

Jan. 2, 1923.

1,440,755.

C. U. WINBERG.
BROODER.
FILED JULY 31, 1919.

Fig. 1.

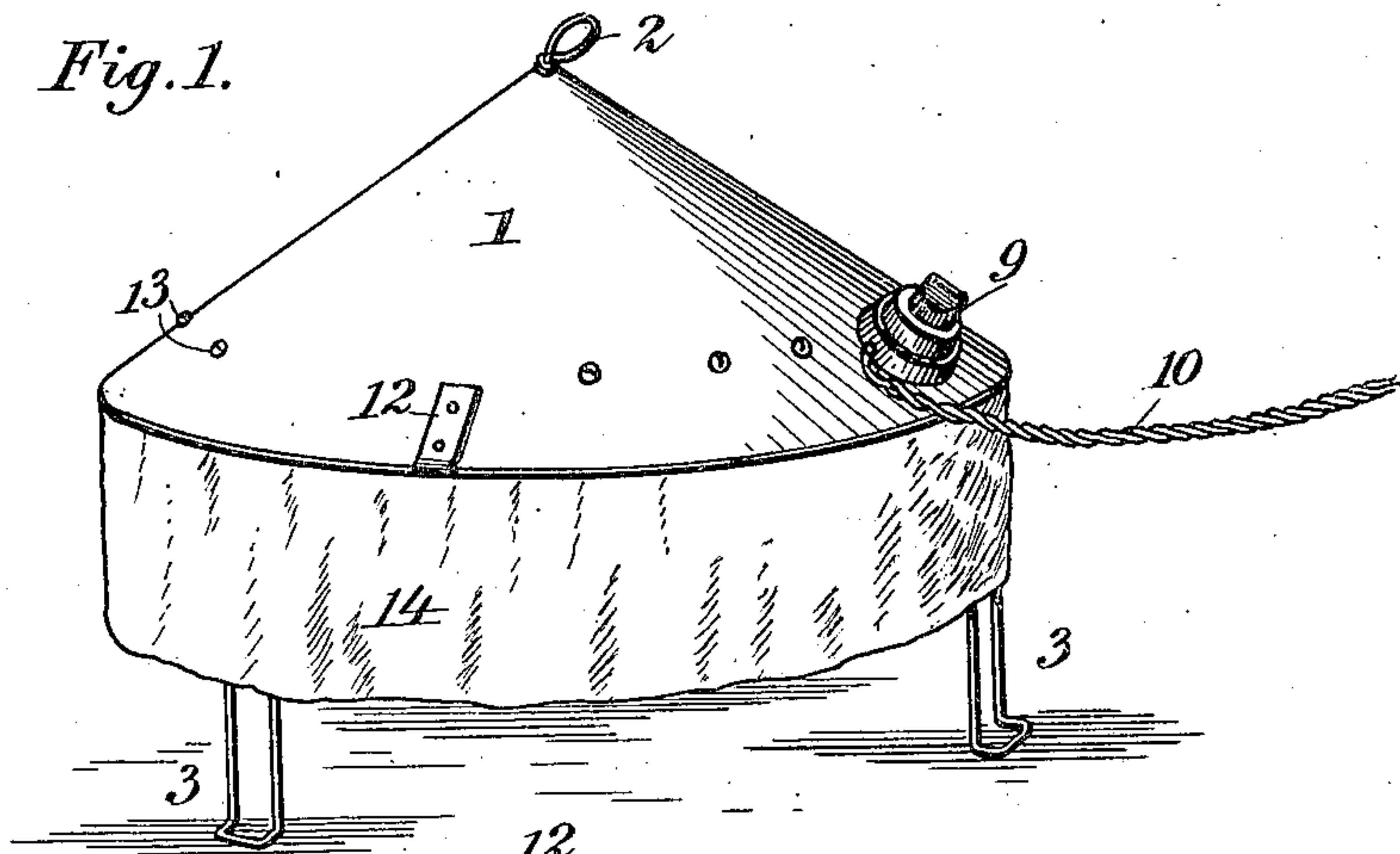


Fig. 2.

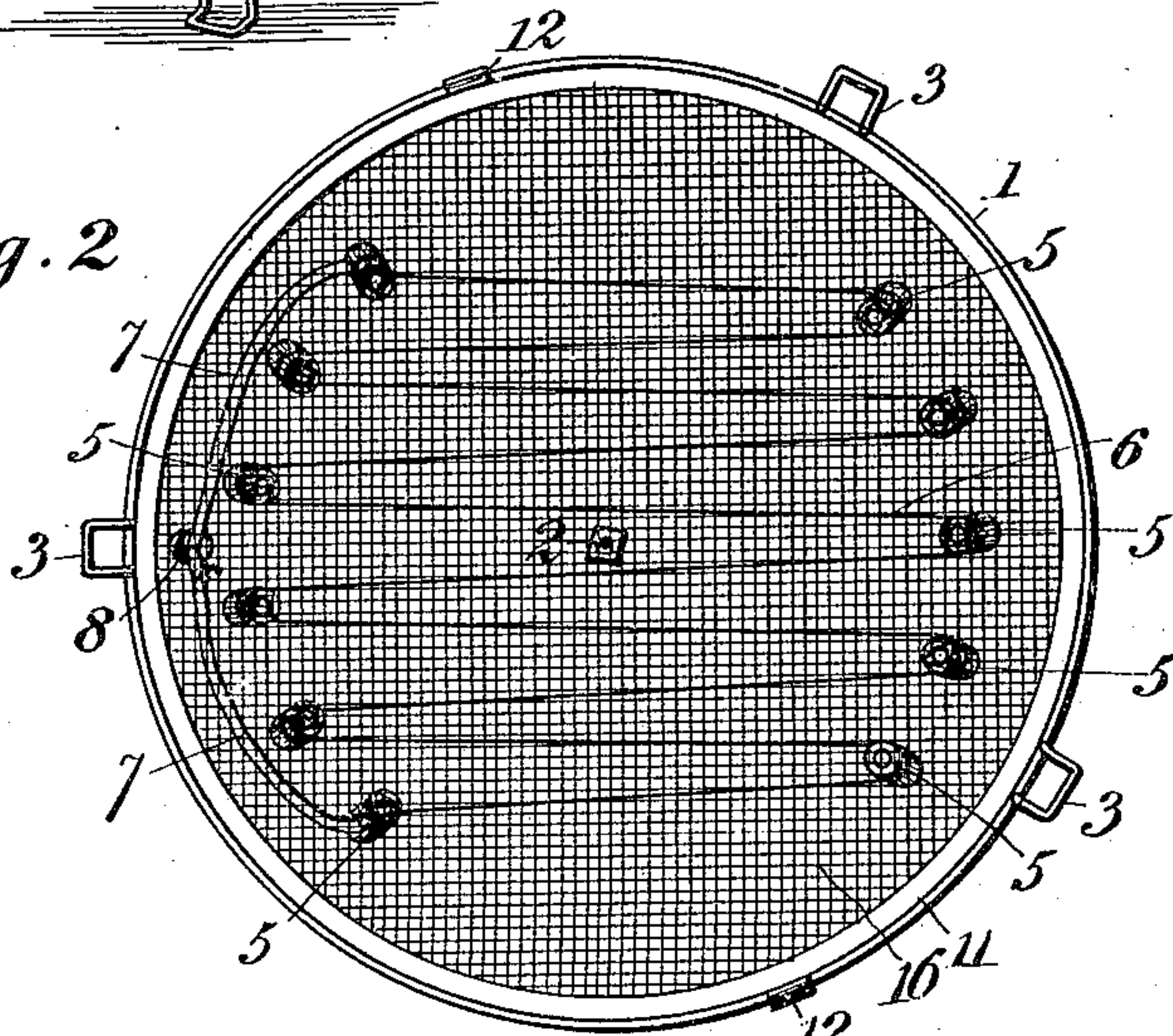
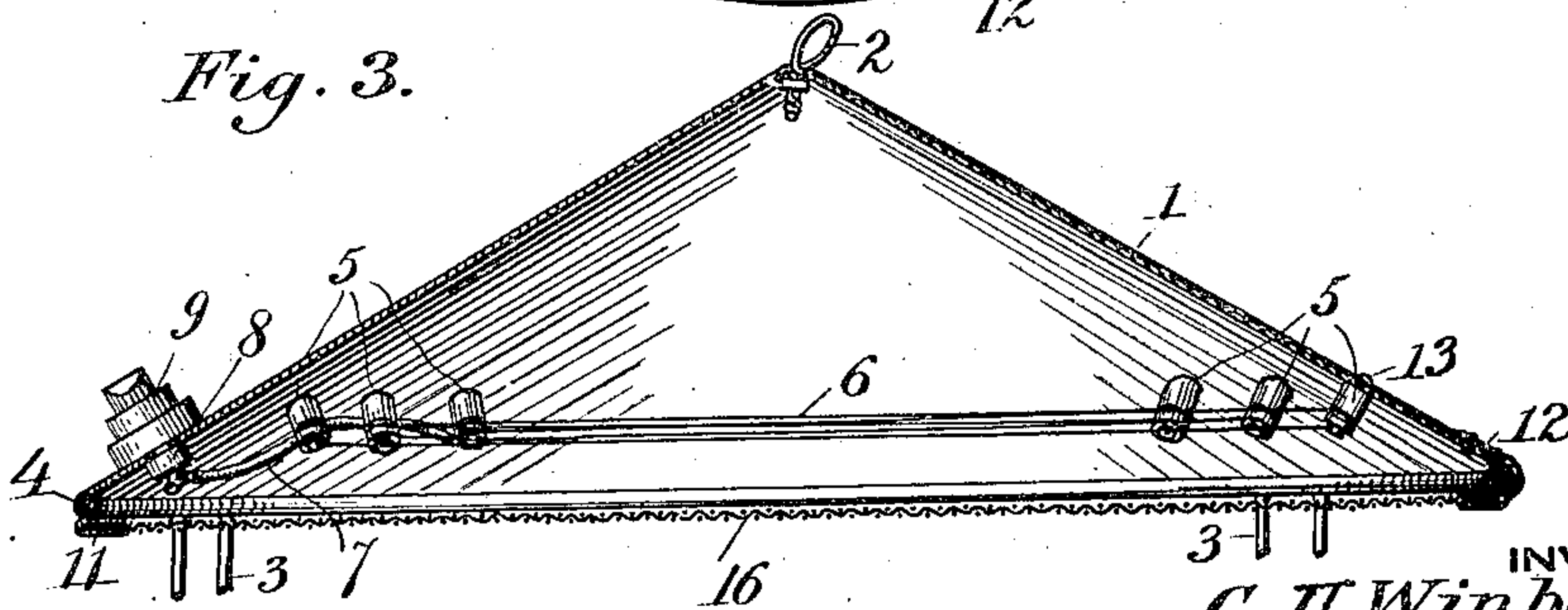


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES UNO WINBERG, OF SEATTLE, WASHINGTON.

BROODER.

Application filed July 31, 1919. Serial No. 314,536.

To all whom it may concern:

Be it known that I, CHARLES U. WINBERG, a citizen of the United States, residing at Seattle, in the county of King and State of Washington, have invented a new and useful Brooder, of which the following is a specification.

This invention has reference to brooders, and its object is to provide an electrically heated brooder of simple construction which may be placed in any desirable position where electric current is available.

Many farms are equipped with local power and lighting systems of relatively low voltage and the brooder is designed to work on such voltage with the heating elements producing a black heat of about the same degree as the body heat of a hen, with provision for reducing the heat as required.

In accordance with the invention a hood or roofing is provided and arranged to constitute a housing for the electric heating elements, with the housing so shaped as to direct the heat downwardly in the same manner as would occur in the case of chicks protected by a hen. In order to protect the chicks from drafts, the housing, which is somewhat elevated by legs or hanging means, is provided with a skirt or curtain hanging below the roof or cover and acting to more or less confine the heat similarly to the effect of the feathers of the hen. By providing a multi-point switch the heat may be readily regulated, and by providing a screen of wire fabric or the like direct contact of the chicks with the heating unit is prevented.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing of the drawing, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a perspective view of the brooder in position for use.

Figure 2 is an inverted view of the brooder with the curtain omitted.

Figure 3 is a diametric section through the roof or hood portion of the brooder,

with the curtain omitted, and drawn on a larger scale than the other figures.

Referring to the drawing, there is shown a roof or hood 1 which may be made of metal and is preferably, though not necessarily, of conical form, the hood having its apex upwardly when in use. At the apex of the hood there is provided a loop 2 which may be a swivel loop, although such particular arrangement is not obligatory. The purpose of the loop 2 is to permit the suspension of the brooder from a higher point. Fast to the outer or rim portion of the roof or hood 1 are legs 3 permitting the brooder to be supported upon a surface, the legs being of appropriate length to raise the roof 1 to a suitable height. The legs 3 may be conveniently formed of bent wire, or may be otherwise formed. In order to stiffen the outer margin of the roof it may be provided with a bead 4.

Fast to the inner wall of the roof 1 is an appropriate number of insulating knobs 5, the ordinary porcelain knobs of commerce being convenient for this purpose. The knobs 5 are distributed in such a manner that a strand 6 of resistance wire may be carried between and about them with the turns suitably separated to distribute the wire over the inner surface of the roof out of contact therewith. The wire has insulated terminal portions 7 carried through a bushing 8 to the exterior of the roof and there may be connected to a multi-point electric switch 9, a three-point switch being usually sufficient. Exterior to the roof a suitable conducting cord 10 provides for the connection of the switch 9 to some appropriate source of electric current, either a commercial service line or a local source such as is frequently found upon farms, therefore needing no description.

The resistance wire 6 is inset for a short distance into the interior of the hood or roof 1 while the lower portion of the roof is covered by a gauze screen 16 provided with a marginal frame 11 held to the roof by clips 12 riveted or otherwise fastened to the roof. In order to hold the knobs 5 to the roof screws 13 may be used.

Carried by the roof 1 about the margin thereof is a curtain 14 of some flexible material such as cloth, and dropping to a point where it is protective to chicks under the roof, but stops short of the surface over which the roof is placed by a sufficient dis-

tance to permit the chicks to find their way under the curtain in passing to and from the brooder.

When the chicks are young they need considerable heat, say, in the neighborhood of 90° F. and when the chicks get older the heat may be reduced to 70° F. This is readily controlled by the multi-point switch so that when the latter is set for high temperature the heat will reach 90° and when set for low heat it need not exceed 70° F.

The device is of a simple, relatively cheap, construction, permitting changes in the heat supply, and the resistance wire for the desired degree of heat will at all times remain black, that is, below red heat. The resistance wire may cover a considerable area and therefore distribute the heat quite evenly over the interior of the brooder, the heat being reflected downwardly upon the chicks due to the conical or similar shape of the roof. This effect may be enhanced by having the inner face of the roof heat-reflecting as would be the case if the roof were made of tin plate or some other material with a polished, smooth, bright surface.

While the roof 1 is shown as of conical form, it will be understood that it may be of other form whereby it will house the electric heating elements or units and at the same time reflect or direct the heat downwardly upon chicks located under the roof.

The principal advantage accruing from the use of the present brooder is its low operating expense. Because the wires are never allowed to rise above a black heat, the current consumption is extremely small, costing for the smallest size of brooder about seventy-five cents a month. This amount may be compared with the cost of the cheapest type of brooder using kerosene oil which costs nearly four dollars per month.

The present device was especially designed to operate on a low voltage circuit, say of thirty-five volts, or on any Delco light plant circuit. Other brooders, depending on electricity for heat either employ incandescent lamps, whose heating value is designed very low, or else have red hot resistance wires along with thermostats and other complicated apparatus to break the circuit when the brooder gets too warm. Brooders like these last are necessarily expensive because of the high operating expense and are disadvantageous in being diffi-

cult to adjust to changing weather conditions except by one experienced with electrical apparatus.

The present invention provides an easy and inexpensively constructed brooder, exceedingly simple to assemble and to repair; cheap in first cost, and low in operating expense. It differs from all other brooders in using a resistance which is never allowed to rise above a black heat and yet which radiates enough heat to keep the chicks as warm as though the mother hen were sheltering them. It does not overheat their backs, but distributes a uniform and gentle heat which is reflected downwardly by the hood. Moreover since the wires are at a black heat they do not emit light, as red hot wires will do, a feature appreciated by young chicks who like to hover in darkness.

What is claimed is:—

1. In a brooder, a hood open at the bottom, a plurality of insulators mounted on the inside of the hood above the bottom, a resistance wire connecting the insulators and spaced from the bottom of the hood, means for supplying a current of low voltage to said wire whereby it never rises above a black heat, and a multi-point switch provided on the outside of the hood and in circuit with the resistance wire for diminishing or cutting off entirely the said current.

2. In a brooder, a conical hood that reflects heat waves downwardly, a plurality of legs supporting the brooder and depending from the hood, a protecting screen secured to the lower edge of the hood, a curtain depending from the hood outside of the legs but having a width less than the height of the legs, a plurality of insulators removably mounted on and within the hood, an electrical resistance means connecting the insulators and spaced from the hood proper as well as from the lower edge thereof, means for supplying a current to said wire, whereby the wire never rises above a black heat, and a multi-point switch provided on the outside of the hood for diminishing or cutting off entirely said current.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CHARLES UNO WINBERG.

Witnesses:

H. E. GLADFELTER,
W. J. DAUGHERTY.