

July 6, 1937.

G. A. RUTKOSKIE

2,086,191

ATTACHMENT FOR ROTARY WEB PRESSES FOR PRINTING WAX CARBON SPOTS ON PAPER

Filed Oct. 5, 1935

6 Sheets-Sheet 1

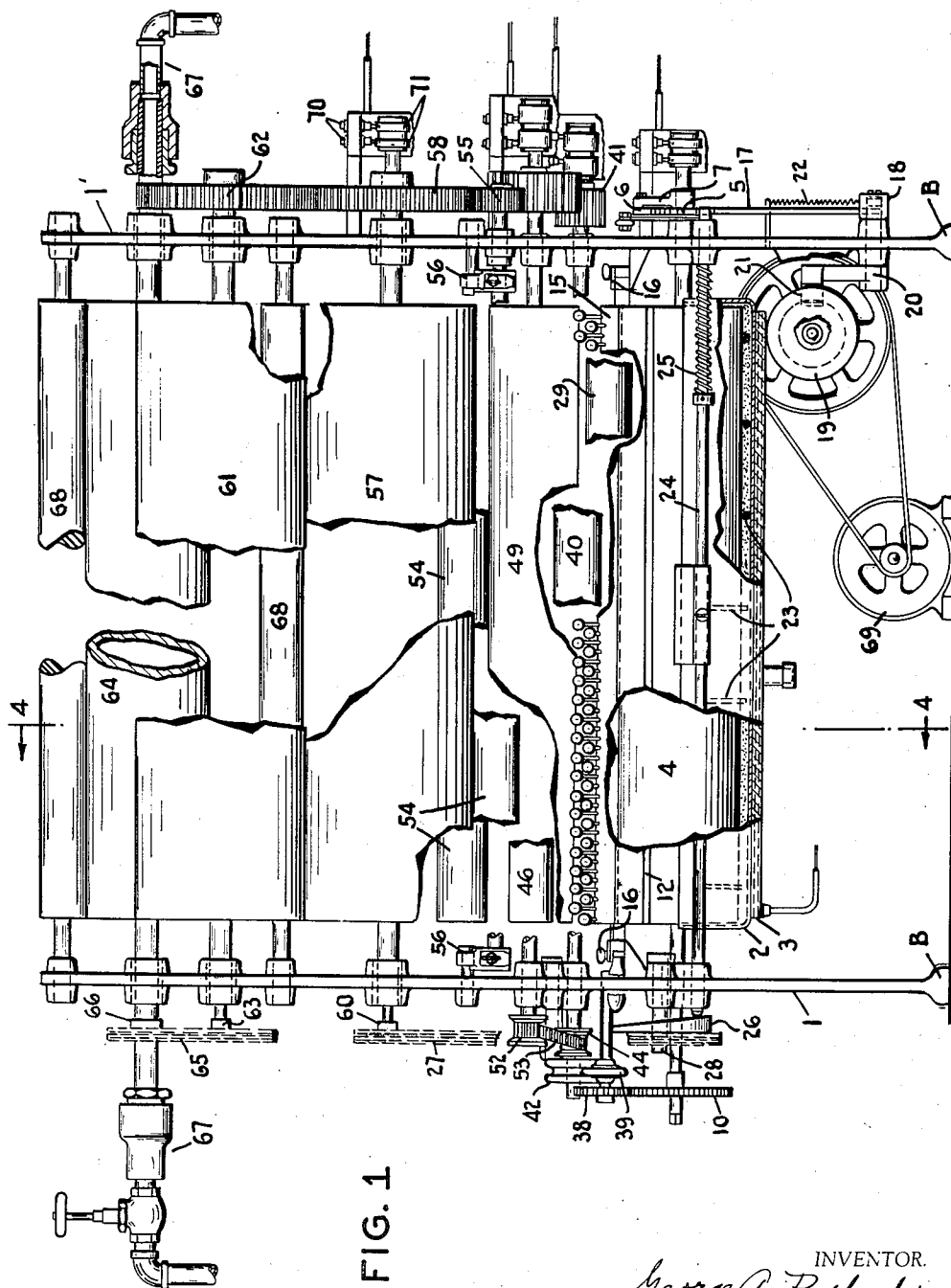


FIG. 1

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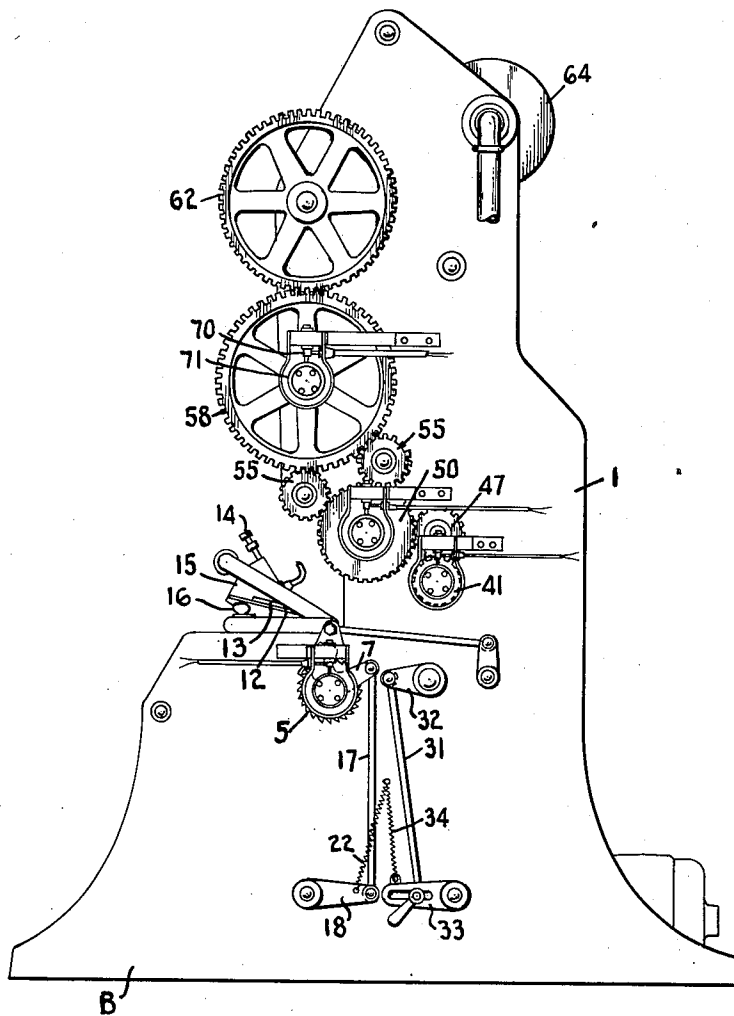
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6 Sheets-Sheet 2

FIG. 2



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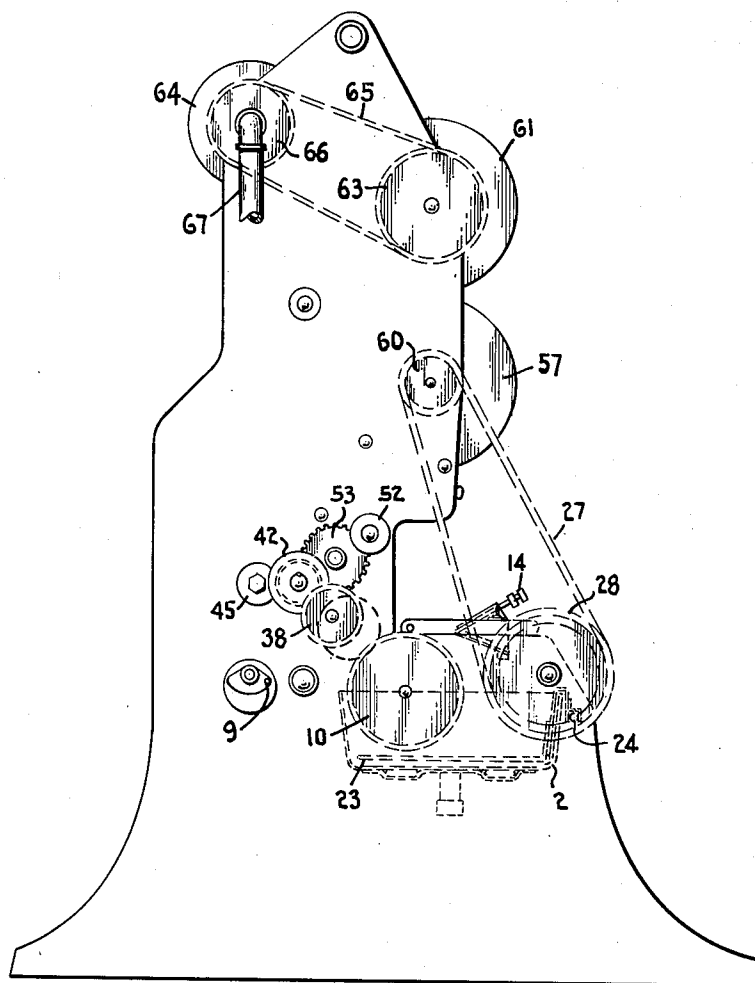
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6 Sheets-Sheet 3

FIG. 3



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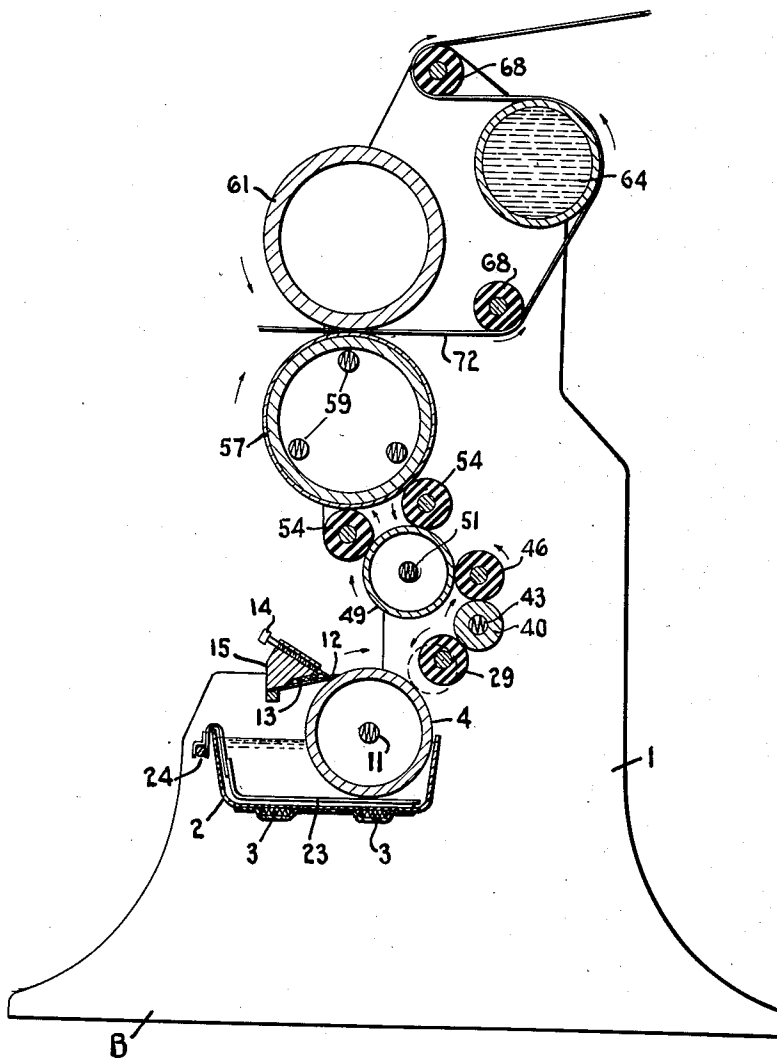
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6 Sheets-Sheet 4

FIG. 4



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Filed Oct. 5, 1935

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FIG. 6

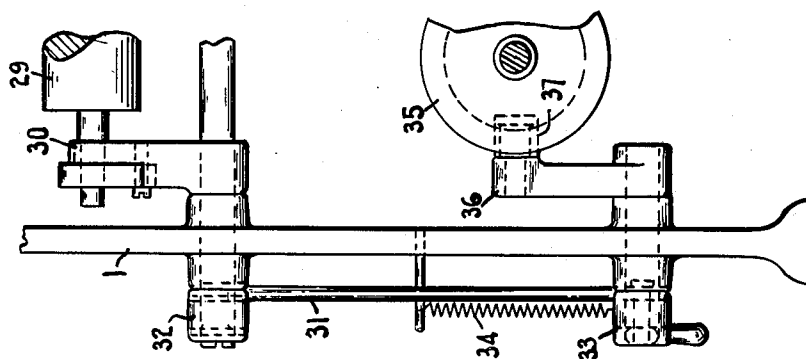
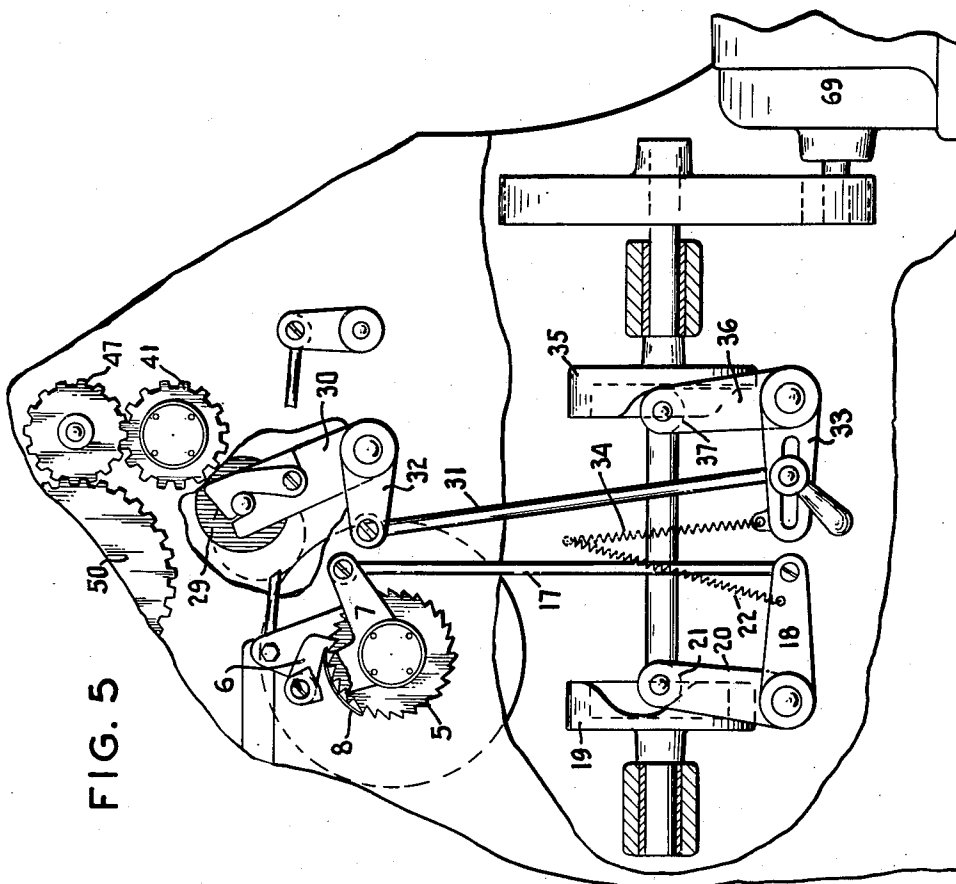


FIG. 5



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6 Sheets-Sheet 6

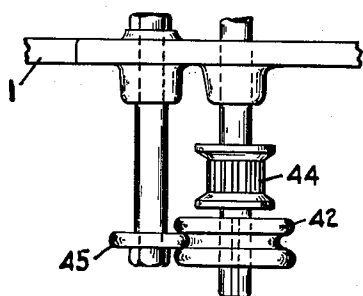


FIG. 7

FIG. 8

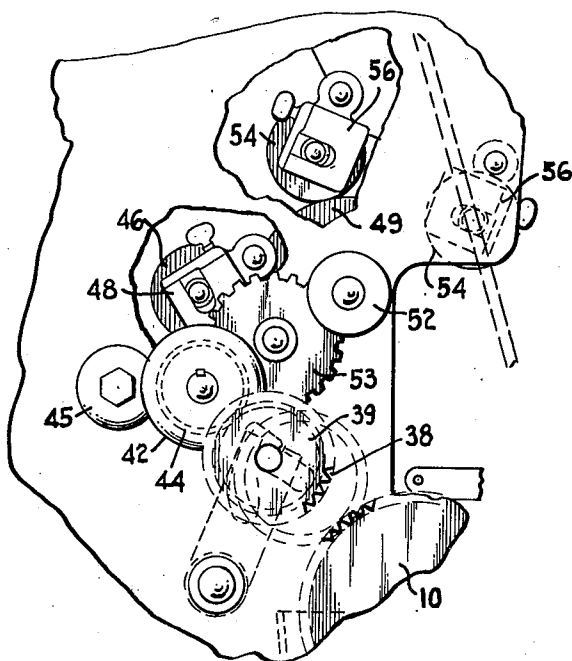
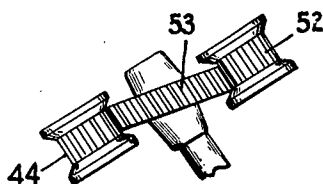


FIG. 9



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UNITED STATES PATENT OFFICE

2,086,191

ATTACHMENT FOR ROTARY WEB PRESSES
FOR PRINTING WAX CARBON SPOTS ON
PAPERGeorge A. Rutkoskie, Athens, Ohio, assignor to
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poration of Ohio

Application October 5, 1935, Serial No. 43,760

4 Claims. (Cl. 91—50)

My invention relates to such presses as are described in my copending application, Serial No. 43,761, filed October 5, 1935.

As set forth in that specification, practice has 5 shown that owing to the fact that the wax carbon compound used for printing the spots on the paper can only be handled satisfactorily at a critical temperature, it is desirable that all parts of the press be maintained at a degree of heat 10 which will approximate the desired degree.

It has been learned that owing to the foregoing facts it is desirable that the ink fountain, in which the carbon is melted and from which it is distributed by means of the ink fountain roller 15 in much the same manner as printer's ink is distributed in an ordinary printing press, be shielded from currents of cold air such as might be caused by an open window in the press room.

My invention has for its object to provide a 20 construction in which an essential part of the press can be formed to provide a satisfactory shield.

My means of accomplishing the foregoing objects may be more readily understood by having 25 reference to the accompanying drawings which are hereunto annexed and are a part of this specification, in which—

Fig. 1 is a rear elevation of my improved press partly broken away to show the interior construction of some of the parts;

Fig. 2 is a side elevation of my improved press viewed from the right hand side of the press as shown in Fig. 1;

Fig. 3 is a similar view looking at the left hand 35 side of the press as shown in Fig. 1;

Fig. 4 is a vertical sectional view taken on line 4—4 in Fig. 1;

Fig. 5 is an enlarged fragmentary detail view showing the cam driving mechanism for the 40 fountain roller and ductor roller;

Fig. 6 is a fragmentary end view of some of the parts shown in Fig. 5;

Fig. 7 is a fragmentary detail view of the application gear stabilizer;

Fig. 8 is an enlarged fragmentary view illustrating the movement of the ductor roller in relation to the ink fountain roller and small vibrator roller; and

Fig. 9 is a fragmentary detail view of the gearing for reciprocating the vibrator rollers.

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

As shown in the drawings, my press is equipped with a frame formed by two side frames 1 and 1' 55 each of which is provided with a base B from

which the frame extends upwardly as clearly seen in Figs. 2, 3 and 4, each side frame has a wing formed thereon. These wings are of a width greater than the portion which carries the operating parts of the press. Within these wings and adjacent the floor, I mount the ink or carbon fountain 2. This fountain 2 is preferably heated by electric heating elements 3. It will be understood that the heating elements are suitably connected to a source of electric current supply (not shown). In the fountain 2 is the ink fountain roller 4 which is intermittently rotated by means of a feed ratchet 5 which is moved by a pawl 6 which is oscillated by a feed ratchet arm 7. The amount of movement of the feed ratchet 5 is governed by the amount of movement of the pawl 6. This in turn is governed by a control plate 8 which is provided with a suitable handle 9 for operating the plate 8. A saw tooth gear 10 is mounted on a shaft of the ink fountain roller at the opposite side of the press from the feed ratchet 5. The amount of carbon flow from the ink fountain roller 4 is regulated by the carbon flow adjusting blade 12. This carbon flow adjusting blade 12 is provided with an electric heating element 13. The blade is adjusted in the usual manner by adjusting screws 14. The blades are mounted on a blade holder 15 which is provided with the usual blade holder clamps 16. I have found that better work can be turned out if the carbon or ink fountain roller 4 is itself heated. For this purpose I mount an electric heating element 11 in the center of the roller. This element 11 is also connected to a suitable source of electric current (not shown).

The feed ratchet arm 7 is actuated by a connecting rod 17 which is pivotally secured to a crank arm 18 which is rocked by a cam 19 which engages a roller 21 carried by the other arm 20. A coil spring 22 is employed to hold the roller 21 in contact with the cam 19. Only by continual agitation of the melted wax carbon compound can satisfactory work be produced. I accomplish this by means of an agitator which is automatically shifted back and forth inside of the carbon or ink fountain 2. The agitator consists of a plurality of fingers 23 secured to shaft or rod 24 which is reciprocated by means of a cam 26. A spring 25 holds the end of the rod 24 against the face of the cam 26. The cam 26 is rotated by means of a chain 27 which runs on a sprocket 28, as more fully described in Patent No. 1,861,826, to Welk. The ductor roller 29 has a retaining arm 30 which is secured to an adjustable connecting rod 31 which is attached 55

to an arm 32, the other end of which is secured to an arm 33. This arm is provided with a slot so that the radius of the arc of the movement of the end of rod 31 may be varied as and if desired.

The arm 33 is operated by a cam 35 which engages a roller 37 mounted on another arm 36, the roller 37 being held in contact with cam 35 by a coil spring 34. The shaft of the ductor roller is provided at one end with a saw tooth gear 38 and a friction gear 39. The small vibrator roller 40, which contacts the ductor roller 29, has a driving gear 41 and a friction gear 42. An electric heating element 43 is mounted inside of the small vibrator roller 40. This roller 40 is vibrated by means of a vibrating gear 44. A friction gear stabilizer 45 is mounted on a stub shaft secured to the frame 1. The distributor roller 46 is driven by a gear 47. The shaft of this roller 46 is mounted in adjustable bearings 48. The large vibrator roller 49 is rotated by means of a driving gear 50. The roller 49 is heated by an electric heating element 51. Mounted on the shaft of the roller 49 is a vibrator gear 52 similar to the vibrator gear 44 on the shaft of the small vibrator roller 40. These two gears 44 and 52 are actuated by a vibrator idler gear 53 rotatably mounted on a shaft secured to the frame 1. The form rollers 54 are provided with driving gears 55. The shafts of the form rollers 54 are mounted in adjustable bearings 56 so as to permit their adjustment with relation to their contact with the surfaces of plate cylinder 57 and the large vibrator roller 49. The plate cylinder 57 is driven by a gear 58. On account of the large diameter of the plate cylinder 57 I found it desirable to provide a plurality of electric heating elements 59 to insure the correct temperature of its entire surface. The gear 58 is driven by a gear 62 mounted on the shaft of the impression cylinder 61. A chain sprocket 60 is mounted on the other end of the shaft of the plate cylinder 57, and carries a chain 27 for the sprocket 28 for driving the cam 26 which actuates the agitator in the ink fountain 2. In order to chill the paper after it has passed between the circular type plate carried by the plate cylinder 57 and the impression cylinder 61, I provide a cylinder 64 which is rotated by means of a chain 65 mounted on a sprocket 66 which is driven by a sprocket 63 on the shaft of the impression cylinder 61. Suitable pipe connections 67 are provided to carry cold water to the interior of the cylinder 64. A suitable electric motor 69 is provided for driving the cams. The press itself is driven in the standard manner by means of a constant speed motor set on the side of the press which drives a jack shaft, which, in turn, is connected by a driven shaft to the main shaft of the press. This method of driving is familiar to every pressman, and since it forms no part in any way of applicant's invention, a detailed description and drawing are deemed unnecessary. It will be understood that each shaft of such rollers as are equipped with electric heating elements is provided with collector rings 71 which are engaged by brushes 70 connected to a suitable source of electric current (not shown).

It will be apparent to persons skilled in the art that by constructing the press in this manner the ink fountain is almost enclosed by the

wings on the side frames of the press. This operates to almost completely shield it from any drafts of air. The result of this construction is that any danger of the wax carbon compound in the fountain being chilled to a point below the critical temperature which it must possess in order to turn out satisfactory work is avoided.

The operation is as follows: The wax carbon compound is placed in the fountain and the electric current is turned on. When it is at the correct temperature, the press is started, the melted wax carbon is carried by means of the various rollers to the circular type plate. The web of paper 72 is carried to the impression cylinder 61 which must be cushioned as explained in my Patent No. 1,961,828, thence after receiving the wax carbon the paper 72 passes around the cooling cylinder 64 and thence to the winding reel (not shown). Suitable idler or tension rollers 68 are provided to give the proper tension to the paper stock 72. In this way I am able to turn out paper with spots of wax carbon at a minimum of expense where a large volume of forms is needed. At the same time they overcome one of the difficulties experienced in handling the wax carbon compound.

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

1. The combination with a rotary web press for printing wax carbon spots on paper, having a heated ink fountain adapted to receive wax carbon, an intermittently rotated ink fountain roller, a ductor roller, a small vibrator roller, a distributor roller, a large vibrator roller, form rollers, a plate cylinder, an impression cylinder, shafts for said rollers and cylinders, means carried by the shafts of said rollers whereby all of the rollers are positively driven; of a frame to support said parts, said frame comprising two side frames having an enlarged base, and means to mount said heated ink fountain entirely within said frames and adjacent the base.

2. The combination with a rotary web press for printing wax carbon spots on paper, having a heated ink fountain adapted to receive wax carbon, an intermittently rotated ink fountain roller, a ductor roller, a small vibrator roller, a distributor roller, a large vibrator roller, form rollers, a plate cylinder, an impression cylinder, shafts for said rollers and cylinders, means carried by the shafts of said rollers whereby all of the rollers are positively driven; of a frame comprising two side frames which support said parts, said heated ink fountain being mounted entirely within said side frames, and adjacent its base, and means formed on said frame to shield said ink fountain from drafts of air.

3. The combination with a press of the character described, having a heated ink fountain, an ink fountain roller; of means to mount said ink fountain entirely within the frame of the press to shield said ink fountain from drafts of air.

4. The combination with a press of the character described, having a frame, a heated ink fountain, an ink fountain roller; of means to mount said ink fountain entirely within the frame of the press to shield said ink fountain from drafts of air, said means being formed on the frame which supports said ink fountain.

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