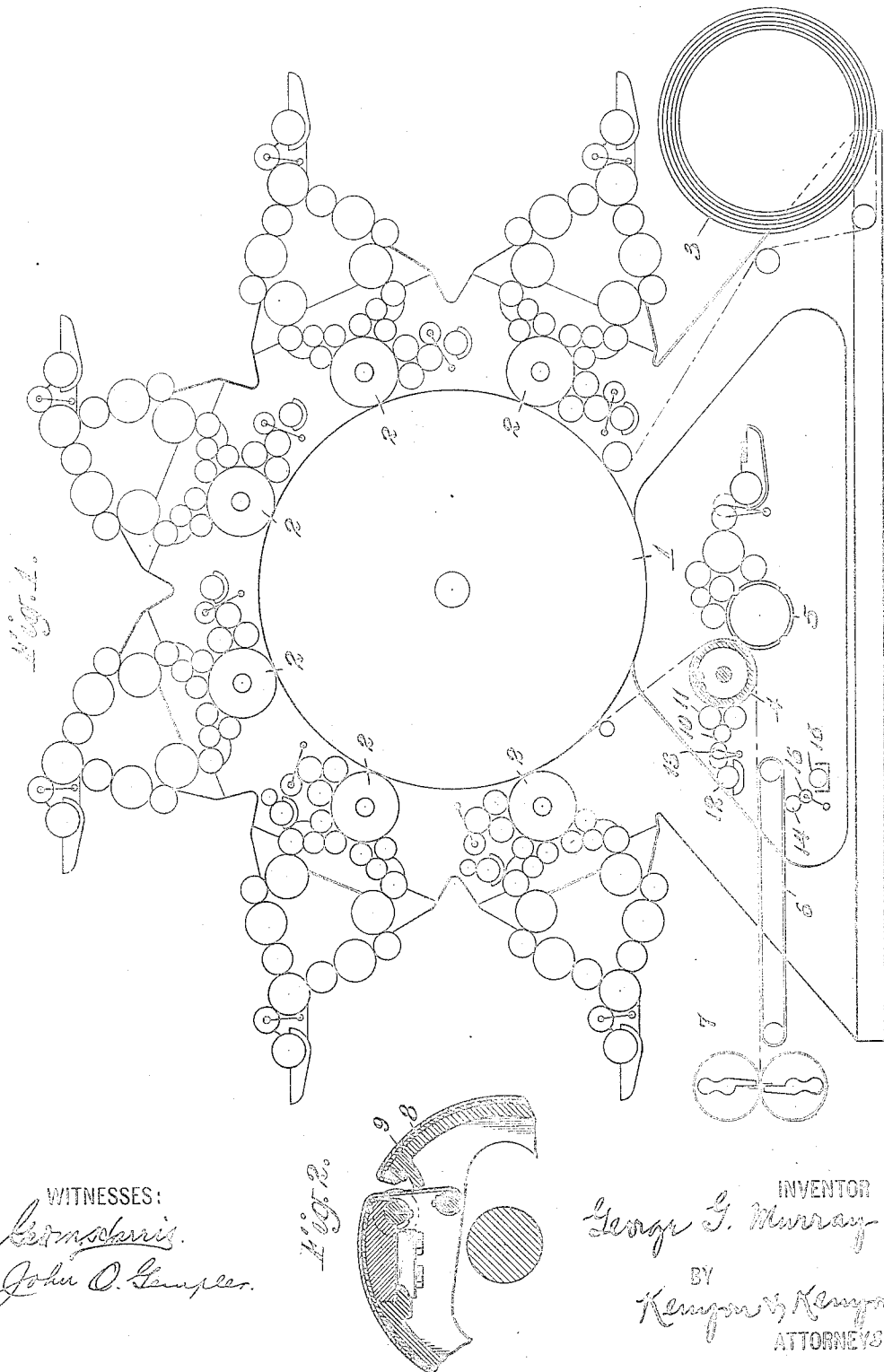


G. G. MURRAY.
 MEANS FOR PREVENTING OFFSET.
 APPLICATION FILED JAN. 27, 1906.

1,050,982.

Patented Jan. 21, 1913.



WITNESSES:
Kenyon & Kenyon
John O. Kenyon

INVENTOR
George G. Murray
 BY
Kenyon & Kenyon
 ATTORNEYS

UNITED STATES PATENT OFFICE

GEORGE G. MURRAY, OF LARCHMONT, NEW YORK.

MEANS FOR PREVENTING OFFSET.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE G. MURRAY, a citizen of the United States, and a resident of Larchmont, county of Westchester, and State of New York, have invented certain new and useful Improvements in Means for Preventing Offset, of which the following is a specification.

My invention relates to the prevention of offset in printing presses and other mechanisms for manipulating printed material, the same being particularly useful as carried out in connection with presses for printing on both sides of paper or similar material. In presses of this character and in various mechanisms for manipulating printed material and especially fresh printed paper, as for example delivery mechanisms of printing presses and folding mechanisms, if the ink bearing surface of the printed material comes in contact with any part of the mechanism some of the ink may be transferred to such part, especially where there is any pressure exerted between the contacting surfaces, and after a certain amount of ink has been thus transferred it begins to set off or "offset," as it is termed, unto the passing material. Great difficulty has been experienced in preventing this offset, especially in the finer classes of printing, where not only is the offset more apt to occur by reason of the nature of the materials used but even a slight amount of defacement due to offset constitutes a most serious defect. Although much attention has been paid to this matter by those skilled in the art, no solution of the problem has been reached which is generally applicable, and particularly which will permit of the finer grades of printing being performed on perfecting presses, and particularly on rotary perfecting presses where the impressions on the opposite sides of the paper are effected in substantially instantaneous succession, and where the printed product cannot be manipulated, as in folding or delivering, without contact with the fresh printed surfaces.

My invention has for an object to produce means whereby the defacement of printed matter by offset may be effectively prevented, and more particularly to provide means whereby offsetting may be effectively prevented without in any manner injuring

the impressions on the paper or similar material as by the removal of part of the ink therefrom.

It is also an object of the invention to provide a simple and effective means for preventing offset in printing presses and other mechanisms for manipulating printed material, whereby the complicated and expensive mechanisms now commonly used for this purpose may be dispensed with.

These and other objects of the invention will in part be obvious and in part be pointed out in the following description.

I have found that a transfer of ink from a printed surface to a surface with which it comes in contact will not take place, to a harmful extent at least, in the presence of a stable emulsion, even where the surfaces are brought into contact under heavy pressure, such for example as exists between an impression surface and the material being printed thereon. To obtain good results the surface of the member to which the emulsion is applied is preferably slightly roughened or grained or made to a certain extent porous so that it will more readily carry a suitable quantity or supply of the emulsion. In the case of an impression member of a printing press, moreover, the surface should be yielding or flexible or of such a nature that it will properly support the paper or other material to be printed in contact with the design member, and where the usual packing is employed on the impression member the emulsion carrying member should be impervious to the emulsion so as to prevent the destruction or impairment of the packing materials.

I have found an emulsion or a mixture of oil and water or similar substances in the nature of an emulsion, and particularly an emulsion or similar compound of boiled linseed oil, or linseed oil of like character, and water, to give good results when used in connection with the impression member of a printing press, the proportions employed being one part of oil to three parts of water with a little caustic soda to facilitate the emulsification of the oil in the water. Where boiled linseed oil is employed, it is preferably used in a substantially pure condition, the oxidizing agents commonly found in the boiled linseed oil of commerce being omitted. The emulsion may, however, be

greatly varied both as to the ingredients thereof and as to the treatment and combination of the ingredients.

In carrying out the invention in connection with a printing press, the emulsion should be supplied in a very thin layer or film, and it is preferably supplied continuously and in uniform and regulatable quantities.

More fully to set forth the invention, I have illustrated in the drawing, which is referred to herein and forms a part hereof, a machine by which my method may be carried into effect and which constitutes one embodiment of other features of the invention.

Of the drawings, Figure 1 is a view partly diagrammatic and partly sectional illustrating a printing press constructed in accordance with my invention, and Fig. 2 is a sectional view on an enlarged scale illustrating in more detail one of the impression members of the press.

Referring to the drawings in detail, the press there shown comprises an impression cylinder 1 around which are arranged a series of design cylinders 2 adapted to print a series of impressions on one side of the paper. As shown, this press is intended to print upon paper or similar material in web form, the web being continuously supplied from a roll 3. After passing around the cylinder 1 and receiving several impressions from the design cylinders, the web passes between the impression and design members 4 and 5, respectively, of a second printing mechanism whereby it receives impressions upon its opposite side. After leaving the second printing mechanism, the web passes to a suitable delivery mechanism, that shown including a set of conveying tapes 6 and a set of cutters 7.

To prevent offset of ink from the first printed side of the web to the surface of the impression member 4, the surface of the latter is supplied or provided with the emulsion. This may be accomplished in any suitable way. In the particular construction shown there is placed over the usual packing 8 of the cylinder a sheet or member 9 of material which is impervious to the emulsion and which is at the same time provided with a suitable porous or grained surface adapting it to carry a suitable quantity or supply of the emulsion without liability of transferring the same to a harmful extent to the surface of the paper or material being printed. Preferably, this layer or member 9 should be flexible and yet not sufficiently soft or yielding to prevent the proper impression of the design upon the paper.

I have found certain forms of artificial leather used for book binding and other purposes to give satisfactory results. Where the impression cylinder is used in connection

with a relief impression surface, I have employed an artificial leather known to the trade as "pantasote" to answer the purpose, the heavy cloth basic layer of this material being removed, if desired, to make the material less soft and yielding. This material affords a surface which is suitably porous or grained and at the same time the material is insoluble in and impervious to an emulsion of boiled linseed oil and water.

Any suitable means may be provided for maintaining a supply of emulsion on the impression surface. As shown, a simple liquid distributing mechanism is employed for the purpose, the same consisting of distributing and applying rollers 10 and 11, a fountain 12, and an intermittently operated conveying or "ductor" roller 13.

It will be understood that my invention may be carried out in connection with other surfaces which come in contact with or manipulate the printed material. As shown, for example, the delivery tapes 6 which serve to convey the printed material from the second printing couple to the cutters 7 may be supplied with an ink repellent emulsion. In accordance with the preferred construction these tapes are formed of a material which is impervious to the emulsion and affords a suitably grained surface. For example, they may be made of or provided with a surface member of the artificial leather referred to, and suitable means as the applying roller 14, fountain 15, and ductor 16 may be provided to maintain a supply of emulsion thereon.

It will be understood that my invention in its broader aspects is not limited to the precise compounds or devices herein specifically set forth, as many changes may be made respecting the materials and constructions employed in carrying out my invention without departing from the main principles thereof and without sacrificing its chief advantages.

What I claim is:

1. An antioffset device consisting of a member for manipulating printed material, said member having its bearing surface provided with a stable emulsion.

2. An antioffset device consisting of a member for manipulating printed material, said member having its bearing surface provided with an emulsion of oil and water.

3. An antioffset device consisting of a member for manipulating printed material, said member having its bearing surface provided with an emulsion of boiled linseed oil and water.

4. A device for preventing offset consisting of a member for manipulating printed material, said member having a suitably grained surface provided with a stable emulsion.

5. An antioffset impression member hav-

ing its surface provided with a stable emulsion.

6. An antioffset impression member having its surface provided with an emulsion of oil and water.

7. An antioffset impression member having its surface provided with an emulsion of boiled linseed oil and water.

8. An antioffset impression device having a surface provided with a stable emulsion, said device being impervious to the emulsion.

9. A printing press including in combination, an impression member having its surface provided with an emulsion of boiled linseed oil and water, and means for maintaining a supply of emulsion on said surface, said member being impervious to the emulsion.

10. A printing press including in combination, means for printing on both sides of the material, an impression surface with which the first printed side of the material comes in contact being provided with a stable emulsion.

11. A printing press including in combination, means for printing on both sides of the material, an impression member with which the first printed side of the material comes in contact having a flexible grained surface provided with a stable emulsion, said member being impervious to the emulsion.

12. A printing press including in combination, means for printing on both sides of the material, an impression member with

which the first printed side of the material comes in contact having a flexible grained surface provided with an emulsion of oil and water.

13. A printing press including in combination, means for printing on both sides of the material, an impression member with which the first printed side of the material comes in contact having a flexible grained surface provided with an emulsion of boiled linseed oil and water.

14. A printing press including in combination, means for making a plurality of impressions upon one side of the material, and means for printing the opposite side of the material, the impression member of said last named means having its surface provided with a stable emulsion.

15. An antioffset device consisting of a member for manipulating printed material, said member having an outer layer with a bearing surface provided with a stable emulsion.

16. An anti-offset impression member having an outer flexible layer bearing a suitable emulsion, said layer being impervious to the emulsion.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE G. MURRAY.

Witnesses:

CHAS. B. JACOBS,

CHAS. M. HUDSON.