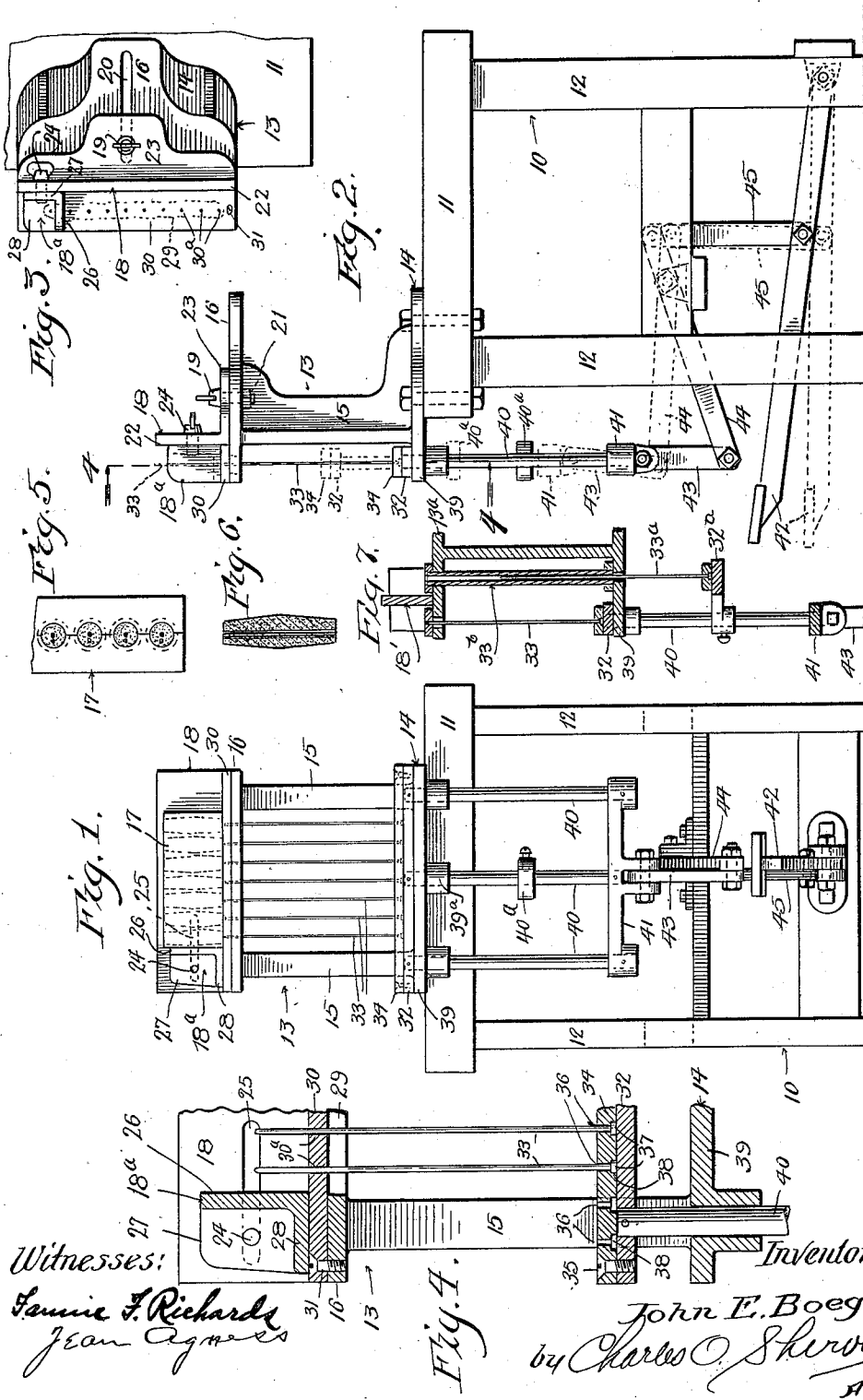


J. E. BOEGEN.
MACHINE FOR VENTING AND WIRING CORES.
APPLICATION FILED APR. 13, 1911.

1,015,610.

Patented Jan. 23, 1912.



UNITED STATES PATENT OFFICE.

JOHN E. BOEGEN, OF BERWYN, ILLINOIS, ASSIGNOR OF ONE-HALF TO BERNARD L. ZELLER, OF CHICAGO, ILLINOIS.

MACHINE FOR VENTING AND WIRING CORES.

1,015,610.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed April 13, 1911. Serial No. 620,782.

To all whom it may concern:

Be it known that I, JOHN E. BOEGEN, a citizen of the United States, residing at Berwyn, in the county of Cook and State of Illinois, have invented new and useful Improvements in Machines for Venting and Wiring Cores, of which the following is a specification.

This invention relates to machines for operating upon cores for molds and more particularly the invention relates to a new and improved machine for venting and wiring cores.

One of the objects of this invention is to provide a simple, practical and efficient machine for making vents or air passages in cores and for inserting reinforcing wires therein.

In common practice a number of cores are molded at one time in a core box, and the core maker makes the vents therein by inserting a wire into each core and withdrawing the same. This operation is done while the cores are still in the box and considerable time is taken up in venting each individual core. When slender cores are used they are usually strengthened by means of a reinforcing wire which is inserted into the body of the core, and this is done by hand.

The purpose of this machine is to vent a plurality of cores at once, or to wire a plurality of cores at once, thereby saving a great deal of time, labor and unnecessary work.

The invention consists in the several novel features hereinafter set forth and claimed.

The invention is clearly illustrated in the drawing furnished herewith in which—

Figure 1 is a front elevation of a machine embodying the invention, Fig. 2 is a side elevation thereof, Fig. 3 is a plan of the head of the machine and a fragment of the supporting stand or bench, Fig. 4 is a detail vertical section taken on the line 4—4, Fig. 2, Fig. 5 is a plan of a fragment of a core box and cores contained therein, Fig. 6 is a central longitudinal section of a core, and Fig. 7 is a vertical transverse section of a machine having both venting mechanism and reinforcing wire-inserting mechanism.

The machine is preferably mounted upon a stand 10, of suitable construction, here shown as comprising a table 11, carried by

legs or supports 12. The head 13, of the machine is bolted or otherwise secured to the stand 10, and comprises in general a base plate 14, from which rises uprights 15, having at their top a horizontal core box supporting plate 16, for receiving the core boxes one of which is shown at 17. A core box gage 18, is mounted upon the head to extend longitudinally thereof, said gage being capable of adjustment backward and forward upon the plate 16, to properly locate core boxes of different widths upon the head. Means are provided for securing said gage in place at any desired point upon the plate 16, said means being here shown as comprising a thumb screw 19, passing through a hole in the gage and through a transverse slot 20 in the plate 16, the thumb screw having a nut 21, upon the underside of the plate 16, bearing against the underside thereof. The particular form of gage illustrated comprises a vertical web 22, and a horizontal web 23, but obviously this construction is immaterial to the invention broadly considered.

An end-stop 18^a, is located in front of the gage and is adjustable longitudinally thereof; as shown it is secured to the gage 18, by a thumb screw 24, passing through a longitudinal slot 25, in the vertical web of the gage and threaded in a hole in the end-stop. A simple form of end-stop comprises angularly disposed vertical flanges 26, 27, and a horizontal flange 28. The gage and end-stop form a right angled wall for locating the core box upon the head 13.

The core box supporting plate 16, has a slot 29, running longitudinally of the plate in front of the gage, and above said slotted portion of the plate 16, is secured a guide bar 30, having perforations 30^a, registering with the core molds in the core box; said guide bar is secured in place upon the plate 16, by screws 31, or otherwise as desired. It is obvious that guide bars may be furnished for any particular arrangement of core molds by making perforations therein register with the location of the core molds in the core box.

Below the plate 16, and in vertical alignment with the guide bar 30, is a supporting bar 32, which carries the vent wires or needles 33. A vent wire spacing bar 34, is secured to the top of the supporting bar

32, as by screws 35, said spacing bar having perforations 36, formed therein in vertical alinement with the perforations 30^a, of the guide bar 30. The vent wires 33, have heads 37, upon their lower ends that are seated in enlargements 38, of the perforations 36, in the spacing bar 34, and said vent wires project up into the perforations in the guide bar 30, and are guided to move therein. The supporting bar normally rests upon a ledge 39, formed at the front of the base plate 14, to support the vent wires in their lowermost position. Mechanism is provided for raising and lowering said vent wires or needles and in the simple form shown in the drawings comprises a plurality of lift rods 40, projecting down from the supporting bar 32, and carried by a lift bar 41. The lift rods pass through holes in the ledge 39, of the base plate and are guided to move therein. An adjustable stop 40^a, is provided upon one of the lift rods 40, to limit the upward movement of the vent wires, said stop being arranged to strike some stationary portion of the machine, as for instance, the boss 39^a, in which is guided the lift rod, carrying the stop. The lift bar is shown as connected to a treadle or foot lever 42, whereby the vent wires or needles may be raised by pressing down upon the treadle, said connections comprising in the form shown a link 43, pivotally connected to the lift bar and projecting down therefrom, a lever 44, pivotally supported between its ends on the stand 10, and connected at one end to the link 43, and at its other end to a link 45, connected to the treadle or foot lever 42. Said foot lever is shown as fulcrumed at its rear end to the frame of the stand and it extends to the front of the same in convenient position to be depressed by the workman.

It is obvious that any equivalent means may be substituted for the particular mechanism shown for operating the vent wires, and I do not wish to confine myself to the particular arrangement shown.

In using the machine described, a guide bar and spacing bar having perforations registering with each other and with the core molds of the core box to be used, are fastened in place with the vent wires placed therein and the gage and end-stop adjusted to properly locate the core box above the vent wires. The core box with the cores therein is then placed in position on the guide bar and the treadle depressed thereby simultaneously inserting a vent wire in each core and making the vents therein. Upon releasing the treadle, the vent wires are withdrawn from the cores and the core box removed.

It is obvious that a large number of cores may be vented by one operation of the machine and that the laborious and painstaking

task of venting them singly by hand is made easy and in less time than it ordinarily takes.

The mechanism above described is particularly arranged to insert vent wires or needles into the cores and thereafter withdraw them for the purpose of venting the cores, but when it is desired to leave the wires in cores so as to reinforce them (which is the common practice when making slender cores) a slightly different arrangement is employed. Referring to Fig. 7 which shows a machine arranged with mechanism for venting cores and also with mechanism for wiring cores 13^a, is a head for supporting the core box and guiding the vent wires and wire-inserting devices.

The vent wire-inserting mechanism is constructed as above described and the reinforcing wire-inserting mechanism is substantially the same with slightly different arrangement of parts and the addition of certain other elements. Push wires 33^a, in this instance are carried by a supporting bar 32^a, located below the head, but secured to the lift rods or other mechanism for actuating the vent wires. It is preferable to make the supporting bar 32^a, vertically adjustable on the lift rods to regulate the stroke or movements of the push wires 33^a. The push wires travel in guides 33^b, mounted in the head below the core box support, said guides being arranged to register with the core molds in the core box used and in the form shown being placed directly behind the vent wires 33. I have shown the guides 33^b, in the form of tubes into each of which may be dropped the reinforcing wire to be inserted into the core, each reinforcing wire being of a length approximately equal to that of the core. The push wires 33^a, extend up from the supporting bar 32^a, and slide in the tubes 33^b, and support the reinforcing wires in said tubes whenever they are placed therein. The core box containing the cores is placed upon the core box support over the tubes and the reinforcing wires having been dropped into the tubes, rest upon the upper ends of the push wires and by raising the latter, the reinforcing wires are moved upward into the cores contained in the core box.

I have shown a gage 18', between the upper ends of the vent wires and push wires whereby both operations of inserting reinforcing wires and venting cores can be conveniently done on one and the same machine. The reinforcing wires are inserted into the cores by holding the core box in position over the tubes and raising the push wires after which the core box can be lifted over above the vent wires and the latter raised and lowered.

I realize that various alterations and modifications of this device are possible

without departing from the spirit of my invention, and I do not therefore desire to limit myself to the exact form of construction shown and described.

5 I claim as new and desire to secure by Letters Patent:

1. In a machine of the class described, a core box support having a core box gage and end stop, arranged to hold and locate in
10 proper position a core box, having one or more cores contained therein, and wire inserting mechanism associated with said support and having vent wires registering with the cores in the core box.

15 2. A core venting machine, comprising a core box support, having an adjustable gage and an adjustable end stop for locating a core box in position on said core box support, a plurality of vent wires guided to enter
20 cores contained in a core box positioned upon said core support, and vent wire actuating mechanism.

3. In a core venting machine, a core box support having perforations for guiding

wires to cores carried by said support, an
adjustable gage, and an adjustable end stop
for positioning a core box upon said support.

4. A core venting machine, comprising a head consisting of a base plate, a plurality
30 of uprights, extending up therefrom, a core box supporting plate at the top of said uprights, a gage transversely adjustable on said plate, and an end stop longitudinally adjustable on said gage, a plurality of vertical
35 vent wires guided to move in fixed vertical planes registering with cores carried by said plate, and mechanism for inserting said vent wires in unison in cores carried by said
40 plate.

In witness whereof, I have hereunto signed my name at Chicago, Cook county, Illinois, this 10th day of April 1911.

JOHN E. BOEGEN.

Witnesses:

CHARLES O. SHERVEY,
FANNIE F. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."