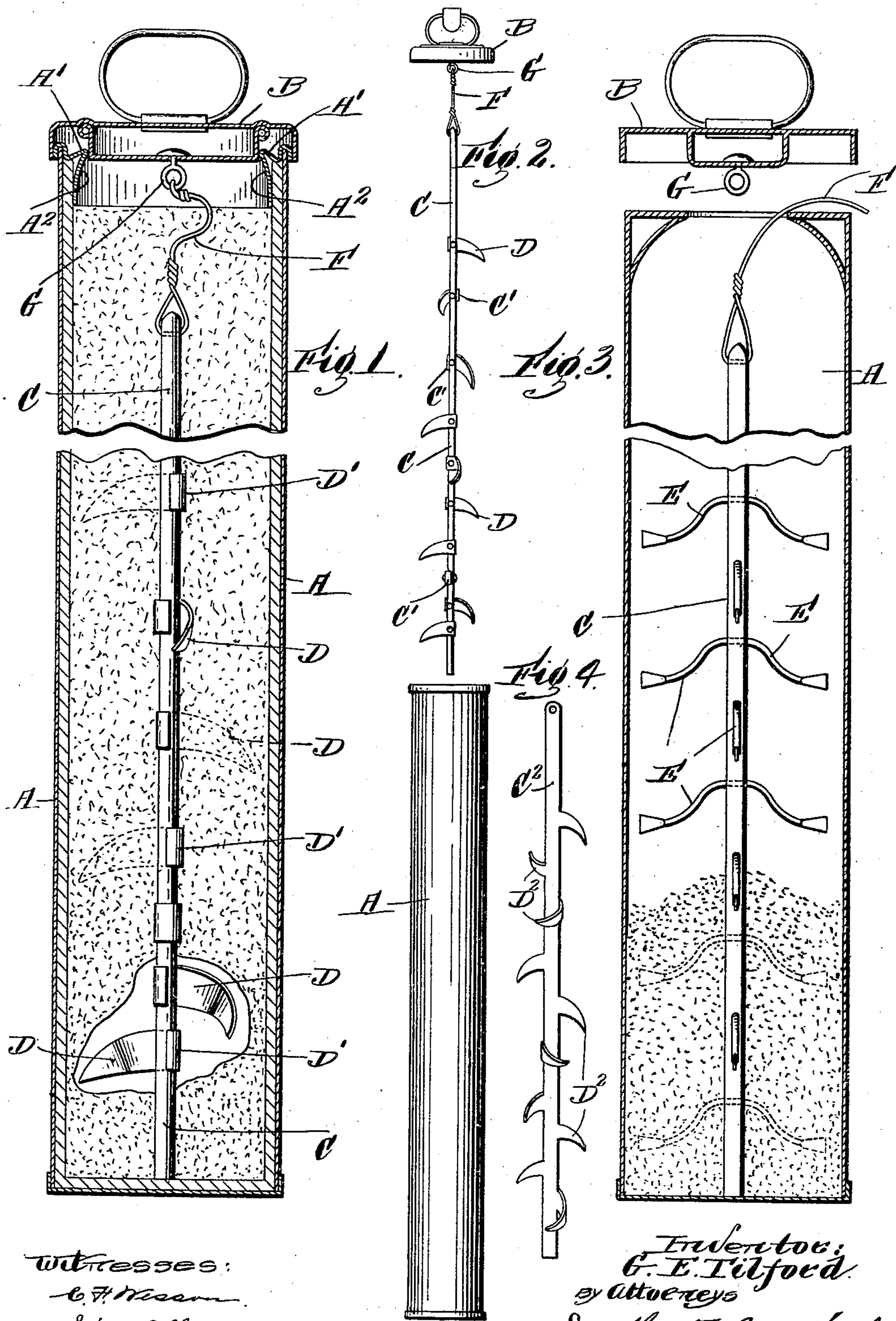


No. 869,752.

PATENTED OCT. 29, 1907.

G. E. TILFORD.
FIRE EXTINGUISHER.
APPLICATION FILED OCT. 1, 1906.



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UNITED STATES PATENT OFFICE.

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FIRE-EXTINGUISHER.

No. 869,752.

Specification of Letters Patent.

Patented Oct. 29, 1907.

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To all whom it may concern:

Be it known that I, GEORGE E. TILFORD, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented a
5 new and useful Fire-Extinguisher, of which the following is a specification.

My invention relates to improvements in fire extinguishers of the dry dust variety.

Dry-dust fire extinguishers can be made in such a
10 manner that the dust will remain in proper condition for many years, but as some of the powders are compounded they will cake up after a time, especially in damp weather. This is sometimes a serious objection to this type of fire-extinguishers.

15 The principal objects of my invention are to provide means whereby even the poorer classes of dry dust compositions will be delivered from the package in a fine powder even if they have caked up in the manner mentioned above, and to provide for loosening
20 the powder if it should be packed too tight, or for any other reason not readily be discharged from the receptacle. For the purpose of accomplishing these objects I locate in the receptacle or tube, for containing the dry dust composition, means for agitating the
25 powder, or for breaking up the cakes formed therefrom. This means may be constructed in many ways, but in the preferred form it consists of a rod connected with the closure for the receptacle, and adapted to be drawn through the powder when the receptacle and
30 closure are separated. The rod is provided with wings or blades for accomplishing the desired purpose.

Reference is to be had to the accompanying drawings, in which

35 Figure 1 is a vertical central section of a dry-dust fire extinguisher showing one form of my invention applied thereto. Fig. 2 is an elevation showing the parts as they appear when separated by pulling the containing tube away from the closure which supports the agitating device, the wings being slightly modified. Fig. 3 is a sectional view similar to Fig. 1 showing how the agitating device is located when the receptacle is being filled, the agitator being modified, and a different form of closure being shown, and Fig.
40 4 is a modified form of agitator.

45 Referring first to Fig. 1, it will be seen that I have selected a type of tube for the dry-dust composition which is now upon the market. This tube A is provided with a closure B in the form of a cap which has an eye or ring adapted to be supported from a hook,
50 nail, or the like. As ordinarily constructed this cap fits the tube with sufficient friction, so that the tube is supported by it when hung in the manner specified. When it is desired to use the powder, the receptacle is pulled downwardly, leaving the cap suspended, and
55 the dust is then distributed.

In order to break up the cakes of dust if such are formed, and to agitate the powder so that it can be more readily thrown or discharged from the receptacle, I have provided an agitator in the form of a rod C. This rod is nearly the length of the tube and extends
60 to the bottom thereof when the parts are in the position shown in Fig. 1. On the rod at intervals are a series of blades D, each one being of a curved formation as shown in Fig. 2, and having an extension D' curved about the rod and brazed, soldered or other-
65 wise attached thereto. The several blades or wings are placed at angles to each other, preferably so that not more than two of them are in alinement. However, this may be varied to suit conditions of manufacture. The number of blades is not important, 70 enough of them being employed to perform the desired function. They are preferably located nearer together at the bottom of the rod than at the top, so that those near the top merely serve to cut way through the caked material, while those near the bottom may
75 serve to pulverize and agitate it. The blades or wings extend nearly to the sides of the tubular receptacle, but considerable clearance is allowed in order to permit them to be readily withdrawn without interfering with the motion of the receptacle away from the cap
80 which holds the agitator.

The receptacle or tube as ordinarily constructed is provided with an inwardly extending flange A'. This is sufficient to prevent the powder from being pulled out by the agitator if the blades are properly
85 located upon the latter. However, the square shoulder which is ordinarily present might interfere with the withdrawal of the wings, and consequently I have shown this shoulder as modified to form a slanting surface A², which engages the ends of the wings and
90 forces them into such position that they can be drawn through the opening in the flange A'. It is to be noted that the wings are also slanted upon their upper surfaces to assist in this operation, and in fact to perform it by themselves when the device is used on a tube
95 not provided with the slanting surface A². It will be observed moreover that the wings are ordinarily not placed opposite each other so that they can be withdrawn through the opening in the flange A', even if each wing is almost as long as the diameter of that
100 opening. This permits the use of longer wings without enlarging the opening for the closure B, and by shifting the whole device back and forth assists in the breaking up of caked material. On account of the curvature of the wings the operation of separating the receptacle
105 and closure will tend to turn the agitator in the powder and thus add to the efficiency of the operation thereof.

In the form shown in Fig. 2, the wings are slightly modified to the extent of being riveted onto the rod instead of being brazed or soldered thereto. For the
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purpose of enabling the riveting to be accomplished in an efficient manner, the rods are flattened before the wings and rivets are applied. In this form, means additional to the rivets may be provided for preventing the wings from turning on them as axes. This is shown in the form of a projection C'.

In the form of the invention shown in Fig. 3, the wings are represented by a series of wires E passing through perforations in the rod. In order that the perforations may be provided conveniently and cheaply, the rod is flattened, and this enables them to be made by a simple punching operation. The wires E are not necessarily fixed to the rod, but being bent in the manner indicated, they may swing freely therein. This permits them to have greater freedom of motion, and warrants an efficient operation. They are preferably flattened at their ends, and while they may be applied at different angles, as explained in the case of the other form described above, it is more economical in construction to provide the passages for them in two planes only, and this construction is shown in Fig. 3. In this figure a different form of closure is shown, consisting of a simple cap fitting in an opening in the top of the tube. It is to be understood that either of the forms shown, or any other, may be used with either of the agitators.

In Fig. 4 a modified form of agitator is shown. In this construction the agitator consists of a central rod or strip C² having extending wings or blades D² the rod and blades being struck up from sheet metal so as to form one integral piece. The metal may be tin or steel and the blades may be bent to assume curved positions as shown.

In assembling the parts the agitator of either of the forms shown, or any other form coming within the scope of my invention as expressed in the claims, is placed in the receptacle, and a flexible support F therefor is attached to its upper end. This support is then drawn over the edge of the tube, as indicated in Fig. 3, and the composition poured in. The tube being filled, the flexible connection F is secured to the bottom of the closure through an eye or ring G or the like, and the closure applied in the usual manner. This flexible connection also permits the turning action of the agitator as described above.

While the invention has been described as particularly applicable to powdered fire extinguishing materials, it is to be understood that it can be used with

any material of this character even though not in the form of a powder. For example, a fire extinguishing material in the form of a readily firable cake would be broken up by the use of such a device.

While I have illustrated and described certain forms in which I at present prefer to embody my invention, I am aware that many modifications may be made therein, and that the invention can be carried out in many ways within the scope thereof as expressed in the claims. Therefore, I do not wish to be limited to the particular forms shown, but

What I do claim and desire to secure by Letters Patent is:—

1. The combination with a receptacle for a fire extinguishing composition, of a closure therefor, and means supported by and depending from said closure for agitating the composition in the receptacle as the closure and receptacle are separated.

2. The combination with a receptacle for a fire extinguishing powder, and a closure therefor, of means connected with the closure for breaking up caked powder when the closure and receptacle are separated.

3. The combination with a receptacle for a fire extinguishing composition having an opening, of a closure for said opening, and a rod connected with said closure, and having wings or blades adapted to pass through the composition when the closure and receptacle are separated.

4. The combination of a receptacle for a fire extinguishing composition having an opening, a closure frictionally held in said opening and adapted to support the receptacle, and a rod connected with said closure and supported thereby, said rod having means for agitating the composition on passing through it when the closure and receptacle are separated.

5. A fire extinguishing receptacle having a removable closure, a rod connected with the closure, and a series of curved wings or blades located on the rod at angles to each other.

6. An agitator for a fire extinguishing receptacle comprising a rod, and a series of curved wings or blades on the rod, said blades being located nearer together at the bottom of the rod than at the top.

7. An agitator for a fire extinguishing receptacle comprising a rod and a series of wings or blades, said rod and blades being formed from sheet metal.

8. An agitator for a fire extinguishing receptacle comprising a rod and a series of wings or blades said rod and blades being formed from an integral piece, said blades being bent to proper position.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

GEORGE E. TILFORD.

Witnesses:

JULIA C. HAYES,
ALBERT G. PERRY.