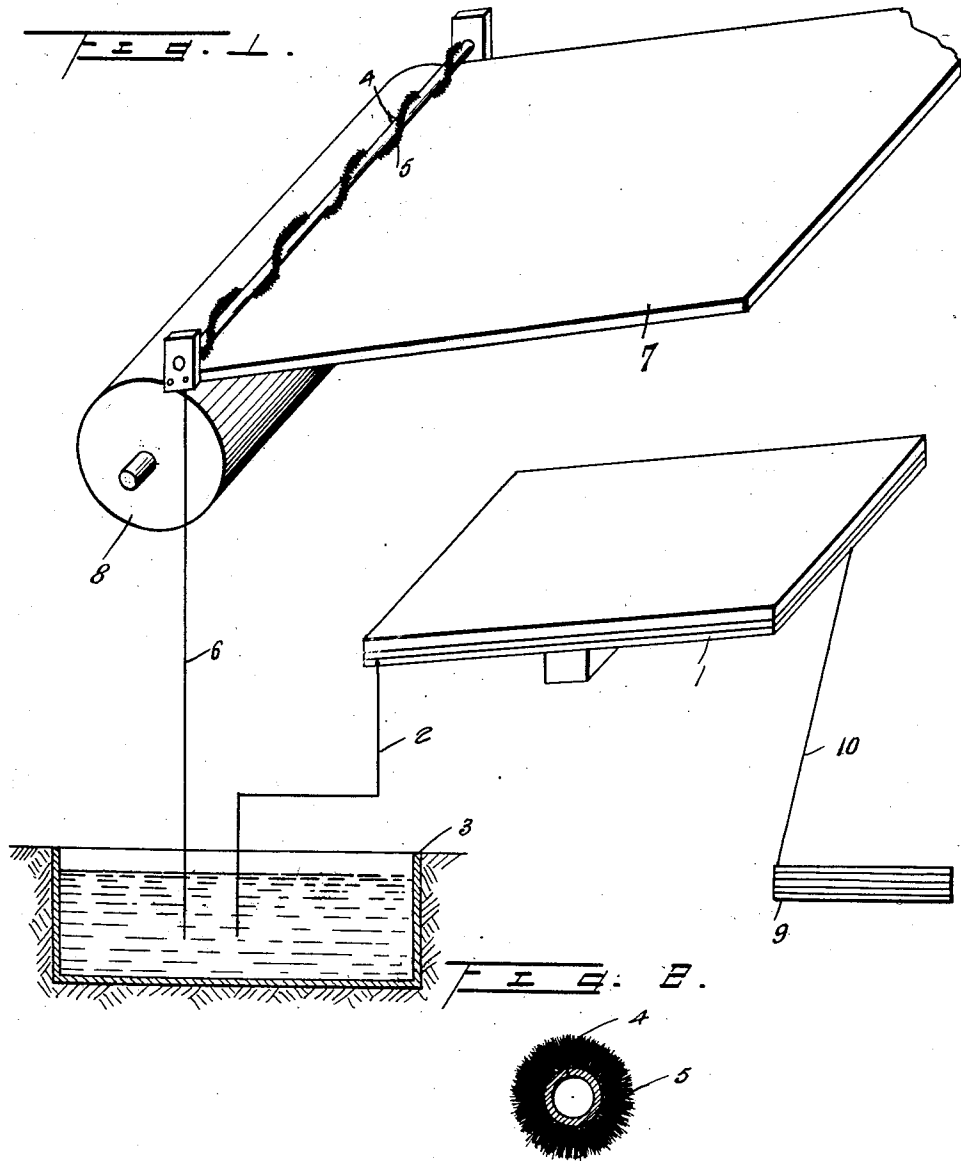


A. BUNGER.  
ANTISTATIC FRICTION DEVICE.  
APPLICATION FILED JULY 15, 1920.

1,396,318.

Patented Nov. 8, 1921.



Inventor  
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By *A. Kaufmann* Attorney

# UNITED STATES PATENT OFFICE.

AUGUST BUNGER, OF HOBOKEN, NEW JERSEY.

ANTISTATIC FRICTION DEVICE.

1,396,318.

Specification of Letters Patent.

Patented Nov. 8, 1921.

Application filed July 15, 1920. Serial No. 396,408.

*To all whom it may concern:*

Be it known that I, AUGUST BUNGER, a citizen of the United States, residing at Hoboken, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Antistatic Friction Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an anti-static friction device adapted to be used in connection with printing or lithographing presses for extracting the static-electricity from paper which is generated during the process of printing thereon.

In order that the advantages of the present invention may be readily apparent, attention is called to the fact that it is well known in the art of printing and lithographing that the frictional adhesion of layers of paper due to the presence of static-electricity causes a great waste of material, consumption of time and loss of labor. The charge of electricity in the sheets varies with weather conditions and varies also in accordance with different classes of paper and while the presence of electricity prevents papers from being handled with facility before being printed upon, the electricity is more pronounced and causes perceptibly stronger frictional adhesion after the sheets are printed on one side thereof. This adhesive tendency of the paper results in improper delivery of the sheets to the "flysticks" or other delivery appliances on the press, the sheets clinging closely one to the other producing "offsets" upon the unprinted side of the paper and preventing regular and even "jogging" or straightening of the sheets by the attendant or feeder at the press. Moreover, the edges and corners of the sheets become crumpled and curled, thereby preventing the sheets from being fed to an accurate register in printing the second side of the paper or more particularly causing inaccurate registering when two or more colors are to be printed upon the paper.

It is the object of the present invention to provide simple means for extracting or removing the static-electricity from a stack of sheets of paper and with this object in view, the invention includes the following instrumentalities.

The stack of paper is placed upon a jogger or the sheets of paper are accumulated thereon in the usual manner. This jogger is provided with zinc plates, however, which come in direct contact with the stack of sheets. The zinc plates are connected by an electric conductor, such as a wire with the ground in a body of water. The apparatus also includes one or more antennæ of special structure which are electrically connected with the ground in the body water. These antennæ are positioned to come in contact with the sheet upon delivery thereof and they each included a core of copper or brass pipe and wire, upon which is wound a coil of metallic tinsel. The spicules of the tinsel are numerous and disposed in every conceivable direction. Some of them come in contact with the top sheet of the stack and these spicules or fibers of the tinsel gather the said electricity which is conducted to the ground in body of water and removed from the stack of sheets and consequently the sheets are rendered anti-static and are in condition where they may be accurately and efficiently printed in the usual manner.

Other objects of the invention will be apparent as the description proceeds and it will be understood that the novel construction, combination and arrangement of cooperating elements as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming a part of the present application and in which:

Figure 1 is a diagrammatic view of the anti-static friction device.

Fig. 2 is a detail sectional view showing the structure of the antennæ of the device.

Referring more particularly to the drawings, in which similar reference characters designate corresponding parts throughout the several views, 1 indicates a plurality of copper and zinc plates or coil which may be employed in connection with the jogger of a press or printing machine and which is electrically connected by means of a wire tube with the ground in body of water 3 and upon which the paper sheets are accumulated in the usual manner. The device also includes an antennæ, consisting preferably of a copper or brass pipe 4 having a wire wound thereon and which wire in turn has wound thereon metallic tinsel 5. A wire 6 preferably connects the wire 4 with the ground in body of water 3.

In practice the stack of sheets is placed

upon the feed board 7 which is arranged in the usual operative relation to jogger 1 and impression cylinder 8 and the antennæ comes in contact with the top sheet of the stack, thus the spicules, points, branches or fiber of the tinsel 5 come in contact with the upper surface of the top sheet of the stack and the static-electricity is gathered by the tinsel upon the copper wires and pipe 4 and is conducted along the wire 6 to the ground in the body of water 3. Electric connection is also made with zinc or copper plates 9 which gather the electricity after the sheet is delivered and is conducted along wire 10 to plates 1 and then by way of the wire 2 to ground in body of water 3 to create a circuit, so to speak, through the stack of sheets, and to cause the static-electricity to flow as hereinbefore indicated.

From the foregoing description taken in conjunction with the accompanying drawings, it will be seen that an anti-static friction device of simple structure is provided and that the same when applied to a stack of paper will effectually relieve the same of the static-electricity stored therein and consequently render the condition of the paper such that it may be readily handled during the process of printing, lithographing, or the like.

While the preferred embodiment of the invention has been shown and described, it will be understood that minor changes in the details of construction and arrangement of parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

What is claimed is:—

1. A mechanism to discharge static electricity from sheet material including an antennæ having a supporting member, a spiculiform conducting body coiled on said member and engageable with the material and means in conducting relation with the body to discharge electricity collected thereby.

2. A mechanism to discharge static electricity from sheet material including an antennæ having a supporting member as a conductor, means in conducting relation with the member to discharge electricity collected thereby and a spiculiform conducting body coiled on said member in conducting relation to directly engage the material.

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

AUGUST BUNGER.

Witnesses:

FREDERICK HEIGIS,  
JOHN C. VORRATH.