UNITED STATES PATENT OFFICE.

GEORGE STEELE DUNCAN AND GEORGE HENRY POTTS, OF EDINBURGH, SCOTLAND, ASSIGNORS TO AMERICAN OFFSET COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

COMPOSITION FOR PREVENTING SET-OFFS IN PRINTING.

No. 825,528. Specification of Letters Patent. Patented July 10, 1906.

Original application filed May 8, 1906, Serial No. 259,374. Divided and this application filed February 6, 1906. Serial No. 299,617.

To all whom it may concern:

Be it known that we, GEORGE STEELE DUNCAN and GEORGE HENRY POTTS, subjects of the King of Great Britain, residing at Edinburgh, Scotland, have invented an Improvement in compositions for Preventing Set-Off in Printing, of which the following is a specification.

This invention has for its object to provide an improved composition to prevent "set-off" or transfer of ink from one sheet to another or from one side to the reverse side of a sheet in printing, the said composition being particularly applicable for use in rotary printing-presses, rotary presses for magazine-printing, perfecting-machines, and flat-bed single-cylinder machines.

This invention in its preferred embodiment consists of a liquid composition which is particularly designed to be used for dampening the set-off rollers of printing-presses, although it is adapted for use in any manner for which "anti-set-off" compositions are or may be used.

The composition comprises in its preferred embodiment soap, (preferably soft soap,) a resinous substance, (preferably turpentine,) a non-volatile oil, (preferably a non-drying oil, such as olive-oil,) a non-volatile oxidizing oil, (preferably boiled linseed-oil,) a stable lubricating-oil, (preferably neat's-foot oil,) a highly-volatile mineral solvent, (preferably naphtha,) and an organic solvent, (preferably methylated spirits.)

The proportions in which we prefer to mix the above-named ingredients are as follows: equal volumes of each of the oils—that is to say, equal volumes of neat's-foot oil and boiled linseed-oil—and equal volumes of methylated spirits and naphtha, the volume of each of these being about half the volume of the boiled linseed-oil. The volume of the turpentine is preferably kept a little less than half the volume of the boiled linseed-oil. The soap should be present in the proportion of about one pound to every four quarts of turpentine.

While the ingredients and proportions above given are those which are preferred, it is to be understood that this invention is not limited thereto, as the proportions may be varied within wide limits and certain of the ingredients omitted and equivalents of the ingredients substituted in their place.

The invention is to be considered as broadly embracing the features of novelty in a composition for the purpose specified as defined within the scope of the appended claims.

Among the changes which may be made in this composition without departing from the spirit of the invention or materially sacrificing the advantages thereof may be mentioned the following, which are, however, to be considered as merely illustrating a few of the many changes which the skill and experience of workers in the art will naturally suggest: The neat's-foot oil and the olive-oil are practically interchangeable—that is to say, one may be more or less completely replaced by the other. In place of the naphtha, benzene or other similar volatile solvent may be used; but naphtha is preferred. The proportion of boiled linseed-oil may be widely varied; but the best results have been obtained when the proportion of this ingredient is not diminished or increased by more than one third of the proportions indicated above. The proportion of the methylated spirits or naphtha, or of both of these, may be very considerably increased without seriously affecting the character of the liquid, and the proportion of the naphtha may be materially diminished without impairing the usefulness of the liquid. The proportions of the soap may be materially varied, and where the composition is to be used with rotary machines it can be advantageously materially increased. Where the proportion of the soap is increased, it has been found that the best results are obtained by correspondingly increasing the proportion of the naphtha.

In preparing the composition, as it is desirable to apply heat to bring about as good an admixture of the soap as possible it is preferable to defer adding the naphtha until after this heating and to take only one-third of the total volume of the liquid previous to the addition of the naphtha and to this third add the soap and stir well, gradually raising the temperature to about 130° Fahrenheit. Then turn off the heat and allow the liquid to cool under gentle stirring. When the liquid is cool, add to it the remaining two-thirds, to

which in the meantime naphtha has been added.

The liquid is preferably applied by a cloth saturated with it and the principal lubricating-roller thereby given a good soaking. The frequency of the applications of the liquid for a given quantity of work depends largely on the quality of the ink. With a rotary machine if good ink is used the initial dampening will suffice during the running of the reel, whereas with inferior ink the same machine and the same work may require a further application of the liquid when only half the reel is run.

In another application for Letters Patent, filed May 8, 1905, Serial No, 259,374, of which this is a division, we have described the composition hereinbefore set forth and have claimed certain novel features thereof not hereinafter claimed.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A composition for preventing "set-off," comprising a resinous liquid and soap.

2. A composition for preventing "set-off," comprising turpentine and soap.

3. A composition for preventing "set-off," comprising a resinous liquid, soap and a volatile solvent.

4. A composition for preventing "set-off," comprising turpentine, soap and a volatile solvent.

5. A composition for preventing "set-off," comprising a resinous liquid, soap, a volatile solvent and an oxidizing-oil.

6. A composition for preventing "set-off," comprising a resinous liquid, soap, a volatile solvent and linseed-oil.

7. A composition for preventing "set-off," comprising turpentine, soap, a volatile solvent and linseed-oil.

8. A composition for preventing "set-off," comprising a resinous liquid, soap, a volatile solvent, an oxidizing-oil and a stable lubricating-oil.

9. A composition for preventing "set-off," comprising a resinous substance, soap, a volatile solvent, an oxidizing-oil and neat's-foot oil.

10. A composition for preventing "set-off," comprising turpentine, soap, a volatile mineral solvent, boiled linseed-oil and neat's-foot oil.

11. A composition for preventing "set-off," comprising a resinous liquid, soap, a volatile mineral solvent, an oxidizing-oil, a stable lubricating-oil and an organic solvent.

12. A composition for preventing "set-off," comprising a resinous liquid, soap, a volatile mineral solvent, an oxidizing-oil, a stable lubricating-oil and methylated spirits.

13. A composition for preventing "set-off," comprising turpentine, soap, a volatile mineral solvent, boiled linseed-oil, neat's-foot oil and methylated spirits in substantially the proportions specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE STEELE DUNCAN.
GEORGE HENRY POTTS.

Witnesses as to George Steele Duncan:
JOHN HOVING,
F. H. LOGAN.

Witnesses as to George Henry Potts:
GEORGE G. SCHOENLANK,
W. H. BERRIGAN.