



fitted with a thread dial, and this can be employed for a wide range of multiple threads. Table 1 shows the complete useful range of multiple threads, with pitches that can be cut using a thread dial indicated by shaded boxes. A typical dial is shown in Fig. 5. In addition to the engagement points marked, you can also engage at the points indicated by the dotted lines. Table 2 shows threads that can be cut and dial settings for cutting them. Two different standard types of dials are shown. The table is based on an 8-pitch lead screw, standard on most small lathes.

As an example of threading, consider Fig. 6. This shows a double thread of 6-lead, 12-pitch being cut. Refer to Table 2 and you will note this requires engagement similar to the B position. Gear for 6-lead and cut the first thread by engaging the dial at any point marked 1 on the outside rim of the drawing. Without changing the compound infeed, engage at any point marked 2. That's your double thread. Make successive cuts at each compound setting until the double thread is complete. With this method, no attention need be given the minor diameter since you simply go on turning until the crest of thread is sharp. However, as a matter of convenience, it is always good practice to turn the minor diameter. This can be determined by noting the double depth of thread in Table 3 and subtracting this figure from the full diameter of the work.

**How thread dial works:** It's a good idea to understand just why the thread dial splits the thread. On any such dial, numbered divisions indicate 1 in. of carriage travel. One half of a numbered division is  $\frac{1}{2}$  in. of carriage travel, etc. Fig. 5 shows that the dial can be subdivided to  $\frac{1}{8}$  in. of

IF LATHE IS GEARED FOR  $\frac{1}{2}$  THE PITCH OF A TAP THE TAP WILL CUT A DOUBLE THREAD

*How to Use Taps*

TABLE 3 DEPTH OF THREADS

Pitch	Pitch Inches	Single Depth of Thread	Double Depth of Thread	Infeed at 29 Degrees
3	.333	.253	.506	.292
4	.250	.190	.380	.216
4½	.222	.169	.338	.192
5	.200	.152	.304	.174
6	.167	.127	.254	.146
7	.143	.108	.216	.124
7½	.133	.101	.202	.114
8	.125	.095	.190	.108
9	.111	.084	.168	.096
10	.100	.076	.152	.087
10½	.095	.072	.144	.082
11	.091	.069	.138	.079
12	.083	.063	.126	.072
13	.077	.059	.118	.068
13½	.074	.058	.116	.067
14	.071	.054	.108	.062
15	.067	.051	.102	.057
16	.063	.047	.094	.054
16½	.061	.046	.092	.053
18	.055	.042	.084	.047
19½	.051	.039	.078	.045
20	.050	.038	.076	.043
21	.048	.036	.072	.041
22	.045	.035	.070	.039
23	.043	.033	.066	.037
24	.042	.032	.064	.036
25	.040	.030	.060	.035
26	.038	.029	.058	.034
27	.037	.028	.056	.032
28	.036	.027	.054	.031
30	.033	.025	.050	.029
32	.031	.024	.048	.027