

UNITED STATES PATENT OFFICE

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INK THINNER OR VEHICLE

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1 Claim. (Cl. 134—56)

This application is a division of my application, Serial No. 682,628, filed July 28, 1933, now U. S. Patent No. 1,989,250, for Offset printing inks.

The main object of this invention is to provide a thinner or vehicle for offset printing inks and the like.

Objects relating to details and economies of my invention will appear from the description to follow. The invention is defined and pointed out in the claim.

The printing plate is made planographic by the half-tone process with the design in relief. This is inked by a suitable machine or apparatus or by passing an ink roller over the plate, the ink not being forced down into the recesses, but remaining on the relief or high parts of the plate. A rubber or composition transfer roller is then run over the plate and the design transferred to the panel or object to be ornamented.

In this method of offset printing, with surface printing plates as distinguished from intaglio plates, especially with regard to decorating garnish moldings, the method of or agent for producing the offset printing ink is of prime importance. The thinner the ink with a sufficient color, the better the print. Thinned ink readily lifts from the plate and readily releases from the printing roll. The ink must lay down perfectly and yet not be so thin as to fill up the printing plate.

Oil added to the ink will allow it to release from the printing roll, but if used alone makes the ink too thin, fills up the plate and greatly cuts the color of the print. Greasy compounds aid in making the ink lay down and do not cut the color. However, a large amount of such compounds are required for satisfactory results, and further, there is a tendency for them to slur the printing.

I provide a thinner which combines the advantages of oil and greasy compounds, but which eliminates their disadvantages. I add to the offset printing ink a thinner containing the following ingredients by weight:

	Percent
Castor oil 1.8 oz.	15.9
Colorless "00" litho varnish 2.5 oz.	22.1
Stearine 3.0 oz.	26.8
Turpentine 4.0 oz.	35.4

The castor oil, varnish, and stearine are dissolved in the turpentine and the ingredients are combined by the use of heat. Sufficient thinner is added to the offset printing ink until the latter is reduced to the proper consistency.

While any commercially available offset printing ink may be used with my thinner, I prefer to use offset printing ink containing by weight pigment 35% to 40% and vehicle 65% to 60%. The pigment may be carbon black and the ve-

hicle a heavy bodied linseed oil with a drier of the rosin type. Offset printing ink of this character may be readily bought or it may be duplicated by any ink manufacturer having facilities for grinding in pigments. In the case of black ink, the weight of the pigment is about 35% and the vehicle 65%. In the case of brown ink, the pigment runs up to 40% and the vehicle 60%. The vehicle itself is from 25% to 30% of the total weight, heavy bodied linseed oil, and 35% of the total weight, varnish.

Summarizing the analyses of the offset printing ink:

	Black	Brown
	Percent	Percent
Oil	30	25
Varnish	35	35
Pigment	35	40

While the ratio of my thinner or reducing agent to the offset printing ink will vary with different printing conditions, nevertheless I prefer to use 14 parts by weight of my thinner to 86 parts by weight of the offset printing ink.

This preferred ratio of thinner to offset printing ink results in an ink which is of such character that a sufficient quantity thereof is held on the high point or design of the relief printing plate so that an effective transfer is made possible and that very good results are produced.

The ink is especially useful in the ornamenting of metal with imitation wood graining. The plate is prepared from a photograph by the half-tone process and with the graining design in relief. The plate is inked with the special ink by passing an inking roller over the plate, the ink not being forced down into the recesses, but remaining on the relief or high parts of the printing plate. A pick-up or transfer roller is then run over the inked plate and the graining design transferred to the panel or surface to be ornamented.

The character of the special ink is such that it is held on the relief or high part of the plate without filling the same and readily releases from the transfer or printing roll and the plate. My thinner produces these advantages without cutting the color of the offset printing ink and without slurring the printing. These characteristics and advantages are highly desirable in the offset printing of delicate graining effects.

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

An ink thinner or vehicle comprising 15.9% castor oil, 22.1% lithographic varnish, 26.6% stearine, and 35.4% turpentine.

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