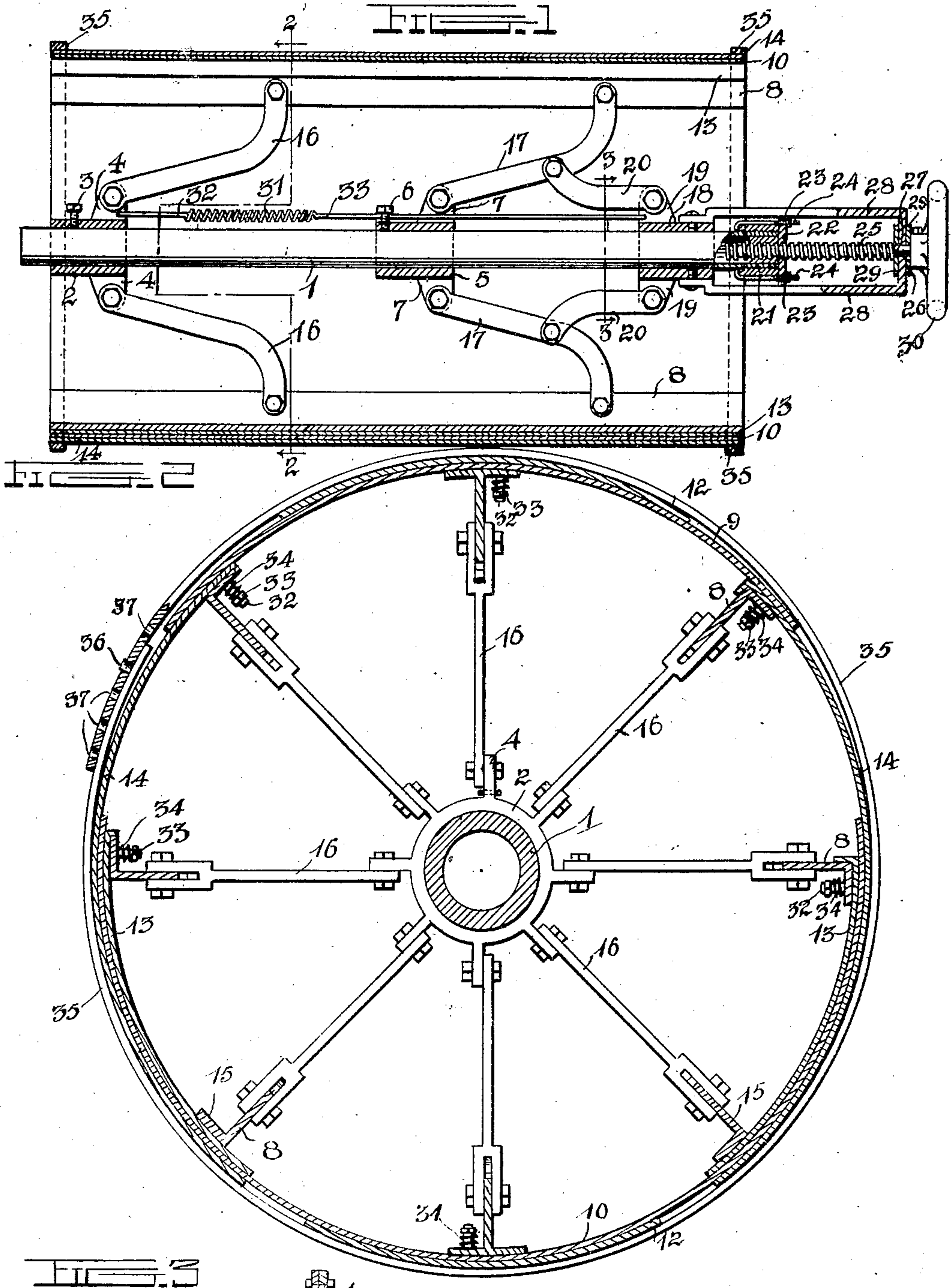


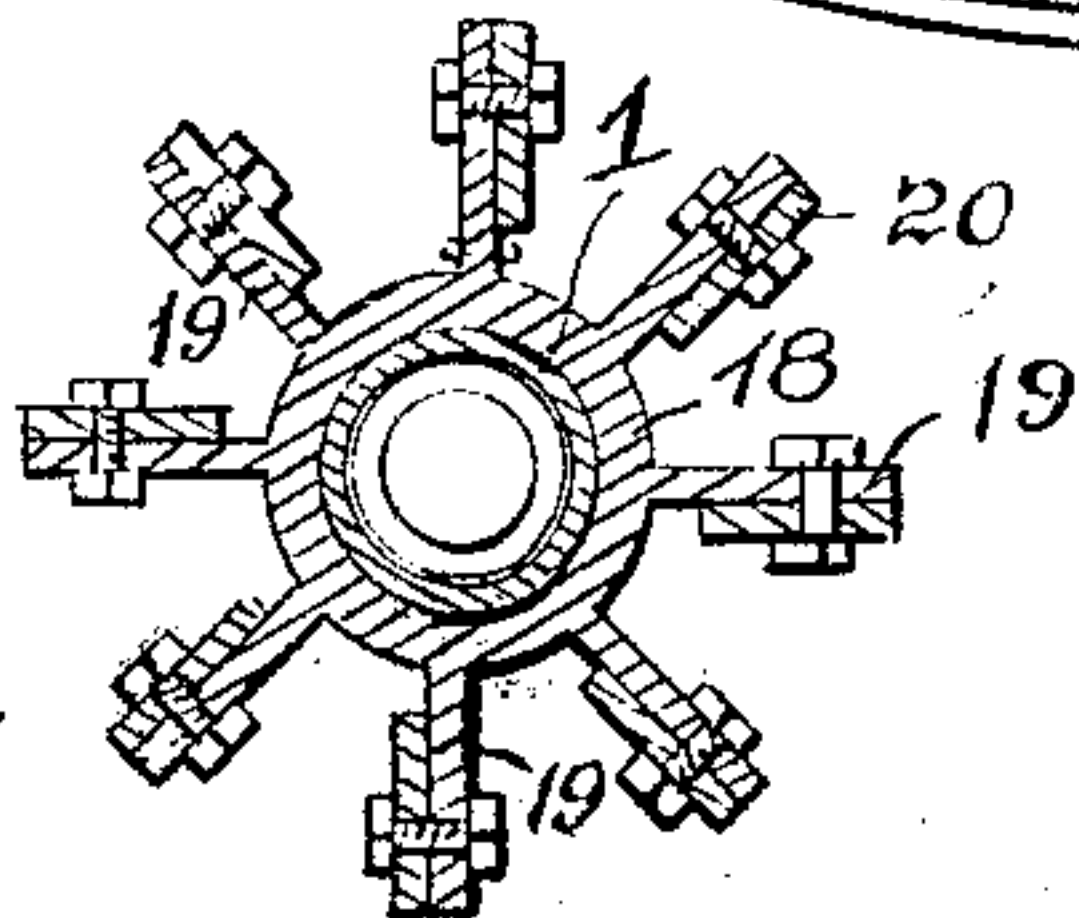
P. C. MERILLAT.
EXPANSIBLE CORE FOR MOLDS.
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917,636.

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UNITED STATES PATENT OFFICE.

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EXPANSIBLE CORE FOR MOLDS.

No. 917,638.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed December 21, 1908. Serial No. 468,679.

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.

The object of the invention is to provide a core of this character which may be readily expanded to vary the size of the same or contracted to facilitate the removal thereof from the molded object.

With this 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 claim.

In the accompanying drawings, Figure 1 is a horizontal sectional view through a core constructed in accordance with the invention; Fig. 2 is a cross sectional view of the same on the line 2—2 of Fig. 1; and Fig. 3 is a similar view on the line 3—3 of Fig. 1.

In the embodiment of the invention, I provide a tubular shaft 1 on which adjacent to its outer end is secured a sleeve or collar 2, said collar being preferably secured to the shaft by a set screw 3. On the collar adjacent to one end is formed a series of radially projecting apertured lugs 4. On the shaft 1 and spaced a suitable distance from the sleeve or collar 2 is a second sleeve 5 which is rigidly held in position on the shaft by a set screw 6 and has formed thereon adjacent to one end a series of radially projecting lugs 7. The body or shell of the core is formed of a series of segmental overlapping plates which are bolted or otherwise secured to longitudinally disposed angle iron ribs 8. The upper and lower plates 9 and 10 of the shell extend part way around each side of the same and are re-inforced by narrow longitudinally disposed plates 12 which are bolted or otherwise secured along the center thereof by the bolts or rivets which secure the plates 9 and 10 to their angle iron supporting ribs. The sides of the cylindrical shell or body of the core are formed by inner and outer overlapping side plates 13 and 14. The upper edges

of the plates 14 extend beneath the lower edges of the upper plate 9 and said upper edges of the plates 14 are secured to supporting ribs, as shown. The upper edges of the inner side plates 13 are also secured to angle iron ribs 8 and said plates 13 are spaced from the outer side plates 14 and between said plates, the upper edges of the lower plate 10 project. The lower edges of the plates 13 project below the angle iron ribs 15 but are not secured thereto, said ribs 15 serving simply as guides to brace the overlapping edges of the guide plates 13 and 14 and the lower plate 10.

The segmental plates forming the shell of the core are supported in operative position to form a substantially cylindrical body by means of radially projecting inclined supporting arms 16 and 17. The outer ends of the arms 16 are pivotally connected at their outer ends to the angle iron ribs 8 and at their inner ends are pivotally connected to the lugs 4 of the collar 2. The arms 17 are pivotally connected at their outer ends to the ribs 8 and at their inner ends to the lugs 7 on the collar 5.

Slidably mounted on the shaft 1 is an expanding sleeve 18 on the inner end of which is formed a series of apertured lugs 19 which are connected to the arms 17 by links 20. On the outer end of the shaft is screwed a socket 21 and in said end is secured a nut 22, said nut being provided on its outer end with radially projecting apertured lugs 23 through which are inserted fastening bolts 24 having hook-shaped inner ends adapted to engage with the inner end of the socket 21.

Adapted to be screwed in and out of the nut 22 is an expanding screw 25 having a reduced outer end 26 whereby a stop shoulder 27 is formed on the screw. An expanding yoke 28 is engaged with the reduced end 26 of the expanding screw and has its inner ends bolted or otherwise secured to the collar 18 whereby when the screw 25 is turned in one direction or the other in the nut 22, said sleeve 18 will be moved inwardly or outwardly thus spreading or retracting the arms 17 by means of the connecting links 20. When the arms 17 are thus spread or retracted, the movement thereof is imparted to the arms 16 through the ribs 8 to expand or retract the segmental plates forming the shell thereby increasing or diminishing the size of the core. On the reduced end of the expanding screw on each side of the yoke 28

are arranged bearing washers 29 and on the end of said reduced portion is secured a hand wheel 30 by means of which the screw is operated.

5 By means of an operating mechanism constructed as herein shown and described, the overlapping sections of the core may be readily expanded or retracted to vary the size of the core or in order to facilitate this
10 operation, I provide a coil spring 31 one end of which is secured to the fixed collar 2 by a connecting rod 32, while the opposite end of the spring is secured to the sliding collar 18 by a connecting rod 33. The tendency of the
15 spring 31 is to draw the sliding sleeve 18 inwardly and thus aid the movement of the sleeve by the expanding screw hereinbefore described, which will permit the screw to be readily turned by the hand wheel 30. The
20 addition of the retracting spring 31 will be found especially desirable when the core rests upon the ground or is unsupported which necessitates the lifting of a greater part of the structure when the segmental
25 plates of the shell are expanded.

In the construction of the core, I preferably secure the segmental plates to the ribs 8 by means of bolts 32 on the inner portions of which between adjusting nuts 33 and the
30 ribs are arranged coiled springs 34 by means of which a yielding connection is formed between the ribs and plates to permit the latter to adjust themselves when the arms 16 and 17 are operated to increase or diminish the
35 size of the core. In connection with the core, I prefer to employ adjustable guide hoops 35 which are adjusted to the size it is desired the core should be and one of said hoops is then engaged with each end of the core. The core
40 is then expanded until the segmental plates engage the hoops which will accurately determine the size of the core and prevent fur-

ther expansion of the same. The hoop may be adjusted in any suitable manner to increase or diminish the size of the same and is
45 here shown as having on one end a stud 36 adapted to be engaged with one of a series of apertures 37 formed in the opposite end as shown in Fig. 2 of the drawings.

From the foregoing description, taken in
50 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
55 and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended
60 claim.

Having thus described and explained the nature of my invention, what I claim as new and desire to secure by Letters-Patent is:

In a core of the character described, a tubular shaft, a series of collars fixedly secured
65 to said shaft, a series of supporting ribs, supporting arms to pivotally connect said ribs with said collars, a series of overlapping segmental plates secured to said ribs to form the body of the core, an adjusting collar slidable
70 on said shaft, a retracting spring to connect said collar with one of the fixed collars on the shaft, and an expanding screw operatively connected with said collar whereby the latter
75 is projected and retracted to expand and retract the sections of the core.

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

PETER C. MERRILLAT.

Witnesses:

AUDA SLOAN,
G. A. KUBACH.