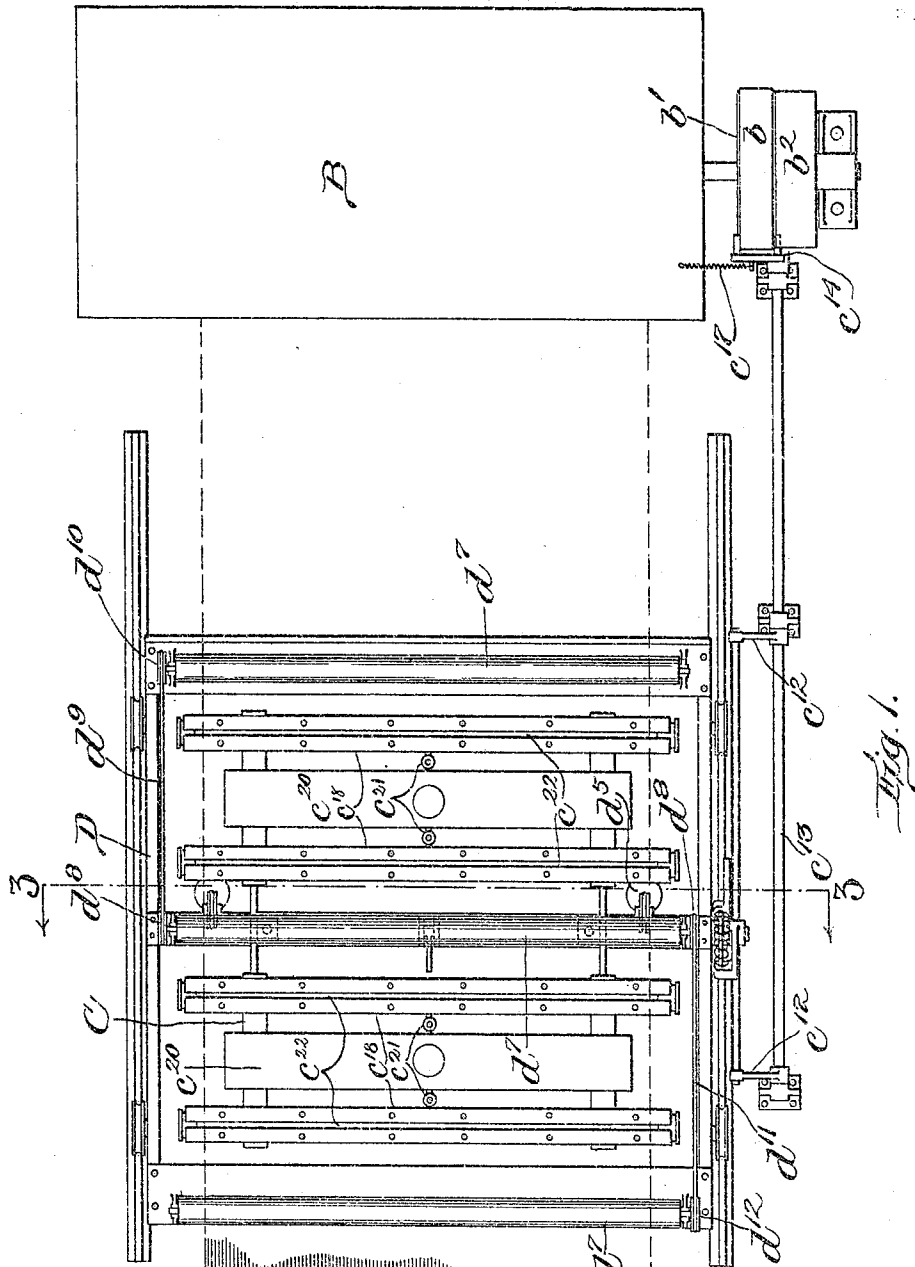


948,934.

Patented Feb. 8, 1910.

2 SHEETS—SHEET 1.



Witnesses

Anna B. Lindsey
May A. Hyman

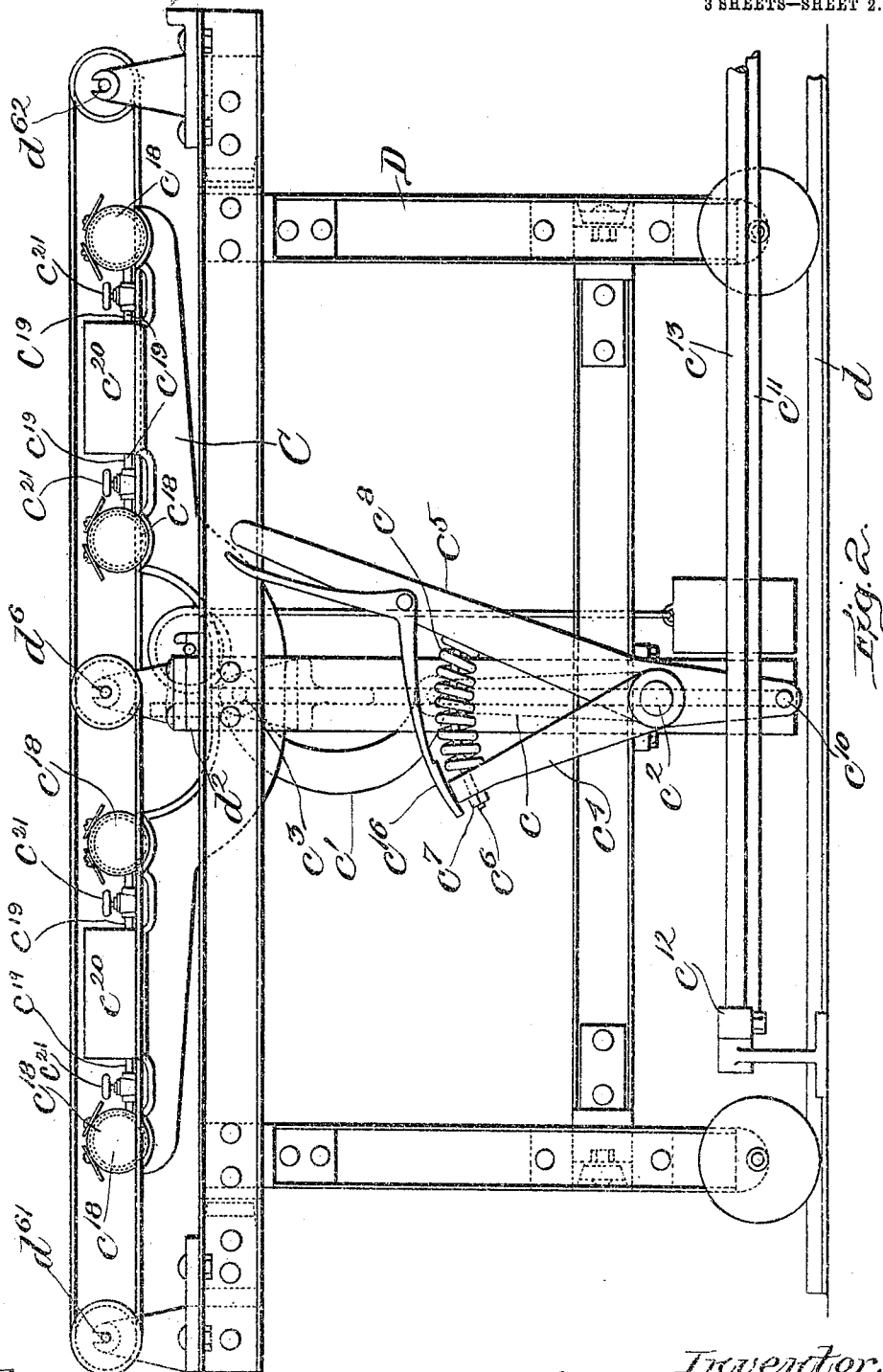
Inventor:

John O. McKean
by Mitchell, Chadwick & Kent,
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948,934.

Patented Feb. 8, 1910.

3 SHEETS—SHEET 2.



Witnesses:

Anna B. Lyndsey
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Inventor:

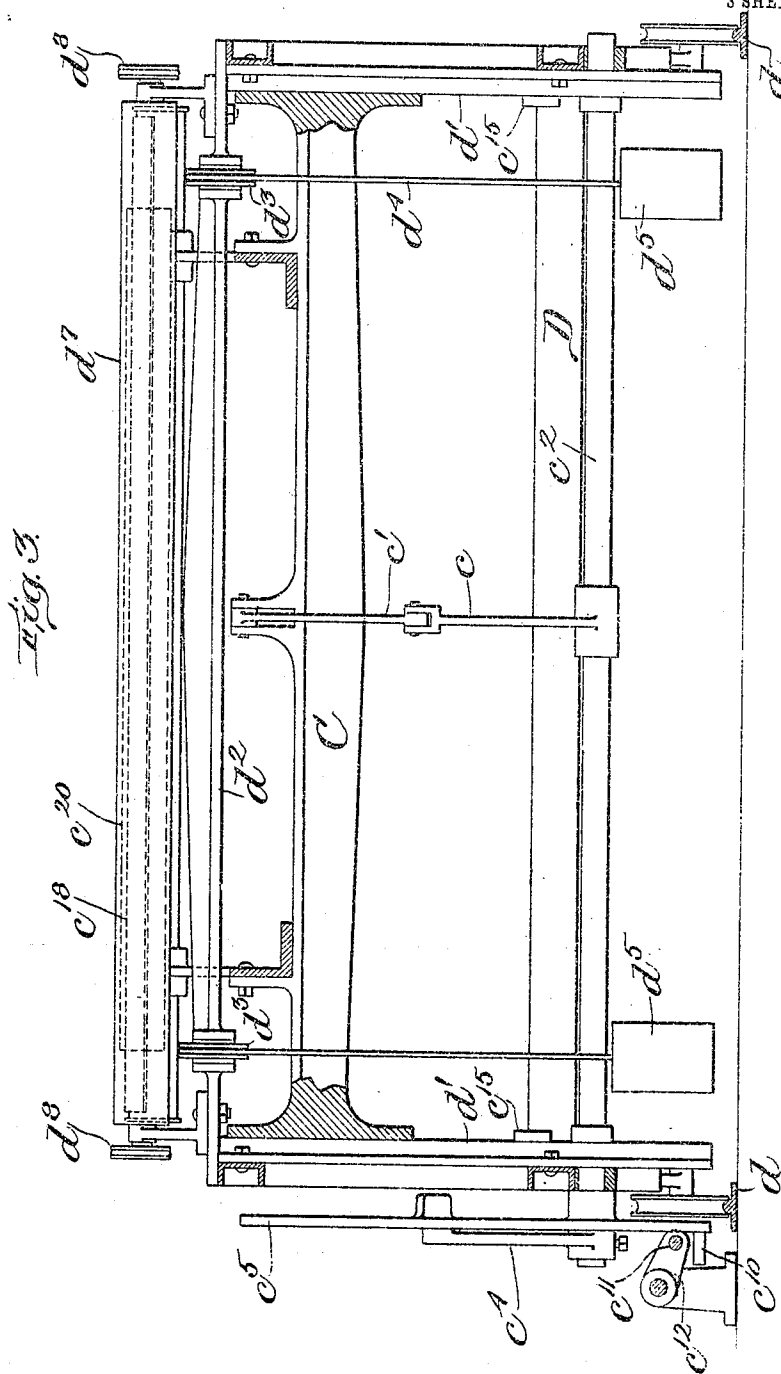
John O. McKean
By Mitchell, Chadwick & Kent.
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948,934.

J. O. McKEAN.
GASSING APPARATUS.
APPLICATION FILED AUG. 19, 1908.

Patented Feb. 8, 1910.

3 SHEETS—SHEET 3.



Witnesses:
Anna B. Lindsay
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UNITED STATES PATENT OFFICE.

JOHN O. McKEAN, OF WESTFIELD, MASSACHUSETTS.

GASSING APPARATUS.

948,934.

Specification of Letters Patent.

Patented Feb. 8, 1910.

Application filed August 19, 1908. Serial No. 449,255.

To all whom it may concern:

Be it known that I, JOHN O. McKEAN, a citizen of the United States, residing at Westfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Gassing Apparatus, of which the following is a specification.

My invention relates to gassing apparatus for trimming threads or the like and has for its object to provide an improved apparatus of this kind which will efficiently remove the lint and trim the loose projecting fibers from the surface of threads or the like, particularly threads which have been previously mercerized. Also to provide a machine of this kind wherein the clearing and trimming is effected by a burner and which may be started and stopped without injury to the threads from the burner.

My improved apparatus comprises a thread supply, means to draw the thread from the supply, a burner between the supply and the thread drawing means, means to throw the burner into and out of operation, and means to control the thread drawing means. The thread extends from the supply past the burner, which burns off the lint and loose projecting fibers, to the thread drawing means and said thread is caused to travel at such a rate of speed that the flame of the burner acts only to remove the loose and projecting fibers without injury to the body of the thread. Therefore when starting the apparatus in operation it is essential that the thread drawing means be first started and the burner thrown into operation afterward, so that when the flame or flames of the latter begin to act on the threads the latter will be in full motion and therefore will not be injured by the burner. Also in stopping the apparatus it is essential that the burner be first thrown out of operation and the thread drawing means be stopped afterward, so that the motion of the threads is not stopped until after the burner is rendered inoperative.

A feature of my invention consists in providing controlling means for the apparatus, to start the latter by first starting the thread

drawing means and then throwing the burner into operation and to stop the apparatus by first throwing the burner out of operation and then stopping the thread drawing means.

It follows that when the apparatus is stopped in the peculiar manner above described, a short length of the thread or the like will pass the burner without being acted upon properly or at all by the latter, and therefore as another feature of my invention I mount the burner upon a carriage movable back and forth in a direction lengthwise of the thread or the like so that after the apparatus has been stopped and before it is started again the carriage and burner can be shifted in the direction of the travel of the threads or the like so as to be placed in advance of the untreated portion of the threads or the like which passed the burner while the apparatus was being stopped. Therefore when the carriage and burner are thus adjusted and the apparatus again started said untreated portion will again be carried past the burner and treated. As soon as the apparatus is in operation the carriage and burner are again slowly shifted back to their first position.

Other features of my invention are hereinafter described.

In the accompanying drawings:—Figure 1 is a plan view of my improved apparatus for trimming threads and the like, parts thereof being conventionally shown in said figure. Fig. 2 is a side elevation of part of the apparatus shown in Fig. 1, and Fig. 3 is a section on line 3—3 of Fig. 1.

Having reference to the drawings, A represents the thread supply herein shown as a roll carrying a winding of threads *a*; B the thread drawing means which may be a baller or any other desired device which will draw the threads off from the roll A; C the burner arranged between the supply A and thread drawing means B beneath the sheet of threads *a*, and D the carriage carrying burner C and movable on tracks *d* in a direction lengthwise of the threads *a*.

The frame of the burner C is mounted to slide vertically on ways *d'* on carriage D and is held in its uppermost position by a

lever c and link c' , the former being fixed to a shaft c^2 journaled on carriage D and the link being pivotally connected at its upper end to the burner frame at c^3 . At one end the shaft c^2 has rigidly fixed to it an arm c^4 alongside of a lever c^5 loosely pivoted on shaft c^2 . Fixed to the lever c^5 is a rod c^6 which extends loosely through the outer end of arm c^4 and carries a stop nut c^7 . Between arm c^4 and lever c^5 is a coiled spring c^8 which normally holds said arm and lever separated. The lever c^5 carries at its lower end a pin c^{10} projecting beneath a rod c^{11} carried by arms c^{12} fixed to a shipper shaft c^{13} . The shaft c^{13} extends over to the thread drawing means B and carries a belt shipper arm c^{14} engaging the belt b which drives said thread drawing means B.

The lever c^5 is the control member hereinafter referred to and when this lever occupies the position shown in Fig. 2 the burner C is held by lever c and link c' in operative position with relation to threads a and the driving belt b is on the driving pulley b' of B. When it is desired to stop the apparatus lever c^5 is swung to the left (Fig. 2) and acts through spring c^8 , arm c^4 , shaft c^2 , lever c and link c' to lower burner C into inoperative position, with the frame of burner C resting on stops c^{15} on carriage D. At about the moment that the burner C reaches its lowermost position the pin c^{10} reaches the bar c^{11} so that if lever c^5 is swung farther to the left pin c^{10} will lift rod c^{11} , thereby rocking shaft c^{13} and shifting belt b of B from the driving pulley b' to the loose pulley b^2 . The purpose of the spring c^8 is, therefore, to provide for continued movement of lever c^5 after the burner frame has engaged stops c^{15} so that shaft c^{13} may be rocked to stop the thread drawing means B. When the lever c^5 reaches the limit of its movement to the left a latch c^{16} engages the end of arm c^4 and locks said lever in that position with spring c^8 compressed. To start the apparatus again the latch c^{16} is disengaged from arm c^4 and lever c^5 is swung to the right until stop c^7 engages arm c^4 and during this part of the movement of said lever the spring c^{17} connected with belt shipper c^1 shifts the latter back to its first position with belt b on the driving pulley b' . After the stop c^7 engages the arm c^4 the continued movement of lever c^5 to the right acts through rod c^6 , arm c^4 , rock shaft c^2 , lever c and link c' , to lift burner C into operative position with relation to the sheet of threads a .

It will now be clear that in starting the apparatus the thread drawing means B is first set in operation, drawing the threads off from roll A, and thereafter the burner C is thrown into operation by being lifted into operative relation with the sheet of

threads passing above it. Also that in stopping the apparatus the burner C is first thrown out of operation by being lowered on carriage C, out of operative relation with the sheet of threads passing above it, and thereafter the thread drawing means B is stopped. In this way the burner C is permitted to act upon the threads only while the latter are in motion and therefore injury of said threads by the flames of burner C is prevented.

At the middle of the carriage D there is a cross bar d^2 carrying a pair of rolls d^3 over each of which passes a cord d^4 or the like, connected at its upper end with burner C, and carrying a weight d^5 at its lower end. These weights d^5 serve to partially counterbalance the weight of the burner C. The burner C comprises several transverse tubes c^{18} arranged in pairs, each pair being connected by pipes c^{19} with a fuel reservoir c^{20} , and suitable valves c^{21} being provided in pipes c^{19} to control the flow of fuel to the tubes c^{18} . Each tube c^{18} contains a wick and at the top of each tube is a longitudinal slot c^{22} exposing the wick within the tube.

The carriage D has three transverse shafts d^6 , d^{11} , and d^{12} journaled on it, each of these shafts carrying a roll or drum d^7 for supporting the threads as they pass over the burner. The middle shaft d^6 carries two pulleys d^8 , one at each end thereof, one of said pulleys being connected by a belt d^9 with a pulley d^{10} fixed to one end of shaft d^{12} and the other pulley d^8 being connected by a belt d^{11} with a pulley d^{12} fixed to shaft d^{11} . By thus connecting all of the shafts of the rolls d^7 said rolls are caused to rotate in unison, thereby maintaining a uniform tension on all of the threads.

When the apparatus is stopped in the manner above described a portion of the sheet of threads a passes the burner C without being acted upon by the latter, owing to the fact that the burner is thrown out of operation before the thread drawing means B is stopped. Therefore before the apparatus is started again the operator rolls the carriage D toward the thread drawing means B until the burner is in advance of the untreated portion of the sheet of threads and after the apparatus is set in operation as above described he returns the carriage D slowly to its first position.

What I claim is:

1. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means, mounted for movement back and forth lengthwise of the thread; means to throw the burner into and out of operation and means to control the thread drawing means.

2. A gassing apparatus comprising a

thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means mounted for movement back and forth lengthwise of the thread and controlling means for starting the apparatus by starting first the thread drawing means and thereafter throwing the burner into operation and for stopping the apparatus by throwing first the burner out of operation and thereafter stopping the thread drawing apparatus.

3. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means for trimming the thread or the like; a carriage on which the burner is mounted, said carriage being movable back and forth lengthwise of the thread or the like; means to throw the burner into and out of operation, and means to control the thread drawing means.

4. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means for trimming the thread or the like; a carriage on which the burner is mounted, said carriage being movable back and forth lengthwise of the thread or the like; a control member and means connecting said control member with the burner and thread drawing means through which said member acts to first throw the burner out of operation and thereafter stop the thread drawing means to stop the apparatus and to first start the thread drawing means and thereafter throw the burner into operation to start the apparatus.

5. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means for trimming the thread or the like; a carriage on which the burner is mounted with provision for movement toward and from the thread or the like, said carriage being movable back and forth lengthwise of the thread or the like, a control member and means connecting the control member with the burner and thread drawing means through which said member acts to first shift the burner away from the thread and thereafter stop the thread drawing means to stop the apparatus and to first start the thread drawing means and thereafter shift the burner toward the thread into operative position to start the apparatus.

6. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means movable toward and from the thread; a rock shaft; means connecting the rock shaft and burner through which the operation of said shaft

shifts the burner toward and from the thread; an arm fast to said shaft; a control member; a connection between said arm and control member for yieldingly resisting relative movement between the arm and control member in one direction and for positively limiting relative movement between said arm and control member in the opposite direction; a shipper for the thread drawing means; a rocker connected with said shipper; a spring for shifting the shipper in one direction and a pin on the control member for operating the rocker to shift the shipper in the opposite direction.

7. A gassing apparatus comprising a thread supply; means to draw the thread from the supply; a burner between the supply and thread drawing means; a carriage on which the burner is mounted to move toward and from the thread, said carriage being movable back and forth lengthwise of the thread; a rock shaft journaled on said carriage; means connecting the rock shaft and burner through which movement of said shaft shifts the burner toward and from the thread; an arm fast to said shaft; a control member movable with the carriage; a connection between said arm and control member for yieldingly resisting relative movement between the arm and control member in one direction and for positively limiting relative movement between said arm and control member in the opposite direction; a shipper for the thread drawing means; a rocker mounted on a stationary support and connected with said shipper; a spring for shifting the shipper in one direction and a pin on the control member for operating the rocker to shift the shipper in the opposite direction.

8. A gassing apparatus comprising a burner, and means to feed thread past it; combined with means whereby some of the thread is caused to re-pass the burner, said means changing the relative position of the burner and thread lengthwise of the thread.

9. In gassing apparatus, the combination with a burner, and means for feeding thread past it, of means for providing relative movements to the burner and thread independent of the normal thread feed for causing some of the thread to re-pass the burner, said movements being in the direction of length of the thread path.

10. A gassing apparatus comprising a burner, means to feed thread past the burner; and controlling means for starting the apparatus by first starting the thread feeding means and thereafter throwing the burner into action and for stopping the apparatus by first throwing the burner out of action and thereafter stopping the thread feeding means.

11. A gassing apparatus comprising a

burner; means to feed thread past the burner; controlling means for starting the apparatus by first starting the thread feeding means and thereafter throwing the
5 burner into action and for stopping the apparatus by first throwing the burner out of action and thereafter stopping the thread feeding means, and means to change the relative positions of the burner and the

thread lengthwise of the thread, to cause 10 some of the thread to re-pass the burner.

Signed by me at Westfield, Massachusetts,
this 14th day of August, 1908.

JOHN O. McKEAN.

Witnesses:

F. I. SMITH,

E. T. FOWLER.