(No Model.)

T. N. HOWELL.

GRAVE TORPEDO.

No. 251,231. Patented Dec. 20, 1881.

Fig. 1.

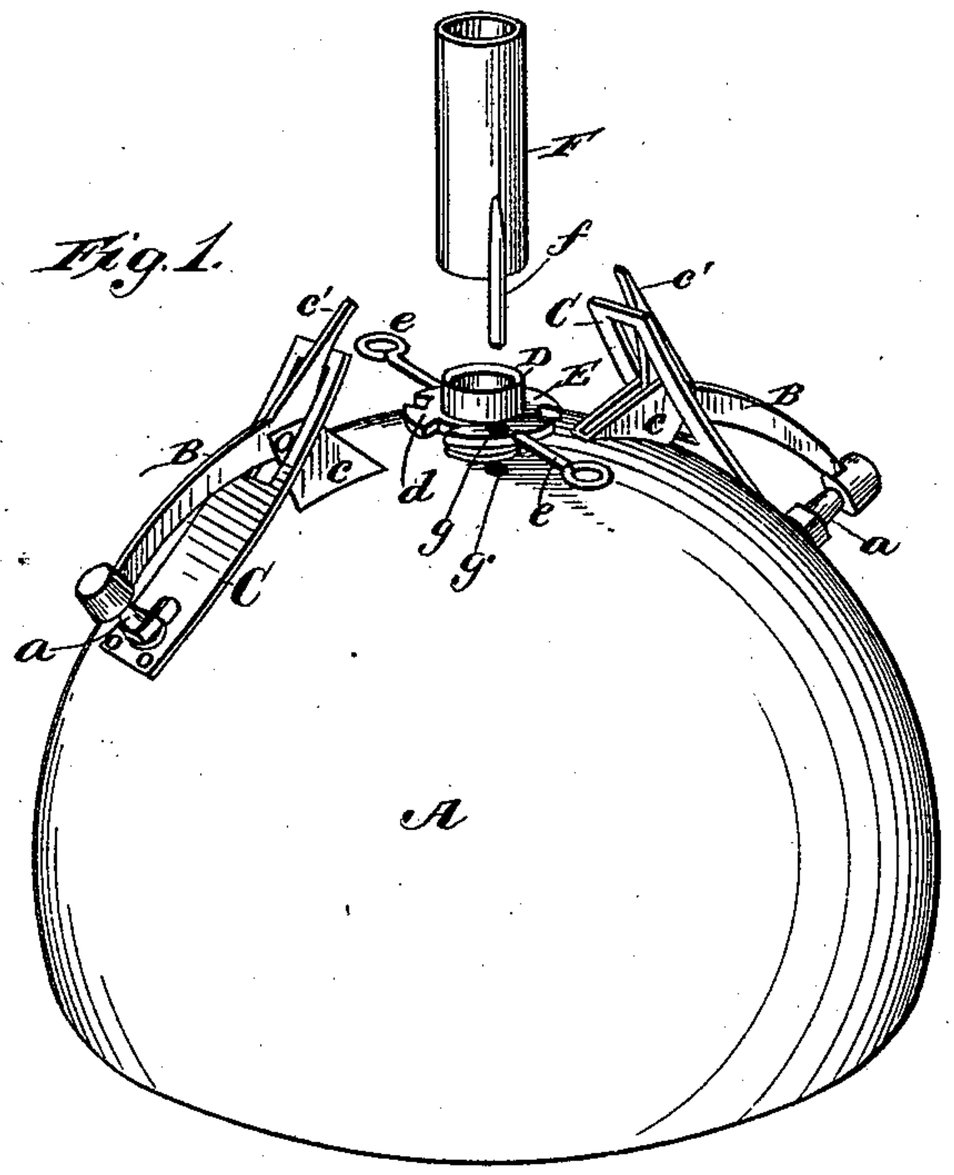
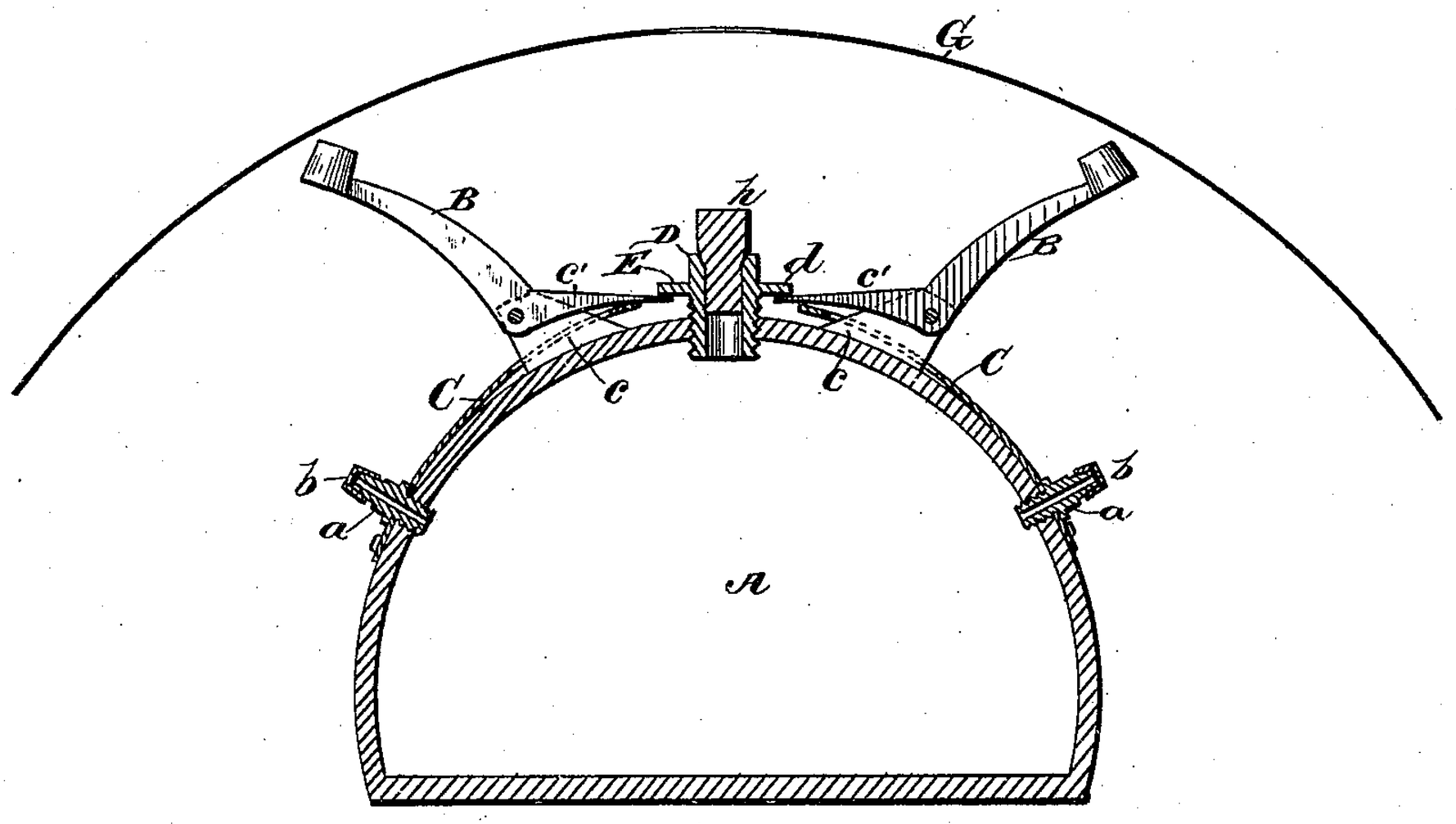


Fig. 2.



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UNITED STATES PATENT OFFICE.

THOMAS N. HOWELL, OF CIRCLEVILLE, OHIO, ASSIGNOR TO P. G. BOSTWICK AND C. S. LE BARON, OF SAME PLACE.

GRAVE-TORPEDO.

SPECIFICATION forming part of Letters Patent No. 251,231, dated December 20, 1881.

Application filed October 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS N. HOWELL, a citizen of the United States, residing at Circleville, in the county of Pickaway and State of Ohio, have invented new and useful Improvements in Grave-Torpedoes, of which the following is a specification.

The object of my invention is to provide improvements in grave-torpedoes, whereby their operation is rendered more certain and effective, and at the same time all danger of premature explosion or disarrangement of the mechanism while charging the torpedo and adjusting it in position is avoided. This object I attain by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved grave-torpedo; and Fig. 2 is a central vertical section of the same, showing the mechanism in position for exploding the shell.

The shell A is preferably hemispherical in form, though any other suitable shape may be adopted, if desired. This shell is provided on its exterior with nipples *a a*, upon which are placed waterproofed percussion-caps *b b* at the proper time.

Attached to the outer surface of the shell, and pivoted in lugs *c c*, are hammers B B, which are adapted to be brought in forcible contact with the caps upon the nipples *a a* by means of the springs C C.

In the upper portion of the shell is an opening, within which is fitted a rotating tube, D, having a threaded connection with the opening in the shell. This tube is provided with a collar, E, that is notched upon its edges to form projections *d d*. By means of these notches and projections the collar E is adapted to engage with lugs *c' c'* on the hammers B B, and so hold said hammers from contact with the capped nipples until the position of the collar is slightly changed by partly rotating the tube D, when the hammer will be immediately disengaged, and by coming in contact with the caps will cause the shell to explode.

The springs C C, by means of which the hammers B B are forced against the nipples, are preferably flat. They are attached by their outer ends to the surface of the shell near the nipples, and their inner free ends are slotted to surround and pass the lugs *c c*, in which the hammers are pivoted. These springs, being of great strength and adapted to bear constantly against the under surfaces of the lugs or projections *c' c'* on the inner ends of the hammers, will insure a blow of such force as to cause certain explosion of the caps.

The collar E is provided with arms *e e*, Fig. 1, which are preferably formed at their ends into rings or hooks for the attachment of wires that extend over and are secured at points around the sides and ends of the coffin in such position that when disturbed by attempts to remove the earth from above the coffin they will impart a partial rotation to the tube D, and thus release the notched collar E from its engagement with the hammers. It will be observed that the slightest movement of the tube D and its collar E will simultaneously release both hammers, and thus insure an explosion.

The torpedo is preferably placed in position at some little distance above the coffin, several inches of earth being interposed in order to prevent injury to the coffin should the grave be disturbed so as to cause an explosion. After the torpedo has been properly arranged and capped, and the necessary wires extended in suitable directions, the torpedo is then filled by means of the pipe or filling-tube F. (Shown in Fig. 1.) The filling-tube F is of such diameter as to fit readily but closely over the upper end of the tube D, and is provided with one or more downward-projecting stems, *f*, each of which is adapted to pass through a perforation, *g*, formed in the collar E, and thence enter a similar opening, *g'*, in the surface of the shell. It will be seen that by this means the tube D and its collar E are securely locked or prevented from moving, and consequently releasing the hammers, while the shell is being charged. The filling-tube F may be of such length as to extend above the surface of the ground, and provided, if desired, with a funnel end or attachment, through which the charge may be introduced to the shell after the grave is completely filled. Before removing the filling-tube a stopper, *h*, is dropped through it, so as to enter the tube D and so seal the shell.

After the torpedo is arranged in position,

and before the grave is filled, an arched or convex hood or shield, G, is placed over it, so as to protect the operative mechanism and prevent the freedom of action from being impeded by contact with the adjacent earth. This hood may be constructed of sheet-iron or any suitable material, and is perforated at the center to allow the passage of the filling-tube, which perforation should be stopped by a plug or otherwise prior to filling the grave, in order to prevent access of dirt through the perforation to the firing mechanism.

By this construction and manner of applying and exploding the torpedo its efficiency is greatly enhanced. The external spring-actuated hammers are of such simple and durable construction as not to be affected by rust to the same extent as the coiled springs, plungers, and key-triggers heretofore employed for a similar purpose, while by the use of waterproof caps in connection with devices for simultaneously releasing both hammers the explosion of the shell is rendered certain and effective. The method of locking the exploding mechanism by means of the engagement therewith of the stem attached to the lower end of the filling-tube renders the necessary operations of arranging the wires and charging the torpedo, as well as filling the grave, capable of being performed with perfect safety.

Various forms of grave-torpedoes have heretofore been invented; but in all with which I am familiar the firing mechanism has been inclosed, or partially inclosed, within the shell proper.

I am not aware that a grave-torpedo has ever been constructed in which the shell is provided on its exterior with nipples, and pivoted swinging hammers combined with a rotary disk or collar for engaging the hammers, and by its rotary movement release the hammers, which constitute the essential and important feature of my invention.

Having thus described my invention, what I claim is—

1. In a grave-torpedo, the combination of the shell provided with the external nipples, the swinging hammers pivoted on the exterior of the shell, the tube secured in the shell and provided with the disk or collar having peripheral notches for engaging and disengaging the hammers by its rotary movements, and the arms extending from the notched disk for rotating the same, substantially as and for the purpose described.

2. In a grave-torpedo, the combination of a shell having suitable nipples for percussion-caps, hammers pivoted in lugs attached to the outer surface of said shell and adapted to be brought in forcible contact with said nipples by means of springs, a partly-rotating tube through which the charge is introduced, said tube being provided with a notched collar capable of engagement with the lugs on the rear ends of the hammers, and with means of attachment for outwardly-extending wires, and a filling-tube having a downwardly-extending stem for entering perforations in the collar and shell, whereby the exploding mechanism is locked during the time required for filling and arranging the shell and then released for action, substantially as set forth.

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

THOMAS N. HOWELL.

Witnesses:
A. H. ROOSE,
J. A. LUTZ.