

chrome orange or red sienna, gallstone, Roman and yellow ochers, verdigris, indigo, Prussian blue, Antwerp blue, ultra-marine, luster, umber, sepia, and various mixtures of these.

A very fine printing ink may be prepared without burning, and the risks attending boiling oil may be avoided, by using the following receipt: Balsam of capivi, 9 ounces; resin soap, dry, 3 ounces; lampblack, purified, 3 ounces; Prussian blue,  $1\frac{1}{4}$  ounces; Indian red,  $\frac{3}{4}$  ounce; creosote, 3 drops. Grind all together on a stone slab, with a muller, to a very smooth and uniform paste. Any of the colors above enumerated may be substituted for the lampblack and other pigments in the above formula to produce colored inks.

In Germany an ink, prepared as follows, has been used, and is said to yield a very clear and fine impression when properly prepared: Venice turpentine,  $2\frac{1}{4}$  ounces; soap, in thick paste,  $2\frac{1}{2}$  ounces; olein, rectified, 1 ounce; carbon black,  $1\frac{1}{4}$  ounces; Paris blue,  $\frac{1}{4}$  ounce, oxalic acid,  $\frac{1}{8}$  ounce; water,  $\frac{1}{4}$  ounce.

The three last ingredients are mixed into a paste. The turpentine and olein are mixed at a gentle heat, the soap and carbon then introduced, and, after cooling, the blue paste is added, the whole being ground beneath a muller to a very fine and smooth paste.

The following are patented inks: Colophonic tar, 14 pounds; lampblack, 3 pounds; indigo, 8 ounces; Indian red, 4 ounces; yellow resin soap, 1 pound. (The colophonic tar referred to is the residuum from the distillation of resin for resin oil.) Linseed oil, 40 gallons; litharge, 4 pounds; lead acetate, 2 pounds. The oil is heated to about 600° Fah., for from forty-eight to sixty-five hours, according to quality of varnish required, the lead salts being added as driers. To each gallon of this varnish, 4 pounds of gum copal is added and dissolved. For common news ink the proportions are as follows: Of the above varnish, 15 pounds; resin, 10 pounds; soap, brown resin, 2 pounds; lampblack,  $5\frac{1}{2}$  pounds.

A fine ink, suitable for use with rubber type, is prepared from nigrosine, soluble, 1 ounce; glycerine, pure,  $4\frac{1}{2}$  ounces; soap, white curd,  $\frac{1}{4}$  ounce; water, *q. s.*

The nigrosine, finely powdered, is mixed into a stiff paste with the water, hot, and after standing a few hours this is mixed with the glycerine

and soap, and the paste rubbed down with a muller on a hot stone slab.

For colored inks of this description the nigrosine may be substituted by almost any of the soluble coal tar dyes.

### Timing Presses.

The following table will give at a glance the number of impressions made per hour by counting the sheets printed in one minute:

Minute.	Hour.	Minute.	Hour.	Minute.	Hour.
1.....	60	16.....	960	31.....	1860
2.....	120	17.....	1020	32.....	1920
3.....	180	18.....	1080	33.....	1980
4.....	240	19.....	1140	34.....	2040
5.....	300	20.....	1200	35.....	2100
6.....	360	21.....	1260	36.....	2160
7.....	420	22.....	1320	37.....	2220
8.....	480	23.....	1380	38.....	2280
9.....	540	24.....	1440	39.....	2340
10.....	600	25.....	1500	40.....	2400
11.....	660	26.....	1560	41.....	2460
12.....	720	27.....	1620	42.....	2520
13.....	780	28.....	1680	43.....	2580
14.....	840	29.....	1740	44.....	2640
15.....	900	30.....	1800	45.....	2700

This will save multiplying.

REX.

### TYPE MEASUREMENT BY SQUARE INCHES.—

Printers are often asked to make estimates for work when a type measure is not accessible. The editor of the *New York Printing Interest* has worked out the following table, with the aid of which and a foot rule calculations may be made. A square inch of—

Pica contains.....	36 ems.
Small Pica contains.....	49 "
Long Primer ".....	56 "
Bourgeois ".....	64 "
Brevier ".....	86 "
Minion ".....	100 "
Nonpareil ".....	144 "
Agate ".....	256 "

The fractions in this estimate are given in favor of the printer.

The tendency of paper when gummed (in the case of postage stamps, labels, etc.) to curl up is very tiresome, and much waste is often caused by tearing. It is said that this evil may be avoided by adding a little salt, sugar and glycerine to the gum, very little of the latter, however, because otherwise the gum does not dry thoroughly. The gummed paper, also, must not be dried in too great a heat. Another peculiarity of gummed paper is its greater liability to curl up, the thicker it is. The thinnest possible under various circumstances should therefore be used.