P. C. MERILLAT.

EXPANSIBLE CORE FOR MOLDS.

APPLICATION FILED OCT. 18, 1909.

956,125.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.

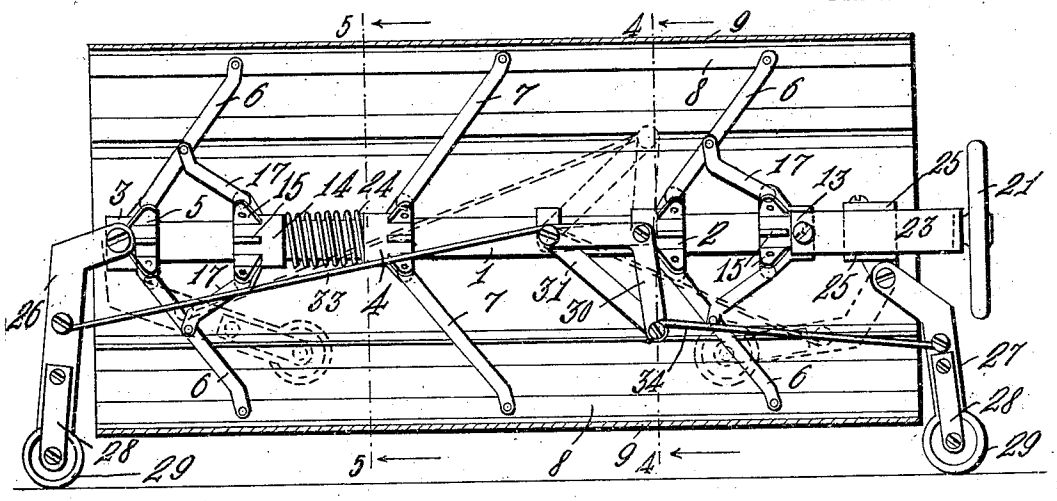

Fig. 1.

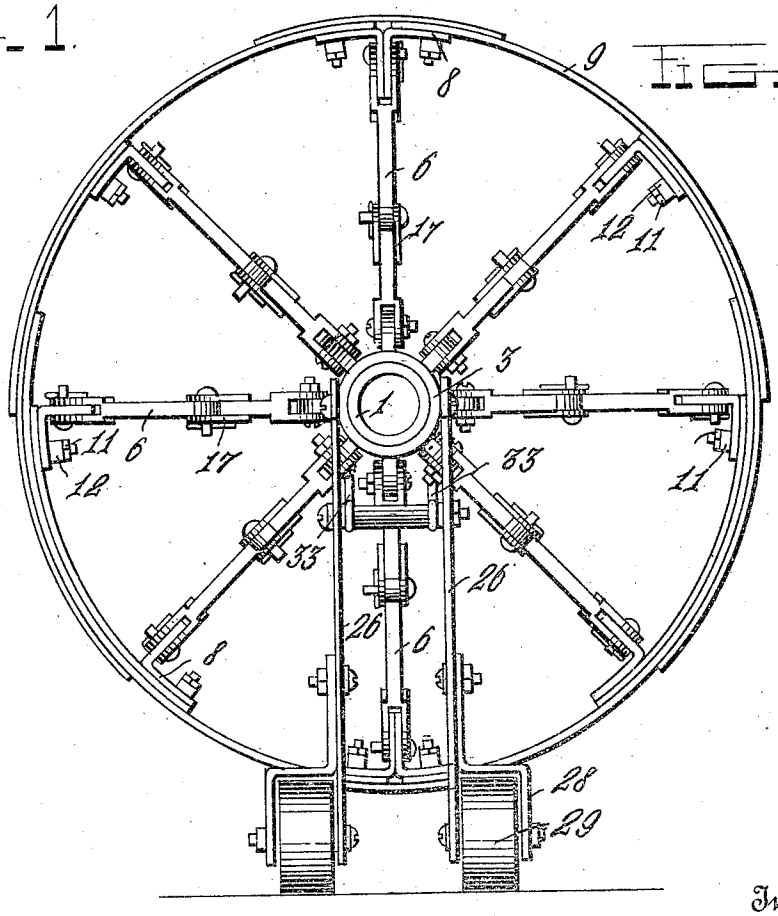

Fig. 3.

Witnesses
C. R. Hardy.
C. W. Griesbauer.

Inventor
P. C. Merillat
by Wilkinson & Co
Attorneys

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

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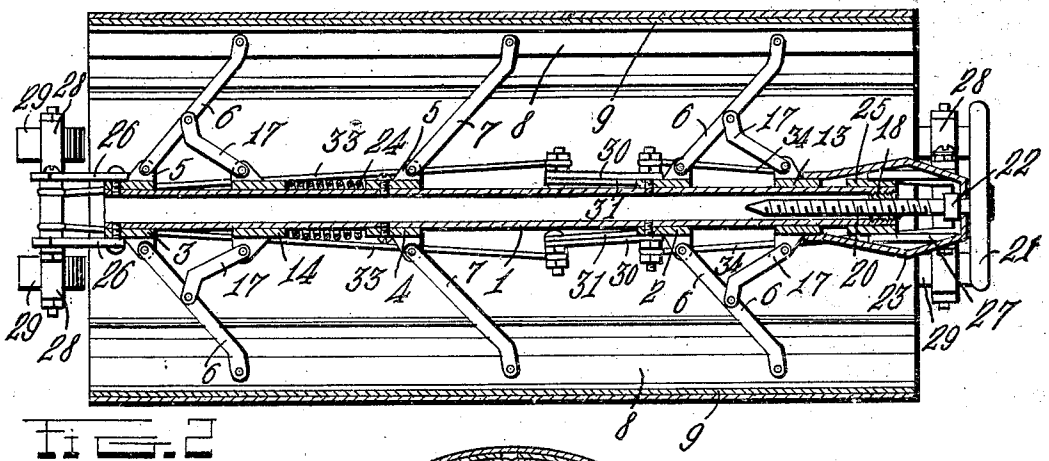


Fig. 2

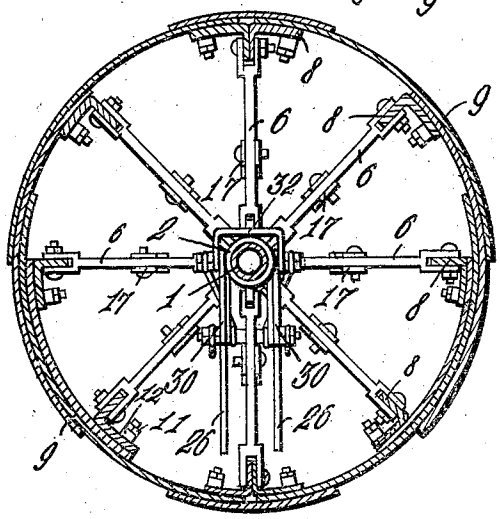


Fig. 4

Fig. 5

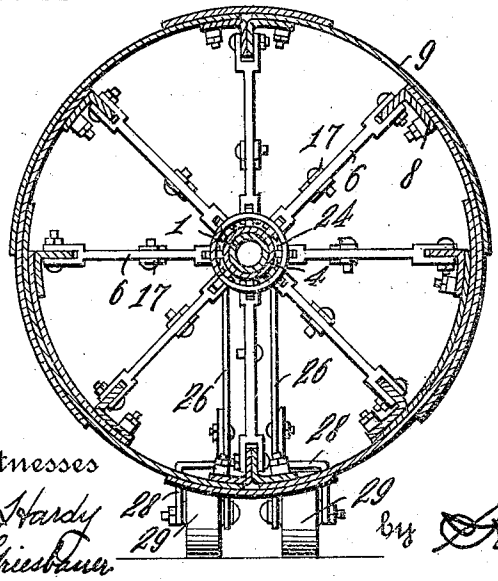
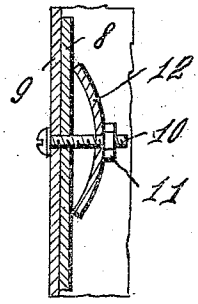


Fig. 6



Witnesses

C. R. Hardy

E. W. Griesbauer

Inventor

P. C. Merillat

by H. B. Williamson & Co.

Attorneys

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

PETER C. MERILLAT, OF WINFIELD, IOWA.

## EXPANSIBLE CORE FOR MOLDS.

956,125. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed October 18, 1909. Serial No. 523,203.

*To all whom it may concern:*

Be it known that I, PETER C. MERILLAT, a citizen of the United States, residing at Winfield, in the county of Henry and State of Iowa, have invented certain new and useful Improvements in Expansible Cores for Molds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in expansible cores for molds.

One object of the invention is to improve the construction of the operating mechanism of the core shown in the United States Patent No. 917,636, granted to me April 6, 1909.

Another object is to provide a wheeled supporting and carrying mechanism whereby the mold core may be readily conveyed from place to place, means being provided whereby the carrying mechanism may be folded into the core when not in use.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a vertical longitudinal section of a mold core constructed in accordance with the invention and showing the supporting and carrying mechanism in operative position in full lines and in folded and inoperative position in dotted lines. Fig. 2 is a horizontal section of the core taken through the center of the same. Fig. 3 is an end view of the device with the carrying mechanism shown in operative position. Fig. 4 is a vertical cross sectional view on the line 4—4 of Fig. 1. Fig. 5 is a similar view on the line 5—5 of Fig. 1; and Fig. 6, is a detail vertical sectional view through one of the plates forming the sleeve of the mold and its angle-iron supporting rib showing the holding connection between the ribs and plates.

In the embodiment of the invention, I provide a tubular shaft 1, on which, adjacent to one end, is fixedly mounted a collar 2, while on its opposite end is fixedly mounted a collar 3, said collar being preferably secured to the shaft by set screws or similar fastening devices. On the shaft 1, between the collars 2 and 3 is fixedly mounted an intermediate collar 4. On the collars 2, 3 and 4, are formed a series of radially projecting apertured lugs 5. Pivotally connected at their inner ends to the lugs 5, of the collars 2 and 3, are core expanding and supporting arms 6, while to the lugs 5, of the collars 4, are pivotally connected the inner ends of the supporting arms 7. The outer ends of the arms 6 and 7 are pivotally connected to angle-iron ribs 8, to which are yieldingly connected overlapping segmental sheet metal plates 9, which form the shell or body portion of the core. The plates 9, are connected to the angle-iron ribs 8, by bolts 10, on the inner ends of which are screwed nuts 11, and between said nuts and the inner sides of the ribs are arranged bowed springs 12. By means of the springs 12, a yielding connection is formed between the ribs and plates to permit the latter to adjust themselves when the arms 6 and 7, are operated to increase or diminish the size of the core as will be hereinafter more fully described.

Slidably mounted on the shaft 1, between the collar 2, and the adjacent end of the core is an adjusting collar 13, while on the shaft between the collar 3, and the collar 4, is arranged an adjusting collar 14. The collars 13 and 14, are provided with a series of radially projecting lugs 15, to which are connected the inner ends of links or braces 17, the outer ends of which are pivotally connected to the expanding arms 6, of the collars 2 and 3, whereby when the collars 13 and 14 are shifted in one direction or the other on the shaft the arms 6, will be forced outwardly or drawn inwardly to expand or contract the core.

In the end of the shaft 1, on which the collar 13, is mounted is secured an interiorly threaded nut or bushing 18. Engaged with the threaded bushing or nut 18, is an adjusting screw 20, having on its outer end a hand wheel 21; on the screw 20, adjacent to the inner side of the hand wheel is formed an angular flange 22. With the screw 20, between the flange 22, and wheel 21 is engaged an expanding yoke 23, the inner ends of which are pivotally connected by screws or other suitable fastening devices to the sides of the collar 13, on the shaft 1.

On the shaft 1, between the fixed collar 4, and the sliding collar 14, is arranged a coiled spring 24, the pressure of which is exerted to force the collar 14, toward the collar 3, thereby forcing the arms 6, outwardly by

means of the links 17. When the adjusting screw 20, is screwed inwardly in the nut or bushing 18, the yoke 23, will move the collar 13, inwardly thus forcing the arms 6, outwardly by means of the links 17, which operation will expand the ribs 8, and segmental plates 9, at this end of the core and will permit the spring 24, to operate the arms 6, and expand the core at its opposite end as hereinbefore described. The arms 7, of the collar 4, move inwardly and outwardly with the ribs 8, as the core is contracted or expanded and simply serve as brace bars for the intermediate portions of the core.

On the hand wheel end of the shaft 1, is arranged a collar 25, on which is formed depending lug to which is pivotally connected the upper end of a core supporting and carrying truck 27. The trucks 26 and 27 preferably comprise legs having angular inwardly projecting upper ends which are pivoted to the collars 25 and 3 on the shaft and on the lower ends of said legs are arranged bearing brackets 28, in which and the adjacent ends of the legs are journaled rollers or caster wheels 29, which, when the trucks are in operative position support the core and permit the same to be readily drawn or pushed from place to place.

When not in use, the trucks 26 and 27 are folded inwardly within the ends of the core as shown in dotted lines in Fig. 1, and when it is desired to move the core, the sections of the same are expanded until the core is of sufficient size to permit the trucks to be swung outwardly to the positions shown in full lines in Fig. 1. In order that the trucks at the opposite ends of the core may be operated in unison, I provide a suitable connecting mechanism comprising a pair of bell-crank levers 30, one of which is pivotally mounted on each side of the sleeve 4, as shown. The ends of the arms of the levers 30, are preferably connected together by brace bars 31, and the levers on the opposite sides of the sleeve are connected together across the shaft 1, by a bail 32. The levers 30, are connected at one end by connecting rods or links 33, to the truck 26, at one end of the core wheel, and said levers are connected at their opposite ends by rods or links 34 to the truck 27, at the opposite end of the core. By thus connecting the trucks, when one of the same is pulled outwardly or pushed inwardly, at one end of the core, the truck at the opposite end will be simultaneously moved in the same direction. After expanding the core a sufficient extent to permit the trucks to be swung outwardly to an operative position, the core is contracted sufficiently to permit the casters or rollers 29, to engage the ground and to hold the body portion of the core above the same high enough to permit the core to be pulled or pushed over the ground. When it is desired to again fold the trucks into the core, the latter is expanded sufficiently to permit the trucks to be swung inwardly as shown in dotted lines in Fig. 1, after which the parts are contracted to form a core of the desired size.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:

1. In a core of the character described, a shaft, a series of supporting and expanding arms pivotally connected to said shaft, a series of expansible core forming sections connected to the outer ends of said arms, means to operate said supporting and expanding arms to expand and contract said core sections, and a wheeled supporting and carrying mechanism connected with said core, whereby the same may be readily transported.

2. In a core of the character described, a shaft, a series of segmental body sections pivotally supported on said shaft to form a substantially cylindrical body and adjusting collars slidable on said shaft and having a loose connection with said sections, an expanding mechanism connected with said collars, whereby said body sections are expanded and contracted to vary the size of the core, and supporting trucks mounted on said shaft and adapted to be swung to operative and inoperative positions.

3. In a core of the character described, a supporting shaft, a plurality of fixed collars on said shaft, a series of expanding arms pivotally connected to said collars, a series of overlapping segmental plates having a pivotal connection with the said expanding arms, means to operate said arms and thereby expand or contract said sections to vary the size of the core, carrying and supporting trucks pivotally mounted on the opposite ends of said shaft and adapted to be folded into said core to an inoperative position and to be swung outwardly to an operative position, whereby the core may be drawn or pushed over the ground, and means whereby said trucks are connected together to move in unison.

4. In a core of the character described, a shaft, a series of adjustable core forming plates, means to connect said plates with said shaft, and adjusting mechanism whereby said plates are expanded and contracted,

core supporting and carrying trucks pivotally mounted on said shaft at the opposite ends of the core and adapted to be folded into the latter to an inoperative position and swung outward to an operative position, bell-crank levers pivotally mounted within the core, and connecting rods or links to connect the trucks at the opposite ends of the core with said bell-crank levers, whereby said trucks are moved in unison when swung to operative or inoperative positions.

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

PETER C. MERILLAT.

Witnesses:
H. E. REECE,
J. C. GREEN.