

M. L. LANE.
 INK DRIER AND STATIC CHARGE REDUCER FOR PRESSES.
 APPLICATION FILED APR. 8, 1910.

Patented May 9, 1911.

2 SHEETS—SHEET 1.

991,860.

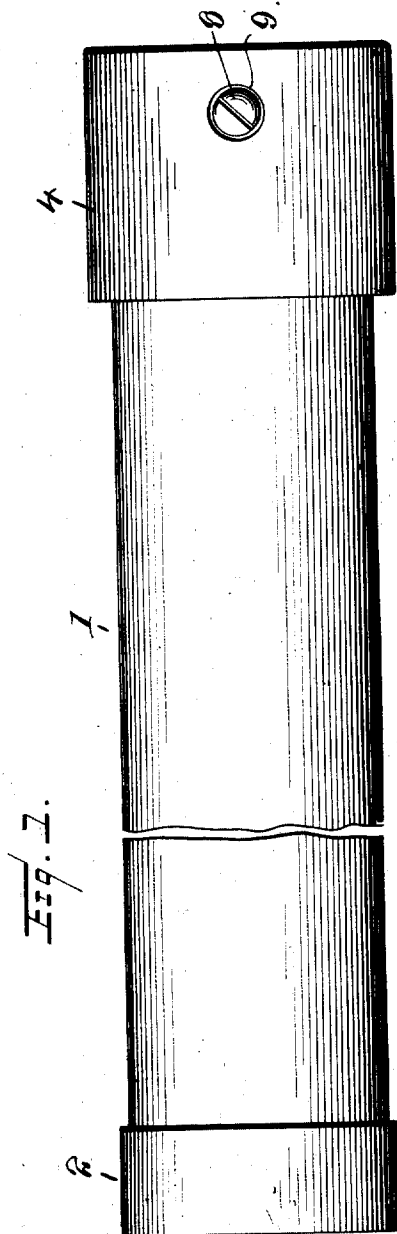


Fig. 1.

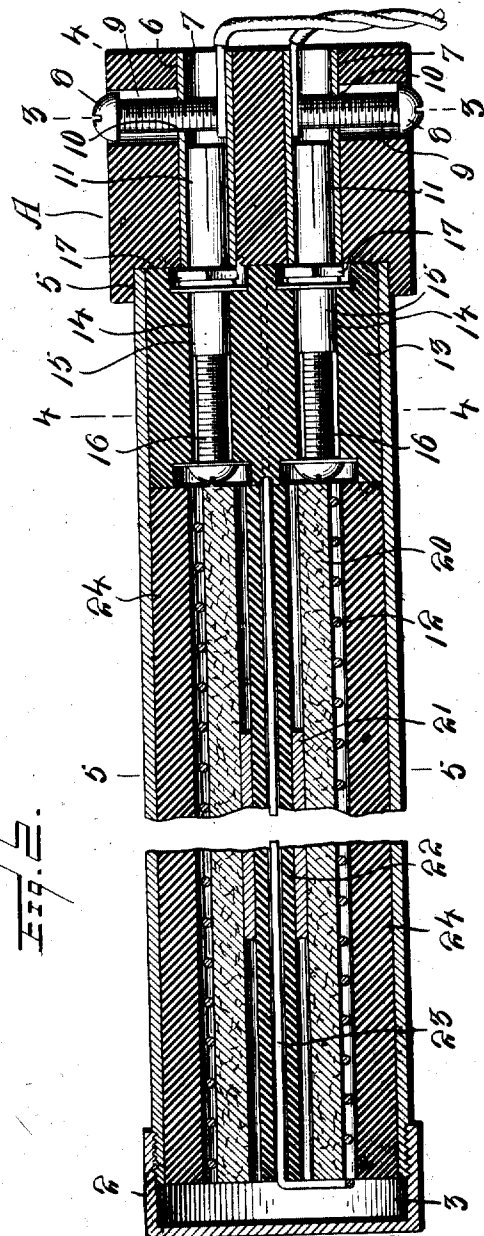


Fig. 2.

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 E. G. Simpson
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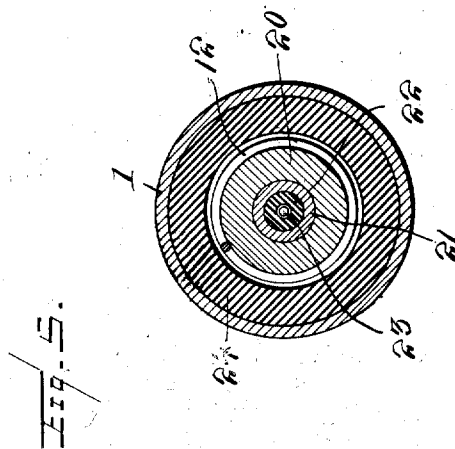
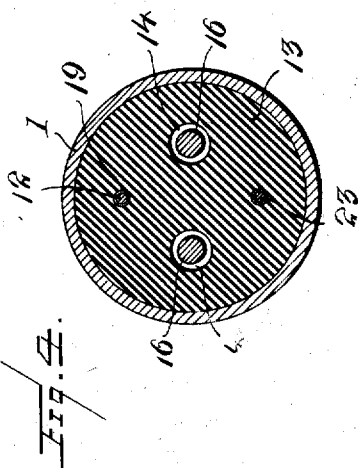
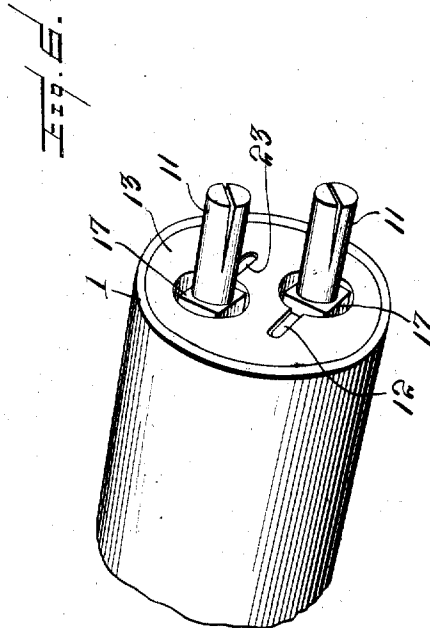
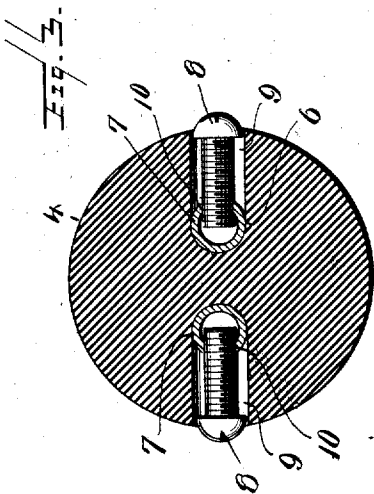
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 Maurice L. Lane
 By Victor J. Evans
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SHEETS-SHEET 2.



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UNITED STATES PATENT OFFICE.

MAURICE L. LANE, OF DETROIT, MICHIGAN. ASSIGNOR OF ONE-HALF TO CLAUD S. GORDON, OF DETROIT, MICHIGAN.

INK-DRIER AND STATIC-CHARGE REDUCER FOR PRESSES.

991,860

Specification of Letters Patent.

Patented May 9, 1911.

Application filed April 8, 1910. Serial No. 554,216.

To all whom it may concern:

Be it known that I, MAURICE L. LANE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Ink-Driers and Static-Charge Reducers for Presses, of which the following is a specification.

This invention relates to a device designed for use more especially in printing presses for drying the ink on the stock and reducing the electro-static charge generated on the stock.

The invention has for one of its objects to provide an extremely simple, practical, and efficient device of this character which is adapted to be arranged in cooperative relation with the cylinder of the press for the purposes mentioned, the device including an electric heating element or coil adapted to be connected in circuit with a suitable source of electricity.

Another object of the invention is to provide a novel construction for electric heaters and charge reducers so as to have a high efficiency.

With these objects in view, and others as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention;—Figure 1 is an elevation of the device with an intermediate portion broken away. Fig. 2 is a view of the device in longitudinal section. Figs. 3, 4 and 5 are transverse sections taken respectively on lines 3—3, 4—4, and 5—5, of Fig. 2. Fig. 6 is an end perspective view of the device with the connecting socket removed.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawing, 1 designates a tubular casing or shell, which may be of any suitable length, as, for instance, forty inches so as to extend the full length of the press cylinder, and the diameter will be such as to accommodate the internal parts of the device. This tubular casing may be of metal or other durable material, and on one end is

screwed a cap 2, which protects the parts of the device from mechanical injury by coming into contact with objects, and also to provide a chamber 3 for permitting the internal parts of the device to expand and contract with the heating and cooling thereof. The end of the casing opposite from the cap 2, is adapted to enter the body 4 of an attaching socket A, constructed of any suitable material such as burnt tale. This body 4 has a chamber 5 at one end into which the casing 1 snugly fits, and extending longitudinally of the body 4 are spaced passages 6 that are lined with metal tubes 7 held in place by binding screws 8 that are disposed in radial openings 9 in the body 4, the said metal tubes 7 having threaded openings 10 for receiving the screws. The circuit wires extend into the tubes 7 and are held electrically connected therewith by the screws being jammed down against the wires to press them against the metal tubes. Split pins or plugs 11 are adapted to enter the tube 7 of the socket, so as to electrically connect the wires with the coil 12 in the casing 1. The pins 11 are anchored in a plug 13 of insulation, such as burnt tale which is snugly fitted in the end of the tubular casing 1, and this plug has passages 14 that are countersunk at their ends and in the outer ends of these passages, the root portions 15 of the pins 11 are disposed, and screws 16 extend into the passages from the inner ends and are threaded in the root portions 15 of the split pins, the heads of the screws being disposed in the inner countersunk ends of the passages 14, while non-circular flanges 17 on the pins are disposed in the outer countersunk ends of the passages. The terminals of the coil 12 extend through passages 19 in the plug 13 and said terminals are clamped under the flanges 17 of the socket engaging pins 11.

The coil 12 is wound around an asbestos tubular core 20 which extends approximately the full length of the casing 1, said tube being supported on a tubular rod 21 that forms a reinforce therefor by extending through the bore of the tube. This supporting tube 21 is of less length than the asbestos tube and the ends are disposed inwardly from the latter so that there will be no chance of a ground being formed between the rod and the coil and return wire. In the supporting tube 21 is a tubular lining 22 of

lavite or equivalent non-conducting material which insulates the return wire 23 from the brace rod 21 the said return wire being connected with the inner end of the coil and passing through the bore of the lavite lining. Surrounding the coil 12 is a tube 24 of lavite which fits in the casing 1, and various tubular parts can be made into sections if desired for convenience in manufacture.

10 The asbestos tube prevents the conduction of heat inwardly but the heat generated by the current passing through the coil can readily pass through the lavite tube 24 and shell or casing 1, so that the stock passing through the printing press can be heated and the ink will quickly dry.

In practice, the drier and static reducer will be attached to the press by adjustable clamps or clips, the attachment being made to the band or fly rods. If attached to the band rod directly in front of the cylinder of the press, the device will heat the stock before it is printed and cause the ink to set quickly after printing and at the same time, the device will reduce the static electricity caused by the chilled stock. If the device is attached to the fly rod above the cylinder, it will set the free ink on the stock and prevent any offsetting after the stock has been deposited at the end of the press. To connect and disconnect the device, is an easy matter since the socket A can be readily pulled off or inserted on the pins.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

What I claim as new and desire to secure by Letters Patent is:—

1. An ink drier and static charge reducer comprising a casing, a tubular heat-non-conducting core extending longitudinally of the casing, an electric heating coil wound longitudinally of the core, a tubular support and reinforce extending through and of less length than the core, a return wire passing through the support and connected with the inner end of the heating coil, a tubular insulation of greater length than and extending through the support for insulating the return wire therefrom, a plug of such diameter as to fit in one end of the casing to return the parts therein, and terminal devices anchored on the plug and electrically connected with the outer ends of the return wire and coil.

2. An ink drier and static charge reducer comprising a casing, a tubular heat non-conducting core extending longitudinally of the casing, an electric heating coil wound longitudinally of the core, a tubular support and reinforce extending through and of less length than the core, a return wire passing through the support and connected with the inner end of the heating coil, a tubular insulation of greater length than and extending through the support for insulating the return wire therefrom, a plug of such diameter as to fit in one end of the casing to return the parts therein, terminal devices anchored on the plug and electrically connected with the outer ends of the return wire and coil, and a cap applied to the end of the casing opposite from that having the plug and forming a chamber into which the parts in the casing are free to expand.

3. A drier and static charge reducer comprising a casing, an electric heating element therein, a heat-non-conducting core on which the element is supported, a tubular support extending through the core, a return wire passing through the support and connected with the inner end of the element, a lining in the support insulating the return wire therefrom, an insulation plug in one end of the casing, pins disposed in the plug and projecting therefrom, fastenings for securing the pins in the plug, the outer ends of the return wire and coil passing through the plug and connecting with the pins, and a socket applied to the said pins for connecting the same with an electric circuit.

4. A drier and static charge reducer comprising a casing, an electric heating element therein, a heat-non-conducting core on which the element is supported, a tubular support extending through the core, a return wire passing through the support and connected with the inner end of the element, a lining in the support insulating the return wire therefrom, an insulation plug in one end of the casing, pins disposed in the plug and projecting therefrom, fastenings for securing the pins in the plug, the outer ends of the return wire and coil passing through the plug and connecting with the pins, a socket applied to the said pins for connecting the same with an electric circuit, said socket including a body of insulation, metal tubes in the body arranged to engage the said pins, and means for connecting circuit wires with the said metal tubes.

5. A device of the class described, comprising a casing, a tubular core disposed in the casing, a coil extending around the core, tubular insulation arranged in the casing and surrounding the coil, a tubular support extending through the core, an insulating lining in the support, a return wire extending through the support and insulated therefrom by the said lining, said return wire be-

ing connected with the inner end of the coil,
a protecting cap applied to one end of the
casing and forming a chamber to provide
for the expansion of the various parts, a plug
5 of insulation inserted into the opposite end
of the casing, metal devices in the plug to
which the coil and return wire are respec-
tively connected, and an attaching socket

engaging the devices for connecting the same
in an electric circuit.

In testimony whereof I affix my signature 10
in presence of two witnesses.

MAURICE L. LANE.

Witnesses:

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B. BLAINE COLFAX,