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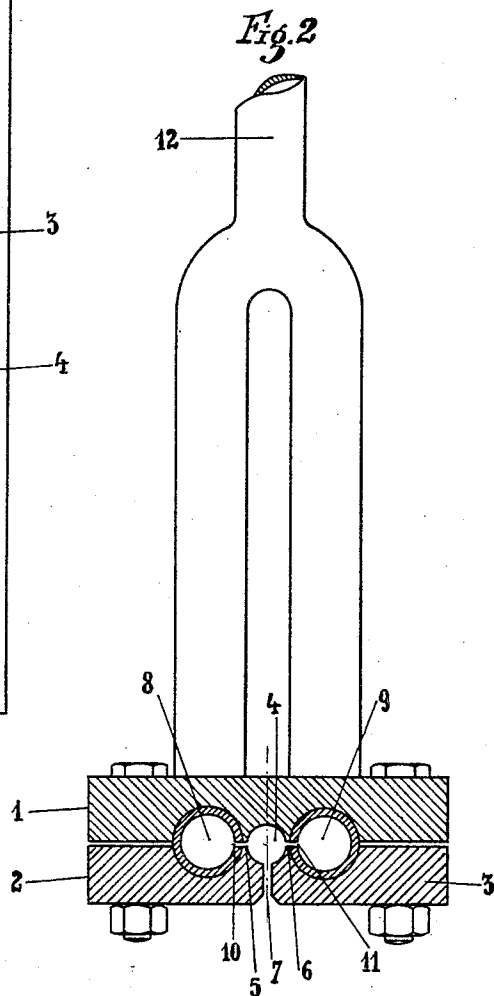
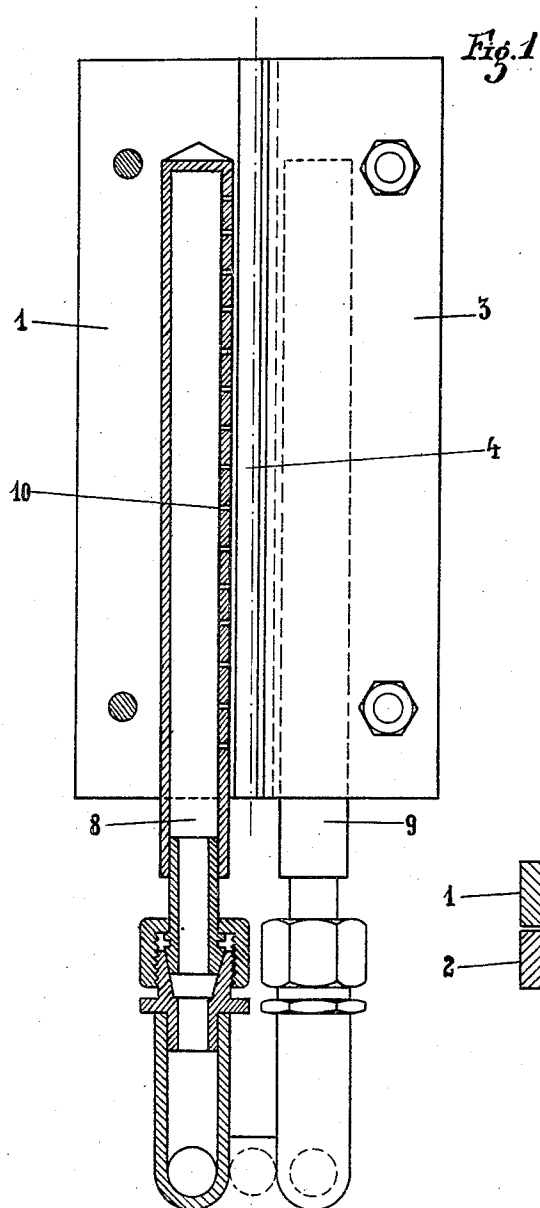
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GAS BURNER FOR SINGEING ANY KIND OF SPUN

Filed April 22, 1929

2 Sheets-Sheet 1



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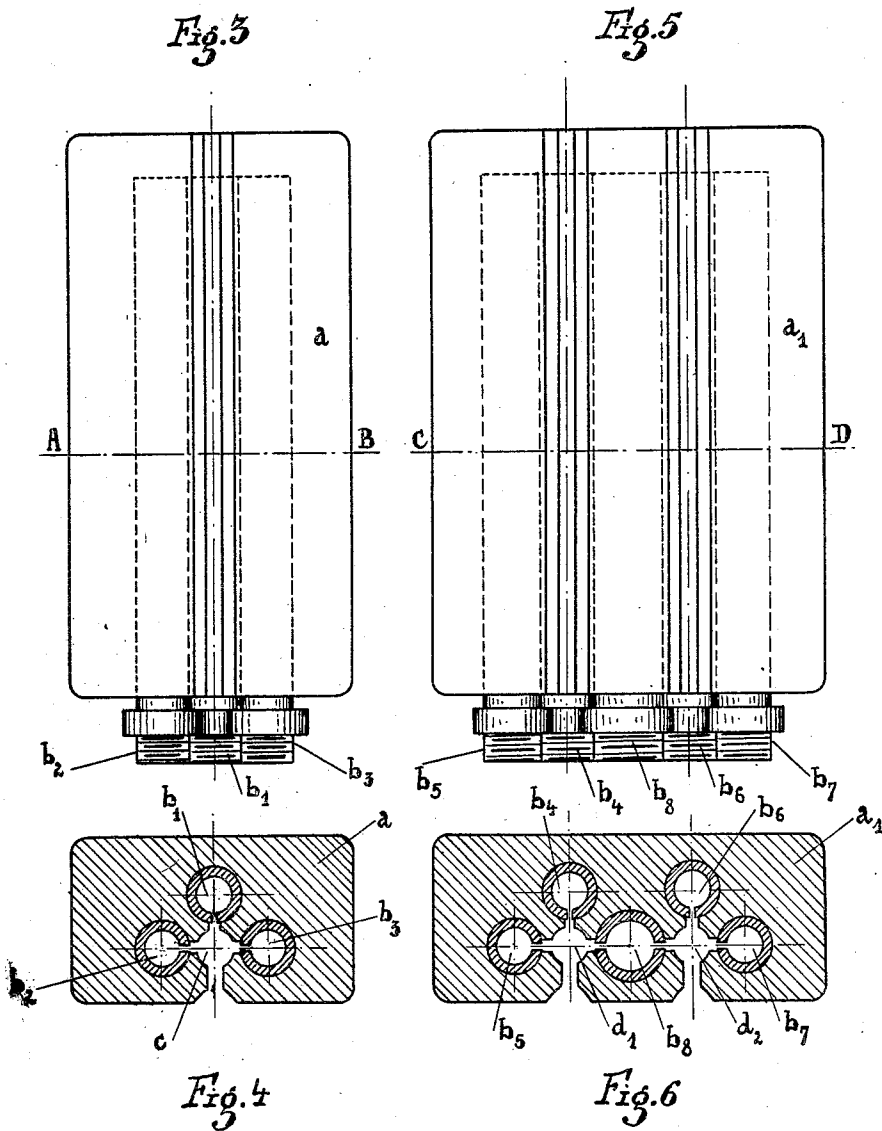
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UNITED STATES PATENT OFFICE

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GAS BURNER FOR SINGEING ANY KIND OF SPUN

Application filed April 22, 1929, Serial No. 357,204, and in France February 28, 1928.

My present invention has for its object to provide an improved gas burner for singeing any kind of spun, that is one which is primarily constituted by a singeing chamber and two burner rows.

The singeing chamber is formed in fireproof block, through the longitudinal axis of which the thread to be singed is passed. Two flames produced by two burner rows enter said chamber through two diametrically opposed slots, said flames being directed in opposite directions and meeting on the passage of the thread.

The fireproof pieces heated to incandescence reflect and concentrate their heat upon the thread, thus completing the direct action of the burner rows in order to determine a total embracement of the thread by the flames and securing uniform singeing on all faces thereof.

The use of insulating material will minimize the loss of heat, so that the heat at the centre of the chamber will be considerably increased and the flames will not be subject to the variations of the outer air.

The shocks and frictions produced by the meeting of the two ignited jets of gaseous mixture under pressure will clean the singeing chamber as well as the perforations of the burners which have tendency of becoming obstructed.

In the accompanying drawings I have illustrated three preferred embodiments of my invention.

Fig. 1 shows half an elevation and half a longitudinal section of a first embodiment of my invention.

Fig. 2 is a cross section thereof.

Fig. 3 is an elevation of a second embodiment of my invention and

Fig. 4 is a cross section thereof on line A—B of Fig. 3.

Fig. 5 is an elevation showing a modified form of device, and

Fig. 6 is a cross section thereof on line C—D of Fig. 5.

Referring now more particularly to Figs. 1 and 2, the improved burner primarily comprises a block of fireproof material composed of three parts 1, 2 and 3, which are recessed

so as to form a cylindrical reflecting and singeing chamber 4.

Said chamber 4 is constructed to receive the ignited jets of gaseous mixture through two longitudinal, diametrically opposed slots 5 and 6, provided in its walls and located in the same plane.

Provided in the wall of the singeing chamber 4 is another longitudinal slot 7, located in a plane at right angles to the plane of the slots 5 and 6 and serving to insert the thread to be singed. Said slot 7 enables the operator to see the inner operation of the device, adjust the combustion during the operation and verify the instantaneous cleaning of the inside of the burner at any moment, whereby such cleaning may be completed if necessary.

Arranged on opposite sides of the singeing chamber 4 in the same plane and parallel thereto are two burner rows 8 and 9 perforated on a generating line. In order to secure uniform pressure in both rows, the latter are supplied by a common main 12 on which a single adjusting cock or valve is arranged.

The two sets of perforations 10 and 11 are arranged in front of each other in such a way, that the jets of ignited gaseous mixture will enter the chamber 4 through the two slots 5 and 6 above mentioned, said jets meeting along the axis of the chamber 4.

Owing to the cylindrical shape of the inside of the chamber 4 and the nature thereof, the walls of said chamber will reflect the flames towards the centre of the chamber through which the thread to be singed is moved.

The textile material will be singed uniformly on all faces owing to the fact that it will be completely embraced by the direct flames as well as by the reflected flames.

A system of rotary or sliding shutters (not shown in the drawings) is provided for closing certain of the perforations 10 and 11 of the burner rows 8 and 9 for the purpose of securing the best adjusting for each kind and size of thread together with the adjusting of the gas supply cock or valve.

Although the device above described enables threads of standard sizes to be satis-

factorily singed, I may obtain better results in certain cases according to the nature or thickness of the thread to be singed, by using more than two gas burner rows for each singeing chamber, whereby the flames will be better distributed around the thread.

It will be obvious that a plurality of singeing chambers arranged side by side or otherwise, may be provided, each chamber being surrounded by a plurality of burner rows. The latter may supply one or several chambers, the perforations of the burner rows being arranged on adequately selected generating lines.

The perforations through which the gaseous mixture is discharged may be shaped in any desired way and even replaced by suitable slots, if required.

In Figs. 3 and 4 I have illustrated such a modification of the device, comprising three perforated burner rows, arranged in trefoil relation around the singeing chamber through which the thread is moved.

Referring to Figs. 3 and 4, A is the block of fireproof material, provided with three holes for the reception of three burner rows b_1 , b_2 , b_3 . C is the central singeing chamber, through which the thread is moved centrally. The wall of said chamber is provided with three slots for the passage of the flames and a fourth slot for the insertion of the thread.

A further modification of the device is illustrated in Figs. 5 and 6, wherein two singeing chambers d_1 and d_2 are provided, each of said chambers being surrounded by three burner rows b_4 , b_5 , b_6 and b_7 , b_8 respectively, the common burner row 8 being perforated on two opposite generating lines in order to enable same to supply jets of ignited gaseous mixture to each singeing chamber d_1 and d_2 .

It will be obvious that the arrangements described by way of example are not limitative and may be modified in many respects without departing from the scope of my invention.

For instance the devices shown in Figs. 3, 4, 5 and 6 may also be provided with rotary or sliding shutters for securing the best adjustment together with the adjustment of mixture supply valve.

The fireproof block shown in the drawings as being formed of a single piece and adapted to be removed by hand without the aid of any tool, may also be formed of a plurality of pieces.

Having now fully described my said invention, what I claim and desire to secure by Letters Patent, is:

1. A gas burner for singeing spun of any kind, comprising in combination a block of fireproof material, a plurality of cylindrical singeing chambers formed in said block, a longitudinal slot in the wall of each chamber for the insertion of the threads to be treated therein, a plurality of other longitudinal

slots in the wall of each chamber, and gas burner rows arranged outside and in front of said last named slots, certain gas burner rows being arranged to be common to two chambers, substantially as set forth.

2. A gas burner for singeing spun of any kind, comprising in combination a block of fireproof material, cylindrical singeing chambers formed in said block, a longitudinal slot in the wall of each chamber for the insertion of the thread to be treated, a number of other longitudinal slots in the wall of each chamber, cylindrical holes formed in said block parallel to and symmetrically around each chamber, and a gas burner row in each cylindrical hole and having its flames directed through the last named slots into the corresponding singeing chamber, substantially as set forth.

3. A gas spun singeing device which consists of a block of refractory material, a plurality of parallel cylindrical singeing chambers in said refractory block, heat reflecting internal walls in said singeing chambers, a plurality of chambers in said block parallel to said singeing chambers and located between said singeing chambers and radially to each singeing chamber, longitudinal slots connecting each singeing chamber to the radially located chambers, a gas burner in each radially located chamber, directing gas jets through said slots in the axis of the respective central singeing chamber or chambers, and a longitudinal slot in each singeing chamber leading outside said block.

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