Oct. 4, 1932. F. E. COATSWORTH 1,881,310

APPARATUS AND METHOD FOR TREATING FABRICS

Filed May 15, 1931 3 Sheets-Sheet 1

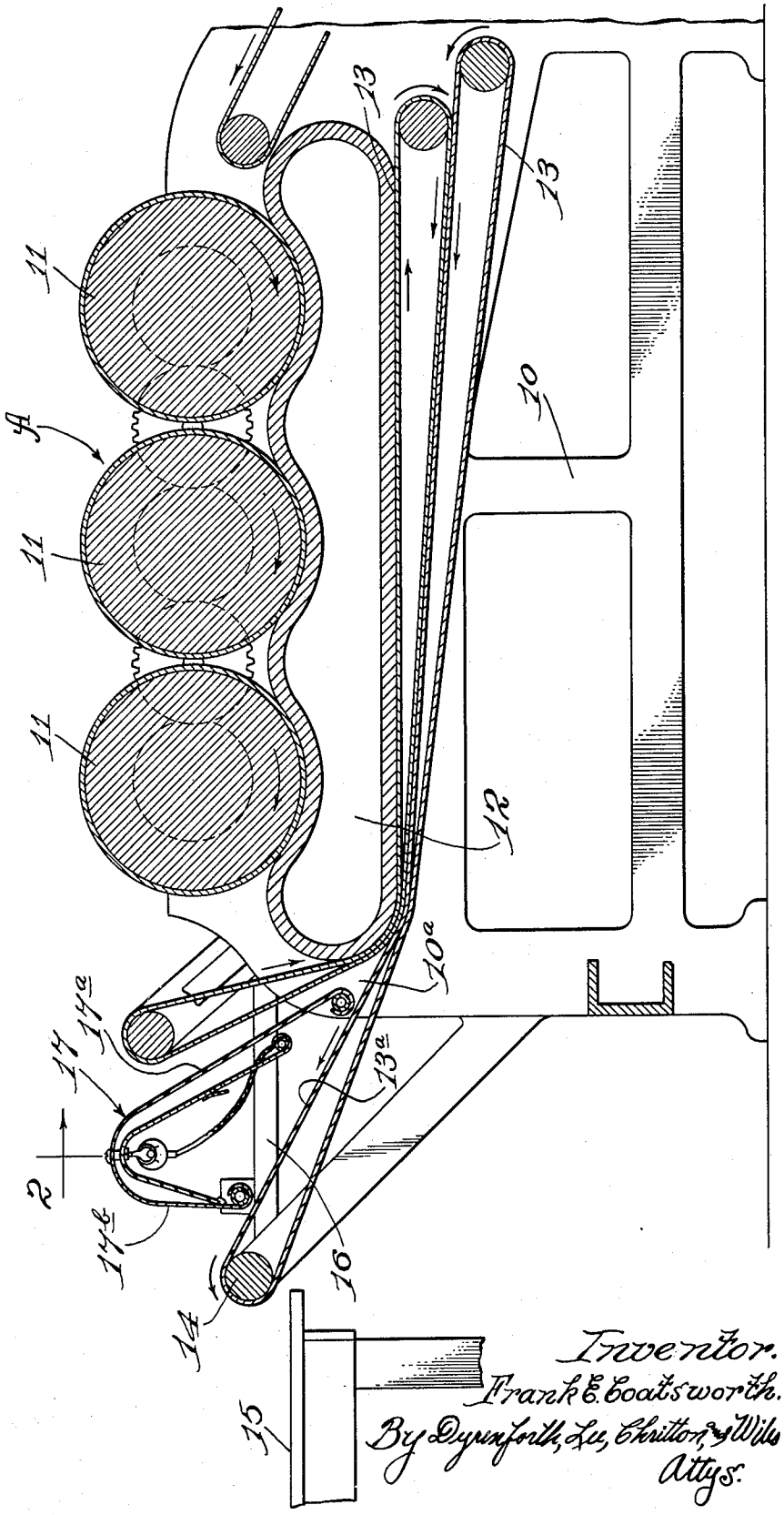


Fig. 1.

Inventor.
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APPARATUS AND METHOD FOR TREATING FABRICS

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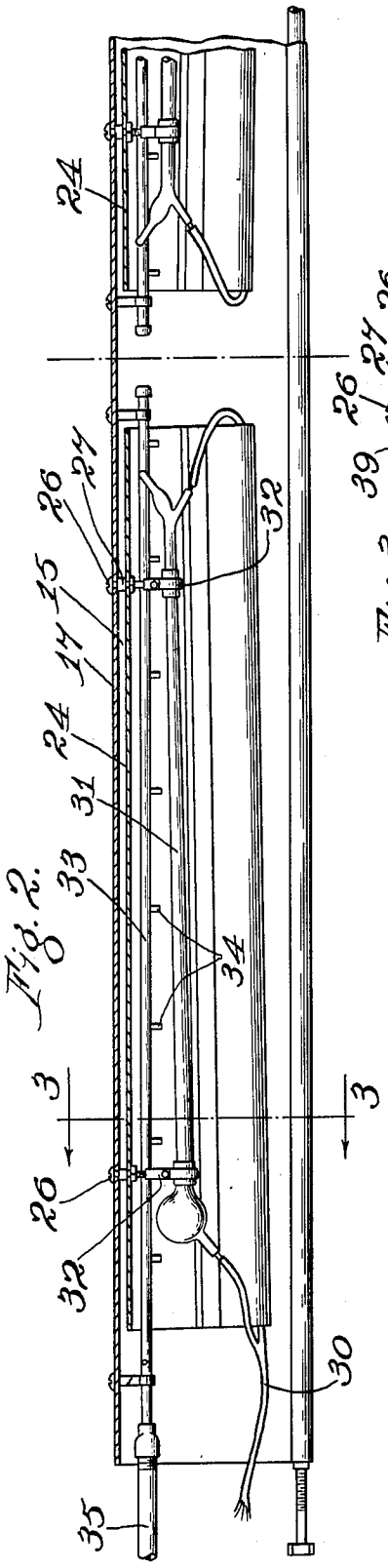


Fig. 2.

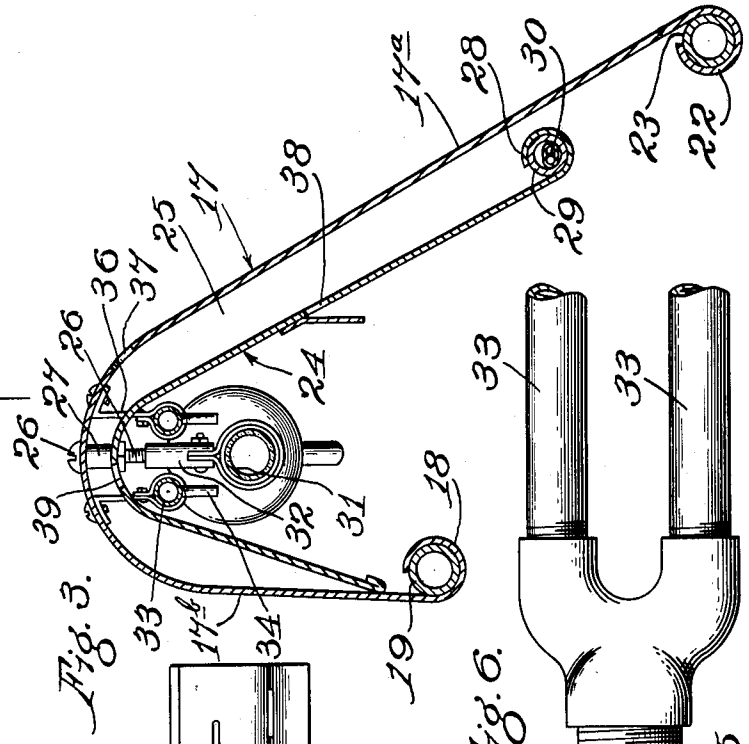


Fig. 3.

Fig. 6.

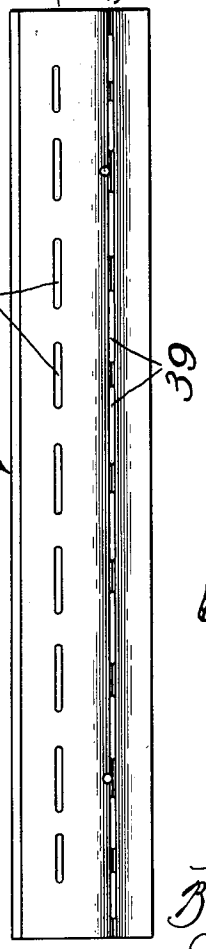


Fig. 4.

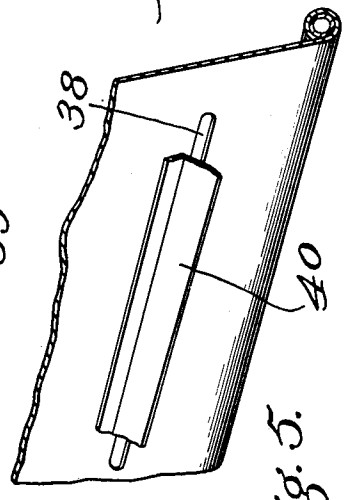


Fig. 5.

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APPARATUS AND METHOD FOR TREATING FABRICS

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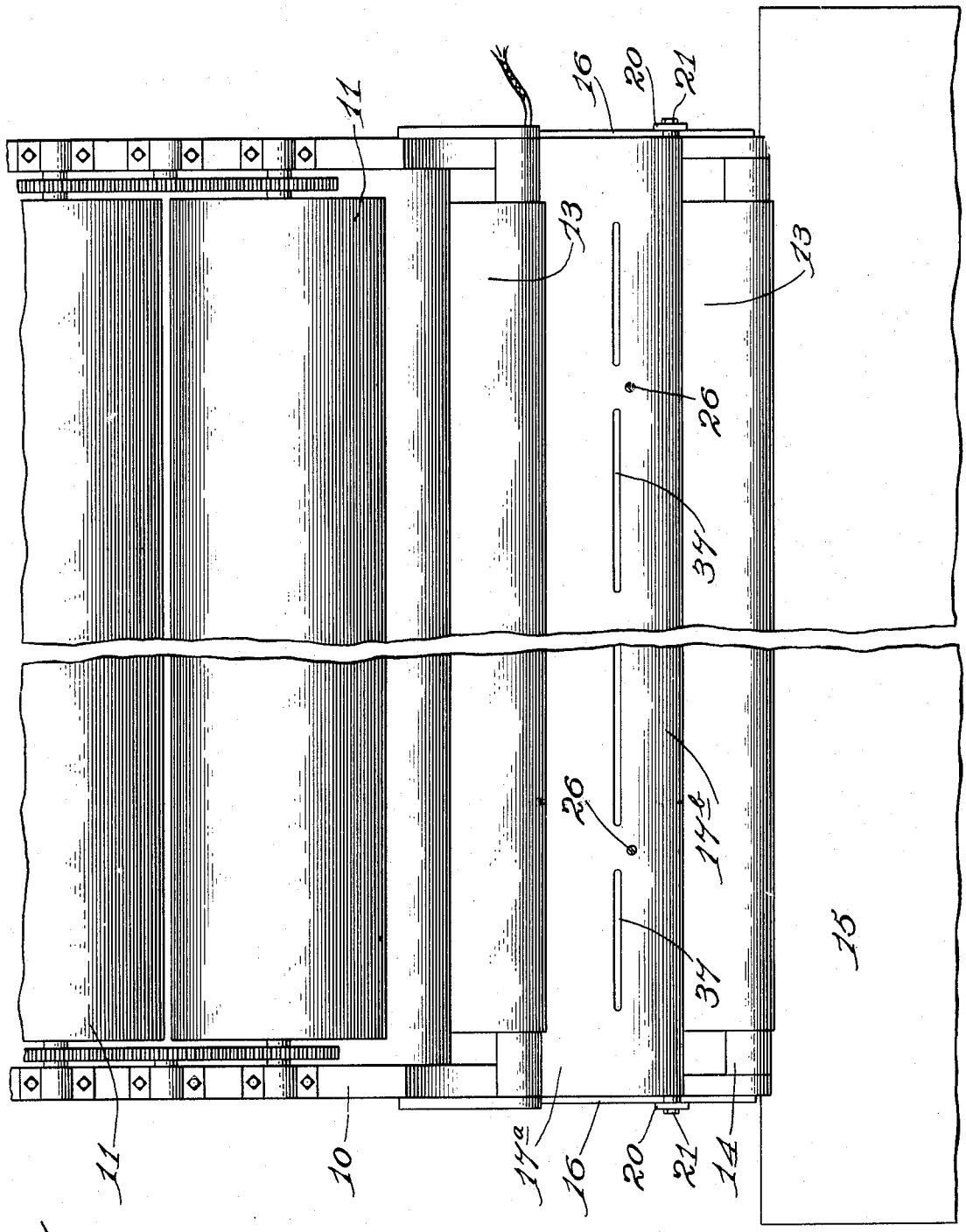


Fig. 1.

Inventor.
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Patented Oct. 4, 1932 1,881,310

UNITED STATES PATENT OFFICE

FRANK E. COATSWORTH, OF CHICAGO, ILLINOIS

APPARATUS AND METHOD FOR TREATING FABRICS

Application filed May 15, 1931. Serial No. 537,717.

This invention relates to improvements in apparatus and method for treating fabrics. For the purpose of illustrating the invention, I have here shown it as applied to a laundry machine, for example, a mangle or ironing machine; but it is obvious that the invention can be used in connection with any kind of machine, apparatus or device for handling, treating, storing or supporting fabrics, such as, for example, clothing, furs, carpets, rugs, sheets, linens, and the like.

Among the features of my invention is the provision of means for treating fabrics to sterilize and deodorize the same. My invention also may be used for bleaching, if desired.

When my invention is used in connection with a mangle or ironing machine, it enables a power laundry to impart to clothing, in a very short time, the wholesome deodorized sweet condition that is secured otherwise only from a long period of exposure in natural sunshine. It is well known that clothes washed in a power laundry usually absorb many odors and frequently germs, due to indiscriminate mixing with soiled articles. By the use of my invention, all clothing after being treated by my improved apparatus is completely sterilized and deodorized and free from germs, and the like.

My improved method of treating fabrics may be applied to clothing in the process of cleaning and pressing; and, if desired, apparatus for subjecting the clothing to my improved process may be attached to the cleaning and pressing machines. Also, if desired, the process may be applied to any fabrics or clothing in storage or arranged on any suitable support.

In general, my invention includes the subjecting of fabrics to ultra-violet rays either alone or in conjunction with air having ozone in it. My improved apparatus is designed to permit its ready attachment to fabric handling machines, such as, for example, mangles and ironing machines. Means are also provided to shield the operator of such a machine from the ultra-violet rays.

Another feature of my invention is the provision of means for directing jets of air and ozone against a fabric substantially in the zone covered by the ultra-violet radiations, thus cooling the fabric and preventing the accumulation of undesirable heat with possible injury to the fabric.

Another feature of my invention is the provision of means for reflecting the ultra-violet rays against the fabrics to be treated and the provision in connection with such reflector of shielding and cooling means.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention shown in the accompanying drawings—

Figure 1 is a view in side elevation of a mangle or ironing machine with my improved apparatus attached thereto; Fig. 2 is a view taken as indicated by the line 2 of Fig. 1; Fig. 3 is a view taken as indicated by the line 3 of Fig. 2; Fig. 4 is a plan view of the reflector; Fig. 5 is a view in perspective of a portion of the reflector showing one of the deflectors; Fig. 6 is a fragmentary view showing the T-connection in the pipe for supplying air and ozone; and Fig. 7 is a top plan view.

As shown in the drawings, A may indicate, in general, a mangle or ironing machine, such as commonly used in a power laundry. For example, this may include the base or support 10, the three rolls 11, 11, the heater element 12 and the conveying sheets 13. The details of the machine itself form no part of the present invention and, consequently, need not be described here. It will suffice to say that in a machine of this kind, the articles being ironed issue therefrom on that portion of the belt or conveyor sheet indicated in the drawings by 13^a. From this sheet, they are discharged over the roller 14 onto the receiving table 15.

I shall now describe my improved appliance adapted for exposing fabrics to ultra-violet light and jets of air having ozone mixed with it. The attachment or appliance as I have shown it here is adapted for attachment to the members 16, 16 on the ironing machine. It is obvious, however, that any

means of attachment or support may be employed.

The attachment itself includes, in general, an elongated hood or guard 17 arranged across the front or discharge end of the ironing machine over the portion of the conveyor sheet indicated by 13[a]. This guard or hood includes a relatively long depending apron 17[a] at the back and a somewhat shorter apron 17[b] in front, said two aprons being joined integrally at their upper edges and curved to form the guard or hood, as shown. For the purpose of supporting and strengthening the hood, the lower edge of the front apron, as indicated by 18, is rolled over a pipe 19, the ends of which are fastened to the upstanding lugs 20, 20 on the members 16, 16 by the machine screws or bolts 21, 21. The lower edge of the rear apron 17[a], as indicated by 22, is rolled over a similar stiffening or strengthening tube 23, the ends of which are attached to those portions of the main frame of the ironing machine indicated by 10[a].

Inside of the guard or hood are supported two reflectors 24 arranged end-to-end. Since these are similar, I shall describe but one. One of these is shown in plan in Fig. 4. This reflector is similar in shape to the guard or hood 17, but somewhat smaller and spaced therefrom in order to leave a space 25 between the two members. The reflector 24 is supported from the guard 17 by bolts 26, 26, numeral 27 indicating spacers to maintain the space 25.

The guard 17 serves to protect the reflectors from injury, and also to protect operators from the hot reflectors.

The rear edge of the reflector 24, as indicated by 28, is rolled about a conduit 29 housing the conducting wires 30 leading to the ultra-violet lamps to be hereinafter described.

Inside of each reflector there is supported an ultra-violet lamp 31, here shown as of the mercury arc type employing a quartz tube. The lamp 31 is supported at its ends by hangers 32 attached to the lower ends of the bolts 26.

Arranged in proximity to the lamp 31 is a pair of pipes 33 provided with jets or nozzles 34 for the issuance of air with ozone in it. The mixture of air and ozone is adapted to be supplied to the pipes 33 through the supply pipe 35 from any suitable source or generator (not shown). As here shown, the air and ozone pipes 33 are arranged slightly above the lamp 31, one on each side, with the nozzle 34 directed downwardly so that the mixture of air and ozone issuing from the nozzles will strike material resting on the conveyor 13[a] which is simultaneously being subjected to ultra-violet radiations from the lamps 31. Any means may be employed for supporting the pipes 33. As here shown, I use hangers 36 attached to the guard 17 and extending through apertures in the top of the reflector 24.

For the purpose of cooling the apparatus, the guard 17 is provided with slots 37 in its upper surface, and the reflector 24 is provided with two rows of apertures or slots 38 and 39. The row of slots 39 is substantially at the top of the reflector and the row of slots 38 is somewhat lower in the rear portion thereof. In front of the slots 38 there is arranged a deflector plate or baffle 40 adapted to direct warm air currents rising in the reflector outwardly through the slots 38 into the space 25 from which they will escape through the apertures 37 in the hood.

The guard 17 and reflector 24 are preferably made of sheet metal or other suitable material. It is to be noted that the apertures in the reflector and guard are staggered so that an operator is shielded from the ultra-violet light, although hot vapors accumulating under the reflector are permitted to escape therefrom.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of my invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as permissible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. Apparatus of the character described including; an elongated hood; means for attaching said hood to a fabric handling appliance; an elongated reflector supported by said hood inside of the same and spaced therefrom; an elongated ultra-violet light generator supported inside of said reflector; a discharge pipe, adapted to conduct a cooling gas, supported inside of the reflector in the vicinity of the ultra-violet light generator; and nozzles in said pipe adapted to direct a cooling gas issuing therefrom substantially in the same direction as ultra-violet rays issuing from said reflector.

2. Apparatus of the character described including: an elongated hood; means for attaching said hood to a fabric handling appliance; an elongated reflector supported from said hood inside of the same and spaced therefrom; an ultra violet light supported inside of the reflector; and means for ejecting a cooling gas, said means being supported inside of the reflector in the vicinity of the ultra violet light.

In witness whereof, I have hereunto set my hand and seal, this 31st day of January, 1931.

FRANK E. COATSWORTH.