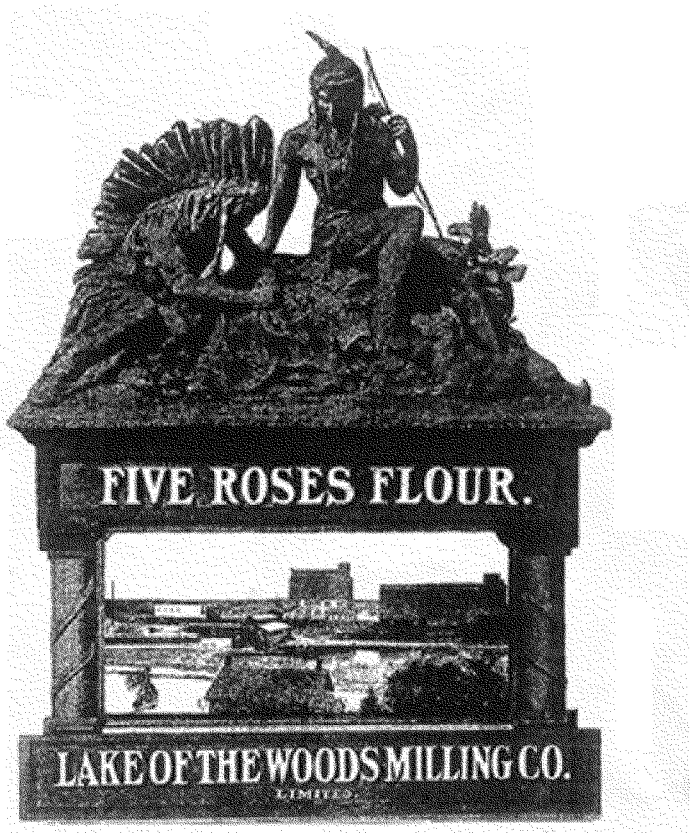
IMITATION THE SINCEREST FLATTERY.

The advertising designs of the J. W. Butler Paper Company, of Chicago, which have been exploited in the pages of THE INLAND PRINTER and elsewhere, are characterized by an art value that renders them of interest from that point alone, with of course the added value of the message they convey of the merits of the papers handled by the J. W. Butler Company. The conception of these designs and their execution and application to carry the message of the company to their customers justified the precaution of copyrighting the designs,

DESIGNED BY JOHN PAULDING, CHICAGO.



MADE IN CANADA.

but *The Canadian Thresherman,* in its issue of March, 1905, contains one of these striking designs applied to an advertisement of a flour milling company which certainly ought to have dough enough to stimulate the artists of Canada to originate something applicable to itself.

While imitation is evidence of appreciation, the clumsiness of the application of Mr. John Paulding's excellent design is more reprehensible than the piracy.

A CHARITABLE HUSBAND.

"You don't seem to enjoy your dinner, dear," said the proofreader's wife. "What's the matter?"

"I was just wondering," he answered, "if there weren't some typographical errors in that cook book of yours."—*Cincinnati Enquirer.*

WORTH THE MONEY.

I appreciate this month's INLAND PRINTER more than any I have received, and will say that this copy has paid for one year's subscription. The subscription was a Christmas present to me by my father, and was highly appreciated.—*James D. Bell, Troy, Alabama.*

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Written for THE INLAND PRINTER.

STATIC ELECTRICITY IN THE PRESSROOM.*

BY R. O. VANDERCOOK.

THERE is now no reason why a printer who uses a little thought need be bothered because of the generation of static electricity on paper in the pressroom. The elimination of this evil does not require any special machinery or any complicated devices or arrangements.

In common with all those who have operated cylinder presses in the temperate zones, the writer had been for years at certain seasons most seriously handicapped on account of the generation of static, but about three years ago, when the trouble was the worst that it had ever been in our experience, a lucky stroke eliminated for us at that time all difficulties and never since have we lost time because of the adhesion of sheets in our pressroom.

THE INLAND PRINTER some time ago reprinted from the *Evanston Press* the story of the victory over static, and at the request of the editor of THE INLAND PRINTER I now give for the benefit of printers a method whereby they can as successfully eliminate the evils of static as we have done.

Like many other good things, the process is exasperatingly simple when it is explained, and the wonder is that it had not been stumbled on to long before. I was fortunate, probably, in having a little training in technical laboratories before entering the printing business. The habit of observation taught there was probably the chief cause of the successful solution of the problem. We were taught in the laboratories to watch carefully every possible factor that might enter into a proposition to be solved and by tests find out all factors that had direct bearing on the proposition in hand

and also to eliminate all other factors which we were satisfied did not have bearing on the said proposition.

Applying this process to the study of static electricity in the pressroom, our first observation was that only at certain seasons of the year were we bothered. This, therefore, established the fact that the formation of static was first due to the differences in the weather. No printer in the latitude of Chicago has ever been bothered with static in the month of June, but the months of January and February were always productive of the worst trouble. Now, the proposition to be considered is what is the difference between a day in June and a day in January. The most apparent difference is that of the temperature shown by the thermometer, but the temperature in the pressroom of a day in January with the windows and doors tightly closed and good heat on might have been practically the same as that of a day in June in the pressroom with all the windows and doors open, therefore temperature *per se* is not the vital factor in the proposition.

Another factor that enters into the weather is atmospheric pressure, which is determined by the barometer. We find on observation that the height of the barometer varied without reference to the condition of static in the pressroom; that is, we had static just as much with a high barometer as with a low barometer, therefore we can eliminate the barometer from our proposition.

Now, the only remaining factor that can be considered is that shown by the hygrometer, an instrument that indicates the relative humidity of the atmosphere.

In every large city the Government maintains a weather bureau, where are kept on file the daily readings of the thermometer, barometer and hygrometer, these three instruments being used to foretell the weather. Turning to a date when the pressroom records show a fearful loss of time and money because of static generating on the paper, and comparing the weather bureau records of the same date, we invariably will find that on the dates when the hygrometer indicated the lowest per cent of humidity in the atmosphere we also find the greatest amount of trouble because of static.

Reducing our observations to a single sentence, we find that the generation of static is inversely proportional to the humidity in the air, or, to put it in every-day language, the more humidity the less static. Now, the proposition is how to make some artificial weather in our pressroom. Humidity is the active factor which we lack.

Now I will tell just what is done in the pressroom of the *Evanston Press* when static begins to show itself. We do not have to wait for it to show itself, because our hygrometer readings will show us whether it will generate before a sheet is fed into the press. When we see that we are to have trouble from static we simply open up the hot water radiators, fill a number of buckets and pans with hot water and place them vaporizing around the room. We see to it that the windows and doors are all closed, so that the aqueous vapor will not pass out through places of ventilation, and possibly we may sprinkle some hot water on the cement floors of the pressroom. This artificial humidity, working together with the peculiar construction of our pressroom, eliminates all trouble from static.

This peculiar construction of our pressroom was entirely accidental, but by using the same process of examination of the problem that we did in the main proposition, we have found out just what brought the results. Under ordinary circumstances, if vapor is generated in a room it will ascend to the ceiling from points of generation, drift along the ceiling and pass out through the places of ventilation and not distribute humidity evenly throughout the room. The reason why the vapor distributes itself evenly throughout our pressroom is because of the simple fact that the cold water supply to a large building comes in through pipes placed on the ceiling of the room.

The vapor generated from the hot water rises to the ceiling and comes in contact with the cold water pipes. When the vapor strikes these cold surfaces it immediately condenses and falls to the floor again in rather a wide area. The moisture as it is precipitated from the cold water pipes is not visible to the physical senses, but is shown immediately in the readings of little hygrometers which are placed around the room. The requisite amount of humidity after the room has been once cleared of static can be easily retained by simply putting pans containing water on the radiators, which require little or no attention. If it is found that a greater flow of humidity is required, it can be conveniently supplied by putting water pans under the radiators and jabbing cotton waste between the coils of the radiators and allowing the waste to extend down into the water in the pans. In this way any desired amount of humidity can be generated; but when real quick action is wanted to start the process, it is better to fill some buckets with hot water, as stated in the first instance. It may be advisable to say here that a patent was granted covering the idea of dispersing humidity throughout the room by means of generating water vapor at or near the floor and precipitating the humidity therefrom by cooling surfaces on the ceiling and making the walls of the room a conductor of electricity and connecting the same with the ground. Any one can get a copy of this patent by sending to the Patent Office. The number is 705,490.

Some pressrooms are so constructed that but a few trifling changes are necessary to remove troubles. The large pressroom of W. B. Conkey, at Hammond, Indiana, is so constructed that there is but very slight trouble because of static. The entire plant is on the ground floor and is heated by forced drafts of hot air driven by a large fan in the engineroom. The injection of live steam into the air flues disperses the necessary humidity evenly over the plant, and the building has steel girders which have ample ground connections, and whatever static is generated passes away immediately through the air and the building to the ground. In many mills, flouring mills especially, a mechanical humidifier is used, the operation of which, in a general way, is to throw, by rapidly revolving plates, fine particles of moisture all over the area to be humidified. Force drafts can be used in many ways to distribute the humidity. The expense of equipment of the pressroom, so as to be entirely free from static troubles, must of necessity vary with the construction of the building. There is a very large basement pressroom in Chicago. The only things necessary to be done is to build double door entries in front of all elevator shafts and passage ways leading out of the room. In these area ways, a little live steam may be allowed to escape so it humidifies the air. That, with other arrangements which by chance are in the building, is sufficient. The ceiling is low, with abundance of water and other pipes suspended from it. When the double doors are open the cold, dry air from the outside becomes humidified by passing over the steam jets and distributes itself evenly over the room. If all points of ventilation in the room have a steam jet, the humidity must of necessity be quite evenly distributed. In such a case, all that is necessary is to have plenty of electrical connections in the room in the shape of metalwork or mineral paint, so that the static can pass through the atmosphere and the building to the ground.

In THE INLAND PRINTER stock rooms, a suggestion of mine, made a few years ago, saved them considerable trouble from static. In winter, when paper stock is unloaded from the wagons, it is unpacked in a room quite well filled with steam, which removes from it all static generated on the sheets by the friction of handling in the wagons.

When static is only in evidence in moderation, it can be frequently removed by rubbing glycerin on the tympan sheets. In every case the glycerin must extend to some metal part of the machine. Glycerin is a conductor of electricity, and the

application of it does not cause the tympan sheets to swell, as would other liquids; it also lessens the friction of the printed sheets and therefore lessens the formation of static. If the glycerin is only rubbed on the tympan where the form strikes, the static electricity can not pass over the dry paper between the part treated with glycerin and the metal of the press, and will therefore stay on the paper. Any other so-called lightning killers or patent preparations for applying to tympan sheets are no better than simple, every-day glycerin.

Every pressman knows, or should know, that the placing of wet sponges on the delivery board of the machine will often remove the static from the sheets as they are piled, but, though this is a partial relief and often permits work to go on, there are at times weather conditions when the sponges are not sufficient. The action of the wet sponges is that the moisture, as it evaporates, is kept in circulation by the action of the fly, and the static electricity is taken up by moisture evaporating from the sponges.

Pressmen have all noticed that after working a short time the sponges refuse to take up any more electricity. This is due to the fact that the sponges are placed on an insulated surface, properly, of dry wood, and when they have taken a full charge can not take any more. If the sponges were connected with a conductor to the earth, they would continue at their work as long as they contained moisture.

Good results have often been obtained by letting a steam jet play under the sheets as they pass over the fly. One reason why this device has not worked as satisfactorily at times as it might, is because the steam does not get in contact with the conducting surfaces after it strikes the paper. The cloud of vapor picks the static off of the sheets and unless the vapor comes in contact with some surface which is a conductor it can not discharge, and the static will remain.

A little consideration of the way nature forms a thunder cloud will help us in our understanding of static in the pressrooms. When the sun draws up moisture from the earth, that moisture takes the form of a cloud, and the cloud, driven by the winds, accumulates through the friction of the air a charge of static. When the static charge becomes strong enough to make a jump to earth, it jumps, and we have a flash of lightning. Rain adds to the conductivity of the air and helps the jump of the big spark.

In our pressrooms we must provide an avenue of escape for the static when it has been accumulated in the air. If there are sufficient gas and water pipes or other metallic ground connections, nothing else need be done to provide conductors, as these pipes, etc., will discharge the electrical energy as fast as generated.

Briefly stated, what is necessary to relieve a pressroom from troubles from static is as follows:

First. Create artificially in the room a summer humidity, which humidity must be evenly dispersed throughout the room.

Second. Provide ample electrical conductors to the ground, from the walls and ceilings of said room.

Any method which will do the above will eliminate all troubles.

As to health in a properly humidified room, physicians are now more than ever before recommending that, in winter, the dry air of residences be humidified by artificial means. Normal humidity is beneficial to the health at all times.

Because the hygrometer is an instrument with which pressmen have never had occasion to become familiar, it may be well to give it a little description. A spiral hygrometer can be bought at any scientific supply store for $1 or $2. This type of hygrometer has a dial about the size of a watch. It works by the expansion or contraction of a composition which is affected by the humidity and not by the temperature, and the figures on the dial give the relative per cent of humidity. This instrument is not accurate enough for scientific purposes but will do for the pressroom.

The instrument used by the weather bureaus and for scientific purposes is called the wet bulb hygrometer. This instrument can not be used by any person unless he has a scientific training, and it is not necessary for pressmen to master its intricacies. The best way, if you wish to become familiar with that instrument, is to watch the government weather bureau hygrometer when the operator is taking a reading. Your little catgut hygrometer can be regulated very easily by taking a bureau reading and turning the pointer on the small instrument so that it will point to the same per cent on the dial as that given by the weather bureau figures. Of course, the same weather conditions must exist where the readings are made by the scientific instruments and the little

CANADIAN PRODUCTS.
Photo by R. R. Sallows, Goderich, Canada.

instruments corrected. Great care must be taken not to let your breath strike it, because there is considerable moisture in the breath of every animal which will instantly show on the hygrometer. Although the hygrometer will be a considerable help in regulating the room, it is not absolutely necessary. Its greatest service is to tell you in advance when you may expect trouble and when humidity is spread evenly over the room. The way a belt sparks indicates the humidity. The dryer the room the more readily will static accumulate on the driving belts. Every pressman has noticed that at times there is much more electricity in the belts. In my conversation with pressmen I have yet to find any who knew why a belt should throw off bigger sparks at one time than at another. The same condition that causes electricity to come on the belt also causes the accumulation of static on the paper.

An interesting little experiment which we tried was to find out how the length of a spark from a given belt would vary with the readings of the hygrometer. We found at about thirty per cent humidity the belt began to show a spark at about six inches distant, and the distance decreased as the per cent of humidity in the room increased. We are now able to get a pretty good humidity test from the same belt by simply noting how far the distance is from the belt to a neutral when the spark begins to show.