July 5, 1932. G. A. RUTKOSKIE 1,865,445

HEAT CONTROL FOR WAX CARBONING PRESSES

Filed Sept. 16, 1931 2 Sheets-Sheet 1

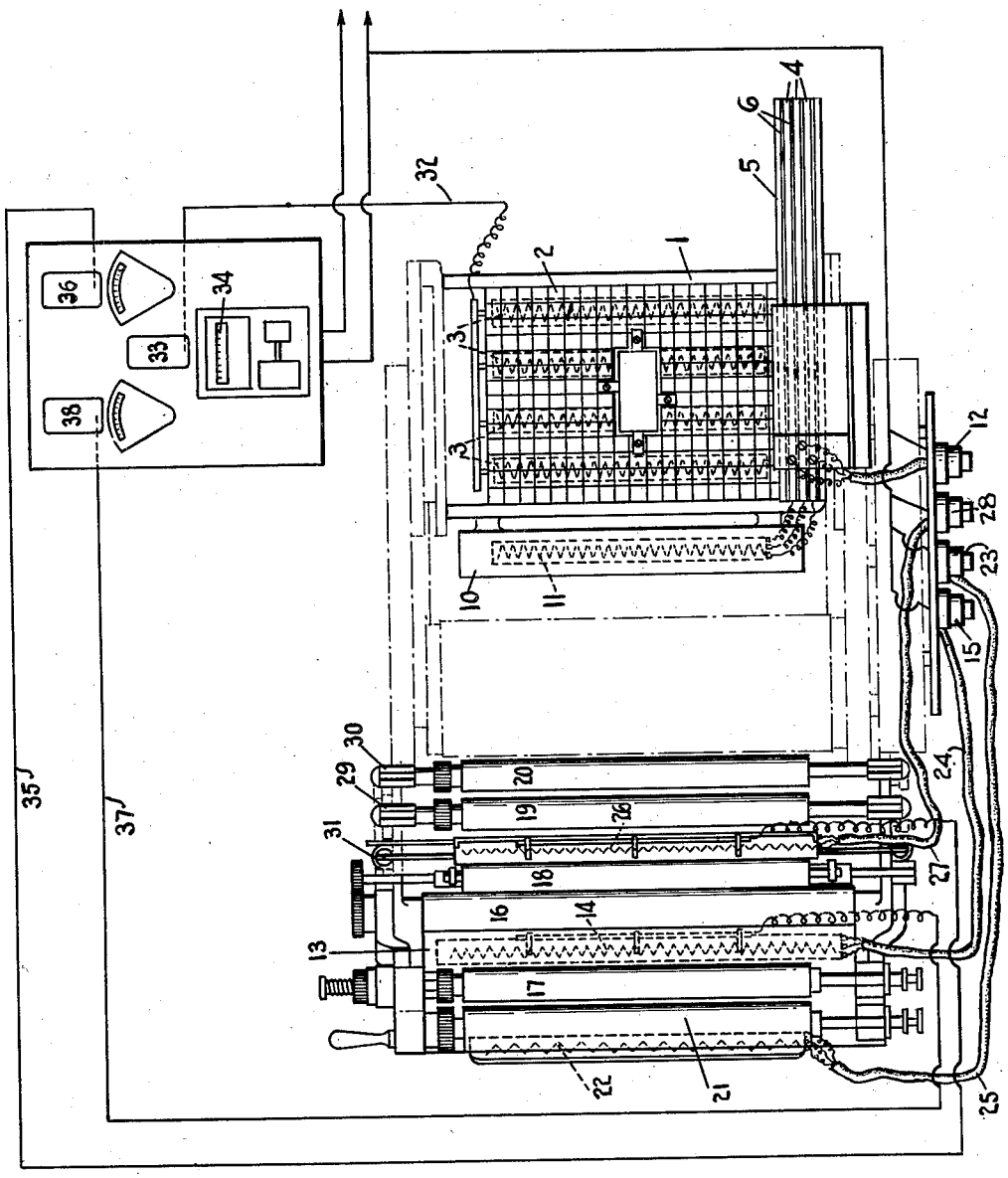


FIG. 1

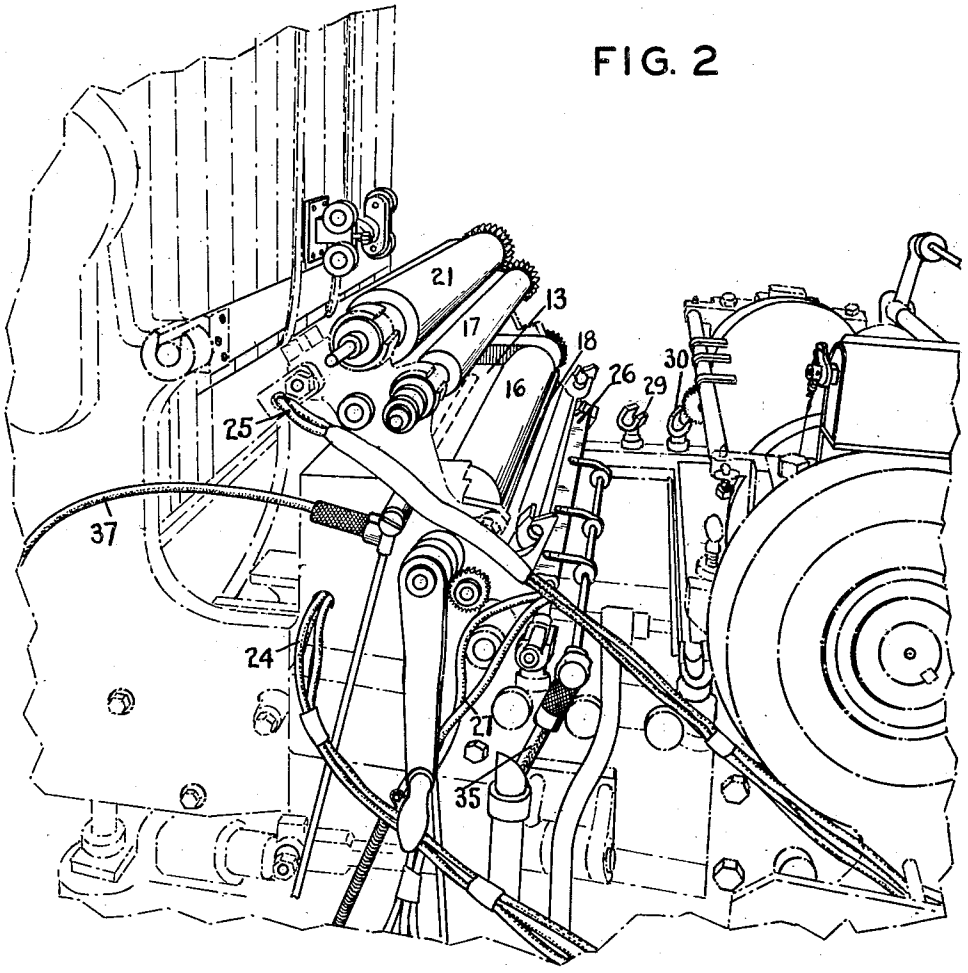
INVENTOR
George A. Rutkoskie
BY his ATTORNEY
Harvey Lea Dodson

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FIG. 2



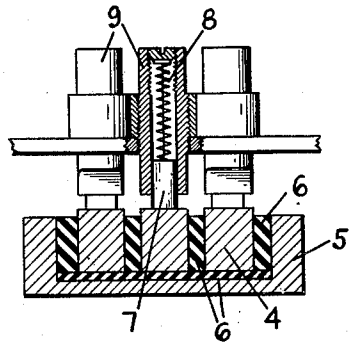


FIG. 3

INVENTOR
George A. Rutkoskie
BY his ATTORNEY
Harvey Dea Dodson

Patented July 5, 1932

1,865,445

UNITED STATES PATENT OFFICE

GEORGE A. RUTKOSKIE, OF ATHENS, OHIO, ASSIGNOR TO THE McBEE BINDER COMPANY, OF ATHENS, OHIO, A CORPORATION OF OHIO

HEAT CONTROL FOR WAX CARBONING PRESSES

Application filed September 16, 1931. Serial No. 563,100.

My invention relates to that class of machines such as are described in my copending application, Serial No. 529,907, for producing wax carbon spots on sheets of paper by impression. As described in that application, it is necessary to provide heating means for the wax carbon and all parts which come in contact with the wax carbon. The application then states:

The temperature necessary to obtain satisfactory results is very essential. Too much heat will cause the compound to penetrate the spot and is also liable to burn the carbon. While if it goes still higher it will crystallize and not be usable at all. While not enough heat will cause the compound to collect on the printing place in excess and this makes an uneven print which is easily offset when put under the trimming knife when the carbonized forms are trimmed to proper size. For that reason, I provide a variable regulator for the control of the heat.

I have found by experience that it is necessary to watch the heat on all of the various heating elements employed which can be readily controlled by the control switches provided for that purpose. I have found that by locating electric heating elements having variable temperatures in various positions on the press and the use of the standard rollers used for ordinary printing but made to stand a temperature of approximately 200° F., then gearing these composition rollers so that they are positively driven and using a specially constructed lock-up base on which to lock regular electroplates such as are used for producing solids in ordinary printing, I am able to produce with the use of a wax base carbon compound, wax carbon impressions of any size and in any position and on any kind of paper limited only by the size of the printing press used.

To accomplish the results thus set forth it is necessary for the operator to almost constantly observe the heating apparatus and exercise the greatest care in the operation of the machine, or the difficulties above set forth may occur. This requires considerable training and a highly skilled and experienced operator.

My present invention has for its object to provide for automatic regulating of the temperature of the heating elements employed on the machine so that when the correct temperature is obtained the regulator can be set at the required degree for the heat and it will maintain the heat at that degree for as long a run as is desired.

My means of accomplishing the foregoing objects may be more readily understood by having reference to the accompanying drawings in which—

Fig. 1 is a top plan view of a press equipped for spot carbon work having my invention applied thereto; and

Fig. 2 is a perspective view with the rollers thrown back so as to permit a clear view of the ink fountain and its heating element and control.

Fig. 3 is a detail showing electric heater contact means for the base.

Similar reference numerals refer to similar parts throughout the entire description.

As shown in the drawings the type bed 1 of an ordinary printing press has mounted thereon a special lock up base 2. This base is heated by electric heating elements 3. As shown they are four in number, and are connected to a control circuit by means of sliding contacts 4 which are mounted in a gutter 5, suitable insulation 6 being provided to insulate the electric current. Three carbon brushes 7 are provided to make contact with the sliding contacts 4, the brushes being held in contact by coil springs 8 mounted in caps 9, of the usual or standard construction for this purpose, so as to provide means to regulate the tension which the springs exert upon the carbon brushes 7. It will be apparent from this description that the type bed 1 can be reciprocated without in any manner affecting the effectiveness of the electrical contacts which convey current to the heating elements in the lock up base 2.

The ink plate 10 is heated by an electric element 11 which is also connected to the sliding contacts 4 and is controlled by the same switch 12 which conveys current to the carbon brushes 7. This switch is a standard switch providing three positions, high, me-

dium and low, so that varying degrees of temperature for the heating elements 3 and 11 can be maintained.

The dry wax carbon compound is placed in an ink fountain 13 which is heated by an electric heating element 14 located directly under the ink fountain 13, the element being connected by suitable conductors 24 to a standard switch 15. The melted compound is separated by the ink fountain roller 16 and carried to the steel vibrator 17 by the ductor roller 18 which is preferably formed of a special composition which will withstand approximately a temperature of 200° F.

The melted compound is distributed to form rollers 19 and 20 also constructed of the special composition, by the aid of a standard rubber roller 21 used for ordinary printing, this roller riding the steel vibrator 17 and ductor 18. Adjacent these rollers I provide an electric heating element 22 which is connected to a standard switch 23 by suitable conductors 25. I remove one of the form rollers from the press and mount in its place a heating element 26 which is connected by suitable conductors 27 to a switch 28. The other form rollers 19 and 20 are carried in the usual roll bearing brackets 29 and 30, the brackets 31 being used to hold the heating element 26 in position, this element being necessary to keep the melted compound on the rollers at the correct working temperature. Electric conductor 32 connects the heating elements 3 and 11 to a temperature control 33 which is arranged to maintain the temperature of the elements at whatever degree is desired. The control is provided with a scale 34 provided with indicia corresponding to degrees of temperature. This permits a variation in the temperature as obviously it can be set to maintain the predetermined degree of heat which is most desirable for successful operation.

The element 26, for heating and maintaining the rollers at the heat at which they attain their highest efficiency, is connected by electric conductors 35 to a similar temperature control 36 by which the temperature of the element 26 and in turn the rollers is maintained as desired.

Electric conductors 37 connect the element 14 which melts the wax compound in the ink fountain 13 to another temperature control 38 and maintains it at the exact melting point where it will not be too cold or too hot to properly distribute upon the rollers.

Thus it will appear that the operator may at will vary the temperature to be maintained by each and all of the elements, and consequently the parts of the press affected thereby, so as to obtain ideal operating conditions and that this temperature will be automatically maintained until the control is manually altered. I have in this way entirely removed the human equation from the problem for the shop foreman can set the various controls at the correct position in the morning and all the operator need do is to throw in the switch for the electric current.

Having described my invention what I regard as new and desire to secure by Letters Patent is:

1. The combination with a printing press having an ink fountain, direct driven rollers, a lock up base, and ink plate, of electric heating elements mounted adjacent said fountain, rollers, base and plate, means to connect said elements to a source of current supply and automatic temperature controls mounted in the line.

2. The combination with a printing press having an ink fountain, direct driven rollers and a lock up base, of electric heating elements mounted adjacent said fountain, rollers, and base, means to connect said elements to a source of current supply and automatic means to maintain the said elements at a predetermined temperature.

3. The combination, with a printing press having an ink fountain, direct driven rollers, and a base, of electric heating elements mounted adjacent said fountain rollers and base, means to connect said elements to a source of current supply, automatic means to maintain the said elements at a predetermined temperature and means to vary said temperature.

4. The combination, with a printing press having an ink fountain, direct driven rollers, and a base, of electric heating elements mounted adjacent said fountain rollers and base, means to connect said elements to a source of current supply, automatic means to maintain the said elements at a predetermined temperature, and means to vary said temperature of each element separately.

GEORGE A. RUTKOSKIE.