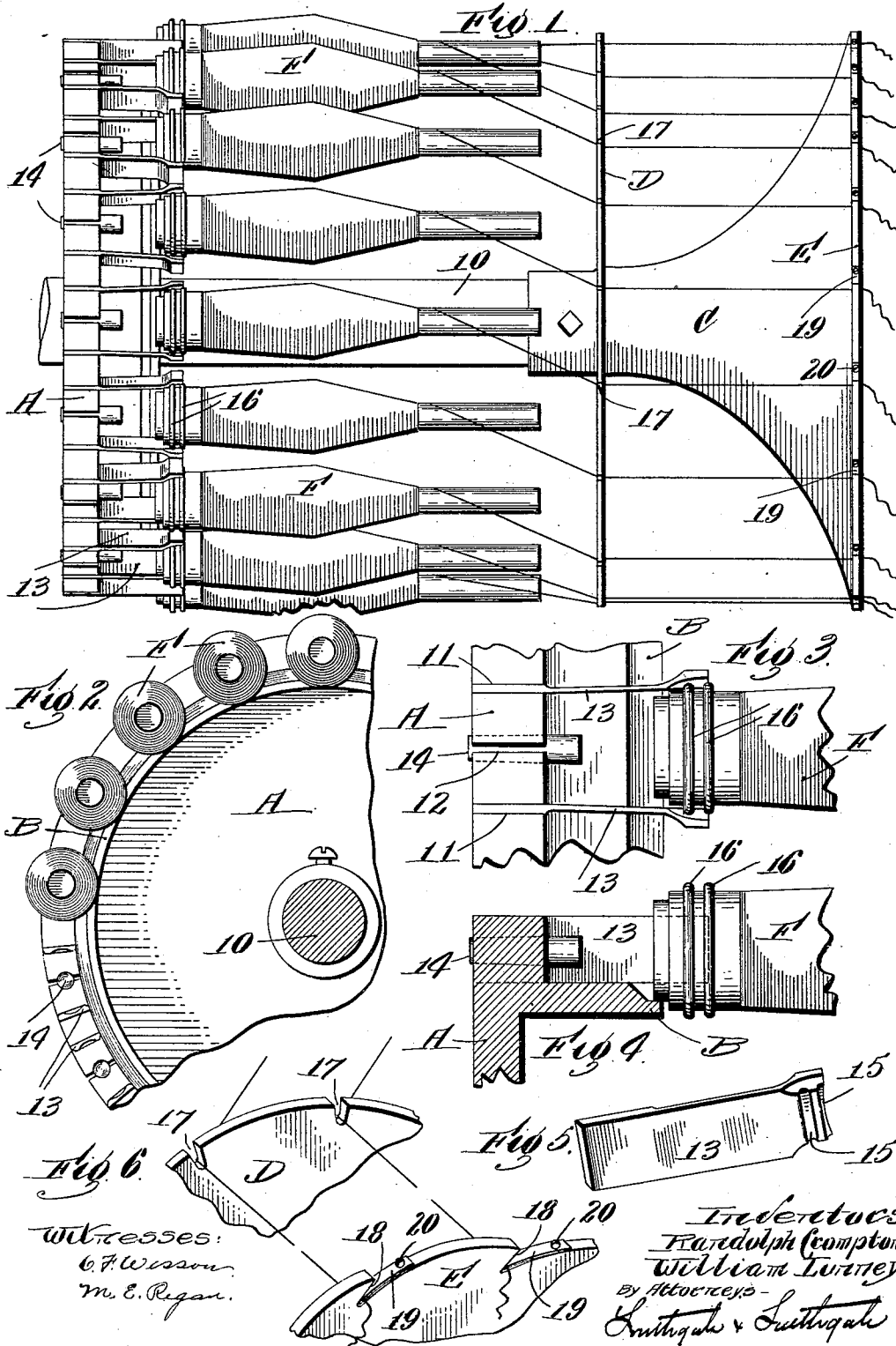


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BOBBIN HOPPER FOR FILLING CHANGING LOOMS.
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1,018,168.

Patented Feb. 20, 1912.



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UNITED STATES PATENT OFFICE.

RANDOLPH CROMPTON AND WILLIAM LUNNEY, OF WORCESTER, MASSACHUSETTS,
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BOBBIN-HOPPER FOR FILLING-CHANGING LOOMS.

1,018,168.

Specification of Letters Patent.

Patented Feb. 20, 1912.

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To all whom it may concern:

Be it known that we, RANDOLPH CROMPTON and WILLIAM LUNNEY, citizens of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Bobbin-Hopper for Filling-Changing Looms, of which the following is a specification.

10 This invention relates to the bobbin hoppers or magazines of automatic filling-changing looms. In looms of this class a series or number of filling bobbins are placed in a rotary hopper or magazine, and actuating mechanism is provided so that when the thread on the bobbin in the shuttle is exhausted, or when the same is broken or deranged, the bobbin in the shuttle is automatically ejected from the shuttle and a new bobbin is taken from the hopper or magazine and placed in the shuttle. In placing the bobbins in the hopper or magazine, it is essential that each bobbin should be held accurately in position, but so that the same can be easily detached when it is to be taken from the hopper or magazine and placed in the shuttle. To accomplish this result, we provide a rotary hopper or magazine in which the bobbins are held at one end only by an improved holding device. The improved holding device consists of a circular plate having a flange for properly positioning the bobbins, which flange has clamping or fastening pieces for the bobbins inserted and held in said plate in a simple and peculiar manner, as hereinafter described.

In the ordinary form of hopper or magazine, the same is provided with a central knob upon which the ends of the threads of the filling are wound as the bobbins are placed in position, so that when a new bobbin is called into position, the end of the filling will be held. This central knob has several draw-backs, as the threads from all the bobbins have to be wound upon the same, there are apt to be snarls or kinks, and as said central knob does not provide an absolutely accurate and reliable means for holding the ends of the filling threads. To overcome these objections, we provide the hopper or magazine with a supplemental plate which has a series of notches, one for each bobbin, and provide a thread holding device in each

of said notches so that each filling is separately and independently held.

The invention further consists of the several advantageous points of construction hereinafter described, and referred to in the claims.

The invention is illustrated in the accompanying drawing, in which,

Figure 1 is an end elevation of our improved bobbin hopper or magazine. Fig. 2 is a partial end elevation of the holding plate for the bobbins. Fig. 3 is a plan of one of the bobbin clamping or holding devices. Fig. 4 is a sectional elevation of the same. Fig. 5 is a perspective view of one of the spring-clamping or fastening pieces, and Fig. 6 is a partial perspective view illustrating the construction of a thread clamping or holding mechanism.

Referring to the drawing and in detail, A designates a circular plate having a projecting annular flange B. This plate is secured upon a shaft 10 which constitutes the support for the hopper or magazine, and which is revolved in any of the usual ways. The periphery of the plate A is sawed or cut open in two places, as at 11, at equal distances from the center with respect to the places where each bobbin is to come, and is also cut open centrally, as at 12, with respect to said place. A tapered hole is bored through the plate A through each cut 12. Spring clamping or fastening pieces 13 are placed in each cut 11, and a tapered pin 14 is driven into each of said holes 12, thus securely clamping the spring clamping pieces 13 in place. The ends of the spring clamping pieces are formed with two grooves 15—15, and two spring clamping pieces 13—13 are used for each bobbin and are placed in position to face each other. Each bobbin or cop F of filling is provided with two rings 16—16 on its butt at a distance apart equal to the distance between the grooves 15—15. This provides a very simple and accurate means for holding the bobbins in position.

When it is desired to place a bobbin in the magazine the same is simply snapped in place between two spring clamping arms 13—13 so that the rings 16—16 will engage the grooves 15—15 of said spring arms. The flange B forms a stop for properly

positioning the bobbins in the clamping arms.

A hub C is secured on the end of the shaft. This hub is provided with two flanges D and E. The flange D is provided with a series of notches 17. These notches 17 are set to come in between the bobbins, so that when a thread is pulled off of a bobbin the same will pass off on an incline to prevent the untwisting or unwinding from the bobbin. The flange E is provided with V-shaped notches 18, or notches shaped something like the notches used to form saw or ratchet teeth. A flat wire spring 19 is secured by a screw 20 to the lower side of each notch. By this arrangement a filling thread can be drawn into a V-shaped notch 18 and then snapped or drawn under the spring 19, which will hold the same securely in position. In this way each thread can be independently, quickly, and accurately nipped or held in position.

By these points of construction a magazine or hopper of advantageous construction is provided.

The details of construction herein shown and described may be greatly varied by a skilled mechanic without departing from the scope of our invention as expressed in the claims.

Having thus fully described our invention, what we do claim and desire to secure by Letters Patent is:—

1. As an article of manufacture, a bobbin hopper or magazine having a plate which is provided with slots arranged in pairs, and a spring clamping arm removably held in each slot and extending substantially at right angles to the plane of the plate, said pair of clamping arms being adapted to hold a bobbin between them.

2. A bobbin hopper or magazine having a plate which is sawed or cut open, spring clamping arms placed in said cuts and projecting laterally therefrom, and means for removably clamping the clamping arms in said cuts.

3. A bobbin hopper or magazine having a plate provided with a circular flange projecting at right-angles to the plate and having means for holding the bobbins entirely on one side of the plate, the edge of said flange projecting under the bobbins and acting as a stop to limit and position them.

4. A bobbin hopper or magazine provided with notches corresponding to the bobbins, and means located in said notches for holding the filling threads in the notches.

5. A bobbin hopper or magazine comprising a plate or flange provided with notches, and means within the surface of said plate or flange for holding the filling threads in the notches.

6. A bobbin hopper or magazine having a flange provided with V-shaped notches corresponding to the bobbins, and flat springs secured in the notches to hold the filling threads.

7. A bobbin hopper or magazine having a flange provided with V-shaped notches, and means contained within the surface of said flange for holding the filling threads in said V-shaped notches.

8. As an article of manufacture, a bobbin hopper or magazine comprising a plate having resilient clamping arms for the bobbins extending at right angles from the plate, and means on the plate for removably holding said arms in position.

9. As an article of manufacture, a bobbin hopper or magazine having a plate, resilient clamping arms, and means located within the surfaces of said plate for removably holding said arms in position to engage and hold the bobbins.

In testimony whereof we have hereunto set our hands, in the presence of two subscribing witnesses.

RANDOLPH CROMPTON.
WILLIAM LUNNEY.

Witnesses:

EUGENE A. SISSON,
LOUIS W. SOUTHGATE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."