

(No Model.)

N. MACDONALD.
FIRE KINDLER.

No. 585,001.

Patented June 22, 1897.

Fig. 1.

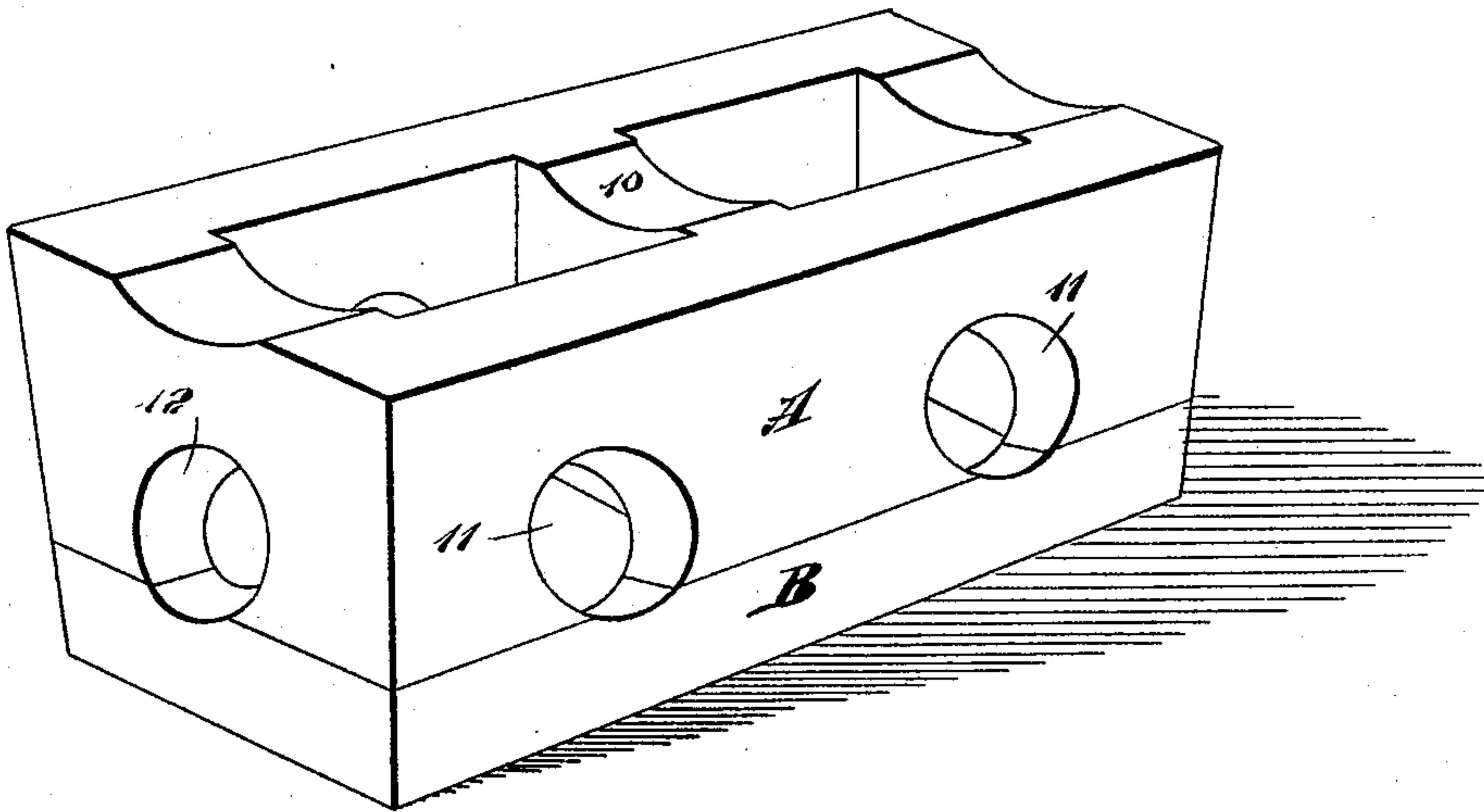
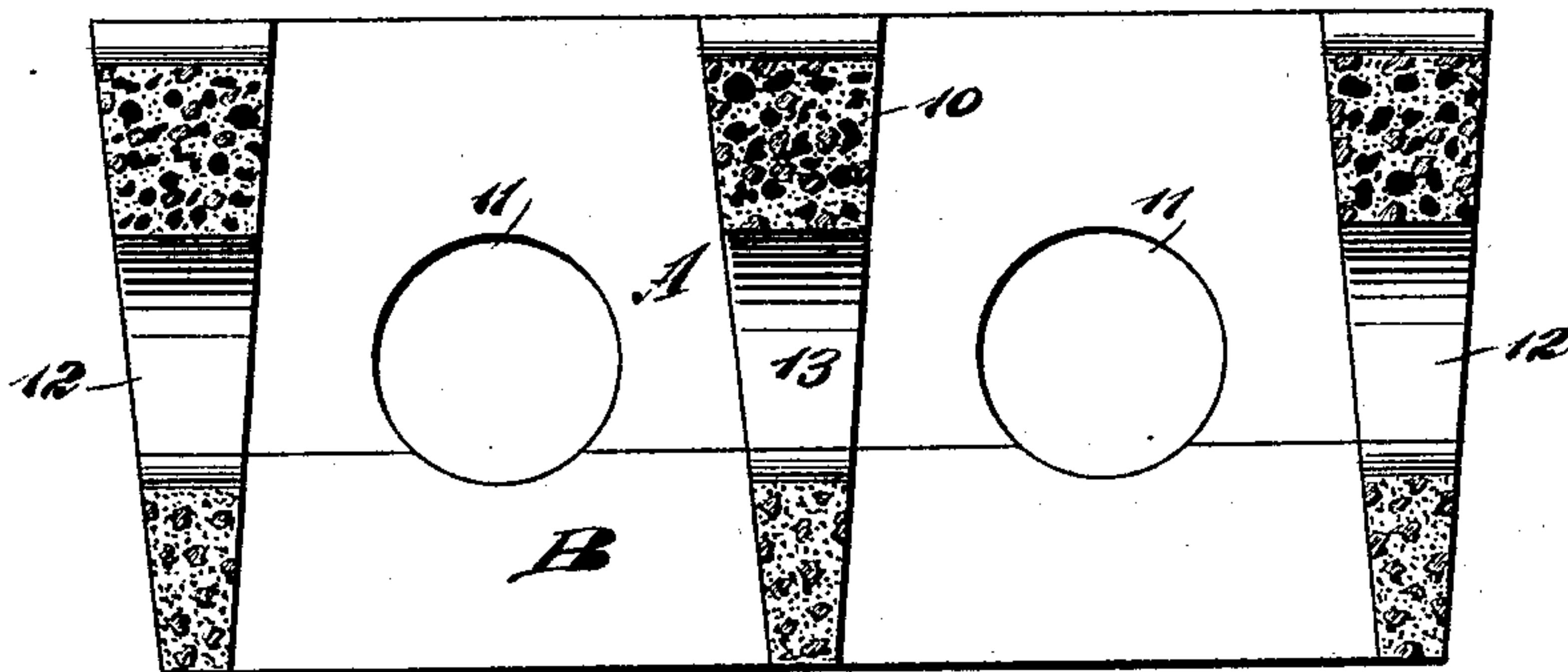


Fig. 2.



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NICOLL MACDONALD, OF MOUNT OLIVER, PENNSYLVANIA.

FIRE-KINDLER.

SPECIFICATION forming part of Letters Patent No. 585,001, dated June 22, 1897.

Application filed October 28, 1896. Serial No. 610,293. (No model.)

To all whom it may concern:

Be it known that I, NICOLL MACDONALD, of Mount Oliver, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Fire-Kindler, of which the following is a full, clear, and exact description.

The object of my invention is to construct a fire-kindler which will be economic and light, and which will produce a maximum of heat and may be quickly ignited.

A further object of the invention is to construct the kindler in such manner that it will produce a strong flame for a predetermined length of time—fifteen minutes, for example—after which the kindler will become a glowing mass, maintaining this shape until it is entirely consumed, which will take, for example, a period of fifteen minutes more. The ingredients of which the fire-kindler is constructed give to the kindler the characteristics of coke after the flame has subsided and during the time the kindler remains in its glowing condition.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both figures.

Figure 1 is a perspective view of the improved kindler, and Fig. 2 is a longitudinal vertical section through the same.

The kindler is made in the form of a hollow brick, as illustrated, and in two sections A and B, the base-section being narrower or of less height than the upper section. One or more partitions 10 are located in the inner chamber of the brick, and these partitions 10, together with the side and end walls of both of the sections, are tapering in vertical section, having substantially a wedge form, as illustrated in Fig. 2, the tops being thicker than the bottom portions of the said parts, and in order to obtain a perfect circulation and an effective and even combustion openings 11 are made in the sides of the sections, while openings 12 are made in the ends of the sections, and openings 13 are produced in the partitions 10.

The lower section B consists of one part by

weight of pulped paper to three parts of sawdust, and the paper is reduced to a pulp ordinarily by mixing it with lime water and working the two ingredients in a suitably-constructed machine. The upper section A is constructed from one part paper-pulp and five parts of pulverized coal, the particles of coal being usually passed through a sieve having a quarter-of-an-inch mesh. After the paper has been reduced to a pulp the other ingredients are added in substantially the quantities above mentioned, and the mass is then thoroughly mixed until it reaches the consistency of thick or stiff mortar. Sufficient of the pulped paper and sawdust is then placed in the mold to form the lower or base portion of the kindler, and then the ingredients that are to form the upper section are molded and the two sections are placed one on the other. After the molding of the material the kindler is placed either in the atmosphere or in an oven and is thoroughly dried.

The kindler is now ready to be saturated with a combustible compound, and I preferably use for this purpose oil or resin, or a mixture of both, the preferred compound consisting of one part by weight of coal-tar, three parts of crude petroleum, and three parts of resin intimately mixed by boiling. The kindler is dipped into this liquid and is permitted to take up all that it will hold, and is then laid away for a few days, at the expiration of which time it is ready for use. It has been found in practice that a binding material will add to the duration of the kindler when fired, and the binding material preferably used consists of a solution composed of one part flour, one part resin, and six parts water, thoroughly mixed by boiling. After the kindler has been duly treated with the compound adapted to promote combustion the kindler is placed in the binding solution, which closes the pores and imparts to the kindler a glossy surface, especially after the binding solution has been permitted to dry on the kindler, which will require at least two days' exposure to the atmosphere.

A kindler constructed as above set forth will burn with a strong flame for at least fifteen minutes, after which it will become a glowing mass having the characteristics of

coke, and the coal combined with the paper imparts such strength to the kindler that it will support considerably more weight than the majority of kindlers that have come under my observation.

It will be perceived that my fire-kindler is constructed with reference to making its lower portion more quickly combustible and more quickly consumed than its upper part, and to this end the lower portion of its walls are made thinner (by the taper) than the upper portion, and the composition of the lower portion (pulped paper and sawdust) is designed for the same end, being more quickly combustible and less lasting than the upper portion that contains the coal particles.

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

1. A fire-kindler consisting of agglomerated materials formed into cellular shape with its lower portion constructed of thinner walls and of a more easily-combustible and more quickly-consumed material than its upper portion, substantially as and for the purpose set forth.

2. A kindler consisting of a hollow brick made in two sections, each section of the said brick being provided with a partition, and each partition, together with the end and side walls of each section of the brick being wedge-shaped in cross-section, as and for the purpose specified.

NICOLL MACDONALD.

Witnesses:

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