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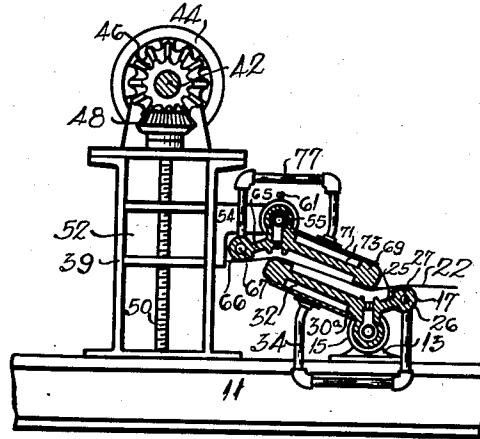
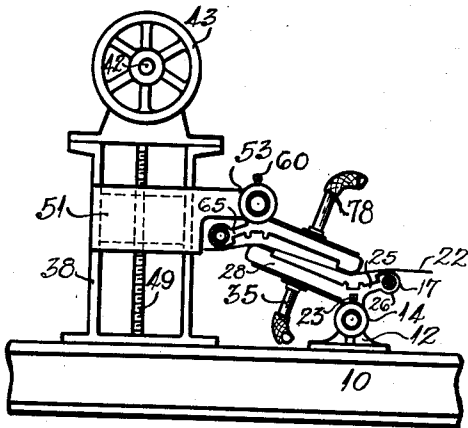
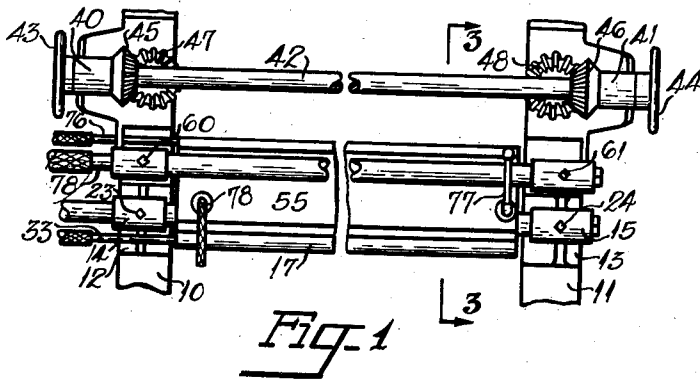
P. HALL

1,988,554

METHOD AND MEANS FOR SINGEING FABRICS AND THE LIKE

Filed Nov. 4, 1932

2 Sheets-Sheet 1



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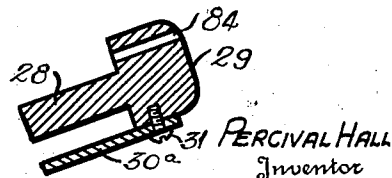
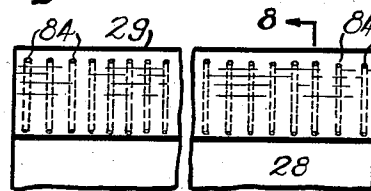
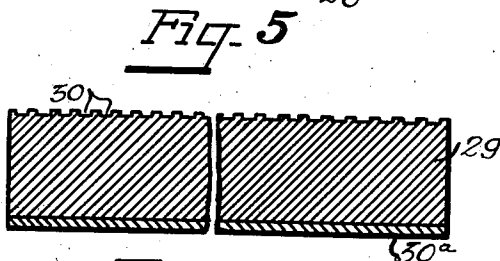
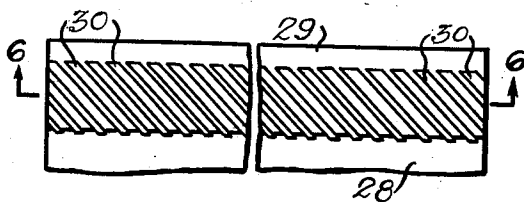
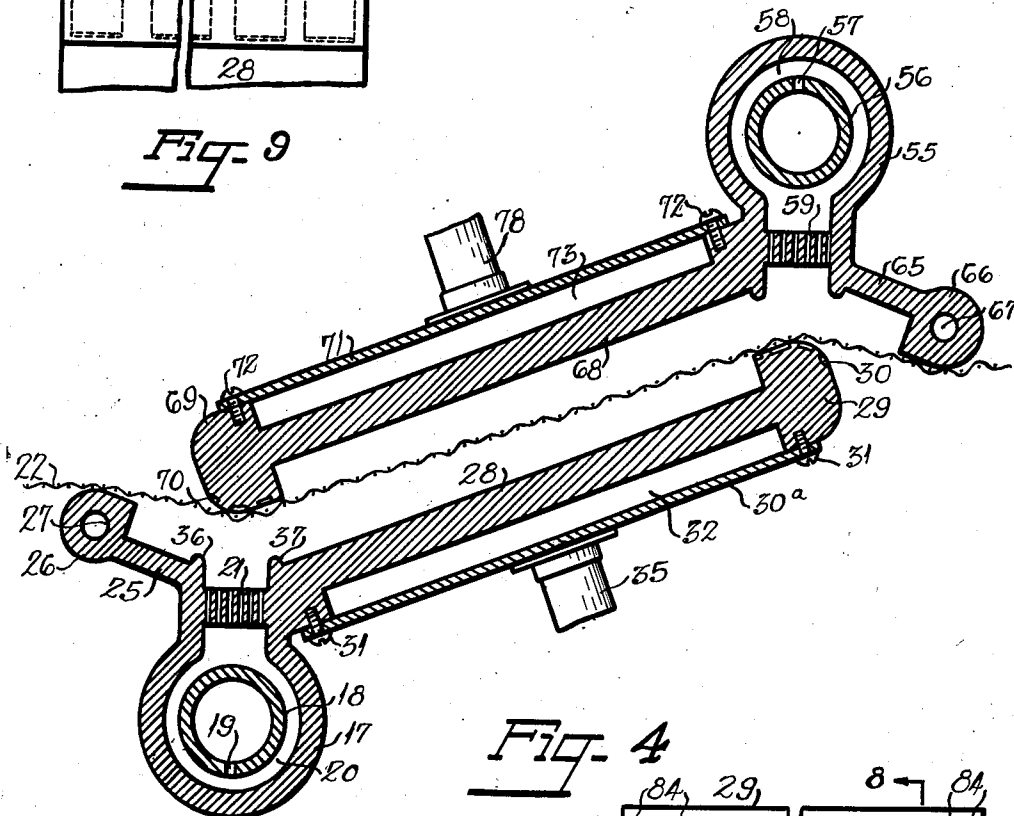
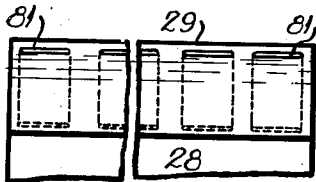
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METHOD AND MEANS FOR SINGEING FABRICS AND THE LIKE

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2 Sheets-Sheet 2



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1,988,554

METHOD AND MEANS FOR SINGEING
FABRICS AND THE LIKEPercival Hall, Lincolnton, N. C., assignor to C. M.
Kemp Manufacturing Company, Baltimore,
Md., a corporation of Maryland

Application November 4, 1932, Serial No. 641,241

6 Claims. (Cl. 26—3)

This invention relates to a method and means of singeing fabric, yarn, and the like in which means are provided for singeing both sides of the fabric by having both sides of the fabric treated by the singeing operation at the same time.

An object of this invention is to provide means for singeing fabric, yarn and the like having singeing devices located above and below the fabric, yarn and the like, said singeing devices being adjustable with relation to each other and also being adjustable as to angularity so as to bend the cloth to form a combustion chamber on both sides of the cloth and also to bend the cloth to occupy a plane having an oblique angle on the surface at the point where it is exposed to the greatest amount of flame. This causes the cloth to form an angle of more than 180 degrees to spread apart any projecting fibers so they will be more thoroughly singed. It also opens the pores of the goods and exposes the nap to burn the same away more perfectly.

Another object of this invention is to provide means for singeing both sides of the fabric simultaneously by causing a combustion chamber to be present on both sides of the fabric with means for allowing the inert and burning gases to escape from the outer edges of the combustion chambers and thus avoid any back pressure in the burning gases.

Another object of the invention is to provide a singeing apparatus for cloth in which combustion chambers are formed having means for allowing escape of some of the flames from the combustion chambers to impinge on the cloth to partially singe the same before its surface is exposed to the combustion chamber. By allowing the inert gases to escape along the edges of the burners, the flame is thoroughly distributed over the entire area of the combustion chamber resulting in more perfect singeing.

Although the apparatus is specially designed for singeing cloth, it is evident that by adjustment of the amount of flame the relative positions of the burners and the rate of travel of the yarn that yarn can also be singed in this apparatus.

Another object of this invention is to provide a singeing apparatus for fabrics, yarn and the like in which the space between the walls of the combustion chamber and the fabric, yarn and the like passing thereover may be changed at will whereby the proximity of the fabric, yarn and the like to the flame may be adjusted and also the intensity of the heat may be regulated.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is a plan view of the singeing apparatus;

Figure 2 is an elevation of the left end of Figure 1;

Figure 3 is a transverse sectional view taken along line 3—3 in Figure 1;

Figure 4 is an enlarged transverse sectional view taken thru the burners;

Figure 5 is a plan view of the nose portion on the long wing of the burner;

Figure 6 is a sectional view taken along line 6—6 in Figure 5;

Figure 7 is a modified form of the nose portion on the long wing of the burner;

Figure 8 is a sectional view taken along line 8—8 in Figure 7;

Figure 9 is another modified form of the nose portion on the long wing of the burner.

Referring more particularly to the drawings the numerals 10 and 11 denote the supporting frame members for the singeing machine upon which are mounted suitable brackets 12 and 13 provided with bearings 14 and 15, supporting each end of the lower burner 17. The lower part of burner 17 is a shell portion, circular in cross-section into which a suitable gas pipe 18 is inserted. This pipe 18 has perforations 19 on the lower side which allow the gas to escape from the pipe into a space 20 and up thru perforations 21 where it is ignited to singe the lower side of cloth or fabric 22. It will be noted that bearings 14 and 15 have suitable set screws 23 and 24 which serve as an adjusting means for the lower burner 17 when it is desired to turn the burner at different positions in the bearings, thereby getting the cloth bent at the proper angle to insure best singeing results.

The upper portion of burner 17 has an angularly disposed member 25 which extends outwardly and upwardly and has an enlarged nose portion 26 on the end thereof, said nose portion having a suitable bore 27 thru which water is circulated to prevent this member from becoming overheated and damaging the fabric as it slides over this portion. Another angularly disposed member 28 is provided on the other side of the upper portion of burner 17. Likewise, this member extends outwardly and upwardly and has on the end thereof an enlarged nose portion 29 which has suitable angularly disposed grooves 30 which provide means for the dead or inert gases to escape from the chamber formed by the angularly disposed members 25 and 28 and the cloth 22, thereby allowing the flame to entirely fill the combustion chamber.

A plate 30a is secured to the lower portion of member 28 by any suitable means such as screws 31, forming a space 32 thru which water is allowed to circulate to prevent member

28 from becoming overheated. It will be noted that the cool water enters the lower burner 17 thru pipe 33 and circulates thru bore 27, pipe 34 and into space 32 which has an outlet such as a pipe 35. Lips 36 and 37 extend all the way across the burner to prevent ashes and the like from clogging perforations 21.

Mounted on frame members 10 and 11 are two brackets 38 and 39 which have on their upper ends suitable bearing members 40 and 41 respectively. In these bearings a transverse rod 42 is mounted, having suitable operating wheels 43 and 44 and beveled gears 45 and 46 which are adapted to mesh with beveled gears 47 and 48 respectively mounted on the upper end of vertically disposed threaded shafts 49 and 50. Threaded shafts 49 and 50 are threadably mounted in sliding members 51 and 52 in brackets 38 and 39 respectively. These sliding members have extended portions 53 and 54 in which are mounted the ends of the upper burner 55.

It is seen that by turning wheels 43 and 44 that shafts 49 and 50 are turned, which in turn raises or lowers members 51 and 52 which support the upper burner. By this method the adjustment of the vertical distance between the two burners is made.

The upper burner 55 is identical in structure to the lower burner 17; however, the burner is turned in an upside down position in order to singe the upper side of the cloth at the same time the lower side is being singed by burner 17.

The upper part of burner 55 is a shell portion, circular in cross section, into which a suitable gas pipe 56 is inserted. This pipe 56 has perforations 57 on the upper side which allow the gas to escape from the pipe into a space 58 and down thru perforations 59 where it is ignited to singe the upper side of the cloth 22. It will be noted that suitable screws 60 and 61 are provided in members 53 and 54 to serve as an adjusting means for the upper burner 55 when it is desired to turn the burner at different positions.

The lower portion of burner 55 has an angularly disposed member 65 which extends outwardly and downwardly and has an enlarged nose portion 66 on the end thereof, said nose portion having a suitable bore 67 thru which water is circulated to prevent this member from becoming overheated. Another angularly disposed member 68 is provided on the other side of the lower portion of burner 55. Likewise, this member extends outwardly and downwardly and has on the end thereof an enlarged nose portion 69 which has suitable angularly disposed grooves 70 which provide means for the escape of dead gases as previously described.

A plate 71 is secured to the upper portion of member 68 by any suitable means such as screws 72 forming a space 73 thru which water is circulated to cool member 68. It will be noted that the cool water enters the upper burner 55 thru pipe 76 and circulates thru bore 67, pipe 77 and into space 73 which has an outlet such as a pipe 78.

Figure 7 shows a modified form of the nose portion on the long wing of the burners in which a plurality of holes 84 are provided for the escape of the dead gases.

Figure 9 is another modified form of the nose portion on the long wing of the burners

in which a plurality of slots 81 are provided for the escape of the dead gases.

It is seen that in case a greater bend is desired to be given to the cloth as it passes over nose portions 29 and 69 that the upper burner 55 can be raised vertically and a greater angular adjustment can be imparted to the burners by set screws 24, 23, 60 and 61 and in this way the angle of bend in the cloth can be adjusted, as the greater bend in the cloth allows more complete singeing, especially where a great amount of singeing is necessary to a fabric.

While I have described and shown the burners as being disposed above and below the fabric and the like, it is understood that the invention contemplates other positions which the burners may occupy as I have found that equally good results can be accomplished by having the longitudinal axis of the burners disposed in a vertical plane.

In the drawings and specification there has been set forth a preferred embodiment of the invention and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the appended claims.

1. In a singeing mechanism, a pair of burners disposed above and below the fabric to be singed, each burner being adjustable on a transverse axis, and means for adjusting the upper burner vertically with relation to the lower burner.

2. A singeing mechanism for cloth and the like, comprising a pair of singeing devices each including a combustion chamber adapted to be covered by the fabric, and means for adjusting the angularity of the singeing devices with relation to the line of travel of the fabric.

3. A singeing mechanism for cloth and the like comprising a pair of opposed gas burners each including a combustion chamber, one burner being offset with relation to the other burner, and the lip of one burner projecting into the combustion chamber of the other burner whereby a fabric being singed passes over the edges of the burners and forms closed combustion chambers in the burners.

4. In a singeing mechanism, a pair of singeing devices, one disposed on each side of the fabric to be singed, each burner being adjustable on a transverse axis, and means for adjusting one of the burners toward or away from the other burner.

5. A singeing mechanism for cloth and the like comprising a pair of opposed singeing devices arranged on opposite sides of the cloth to simultaneously singe both sides thereof, the cloth passing over each singeing device at least partially covering the same to form a combustion chamber, said singeing devices being adjustable with respect to each other and so formed as to maintain substantially closed combustion chambers in various adjusted positions.

6. A singeing mechanism for cloth and the like comprising a pair of opposed singeing devices, each device including a combustion chamber adapted to be covered by the cloth, said singeing devices being adjustable with respect to each other and adapted to remain in contact with the cloth in various adjusted positions thereof.

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