June 5, 1934. G. A. RUTKOSKIE 1,961,827

ROTARY PRESS FOR PRINTING WAX CARBON SPOTS ON PAPER

Filed Jan. 26, 1933 3 Sheets-Sheet 1

FIG. 1.

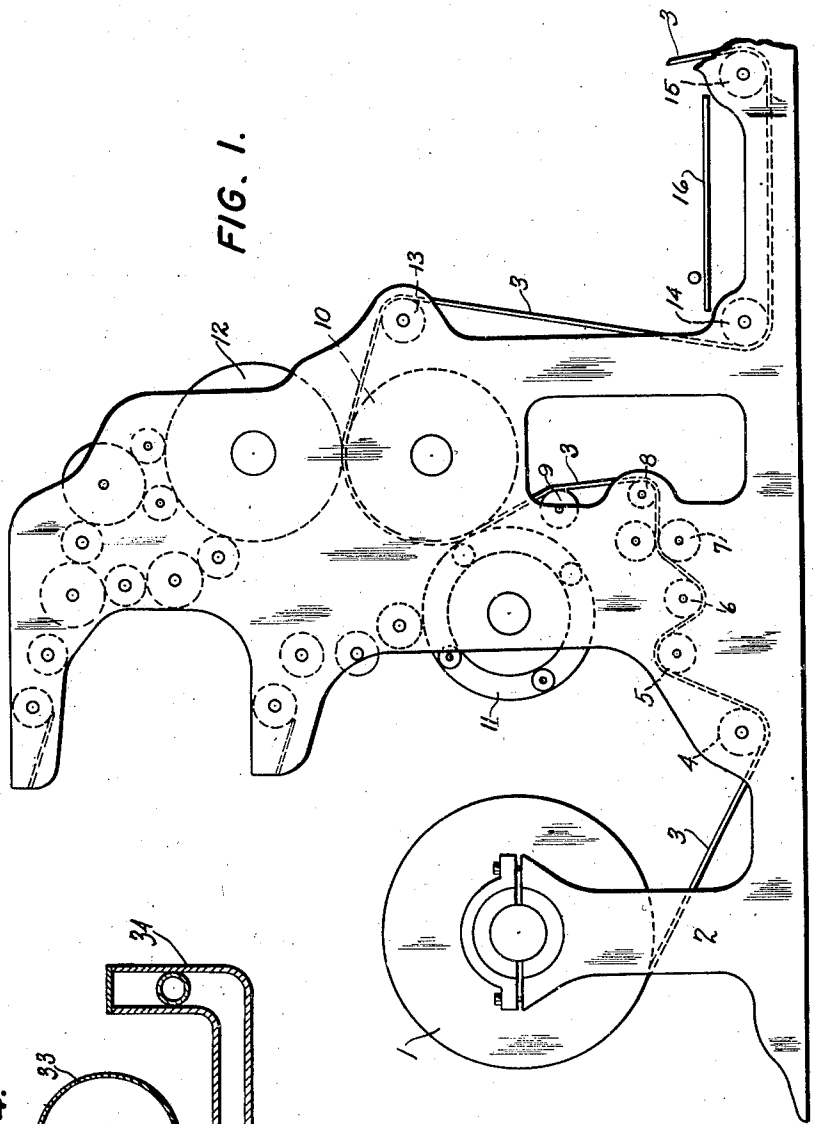
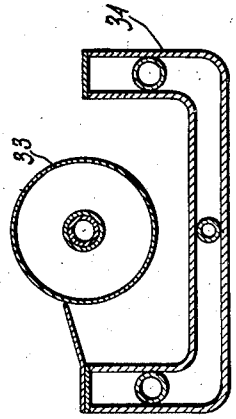


FIG. 4.



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Filed Jan. 26, 1933 3 Sheets-Sheet 2

FIG. 1A.

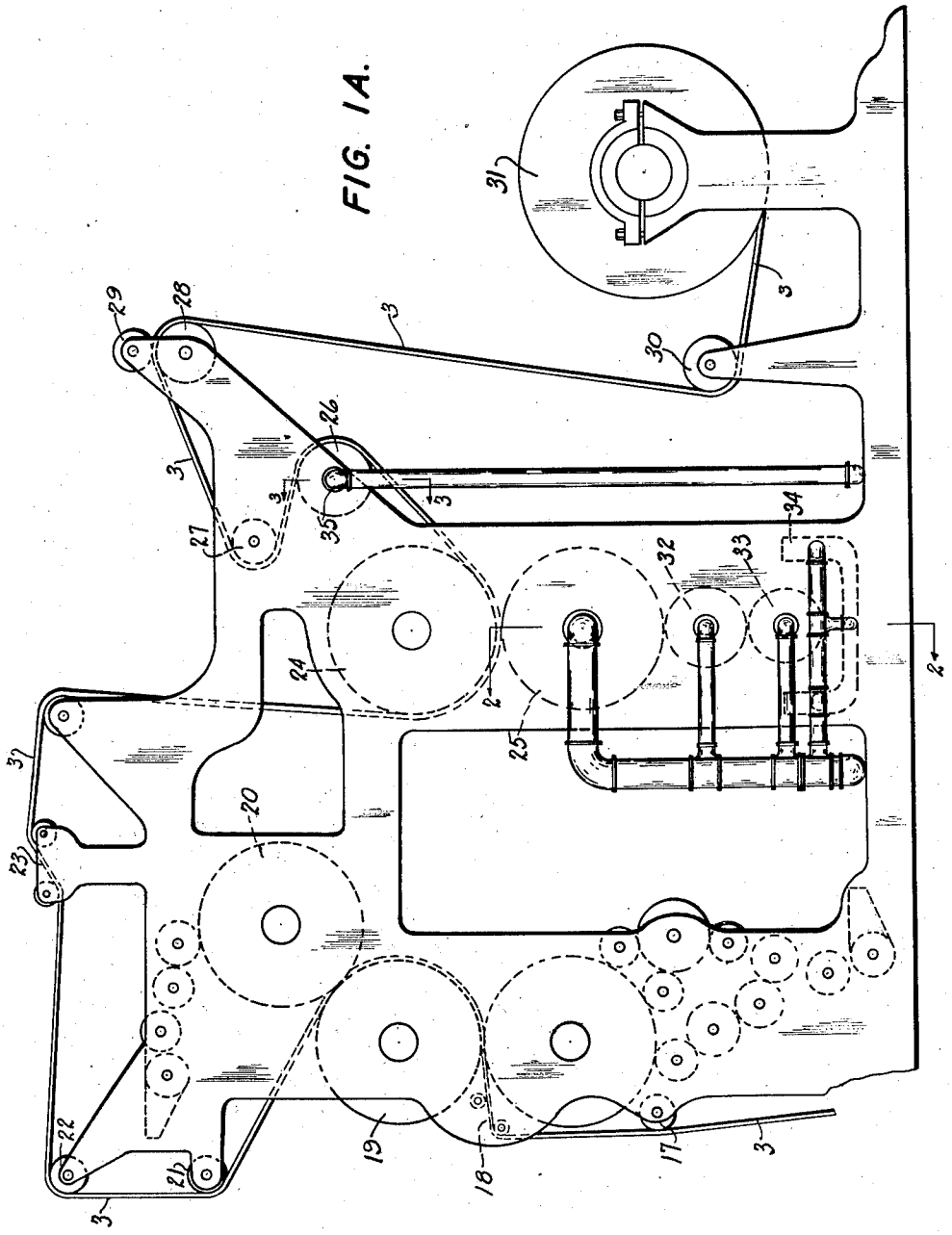

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FIG. 2.

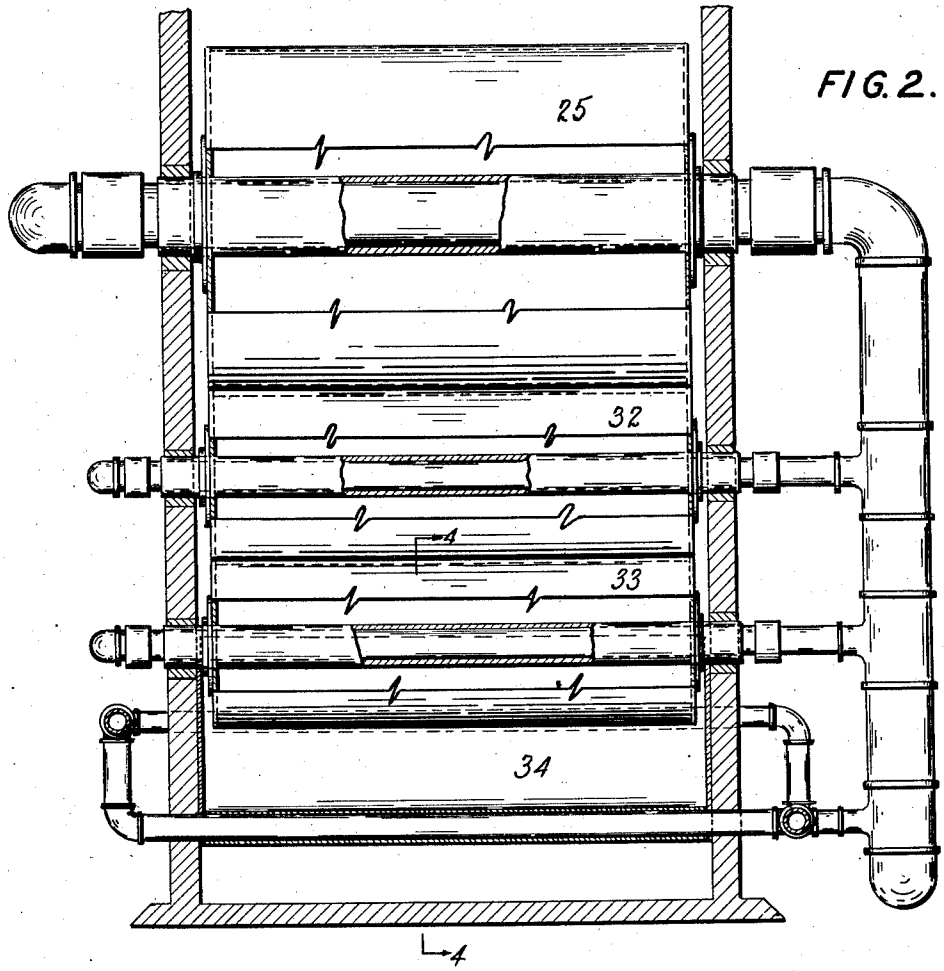
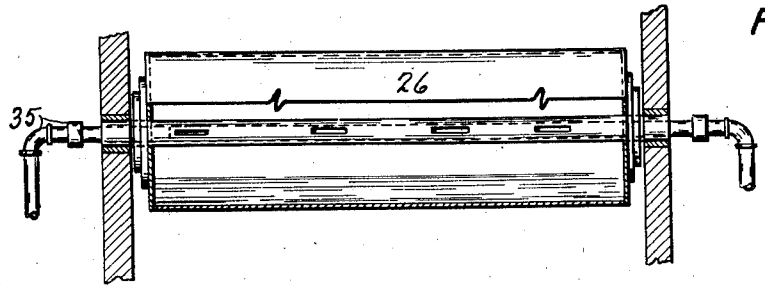


FIG. 3.



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Patented June 5, 1934 1,961,827

UNITED STATES PATENT OFFICE

1,961,827

ROTARY PRESS FOR PRINTING WAX CARBON SPOTS ON PAPER

George A. Rutkoskie, Athens, Ohio, assignor to The McBee Company, Athens, Ohio, a corporation of Ohio

Application January 26, 1933, Serial No. 653,601

3 Claims. (Cl. 91—50)

My invention relates to that class of carbon papers in which spots are printed at different positions and of different sizes so as to only transfer certain entries on the original sheet to other sheets without transferring the entire writing.

My machine is designed to do the same kind of work which is done on the press described in Rutkoskie Patent No. 1,860,957, issued March 31, 1932. It has been found in practice that certain large corporations such, for instance, as the railroads, would find forms of the character described in that patent of great value if the cost could be sufficiently reduced so as to afford their use.

My present invention has for its object to provide a rotary press for applying the wax carbon to the desired spots on the paper so that enormous quantities can be printed at comparatively low cost. I have found that for ordinary work a press of the type described in the patent above referred is most desirable as the size and location of the carbon spots changes with almost every order but in order to supply a large quantity of them at a reduced price a rotary press would be desirable.

I have also found that it is highly desirable to have the carbon cooled immediately or almost immediately after it has been applied to the paper which has the effect of burnishing it so it will not smut the adjoining paper if it is rolled up in the roll.

My invention has for its object to provide a rotary press for printing wax carbon spots on paper at predetermined intervals.

A further object is to provide means for cooling the carbon after it has been applied to the paper.

A further object is to provide means for maintaining the temperature of the carbon carrying and carbon cylinder rolls, because practice has shown that unless the temperature is maintained within a comparatively few degrees the work done by the press will be entirely unsatisfactory.

A further object is to provide means for maintaining a continuous supply of cooling medium to the cooling roller during the entire time that the press is in operation.

My means of accomplishing the foregoing objects may be more readily understood by having reference to the accompanying drawings which are hereunto annexed and are a part of this specification, in which

Fig. 1 is a side elevation of one-half of a press equipped with our improvement;

Fig. 1A is a side elevation of the other half;

Fig. 2 is a detail sectional view of the carbon rollers and carbon tank on the line 2—2 in Fig. 1A, showing the means for heating them;

Fig. 3 is a detail view of the cooling roller on the line 3—3 in Fig. 1A, showing the means for maintaining the supply of cooling medium; and

Fig. 4 is a vertical section on the line 4—4 of Fig. 2.

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

As shown in the drawings the paper is mounted upon a roll 1 which is carried upon suitable standards 2 which permits its free rotation in the usual or customary manner. The paper is shown on a roll 1 mounted on the usual standard 2, the web of paper 3 leaves the roller 1 and passes under and over web idlers 4 and 5 and then under an adjustable idler 6. This adjustable idler is designed to take out any slack that may be in the web 3 before it passes over a hardened steel roller 7. This hardened steel roller is equipped with longitudinal perforators so as to perforate webs in any desired longitudinal direction. The web 3 then passes around two idlers 8 and 9 and then intermediate the impression cylinder 10 and the numbering cylinder 11 where the web is numbered. The web 3 then passes between the impression cylinders 10 and the printing cylinder 12 which prints the desired matter on the web 3.

At this point the web passes over, down and around the web idlers 13, 14 and 15 and under the work board 16 upon which the operator stands. The web 3 then passes up and around idler 17 and through compensator 18. This compensator 18 is adjustable in any direction so as to provide for any adjustment which may be necessary to bring back any lost register between the two printing units. The web 3 traveling around impression cylinder 19 where the web 3 is printed on the reverse side. The web 3 is then carried between the cylinder 19 and a second numbering cylinder 20 where the web is numbered on the reverse side.

At this point the web 3 travels up and around two idlers 21 and 22 and between the compensator 23 where the web 3 can be adjusted if necessary before passing between the impression cylinder 24 and the carbon plate cylinder 25. It will be apparent that the various carbon spots will be impressed or printed on one side only

of the web 3. As stated these spots can be of any desired shape or in any particular location to produce the desired transfer.

The web 3 then passes around a cooler 26. This roller is cooled by means of any suitable cooling medium, cold water or brine which passes through fitting 35 allowing the cold water to pass through the roller to cool the carbon on the paper when it comes in contact therewith. After the web 3 leaves the cooling roller 26 it passes up over an idler 27 and between an idler 28 and feed roller 29, then down under idler 30 to the rewind roll 31.

If the web is to be cut into sheets instead of rewound it would be passed through a shearing cylinder (not shown) where it will be cut into sheets and delivered flat. The carbon plate cylinder 25 is supplied with carbon from two carbon carrying rollers 32 and 33, the roller 33 being partially immersed in the carbon tank 34. This tank 34 and the carbon carrying rollers 32 and 33 and the carbon plate cylinder roller 25 are each provided with fittings to transmit steam to their interior so as to maintain them at the proper temperature while handling the carbon. I have found in practice that this temperature must be maintained within a very few degrees if the work is to be satisfactory. It is therefore necessary to provide the steam fittings with any one of the standard temperature regulators (not shown) which will maintain the supply of steam to keep the temperature of these rollers and the carbon tank at the highest operating efficiency.

Having described my invention what I desire to secure by Letters Patent is:

1. In a rotary press for printing wax carbon spots on paper, having printing and impression rollers, a plate cylinder for printing the carbon spots, and a pair of hollow contacting carbon conveying rollers positioned beneath the plate cylinder, an ink fountain for containing melted wax carbon, one of said rollers being partially immersed in the ink fountain; said ink fountain having a double wall forming a closed heating chamber, a header at each end of said ink fountain, pipes which extend through said ink fountain between the double walls thereof and connect said headers.

2. In a rotary press for printing wax carbon spots on paper, having printing and impression rollers, a plate cylinder for printing the carbon spots, and a pair of hollow contacting carbon conveying rollers positioned beneath the plate cylinder, an ink fountain for containing melted wax carbon, one of said rollers being partially immersed in the ink fountain; said ink fountain having a double wall forming a closed heating chamber, a steam supply pipe at one end of said ink fountain and a steam return pipe at the other end, pipes in said closed chamber which extend directly through the ink fountain between the double walls thereof, and connect the supply pipe to the return pipe, a steam pipe leading to said press, having laterals extending into the cylinder and rollers for imparting a uniform heat thereto.

3. In a rotary press for printing wax carbon spots on paper, having printing and impression rollers, a plate cylinder for printing the carbon spots, and a pair of hollow contacting carbon conveying rollers positioned beneath the plate cylinder, an ink fountain for containing melted wax carbon, one of said rollers being partially immersed in the ink fountain; said ink fountain having a double wall forming a closed heating chamber, a steam supply pipe at one end of said ink fountain and a steam return pipe at the other end, pipes in said closed chamber which extend directly through the ink fountain between the double walls thereof, and connect the supply pipe to the return pipe, a steam pipe leading to said press, having laterals extending into the cylinder and rollers for imparting a uniform heat thereto, and a cooling roller adapted to contact the paper after it leaves the carbon plate cylinder.

GEORGE A. RUTKOSKIE.