No. 712,514. Patented Nov. 4, 1902.

F. W. ERICKSON.

INTERIOR CONDUIT OUTLET BOX.

(Application filed Mar. 26, 1902.)

(No Model.)

Fig. 1.

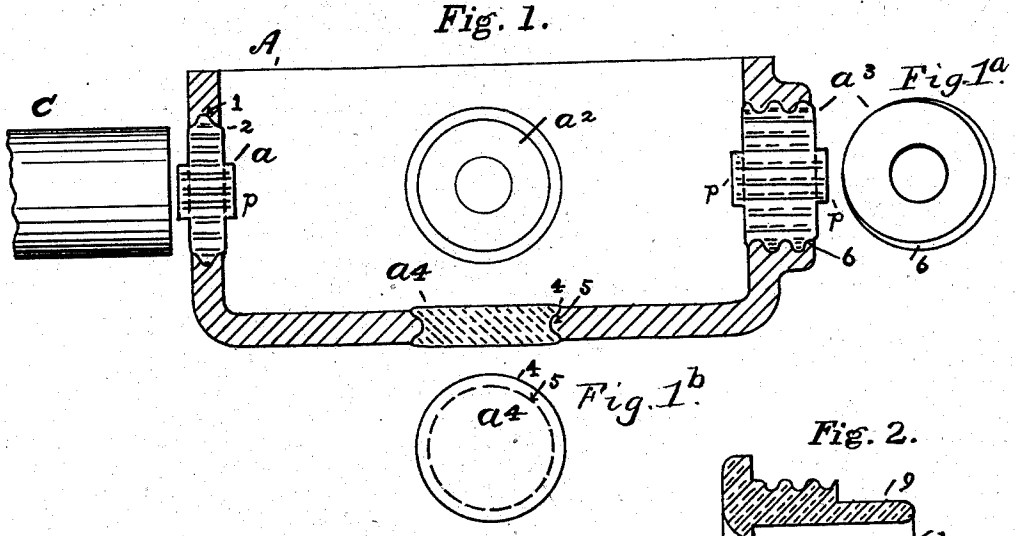



Fig. 1a






Fig. 1b

Fig. 2.

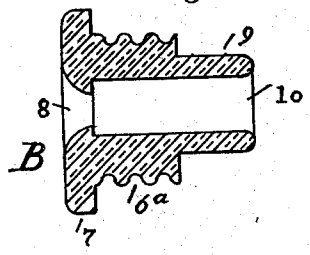



Fig. 3.

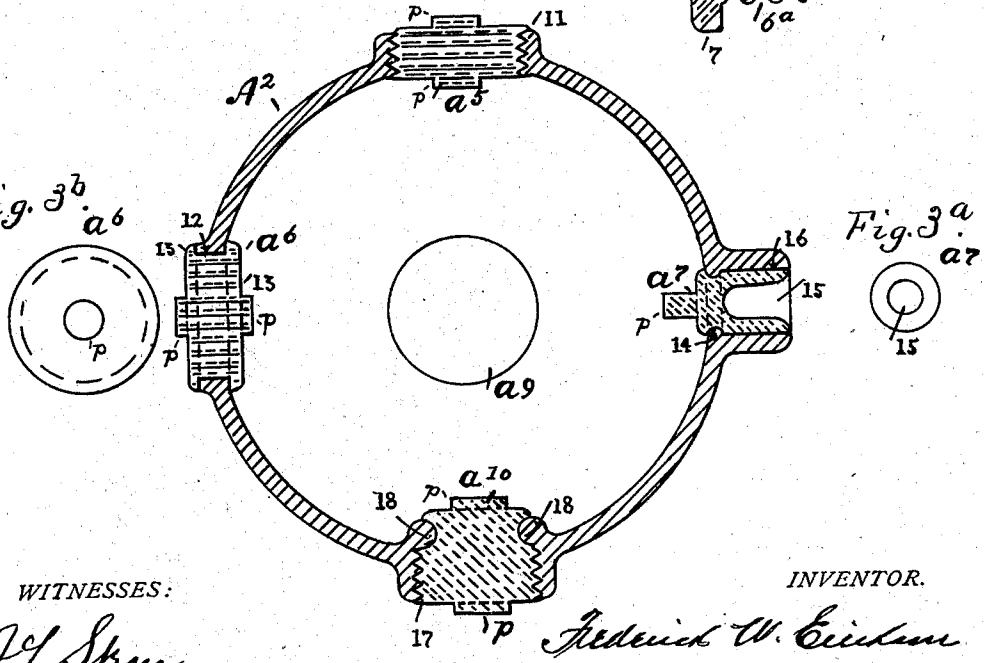



Fig. 3b




Fig. 3a




WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## INTERIOR-CONDUIT OUTLET-BOX.

SPECIFICATION forming part of Letters Patent No. 712,514, dated November 4, 1902.

Application filed March 26, 1902. Serial No. 100,060. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK W. ERICKSON, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Interior-Conduit Outlet-Boxes, of which the following is a specification.

In the manufacture of cast-metal conduit outlet-boxes much ingenuity has been exercised in preparing for the orifices to which the conduits are to enter in order that the conductors which are to be threaded through them may find their way to the switch or other terminals which may be located in the box. Formerly holes were cast or drilled in the walls of the boxes and then plugged up with metal plugs until wanted. Latterly the walls have been cast with thin portions in the places where the orifices are to be located, which are of suitable diameter for the conduits and bushings, which are to be broken away when a conduit is to be entered into the box. These devices are sometimes expensive in first cost, and others, such as the thin-wall portions boxes, are difficult to finish after the hole has been made, and frequently the entire box is fractured by the blow or blows required to effect the entrance. When the thin portion has been successfully broken, the hole has to be filed and smoothed to fit the end of the conduit, and the cast iron at such places is found to be hard and difficult to work.

The present invention addresses itself to the formation of an outlet-box upon a principle entirely new, and consists in forming what may be termed "cores," whose peripheries are of the exact shape it is desired the metal entrances to the box shall be, made of some substance which has a higher melting-point than the metal of the box or formed from some refractory material, as earths or clays, which are hard-baked, producing porcelain, terra-cotta, or such like products. These cores having been thus prepared are introduced into the molds after the pattern of the outlet-box has been withdrawn from the same at the places where the conduit-orifices are wanted in a similar manner to the placing of the ordinary cores in such molds when it is desired to form hollow places in the casting; but the cores are to be retained in the casting after the metal has been poured to form the same, to be removed whenever it is desired to utilize the hole for the entrance of a conduit, and consequently when the metal is poured into the mold it runs all around the cores the same as it would with the ordinary friable cores, and as these cores are of a different or of a more refractory material the running metal does not fuse with the same or unite therewith cohesively. Therefore when the metal has cooled and the casting is removed from the mold the cores are found, as it were, embedded or locked in the metal. The castings are cleaned in the ordinary manner, then are covered with a suitable paint or enamel, and having been provided with suitable means for retaining a cover are ready for shipment.

When the boxes are to be put into place in the walls of a building and the locations for conduit-entrances are determined, the embedded cores, tablets, or disks are easily broken away and the conduit-entrance is found ready for use, all of which I will now proceed to describe, and point out in the claims.

Of the drawings, Figure 1 is a side sectional view of a square outlet-box embodying the invention. Fig. $1^a$ is an end view of disk $a^3$, and Fig. $1^b$ is an end view of disk $a^4$. Fig. 2 is a sectional view of a box-bushing. Fig. 3 is a plan sectional view of a round outlet-box also illustrating the invention. Fig. $3^a$ is an end view of the plug or disk $a^7$, and Fig. $3^b$ is an end view of the disk $a^6$.

In the drawings, A represents in section a square outlet-box made from cast metal.

$a$, $a^2$, $a^3$, and $a^4$ are tablets or disks made from vitreous material, such as clay, and then burned or baked hard to resemble terra-cotta, porcelain, &c. Each of the disks has upon its periphery some configuration which locks it into the surrounding metal. $a$ is provided with a central rounded ridge 1, while its shoulders 2 slope away therefrom. $a^3$ has a screw-thread 6 upon its periphery. $a^4$ has a hollow 5 in its center and two projecting ridges 4 on each side thereof.

When it is desired to enter a conduit-pipe C into the box, one of the fragile disks is broken, the parts cleaned out, and the orifice is ready. Fig. $1^b$ represents a side view of

the disk $a^4$, and Fig. $1^a$ is a side view of disk $a^3$. When the latter disk is broken out, a porcelain or terra-cotta insulating-bushing B (shown in section in Fig. 2) is inserted from the inside of the box. This bushing has a screw-thread $6^a$ formed on its exterior, which is adapted to screw into the thread 6 in the box. This bushing is made in a mold and then baked. It has an orifice 8 of the size of an insulated conductor and an enlarged outer part 10, formed in the rear cylindrical part $6^a$ and 9, the head 7 forming the abutment against the inner wall of the box.

In Fig. 3 the disk $a^5$ has a sharp screw-thread 11 on its periphery. $a^6$ is formed like a spool, with outer ends 13 and a central part 12 of less diameter. $a^7$ is made like a plug, with a score 14 near its inner end. Its walls 16 are smooth and parallel. The hollowed-out portion 15 makes the breaking easier. Fig. $3^a$ is a side view of $a^7$, and Fig. $3^b$ is a side view of $a^6$. $a^{10}$ has sharp screw-threads 17 and a score 18 at its inner end. When this disk is broken out, there is left a screw-thread in the cast metal and a round ring at the inner part, which forms a smooth surface over which the insulated conductors can be safely drawn. All of these disks are made in molds, then baked hard, and when the boxes A $A^2$ are being made from a pattern in the mold after the pattern is withdrawn the disks are placed carefully in the proper places and the metal run in around them, holding and locking them securely in position. In such places as the bottom walls of the boxes the disks $a^4$ and $a^9$ are simply placed in position in the mold; but in the side walls of the boxes the disks are provided with projections $p$ on each side thereof, which fit into the enlargements made in the mold by the core-prints on the pattern and are thus held suspended while the metal is poured around them, precisely as are the common cores in molds.

By the method described I am enabled to produce an outlet-box with the orifices all formed as they would be by tools of any desired shape and at the same time have the orifices plugged until they are wanted for use and plugged with a substance which is easily and quickly broken away without the necessity of chipping or filing the orifice for the reception of the conduit or bushing.

I claim as my invention—

1. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings closed with disks whose peripheries are formed into ridges and furrows corresponding to furrows and ridges in the metal inclosing the same, the disks being made from a material not fusible with the said metal.

2. An outlet-box cast from molten metal, provided with openings for the insertion of conduits and bushings closed with disks whose peripheries are formed into ridges and furrows corresponding to furrows and ridges in the metal inclosing the same, the disks being made from an easily-fractured material.

3. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings closed with disks whose peripheries are formed with screw-threads, the disks being made from a material not fusible with the said metal.

4. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings closed with disks whose peripheries are formed with screw-threads, the disks being made from vitreous material and baked.

5. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings closed with disks whose peripheries lock with the surrounding metal, the disks being made from a material not fusible with the said metal.

6. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings closed with disks whose peripheries lock with the surrounding metal, the disks being made from a material whose fusible point is higher than the surrounding metal.

7. An outlet-box cast from molten metal, provided with openings for the insertion of conduits or bushings normally closed with disks whose peripheries lock with the surrounding metal, the disks being made from vitreous material and baked.

8. A metal outlet-box, provided with openings for the insertion of conduits and bushings closed with disks or plugs whose peripheries are formed into screw-threads corresponding to screw-threads in the metal inclosing the same, the disks made from an easily-fractured material.

9. A metal outlet-box, provided with openings for the insertion of bushings normally closed with disks or plugs whose peripheries are formed into screw-threads corresponding to screw-threads in the metal inclosing the same, the disks made from an easily-fractured material; with a bushing molded from clay and baked, adapted to enter one of said orifices when its disk is removed, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 22d day of March, 1902.

FREDERICK W. ERICKSON.

Witnesses:
J. L. STERN,
JOHN J. ERICKSON.