

May 15, 1923.

J. F. WALLACE
COLLAPSIBLE CORE
Filed Jan. 7, 1922

1,455,686

2 Sheets-Sheet 1

Fig. 1.

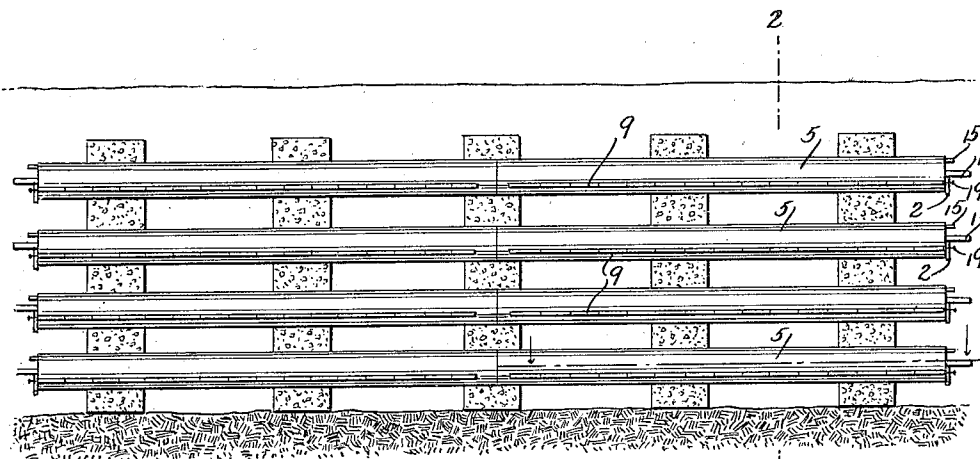


Fig. 2.

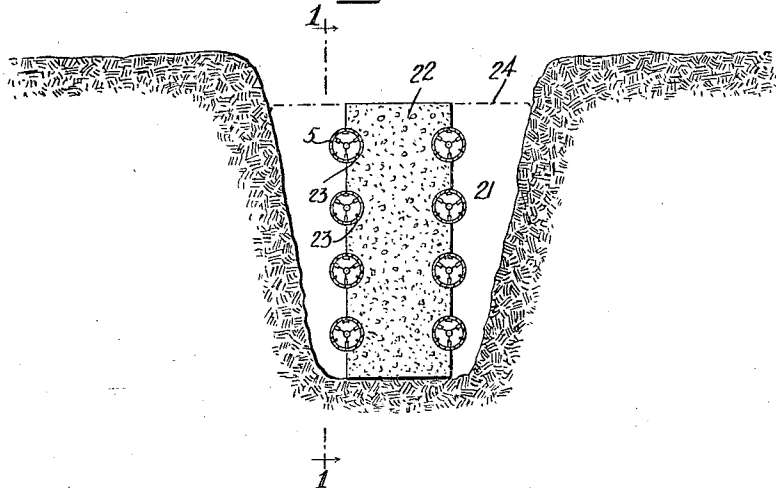
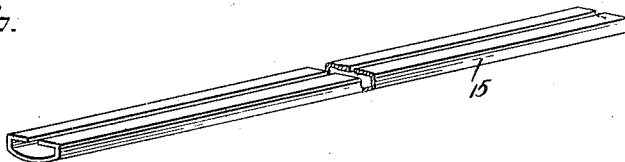


Fig. 3.



WITNESSES

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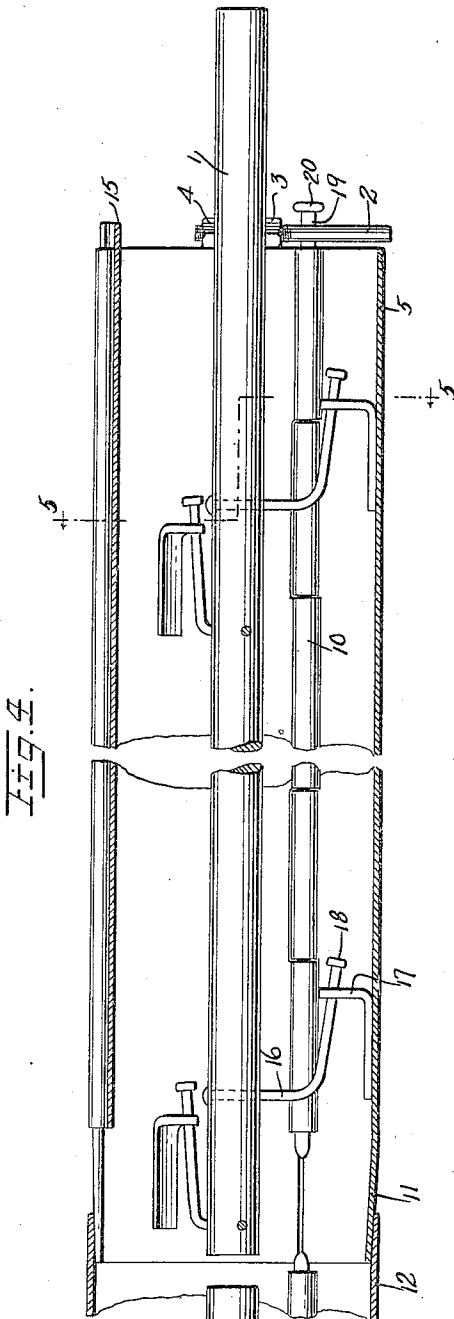
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WITNESSES
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Fig. 5.

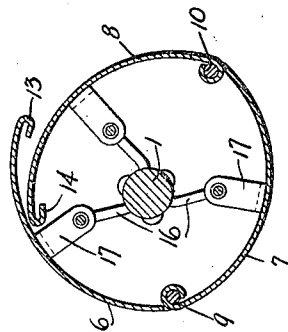
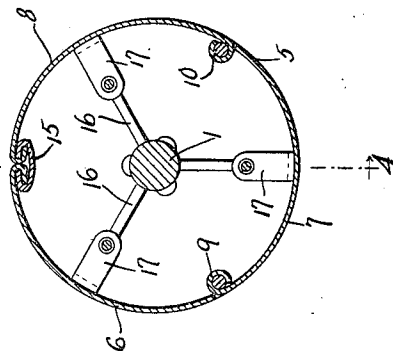


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES F. WALLACE, OF BROOKLYN, NEW YORK.

COLLAPSIBLE CORE.

Application filed January 7, 1922. Serial No. 527,600.

To all whom it may concern:

Be it known that I, JAMES F. WALLACE, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Collapsible Core, of which the following is a full, clear, and exact description.

This invention relates to cores used in forming concrete tubes or conduits and has for an object to provide a collapsible core of the type capable of use for making tubes or for making conduits.

Another object is to provide a collapsible core so formed as to be built into a nested formation for making a plurality of openings or conduits in a concrete casting for the use of electric wires or other similar uses.

A still further object, more specifically, is to provide a collapsible core in which two or more hinged parts are provided and constructed in a round formation ordinarily but so formed as to be readily constricted for permitting removal whenever desired.

In the accompanying drawings—

Figure 1 is a side view of a number of cores arranged in place ready for casting a nest of conduits.

Figure 2 is a sectional view through Figure 1 approximately on line 2—2.

Figure 3 is a detail perspective view of a clamp embodying certain features of the invention.

Figure 4 is a longitudinal vertical section through Figure 1 on line 4—4, the same showing part of two cores, said cores embodying the invention.

Figure 5 is a sectional view through Figure 4 approximately on line 5—5.

Figure 6 is a view similar to Figure 5 but showing a core constricted or collapsed.

In forming conduits for electric wires, various means have been provided, as for instance, metallic pipes, terra cotta structures and concrete. The concrete is considered a very desirable structure but is sometimes difficult to cast properly and present a smooth opening for the wires. Heretofore, different means including a paper core has been used in casting either single or nested conduits. These cores must be removed after the casting has set completely or partially. In the removal of the paper cores much difficulty has been experienced and in order to overcome this difficulty, the present structure has been provided.

The detail construction of the core illustrated in Figure 1 has been shown in a general manner in Figures 4 to 6 inclusive. Referring to these figures by numerals, 1 indicates a central rod of any desired material, as for instance, wood which is provided with a pin 2 held in place by suitable lock nuts 3 and 4 and acting as a stop for limiting the movement of rod 1 in one direction as the pin will strike against the core body 5. This core body is shown as made into three parts or sections 6, 7 and 8 and connected by hinges 9 and 10. It will be evident that more or even less sections could be provided if desired. The hinges 9 and 10 extend for the full length of the core body 5 with the exception of a few inches at the end 11 which is slightly tapered so as to enter into the end 12 of the next section.

It will be understood that each section of core is identical. Sometimes it is desirable to have a slight overlap as shown in Figure 4 though this is not essential and, therefore, the bevel section 11 could be dispensed with. Sections 6 and 8 are provided with longitudinal hook members 13 and 14 instead of hinge structures whereby the retaining member or clamp 15 may be slipped thereover as indicated in Figures 4 and 5 whereby the parts are held in proper position so that the core body 5 will present a complete round structure in cross section. The core body 5 may be made of any desired material but preferably of metal with the outer surface formed as smooth as possible. When the clamp 15 is in the position shown in Figure 5, the core is ready for use and after it has been used and it is desired to remove the same, rod 1 is grasped and pulled longitudinally whereupon the sections will assume the position shown in Figure 6, namely, a constricted or folded position. This constriction or folded action is caused by the various cam members 16 acting on the brackets 17. These brackets are welded or otherwise rigidly secured to the core body 5 and are provided with apertures for receiving the ends of the cam members 16 which are preferably round in cross section and each provided with a head 18 so as not to be accidentally pulled out of its corresponding bracket. In the accompanying drawings, a group of three brackets and corresponding cams have been shown arranged adjacent the respective ends of the body 5 but it is evident that more of these groups

could be provided if desired. Also, if desired, the mounting of the cams 16 in the rod 1 might be loose so as to allow a pivotal action. In case a large collapsing is desired, each of the hinges 9 and 10 is provided with a pintle 19 having a head 20 whereby these pintles may be removed in case any one of the sections should fail to leave the concrete when the collapsing action was attempted.

In using the core, it is intended that the outer surface shall be greased or oiled each time before use so that the concrete will not adhere thereto.

When using the core to build a nested conduit, a trench 21 is provided as shown in Figure 2 and in this trench a number of supports or posts 22 is set, said posts being preferably of concrete provided with notches 23 for receiving the various core bodies 5. After the parts are arranged as shown in Figure 2, the concrete is poured into the space around the post 22 up to approximately line 24. This concrete will naturally pass around all of the cores and form a solid body with the cores arranged therein. After the concrete has set to a certain extent, the cores are collapsed by pulling the rods 1 and then are carefully removed so as not to disturb the smooth even surface of the conduit. In case the core does not collapse readily, the rod 1 may be shaken or moved back and forth quickly so as to give a jerking action, which action will operate at each end of the core body by reason of the cams 16 and brackets 17. As soon as the cores have been removed, they may be cleaned, re-oiled and again placed in position for adding another section to that already cast. This operation is continued until the conduits are as long as desired.

It will be noted that the second operation of adding another section to the conduit is commenced as soon as the cores have been removed which is only a few minutes after the first casting. In this way, a substantially continuous casting operation may be carried out which cannot be done with the paper cores heretofore used and certain other devices. The invention has been particularly described in respect to forming conduits, but it will be evident that not only conduits may be formed by the class of core described but also ducts, arches, chimneys, flues, aqueducts, hollow castings or the formation of hollow spaces in walls, buildings or other structures as well as hollow places in roofs or floors.

What I claim is:—

1. A collapsible core of the character de-

scribed comprising a core body formed with a plurality of sections, said core body being circular in cross section, said sections being hinged together, means extending longitudinally of said core body for disconnecting the hinged structure of adjacent sections, and means operable from one end of the core body connected to said sections for collapsing for drawing inwardly and to a certain extent said sections whereby they may be removed from a cast body of concrete.

2. A collapsible core of the character described comprising a tubular body divided into longitudinal sections, two of said sections having longitudinally arranged intumed hook edges, said sections with the removable sections being hinged together with longitudinally positioned hinges, a clamping member spanning said intumed hook edges and extending into the hooked parts thereof, said clamping member being slidable into and out of engagement with said hook members, and means operable from one end of the core body for collapsing said sections after said clamp has been removed.

3. A collapsible core of the character described comprising a tubular core body divided into longitudinal sections, said sections being hinged together by longitudinally positioned hinges, said sections at any point of connection being disengageable, a bracket secured to each of said sections, a cam co-acting with said bracket for pulling said bracket and section inwardly and pushing the same outwardly, and means operable from the end of the core body for actuating said cams.

4. A collapsible core of the character described comprising a tubular core body divided into longitudinal sections hinged together, a bracket secured to each of said sections adjacent each end thereof, a cam co-acting with each of said brackets, said cams being operable longitudinally of the core body and capable of moving said sections inwardly and outwardly, and a rod connected with said cams and extending to one end of the core body, said rod being capable of manual operation for collapsing and distending the core body.

5. A collapsible core comprising a tubular body divided into longitudinal sections, said sections being connected by hinge members, each of said hinge members being formed with a removable pintle whereby the core body may be collapsed by the removal of one pintle or the removal of all the pintles and means for collapsing said sections.

JAMES F. WALLACE.