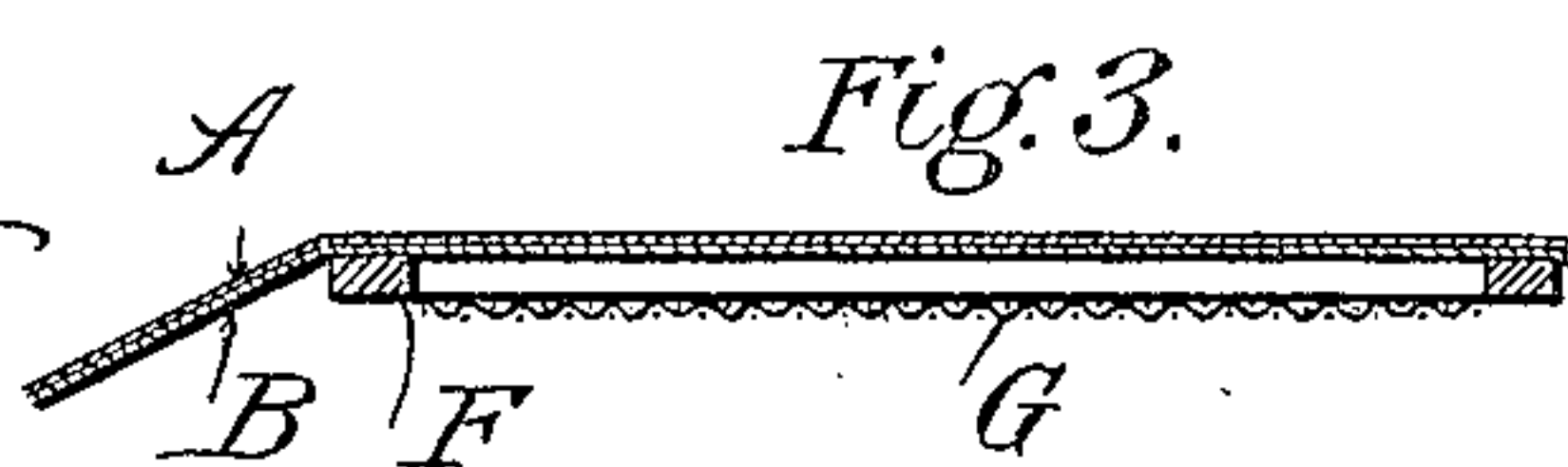
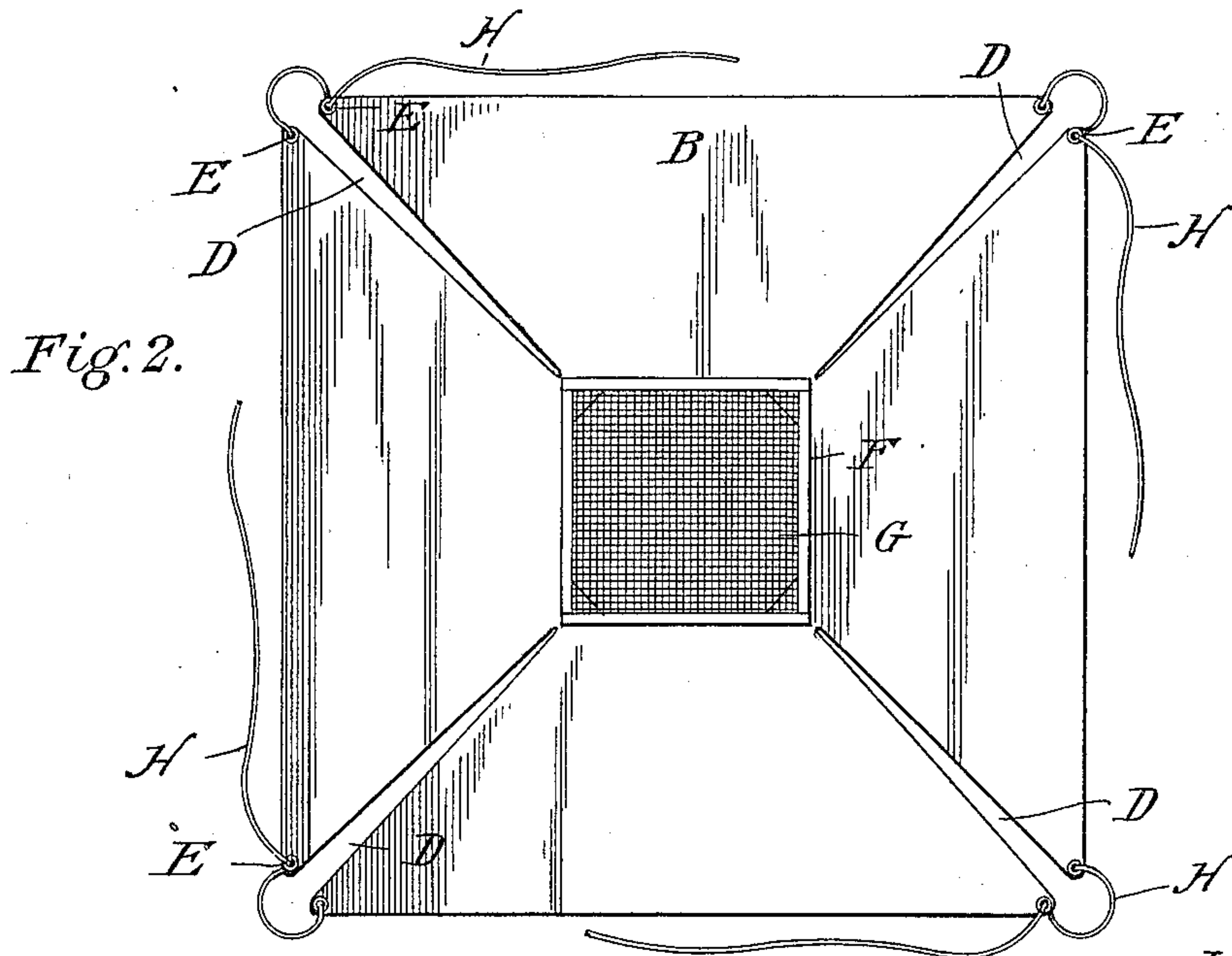
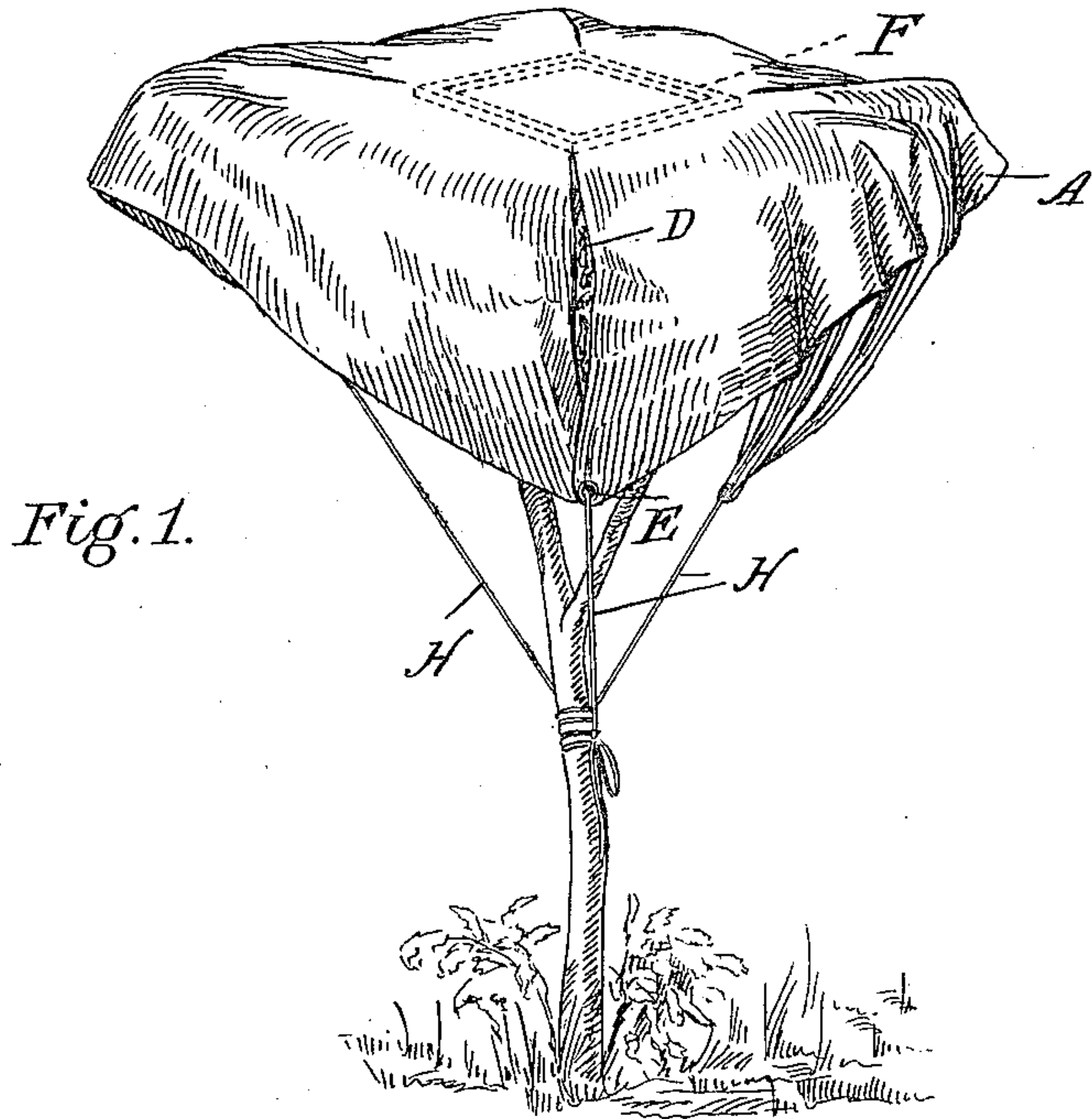


A. G. McADIE.  
PLANT PROTECTOR.  
APPLICATION FILED MAR. 16, 1911.

994,083.

Patented May 30, 1911.



Witnesses;  
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Att'y.



# UNITED STATES PATENT OFFICE.

ALEXANDER G. McADIE, OF SAN FRANCISCO, CALIFORNIA.

## PLANT-PROTECTOR.

994,083.

Specification of Letters Patent. Patented May 30, 1911.

Application filed March 16, 1911. Serial No. 614,944.

(DEDICATED TO THE PUBLIC.)

*To all whom it may concern:*

Be it known that I, ALEXANDER G. McADIE, an employee of the Department of Agriculture of the United States of America, residing at San Francisco, California, (whose post-office address is San Francisco, California,) have invented a new and useful Improvement in Plant-Protectors.

This application is made under the act of March 3, 1883, chapter 143 (22 Stat., 625), and the invention herein described and claimed may be used by the Government of the United States or any of its officers or employees in the prosecution of work for the Government, or any person in the United States, without payment to me of any royalty thereon.

My invention relates to a cover for the protection of trees, bushes, vines, flowers, and other plants against injury from frost and temperatures as low or lower than freezing.

The object of my invention is to provide a cheap and inexpensive device, of lightweight material, yet having sufficient strength and rigidity to withstand out-of-door exposure and weathering.

My invention is designed for interference with the radiation of long heat waves from the ground, which is accomplished by the use of a cover or screen placed above the top of the tree or resting thereon, or on the top of the bush, vine, or plant needing the protection described.

In the construction of my device, I employ a suitable paper, reinforced paper, asphalted paper or cloth, or burlapped tarred paper, water proof and weather proof, and of such textile strength as to best accomplish the desired end. The material may be made up in double sheets, with an intervening air space between, where a high degree of protection is necessary; but for ordinary use a single layer will suffice. The cover consists of a square or rectangular sheet of such paper tacked, cemented, or otherwise firmly fastened to a wooden frame of smaller area. The frame is made more rigid by corner cross-braces. There is also secured to the frame an equal area of wire netting or screen, preferably on the under side of the frame, that is to say, the side which will be nearer the ground when in use. The entire frame forms a central area or crown intended to rest upon and be supported by the top of the

object protected. From the central area on each side extend flaps of the cloth paper going beyond the sides of the frame. The material is so cut along diagonals that the sides make flaps and to some degree overlap. Near the lower end of each flap an eyelet is inserted. A lacing string with a knotted end passes through each eyelet, so that it is an easy matter to bring each flap together tightly. The free ends of the strings can be made fast to the trunk of the tree protected or to any other suitable point.

The nature, characteristic features and scope of my invention will be more readily understood from the following description taken in connection with the accompanying drawings forming a part hereof, wherein—

Figure 1, is a perspective view of my invention. Fig. 2, is a view from the under-side, and Fig. 3, is a detailed view in section.

Referring to the drawings, A represents the exterior cloth side of the cover. This outer cover may be made of burlap or fine cheese cloth, or of any suitable waterproof and weatherproof material.

B, indicates the under or interior paper side of the cover. This paper portion of the cover may be any color, but a black surface is preferable, as, other things being equal, such color is known as a better absorber of heat. The exterior cloth, A, and interior paper, B, are made into one piece by being cemented together by means of some tarry or resinous paint or by the use of any other adhesive substance.

D, indicates the lines along which the cover or layer is cut. These are at diagonals and permit the flaps to overlap. Located at the lower corner end of each flap is an eyelet, E, through which lacing strings, H, having knotted ends, pass, in order to hold the flaps in position when the plant protector is in operation.

F, represents the wooden frame which constitutes the center or crown of the cover, and attached thereto, at either its top or bottom, is a screen of wire netting. This wooden frame, F, and screen or wire netting, G, is employed for the purpose of giving the necessary stiffness to the cover and the desired resistance to the upward push of the branches and twigs of the tree or plant protected. I do not confine myself, however, to the use of the wooden frame and the screen for accomplishing this purpose, but any de-



sirable board may be used for attaining this end.

In practicing my invention, I cement the exterior cloth, A, to the interior paper cover, 5 B, by means of an adhesive substance, thereby constituting one cover or layer. This cover may be of any dimension and made of any suitable weatherproof and waterproof material. Then I secure the central portion 10 of said cover or layer to a wooden frame, F, having a screen, G, attached at either its top or bottom end, and then cut diagonally the material of the cover suspended from the wooden frame, F, as shown 15 in Figs. 1 and 2, thus making a plurality of flaps. At the corners of the bottom end of the flaps I place eyelets, E, and pass there-through, lacing strings, H. When the device is so constructed it is then only necessary 20 to cover the foliage of the tree or plant to be protected by placing the central frame over its top and permitting the flaps to spread over the foliage and then retaining such parts in place by tying the lacing 25 strings to the trunk or base of the tree or plant so covered, or to some other suitable fastening.

This device should be used in the manner 30 described, before sunset, and should not be removed from the object protected until after sunrise. The purpose of using the cover at this period is to retain in place whatever warm air may have risen by convection from the ground to the neighborhood 35 of the treetop or object covered. It prevents loss of heat during the night hours and also serves as a screen and non-conductor to prevent a too rapid warming up

of the chilled fruit or foliage soon after sunrise.

My invention, furthermore, is one in 40 which weight is of the utmost importance. In practice a complete cover made of suitable material and capable of lasting a season or longer, should not weigh more than 45 ten pounds, and preferably much less. The flaps fold in when the cover is not in actual use, and the lacing strings may also be used to tie the cover into a package not exceeding 50 in space the space of the crown or central frame. In practice, twenty-four covers, with a total spread of over nineteen hundred feet, can be packed in a space one yard wide and one yard high. The device is portable, 55 as it can be easily folded and carried about on account of its light weight.

Having thus described my invention, I claim:

A plant protector, consisting of a dual 60 cover of paper and suitable waterproof material, cemented together by an adhesive substance, said cover centrally secured to a frame and over-lapping the same, a plurality of flaps cut diagonally in said over-lapping portion, eyelets in said flaps a wire 65 netting attached to said frame, and means for securing said plant protector in a fixed position for retaining the warm air arising from the ground, substantially as specified. 70

In testimony whereof, I affix my signature in the presence of two subscribing witnesses.

ALEXANDER G. McADIE.

Witnesses:

WILLIAM J. REED,

BERNARD R. LASKOWSKI.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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