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# ***Fire: Rubbing-Stick***

**by Ernest Thompson Seton**

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I have certainly made a thousand fires with rubbing sticks, and I have made at least five hundred different experiments. So far as I can learn, my own record of thirty-one seconds from taking the sticks to having the fire ablaze is the world's record (this was written in 1907; since then the record has been repeatedly lowered by others), and I can safely promise this: That every man who will follow the instructions I now give will *certainly succeed* in making a rubbing-stick fire.

Take a piece of dry, sound, balsam-fir wood (or else yucca, cedar, cypress, tamarack, basswood, or cottonwood, in order of choice) and make of it a drill and a block, thus:



**The drill** should be not more than five eighths of an inch in diameter and 12 to 15 inches long. The larger your drill, the harder you have to work. There is no use in having an immense pile of powder to get a spark. If the drill averages five eighths of an inch in diameter, is perfectly straight, and tapers off at the top nicely, it will revolve

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smoothly and bring your spark quickly. The drill should be held perpendicularly and should be held solidly by the hand resting firmly against the shin bone. The drill should be placed in the bow so that the loop is on the outside of the thong away from the bow. This prevents the drill from rubbing against the bow.

**Block, or board**, two inches wide, six or eight inches long, five eighths of an inch thick. In this block, near one end, cut a side notch one half an inch deep, and near its end half an inch from the edge make a little hollow or pit in the top of the block, as in the above illustration (cut 1 b).

The notch should be cut into the board deeper at the bottom than at the top, and wider from a side view at the bottom than at the top. The narrower the notch is, while allowing the powder to drop, the better. The notch should be so cut that when the hole has been drilled, there will be just a little slit running from the side to the center of the hole through which the powder drops down. The wood must be cut smooth, or the spark may stick and not drop below. I have found it best to have the notch face me rather than have it the other side of the board away from me. I have noticed that the average person leans his drill, which causes it to push against the outside rim of the hole and to break the side away. Usually it is better to start your hole above the notch and then open up the notch until it connects with the hole.

**Tinder.** For tinder use a wad of fine, soft, very dry, dead grass mixed with shredded cedar bark, birch bark, or even cedar wood scraped into a soft mass.

A meadow mouse's nest does very well for tinder. It is easy to get a number of them after the snow has gone from the wet meadows in spring time.

**Bow.** Make a bow of any bent stick two feet long, with a strong buckskin or belt-lacing thong on it (cut 1c).

**Socket.** Finally, you need a socket. This simple little thing is made in many different ways. Sometimes I use a pine or hemlock knot with a pit one quarter inch deep, made by boring with the knife point. But it is a great help to have a good one made of a piece of smooth, hard stone or marble, set in wood; the stone or marble having in it a

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smooth, round pit three-eighths inch wide and three-eighths inch deep. The one I use most was made by the Eskimo. A view of the under side is shown in cut 1 (fig. d).

The hole in the soapstone should be large enough and deep enough to hold the upper point of the drill solidly without slipping out. The socket itself should not be held in the fingers but in the palm of the hand. Never let a light muscle do what a heavy muscle can do. There is a very general tendency to let the wrist get away from the shin bone, which leaves the hand wobbling, unsupported in the air.

**The Foot.** The foot is placed close to the drill, with all the weight on the ball of the foot, the heel off the floor so that you can regulate the pressure by the raising and lowering of the heel.

Now we are ready to make the fire:

Under the notch in the fire-block set a thin chip.

Turn the leather thong of the bow once around the drill: the thong should now be quite tight. Put one point of the drill into the pit of the block, and on the upper end put the socket, which is held in the left hand, with the top of the drill in the hole of the stone (as in cut 2). Hold the left wrist against the left shin, and the left foot on the fire-block. Now, draw the right hand back and forth steadily on level and the *full length* of the bow. This causes the drill to twirl in the pit. Soon it bores in, grinding out powder, which presently begins to smoke. When there is a great volume of smoke from a growing pile of black powder, you know that you have the spark. Cautiously lift the block, leaving the smoking powder on the chip. Fan this with your hand till the live coal appears. Now, put a wad of the tinder gently on the spark; raise the chip to a convenient height, and blow till it bursts into flame.

N. B. *The notch roust reach the middle of the fire-pit.*



You must hold the *drill steadily* upright, and cannot do so without

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bracing the left wrist against the left shin, and having the block on a firm foundation.

You must begin lightly and slowly, pressing heavily *and sawing fast after there is smoke*.

***The Spark.*** When you get your spark, hold your left hand on the board as you take your foot off, and tap with the right hand (to loosen any spark that might hang onto the notch) before lifting the board. When you put your tinder on the spark, hold it down in the back and on the sides so that you will not blow the spark away.

*If the fire does not come, it is because you have not followed these instructions.*

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