

R. W. EATON.
 THREAD BOARD CLEANER FOR SPINNING MACHINES.
 APPLICATION FILED MAY 6, 1908.

919,704.

Patented Apr. 27, 1909.

Fig. 1.

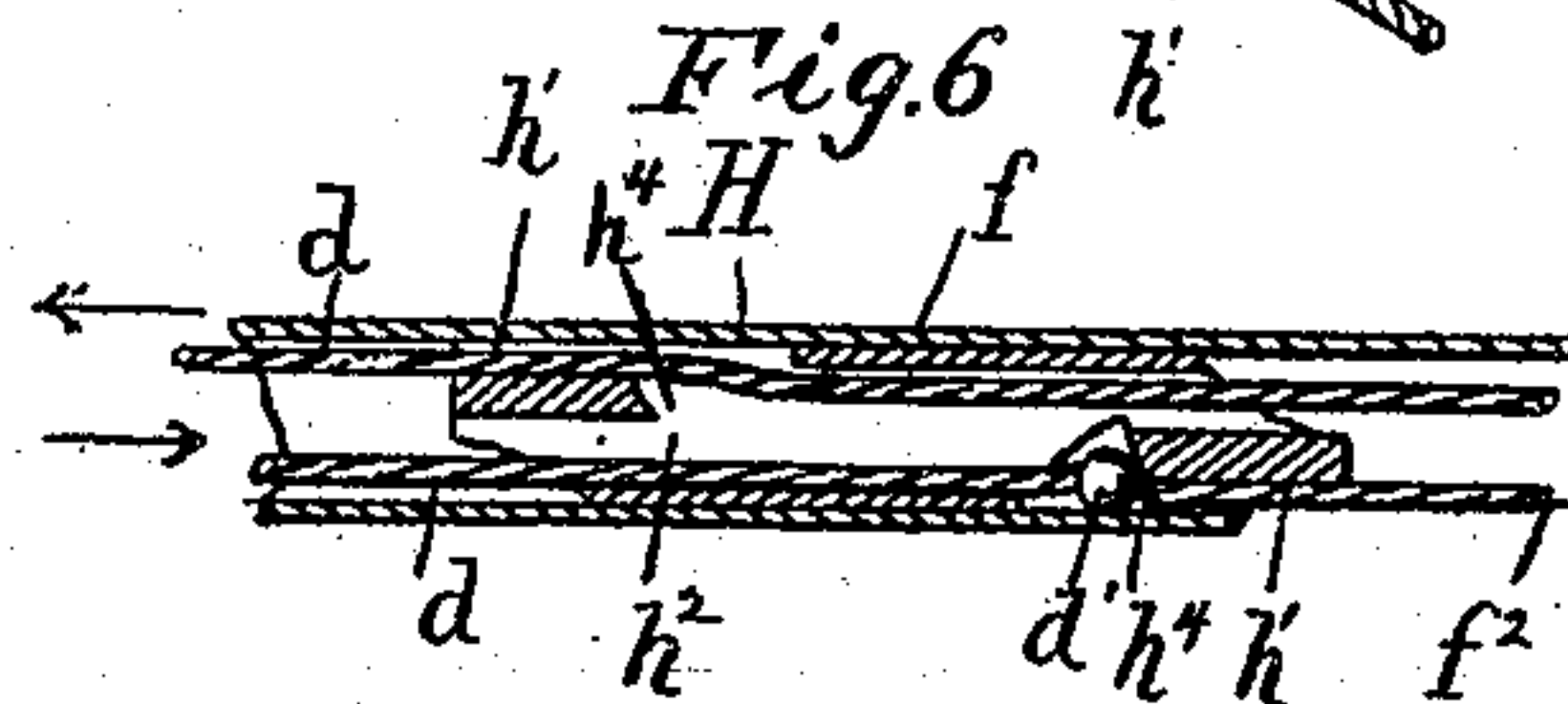
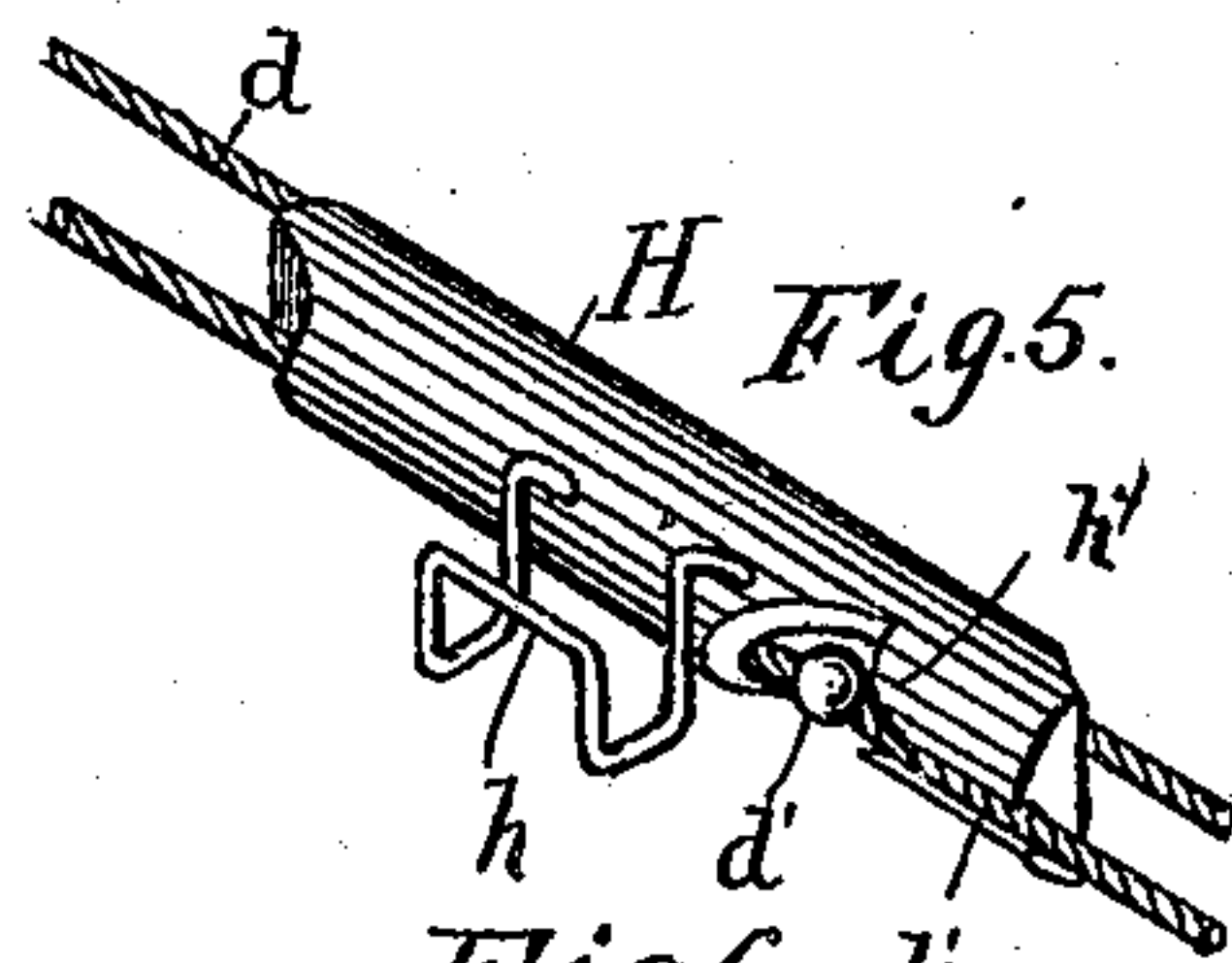
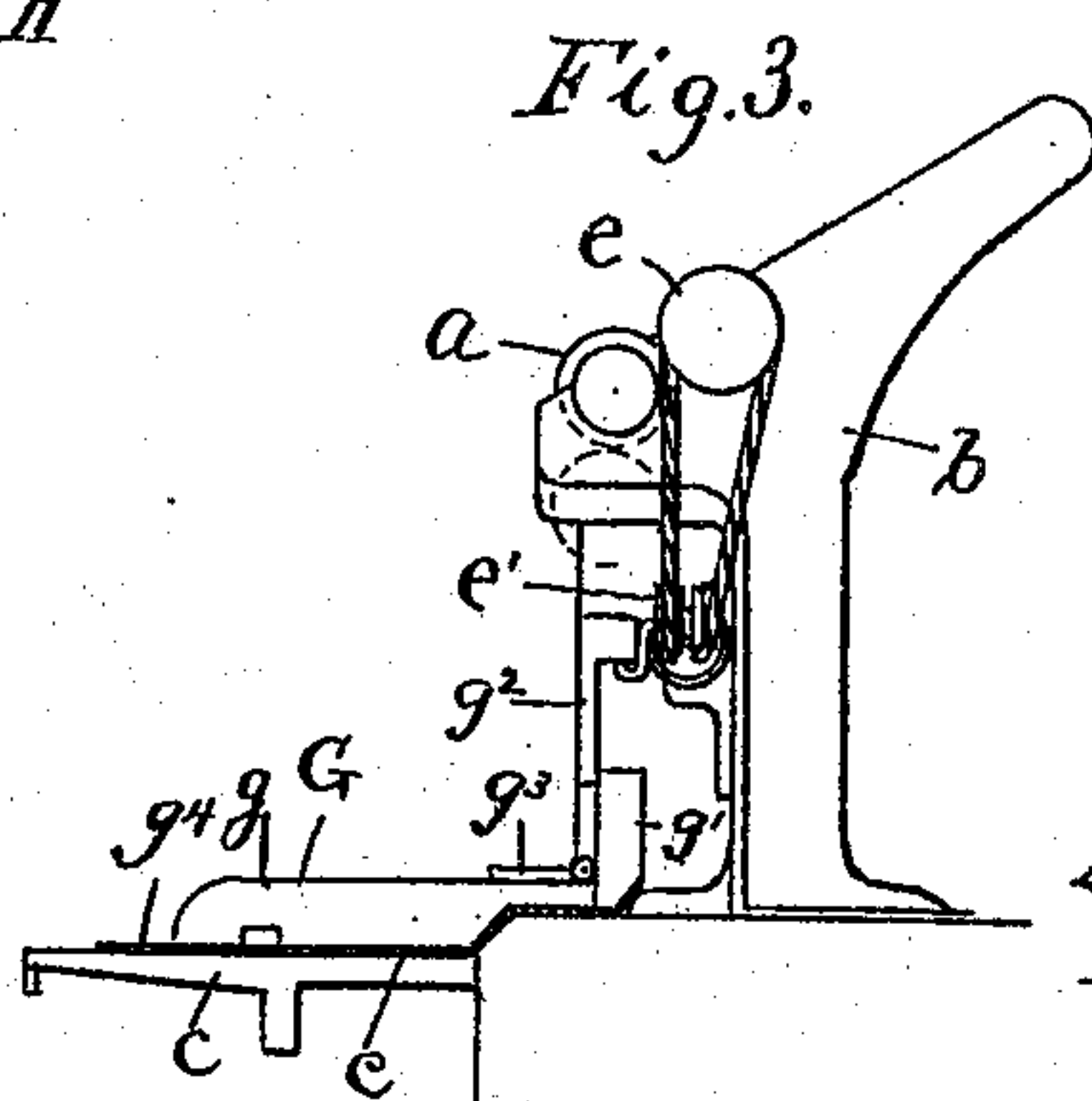
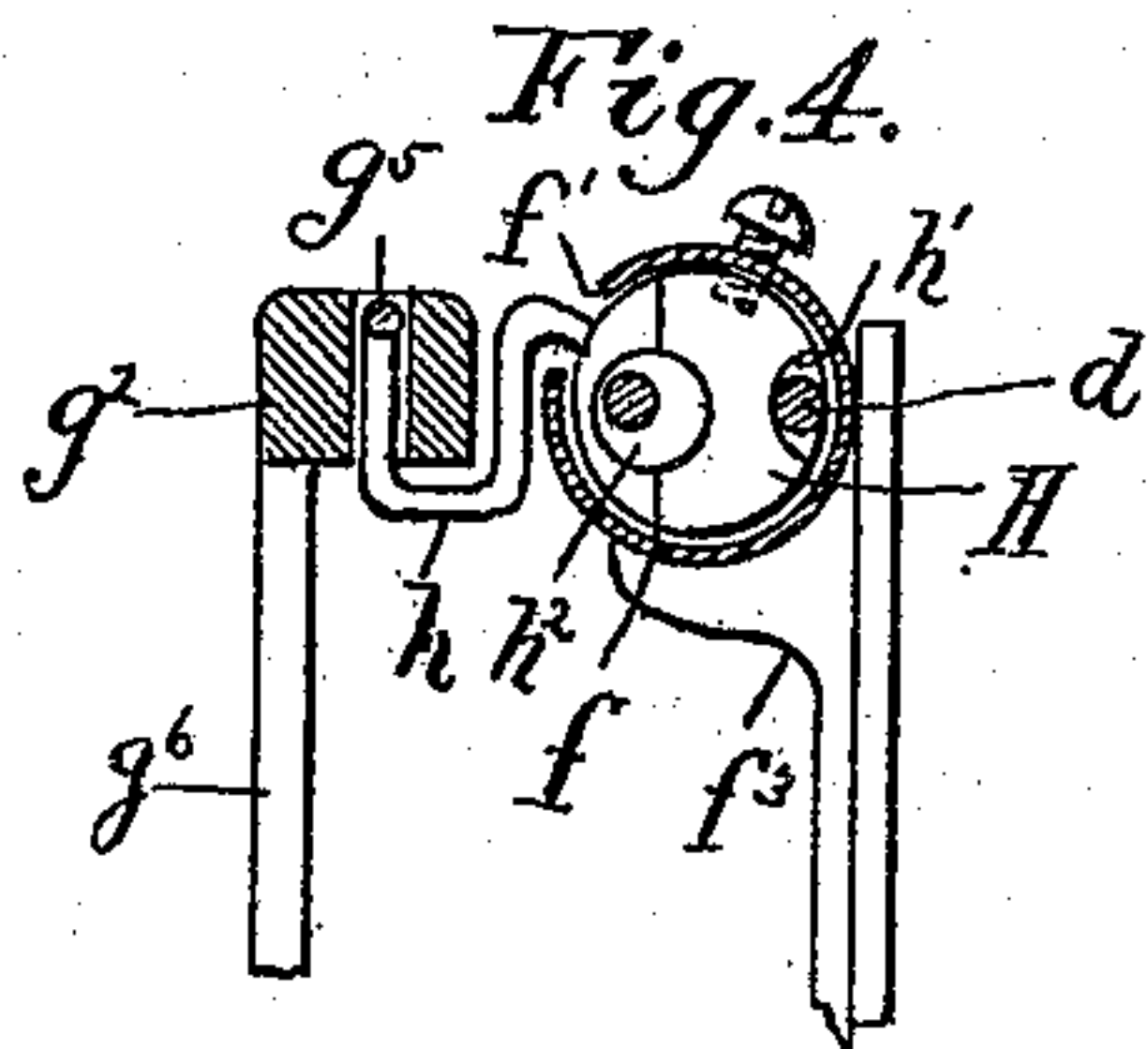
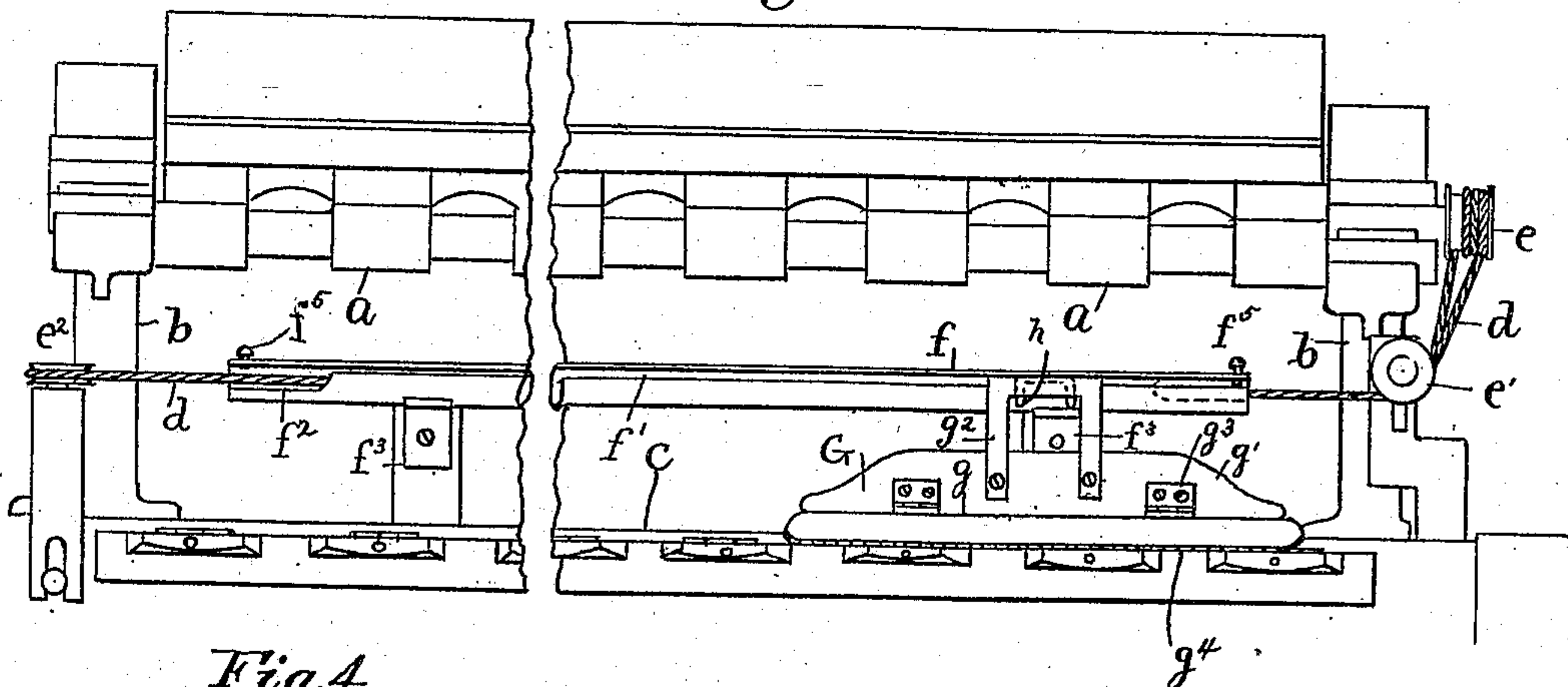
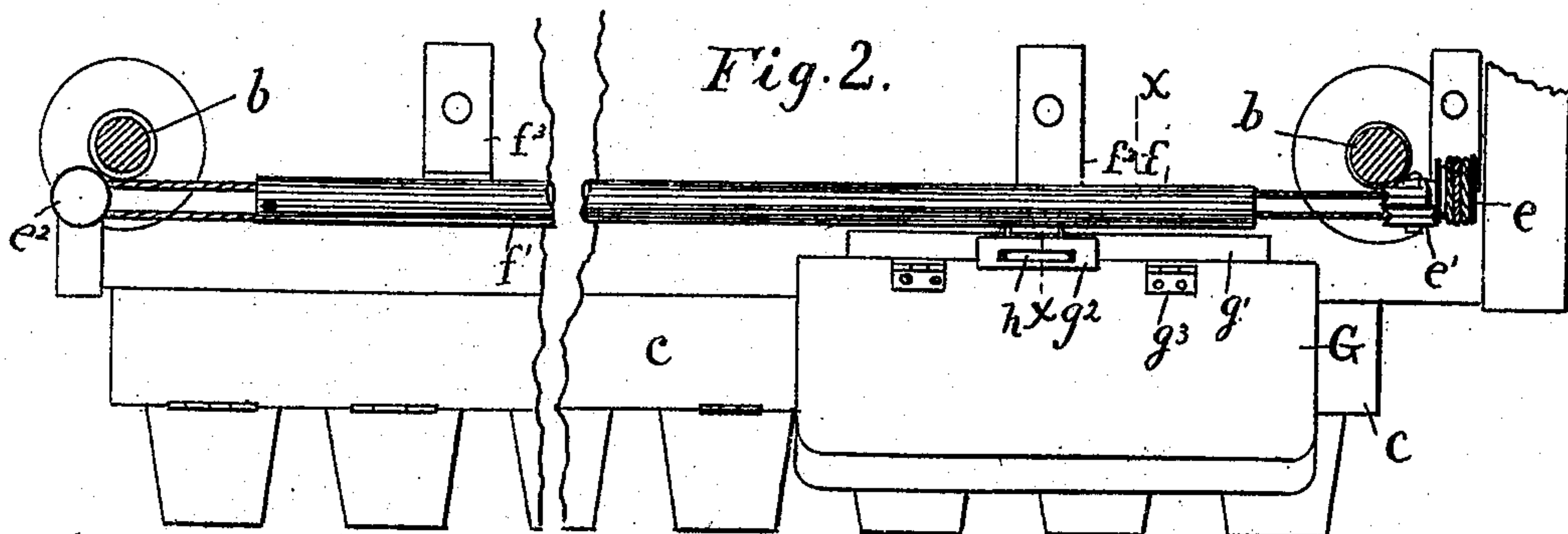


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

RUSSELL W. EATON, OF BRUNSWICK, MAINE.

THREAD-BOARD CLEANER FOR SPINNING-MACHINES.

No. 919,704.

Specification of Letters Patent.

Patented April 27, 1909.

Application filed May 6, 1908. Serial No. 431,089.

To all whom it may concern:

Be it known that I, RUSSELL W. EATON, of Brunswick, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Thread-Board Cleaners for Spinning-Machines, of which the following is a specification.

My invention relates to an automatic device for cleaning the thread boards of spinning machines and the object of the invention is to construct a mechanism which will automatically draw a cleaner board back and forth along the thread board, so designed that it may be easily applied to any standard spinning frame and made with the least possible number of working parts and one which will be easily protected and kept clean.

According to my invention, I propose to reciprocate the cleaner board mechanically lengthwise of the thread board by means located in the slotted tube which will extend lengthwise of the thread board and above the same, the operating mechanism thus being in great part protected from the collection of lint and waste by being inclosed in the slotted tube.

The particular mechanism which I prefer to use for reciprocating the cleaner board is an endless cord used in connection with a traveler which is attached first on one side and then on the other side of the cord to produce the reciprocation of the cleaner board.

Other features of my invention are hereinafter set forth and claimed.

The invention consists essentially of the combination and arrangement of parts hereinafter set forth and claimed.

I illustrate my invention by means of the accompanying drawing in which—

Figure 1 is a front elevation of a spinning frame equipped with my attachment, Fig. 2 is a plan view of the same, Fig. 3 is an end elevation of the same, Fig. 4 is an enlarged section on the line $x x$ of Fig. 2, Fig. 5 is a perspective view of the traveler and Fig. 6 is a central horizontal section through the same.

In the drawing, a represents the drawing rolls and $b b$ the roll stands and c the thread board of a spinning frame.

G represents the cleaner board generally, consisting as here shown of a main board g adapted to slide along the thread board and being of suitable size to cover the space to be cleaned. It has on the bottom a layer of

felt or other like material g^4 suitable for collecting the waste fiber which accumulates at this point and which tends to get into the yarn as the latter is spun.

In order to be turned back out of the way when the thread board is turned back in doffing, the cleaner is hinged to a vertical back piece g' by hinges g^3 . Means are provided for automatically moving the cleaner board back and forth lengthwise of the thread board from end to end and for housing and protecting the reciprocating mechanism and for this purpose I make use of an endless cord d having means by which first one side and then the other side of the cord is alternately attached to the cleaner board, the attachment being shifted at the end of the traverse to give a reciprocating movement to the cleaner board without reversing the motion of the endless cord, the cord being inclosed in a slotted tube whereby it is thoroughly protected and kept clean. The cord d passes over idle pulleys e^2 and e' set at each end of the frame and it makes several turns around a driving pulley e made with a slight taper to prevent riding or kinking of the cord.

As here shown, I make use of a slotted tube f to house the cord and to keep it from collecting lint etc. This tube is mounted on supports f^3 so that it is held above the thread board and parallel therewith. The tube has a slot f' which extends throughout its entire length and at the extreme end there is an additional slot or enlargement f^2 formed for the purpose hereinafter set forth.

Connection is made between the cleaner board and the cord as here shown by means of a traveler H which is generally cylindrical in form to fit the inside of the tube f and is adapted to slide therein.

The connection with the cleaner board is made by means of a double wire hook h which is secured by one end to the traveler and extends out through the groove f' bending downward and upward to enter a vertical opening g^5 in the head g^2 which is formed on the upper end of the uprights g^6 , the latter being secured to the back piece g' .

The cleaner board may thus be connected or disconnected from the traveler by hooking or unhooking it from the hook h . The traveler is propelled through the tube from end to end by a stop or enlargement d' secured on the cord at any point. This stop may be a metal sphere or bullet perforated to admit the passage of the cord and upset

to hold it in place. Two parallel passages or openings are formed in the traveler extending from end to end to admit the passage of the two sides of the endless cord.

5 These passages are so arranged that the stop will be caught and held in one side until the end of the traverse is reached when it will be allowed to escape and pass around the pulleys to enter the opposite side and be

10 there caught. This is accomplished by forming a shallow groove h' in each side of the traveler, one on each end, this groove being just large enough to allow the cord to pass when confined by the walls of the tube

15 but it is not large enough to permit the passage of the stop d' . At the inner end of each groove there is a lateral enlargement h^4 in the traveler to make room for the stop and from there to the opposite end is a passage

20 h^2 large enough to allow the stop to pass. Thus, considering Figs. 5 and 6 assuming that the cord is moving as shown by the arrows, the stop has been drawn through the opening h^2 and has there lodged in the recess

25 h^4 as it could not pass through the groove h' on account of the proximity of the wall of the tube. The traveler is thus drawn along to the right and is shown in Fig. 6 as just approaching the end of the tube and the lateral

30 opening f^2 in the end of the tube. As soon as the groove h' opens into the space f^2 where it is no longer closed by the walls of the tube, the stop d' is released and slips from the recess h^4 so that the cord no longer

35 propels the traveler and the latter is prevented from being drawn out of the tube by any possible friction with the cord by a stud or screw f^5 in the tube. The stop d' having been released from one side of the traveler,

40 it passes around the pulley or pulleys and returns to the traveler, moving in the opposite direction and entering the traveler through the other opening, continuing through the large opening until it reaches

45 the recess h^4 on the opposite side where it is confined by the walls of the tube as before explained and starts the traveler in the opposite direction. When the opposite end of the tube is reached this operation is re-

50 peated, the opening f^2 being so located at each end as to release the stop at the desired point. Thus the traveler is reciprocated back and forth along the thread board by the action of the endless cord without

55 any reversing mechanism applied to the cord.

The idle pulleys are attached to the machine by simple standards or brackets easily placed and the driving pulley is located on the continuation of one of the roller journals

60 so that the whole operating mechanism may be easily attached to any standard spinning frame without rebuilding it and with very few and simple changes.

The cleaner board may be lifted off and

65 put back at any time by simply unhooking it

from the traveler and when the thread board is tilted back the cleaner board goes with it.

It is evident that the endless cord may be used without the protecting tube and that other means than here shown may be used for

70 connecting first one side and then the other of the cord with the cleaner board.

I have shown the slot f' as located above the middle and on one side but it may be otherwise located as desired.

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The same means herein shown for reciprocating the thread board may be employed for reciprocating any other mechanical element to which this motion is to be applied. The mechanism is simple and requires no

80 complete reversing mechanism.

It is evident that other means than the endless cord may be used in the slotted tube for reciprocating the cleaner board.

I claim:

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1. In a device for cleaning thread boards of spinning machines and the like, the combination of a slotted tube extending lengthwise and above the thread board, an endless cord in said tube, pulleys for guiding and operating said cord, a cleaner board adapted to slide on the thread board and having a connecting portion extending through the slot of the slotted tube, means for alternately attaching each side of the cord to the cleaner

90 board within the slotted tube and means for shifting the attachment from one side of the cord to the other at the end of the travel.

2. In a device for cleaning thread boards of spinning machines and the like, the combination of a slotted tube extending lengthwise and above the thread board, a traveler and an endless cord in said tube, pulleys for guiding and operating said endless cord, means for alternately attaching the traveler

100 to each side of the cord, a means for shifting the attachment from one side to the other of the cord at the end of the travel, a cleaner board and means for detachably connecting the traveler and cleaner board extending

105 through the slot of the slotted tube.

3. In a thread board cleaner for spinning machines, the combination of a slotted tube extending lengthwise and above the thread board, an endless cord in said tube having a

115 stop thereon, pulleys for guiding and operating said cord, a cylindrical traveler fitting said tube having longitudinal openings for the passage of the two parts of the cord made up of two shallow longitudinal grooves, one

120 on each side and one on each end extending from the end of the traveler inward, each groove being large enough to allow the passage of the cord but not of the stop and each terminating at its inner end in an enlarged

125 lateral opening in the side of the traveler, an opening extending from each of said lateral openings to the opposite end of the traveler large enough to allow the passage of the stop, a stud at the end of the tube for checking the

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motion of the traveler, a portion of the tube at the end being cut away to allow the release of said stop laterally.

4. In a thread board cleaner for spinning machines, the combination of a slotted tube extending lengthwise and above the thread board, a endless cord in said tube having a stop thereon, pulleys for guiding and operating said cord, a cylindrical traveler fitting said tube having longitudinal openings for the passage of the two parts of the cord made up of two shallow longitudinal grooves, one on each side and one on each end extending from the end of the traveler inward, each groove being large enough to allow the passage of the cord but not of the stop and each terminating at its inner end in an enlarged lateral opening in the side of the traveler, an opening extending from each of said lateral openings to the opposite end of the traveler large enough to allow the passage of the stop, a portion of the tube at the end being cut away to allow the release of said stop laterally.

5. In a thread board cleaner for spinning machines, the combination of a slotted tube extending lengthwise and above the thread board, a cleaner board adapted to slide on the thread board and means located in said tube for reciprocating the cleaner board lengthwise on the thread board.

6. In a device for cleaning thread boards of spinning machines and the like, the combination of a cleaner-board adapted to slide longitudinally on the thread-board, and having a hinged joint to allow it to be turned up with the finger-board, and means for reciprocating said cleaner-board on the thread-board.

7. In a device for cleaning thread-boards of spinning machines and the like, the combination of a slotted tube extending above and lengthwise of the thread-board, a cleaner-board, a traveler in said slotted tube connecting with said cleaner-board, and means for reciprocating said traveler.

8. In a device for cleaning thread-boards of spinning machines and the like, the combination of a slotted tube extending above and lengthwise of the thread-board, a traveler in said slotted tube, a cleaner-board connecting with said traveler and having a hinged joint to allow it to be turned up with the finger-board.

9. In a device for cleaning thread boards of spinning machines and the like, the combination of an endless cord extending lengthwise above the thread board, pulleys for guiding and operating said cord, a traveler, a guide for said traveler located above and parallel with the thread board and forming a permanent part of the machine and means for alternately attaching the traveler to each side of the cord, means for shifting the attachment from one side of the cord to the other at the end of the travel to produce a reciprocating motion of the traveler and a cleaner board resting normally on the thread board below the guide detachably connected with the traveler.

In testimony whereof I have affixed my signature, in presence of two witnesses.

RUSSELL W. EATON.

Witnesses:

ISRAEL RACINE,
J. BRINCHELL.