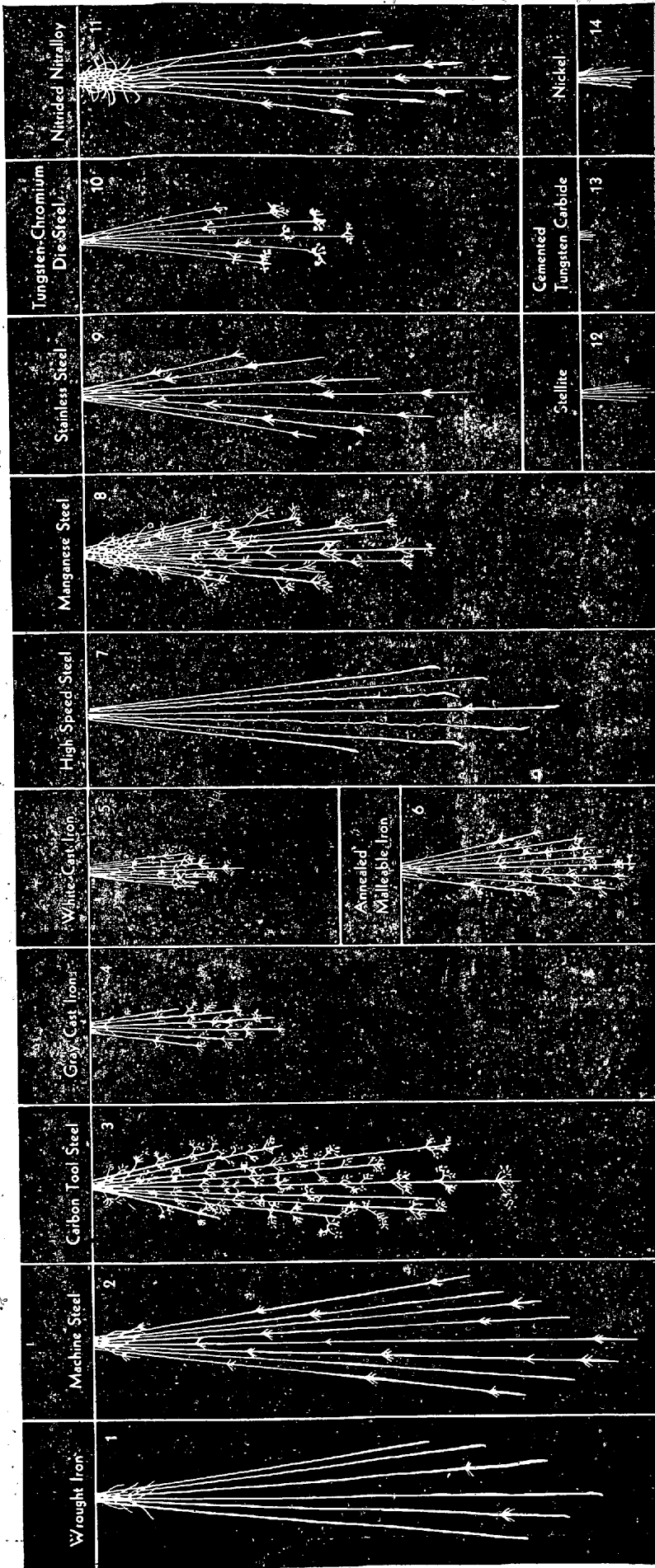


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# Spark Test for Metals



| Line | Metal                       | Volume of Stream | Length of Stream (a) | Color of Stream |              | Quantity of Spurts (b) | Nature of Spurts (b) | Line |
|------|-----------------------------|------------------|----------------------|-----------------|--------------|------------------------|----------------------|------|
|      |                             |                  |                      | Close to Wheel  | Near End     |                        |                      |      |
| 1    | Wrought iron                | Large            | 65 in.               | Straw           | White        | Very few               | Forked               | 1    |
| 2    | Machine steel               | Large            | 70                   | White           | White        | Few                    | Forked               | 2    |
| 3    | Carbon tool steel           | Moderately large | 55                   | Red             | Straw        | Very many              | Fine, repeating      | 3    |
| 4    | Gray cast iron              | Small            | 25                   | Red             | Straw        | Many                   | Fine, repeating      | 4    |
| 5    | White cast iron             | Very small       | 20                   | Red             | Straw        | Few                    | Fine, repeating      | 5    |
| 6    | Annealed malleable iron     | Moderate         | 30                   | Red             | Straw        | Many                   | Fine, repeating      | 6    |
| 7    | High speed steel            | Small            | 60                   | White           | White        | Extremely few          | Forked               | 7    |
| 8    | Manganese steel             | Moderately large | 45                   | White           | White        | Many                   | Fine, repeating      | 8    |
| 9    | Stainless steel             | Moderate         | 50                   | Straw           | White        | Moderate               | Forked               | 9    |
| 10   | Tungsten-chromium die steel | Small            | 35                   | Red             | Straw (c)    | Many                   | Fine, repeating (c)  | 10   |
| 11   | Nitrided nitralloy          | Large (curved)   | 55                   | White           | White        | Moderate               | Forked               | 11   |
| 12   | Stellite                    | Very small       | 10                   | Orange          | Orange       | None                   | Forked               | 12   |
| 13   | Cemented tungsten carbide   | Extremely small  | 2                    | Light orange    | Light orange | None                   | Forked               | 13   |
| 14   | Nickel                      | Very small (d)   | 10                   | Orange          | Orange       | None                   | Forked               | 14   |
| 15   | Copper, brass, aluminum     | None             | 10                   | Orange          | Orange       | None                   | Forked               | 15   |

(a) Figures obtained with 12-in. wheel on bench stand, and are relative only. Actual length in each instance will vary with grinding wheel and pressure.  
 (b) "Spurts" are the sparks (seemingly small explosions) that occur at intervals on the carrier lines.  
 (c) Spurts are blue-white.  
 (d) Some wavy streaks may be observed.