No. 722,821. PATENTED MAR. 17, 1903.

G. B. & E. DENNIS.

TWISTING MACHINE.

APPLICATION FILED NOV. 28, 1902.

NO MODEL.

Fig. 1.

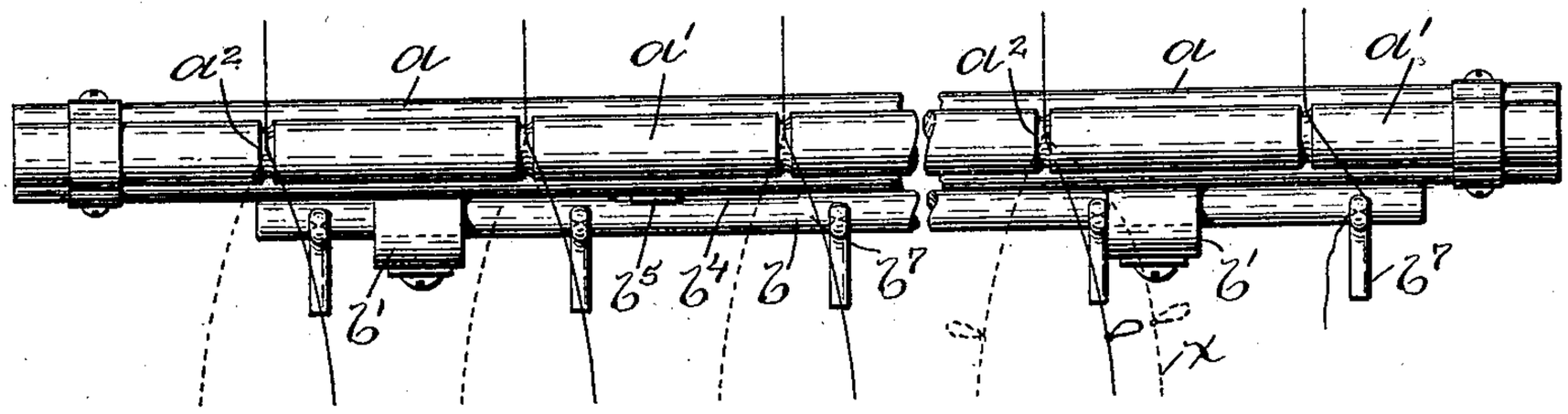


Fig. 2.

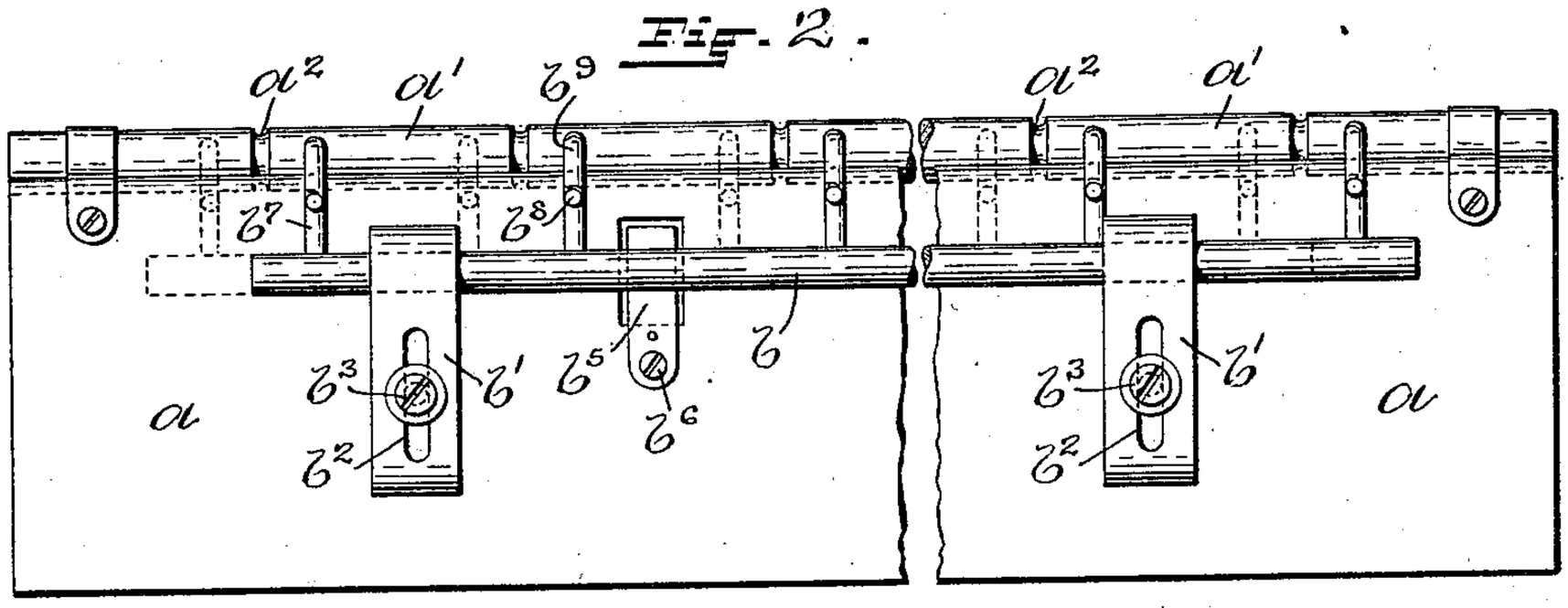


Fig. 3.

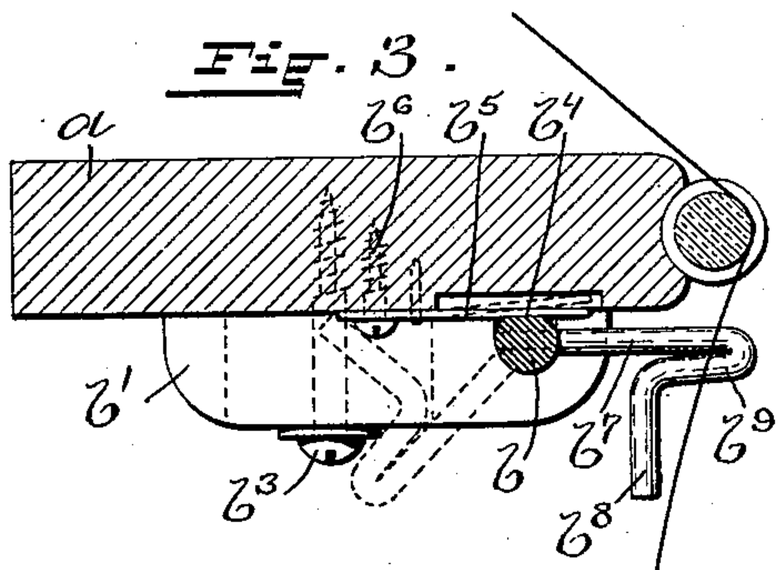


Fig. 4.

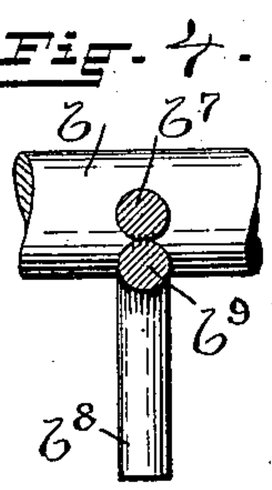


Fig. 5.

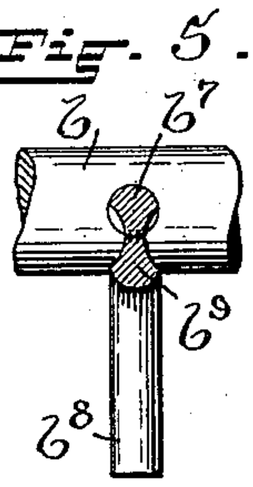
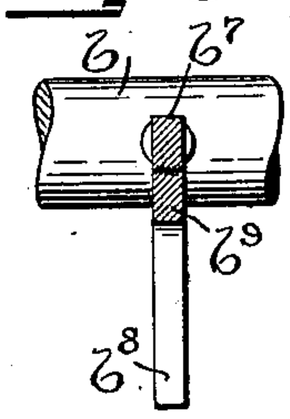


Fig. 6.



WITNESSES:

Ada E. Hagerty.

Chas. H. Luttenton

INVENTORS:

George B. Dennis 2d

Edwin Dennis

by Joseph A. Miller & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE B. DENNIS AND EDWIN DENNIS, OF CENTRAL FALLS, RHODE ISLAND.

TWISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 722,821, dated March 17, 1903.

Application filed November 28, 1902. Serial No. 133,083. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. DENNIS and EDWIN DENNIS, citizens of the United States, residing at Central Falls, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Twisting-Machines, of which the following is a specification.

This improvement has reference to guide-boards of twisting-machines; and it consists in a device under the guide-board to automatically break the thread when a knot or snarl gets in the thread to prevent bunching or uneven winding on the bobbin.

In twisting-machines for twisting spool-cotton or sewing-thread the thread as it comes from the rolls and goes to the bobbin in the usual way is liable to get snarled or knotted, and if not seen by the operator makes a bunch in the winding or an uneven winding on the bobbin.

The object of this invention is to automatically break the thread when a knot or snarl gets into it by the weight of the knot or snarl giving an increased centrifugal force to the thread between the guide-board and the ring-traveler, causing the thread to catch in a wedge-shaped bend in a pin under the guide-board and breaking the thread, as will be more fully set forth hereinafter.

Figure 1 is a front view of a guide-board for twisting-machines with the center broken away, showing the rod with the pins for breaking the thread with the knot or snarl after it has assumed the position as shown at X in broken lines. Fig. 2 is a plan view looking at the under side of Fig. 1, showing the rod with the thread-catching pins in a position for catching a right-hand twisted thread in full lines and a left-hand twisted thread in broken lines, the adjustable bearings for the rod, and the rod-spring for holding the pins in their operative position. Fig. 3 is an enlarged cross-sectional view through the guide-board, showing the thread as it comes from the rolls over the guide-roll and through the ring-traveler to the bobbin, the thread-catching pin being shown in its operative position in full lines and thrown backward in broken lines for convenience of doffing. Fig. 4 is an enlarged detail sectional view through the wedge-shaped bend of the pin, and Figs. 5 and 6 are enlarged detail sectional views of modified forms of the thread-catching pins.

In the drawings, a is the guide-board of a twisting-machine with the guide-rod a' having the thread-grooves a^2 a^2. The guide-rod a', made of glass or other suitable material, is secured to the front edge of the guide-board in the usual way. The rod b is secured to the under side of the guide-board a by the adjustable bearings b' b' with the slots b^2 b^2 and the screws or bolts b^3 b^3, as shown in Fig. 2. This rod b extends the length of the guide-board and has the flattened portion b^4, in contact with the flat spring b^5, fastened to the guide-board by the screw b^6. The rod b carries the thread-catching pins b^7 b^7, one for each thread, which extend from the rod and then backward and downward, forming the end b^8 for catching and the wedge-shaped bend b^9 for holding and breaking the thread, as shown in Figs. 1 and 3. The inside of the wedge-shaped bend b^9 is roughened or scored to more securely hold and break the thread.

In the operation of our device the rod b, with the thread-catching pins b^7 b^7, is adjustable lengthwise, bringing the pins into a position for either a right or left hand twist in the thread, the bearings b' b' forming stops for the pins in either position, as shown in Fig. 2, and the thread-catching pins on the rod b may be thrown under and backward against the tension of the spring b^5 on the flattened portion b^4 of the rod into the position as shown in broken lines in Fig. 3 for the purpose of doffing the bobbins. The thread-catching pins are so placed that the thread controlled by the ring-traveler and traveling in its normal position will clear the pins; but if a knot or snarl gets in the thread the increased centrifugal force given to the thread causes it to fly outward from its normal position and catch on the end b^8 of the pin b^7, which guides the thread into the wedge-shaped bend b^9, holding and breaking the thread and preventing the knot or snarl from being wound on the bobbin.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. In combination with a guide-board for

twisting or spinning machines, a rod, means for adjustably securing the rod to the guide-board, and pins on the rod in a position to catch and break a knotted or snarled thread by the increased centrifugal force given by the knots or snarls to the thread, causing it to fly outward from its normal position and catch on a pin, the pin holding and breaking the thread, for the purpose as described.

2. In combination with a guide-board for twisting or spinning machines, a rod extending the length of the guide-board, means for adjustably and pivotally securing the rod to the guide-board, and pins with wedge-shaped openings on the rod in a position to clear the thread in its normal position, but to catch and break a knotted or snarled thread by the increased centrifugal force given by the knots or snarls to the thread, causing it to fly outward from its normal position and catch on a pin, the pin holding and breaking the thread, for the purpose as described.

3. In combination with a guide-board with means for guiding threads for twisting or spinning machines, the rod b extending the length of the guide-board, the bearings b' b' forming stops to place the thread-catching pins in a position for either a right or left hand twist of the threads and for adjustably and pivotally securing the rod to the guide-board by the bolts or screws b^3 b^3 through the slots b^2 b^2 in the bearings, the flattened portion b^4 on the rod b in contact with the flat spring b^5, and the pins b^7 b^7 extending outward from the rod b, then backward and downward, forming the end b^8 and the wedge-shaped bend b^9, as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

GEORGE B. DENNIS.
EDWIN DENNIS.

Witnesses:
ADA E. HAGERTY,
JOS. A. MILLER, Jr.