

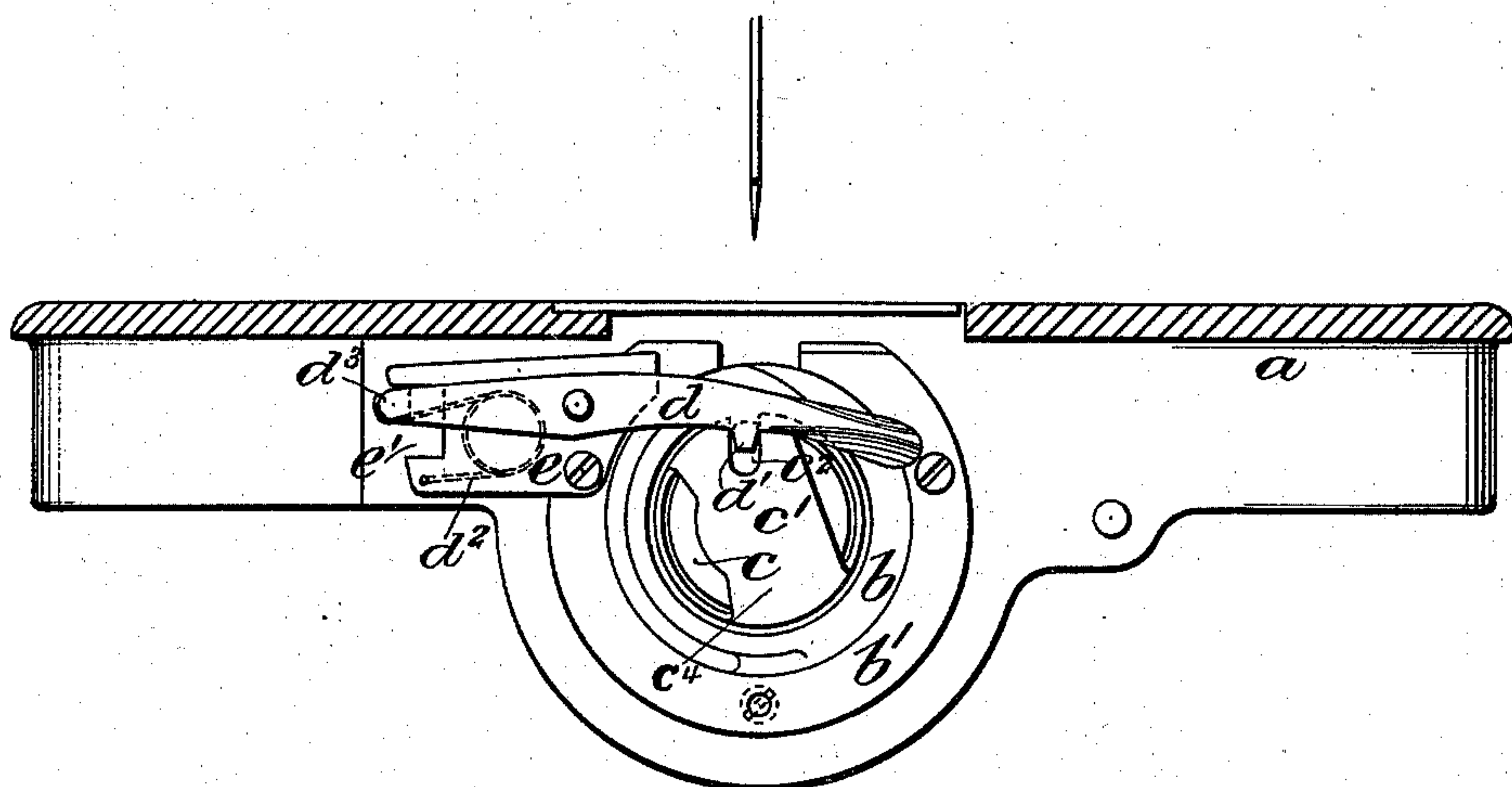
(No Model.)

W. A. MACK.  
SEWING MACHINE.

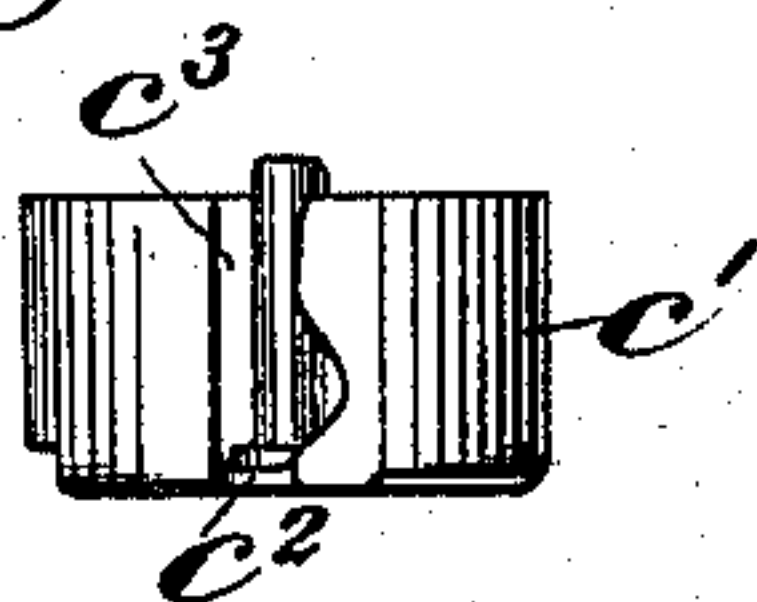
No. 559,493.

Patented May 5, 1896.

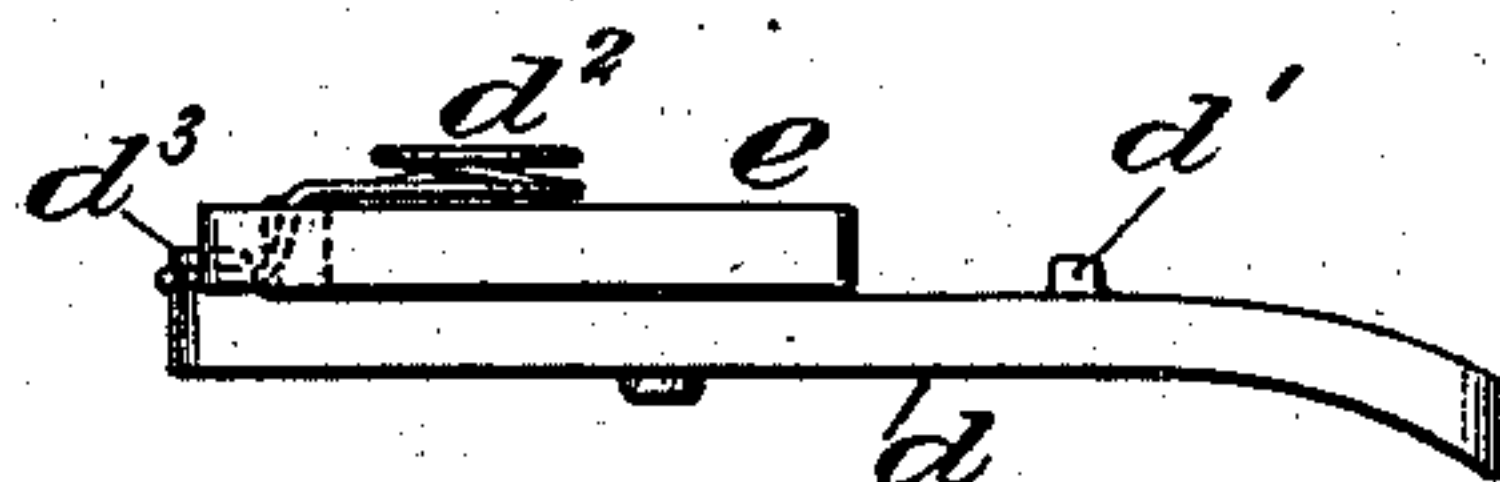
*Fig. 1.*



*Fig. 1a.*



*Fig. 2.*



*Witnesses:-*

*D. H. Haywood*  
*A. L. Hayes.*

*Inventor:-*

*William A. Mack*  
*by Chas. F. Darr*  
*his Atty.*



# UNITED STATES PATENT OFFICE.

WILLIAM A. MACK, OF NORWALK, OHIO, ASSIGNOR TO THE STANDARD SEWING MACHINE COMPANY, OF OHIO.

## SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,493, dated May 5, 1896.

Original application filed February 5, 1891, Serial No. 380,304. Divided and this application filed April 1, 1893. Serial No. 468,637. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. MACK, a citizen of the United States, and a resident of the city of Norwalk, county of Huron, and State of Ohio, have invented new and useful Improvements in Sewing-Machines, of which the following description, taken in connection with the drawings herewith accompanying, is a specification.

My present invention, which forms a division of an application of mine now pending, filed February 5, 1891, Serial No. 380,304, relates to sewing-machines of the rotary-shuttle class; and it consists in an improved device or mechanism for guiding and retaining the bobbin and its case in proper position within the shuttle, as will hereinafter be described in detail, and pointed out in the claims.

Referring to the drawings, Figure 1 represents an end view of the bed-plate of a sewing-machine having my improved mechanism in proper position thereon. Fig. 2 is a top view of the bobbin-retaining device detached from position on the bed-plate. Fig. 1<sup>a</sup> represents a plan view of the bobbin-case removed from its position in the shuttle.

To explain in detail, *a* represents the bed-plate of the machine; *b*, the shuttle; *b'*, the shuttle-raceway casement; *c*, the bobbin, and *c'* the bobbin-case. The latter, in the present instance shown, consists of a cylindrical shell having a face-plate *c'*, which latter is provided with a centrally-located spindle, which, when the case is inserted into the shuttle, is adapted to extend within the hollow spindle in the latter, on which the bobbin is located, and thus allow movement of the shuttle and bobbin, while the bobbin-case remains stationary.

The particular construction of the above-mentioned parts as set forth is not of my present invention, however, and will not be described in detail herein.

According to my invention the bobbin-case, which is adapted to be removably held in position within the shuttle by a retainer *d*, is provided, in the present instance shown, with an elongated opening *c*<sup>3</sup> extending across its periphery, forming a guideway, and a short

radial groove *c*<sup>2</sup> in its face extending to said peripheral guideway and forming a seat, which said guideway and seat are adapted to receive a projection on the retainer *d*, whereby the case is guided to its proper and operative position when inserted into the shuttle and held from rotary movement in a manner as will be described.

The retainer *d* consists of a pivoted lever, which is supported, in the present instance shown, upon a plate or block *e*, secured to the shuttle-race casement and is normally held with one end in a position to engage with the face of the case, as shown in Fig. 1, to retain the latter within the shuttle. The case-engaging end of said retainer is movably held in such normal position by means of a spring *d*<sup>2</sup> acting upon its opposite end, as shown.

The retainer *d* is provided with a projection *d'* on its under side which is adapted to extend into the said peripheral guideway *c*<sup>3</sup> in the bobbin-case when the latter is being withdrawn from or entered into its position in the shuttle, in order that the case will necessarily be guided to its operative position when placed in said shuttle. The retainer is adapted to be raised from engagement with the face of the case to allow for the removal or insertion of the latter, but is limited in such upward movement in a manner as will be described in order to prevent the projection *d'* thereof from being withdrawn from the said peripheral guideway *c*<sup>3</sup> in the bobbin-case when the latter is being removed from or inserted into the shuttle, as described. The movement of the retainer, which also becomes a guide by reason of the construction as described, is limited by a projection *d*<sup>3</sup> on its rear side which extends within a slot *e'*, formed in the supporting-plate *e*, and engages with the opposite walls thereof to limit the movement of the retainer, as described.

The projection *d'* on the retainer *d* extends beyond the edge of the latter on the rear side thereof, as shown in Fig. 2, to form a projection to extend into the said seat *c*<sup>2</sup> in the face of the case when the retainer is in its normal retaining position in order to hold the case from rotary movement.



By means of the construction above described it will be readily understood that the bobbin-case, when inserted into the shuttle, will be necessarily guided to and held in its stationary operative position.

One end of the lever or retainer *d* projects slightly outward from the face of the case and is of sufficient length to form a convenient handle to enable the same to be easily operated.

Having thus set forth my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a sewing-machine, the combination with the shuttle, of a bobbin-case provided with a guideway extending across its periphery, a combined retainer and guide for the bobbin-case provided with a projection located in a position to extend into the said guideway in the bobbin-case when the latter, with its inclosed bobbin, is being removed from, or inserted into, the shuttle, means to hold said retainer normally in a position to retain said case in the shuttle, and means to limit the movement of said retainer to prevent the projection thereof from being withdrawn from said guideway when the retainer is operated to enable the removal or insertion

of said case, substantially as described and for the purpose set forth.

2. In a sewing-machine, the combination with the shuttle, of a bobbin-case provided with a guideway extending across its periphery and a radial groove in its face connecting with said guideway, a combined retainer and guide for the bobbin-case consisting of a pivoted lever provided with a projection located in a position to extend into the said guideway in the bobbin-case when the latter, with its inclosed bobbin, is being inserted into the shuttle, a spring to hold said retainer normally in a position to retain said bobbin-case in the shuttle and with the projection thereon extending into the said radial groove in the bobbin-case, and means to limit the movement of said retainer to prevent the projection thereof from being withdrawn from said guideway in the bobbin-case when the retainer is operated to enable the insertion or removal of said case, substantially as described and for the purpose set forth.

WILLIAM A. MACK.

Witnesses:

EDWARD L. DAY,  
GEO. P. SMITH.