

(No Model.)

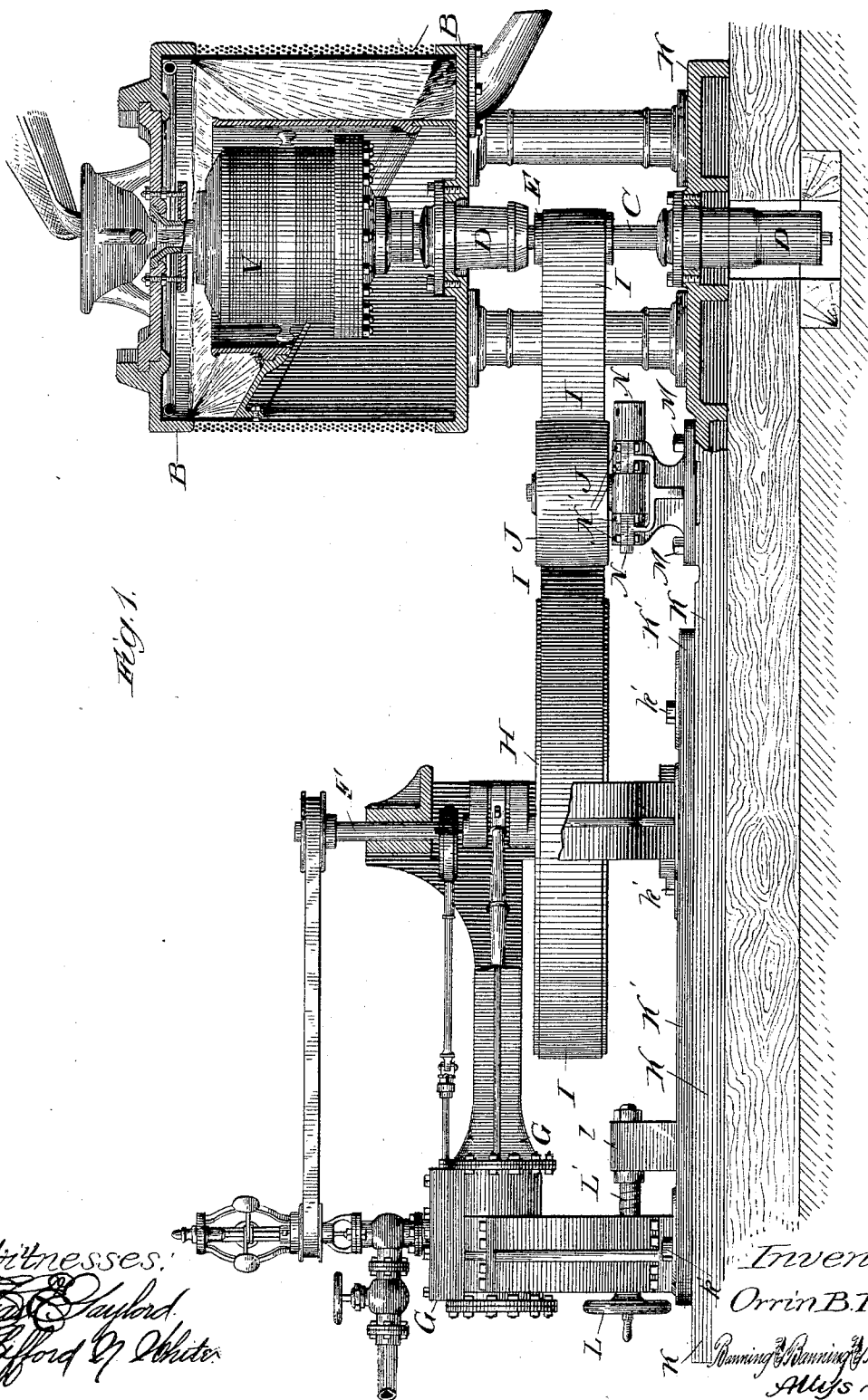
3 Sheets—Sheet 1.

O. B. PECK.

APPARATUS FOR CENTRIFUGALLY TREATING MOLTEN MATERIAL.

No. 433,140.

Patented July 29, 1890.



Witnesses.


 Saylord.
 Efford W. White.

Inventor,
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(No Model.)

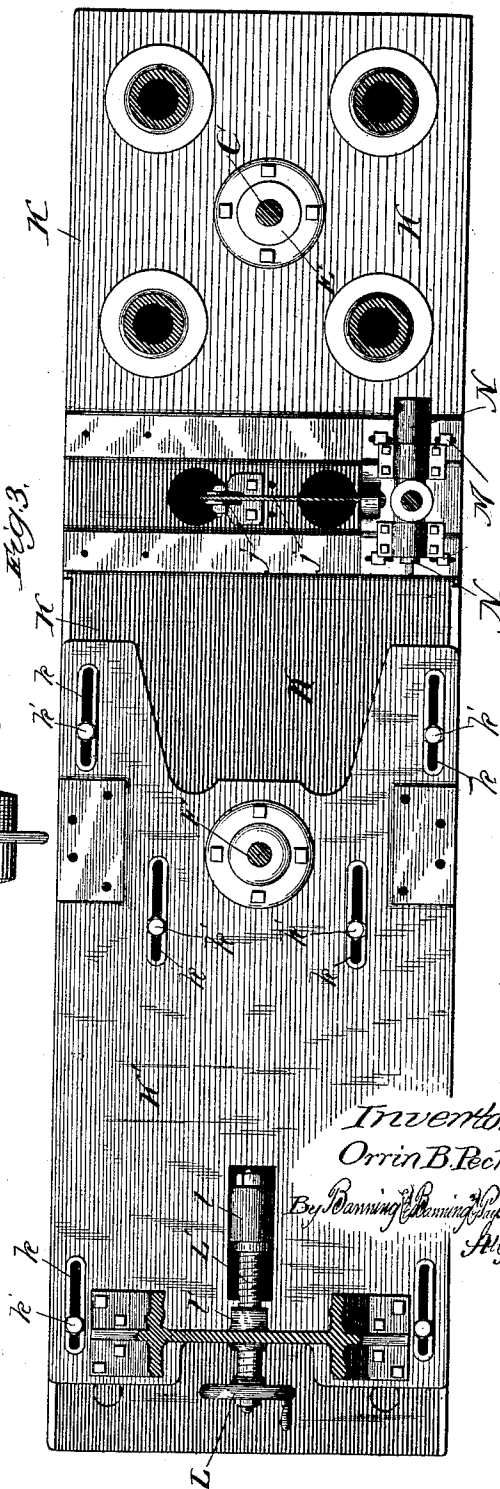
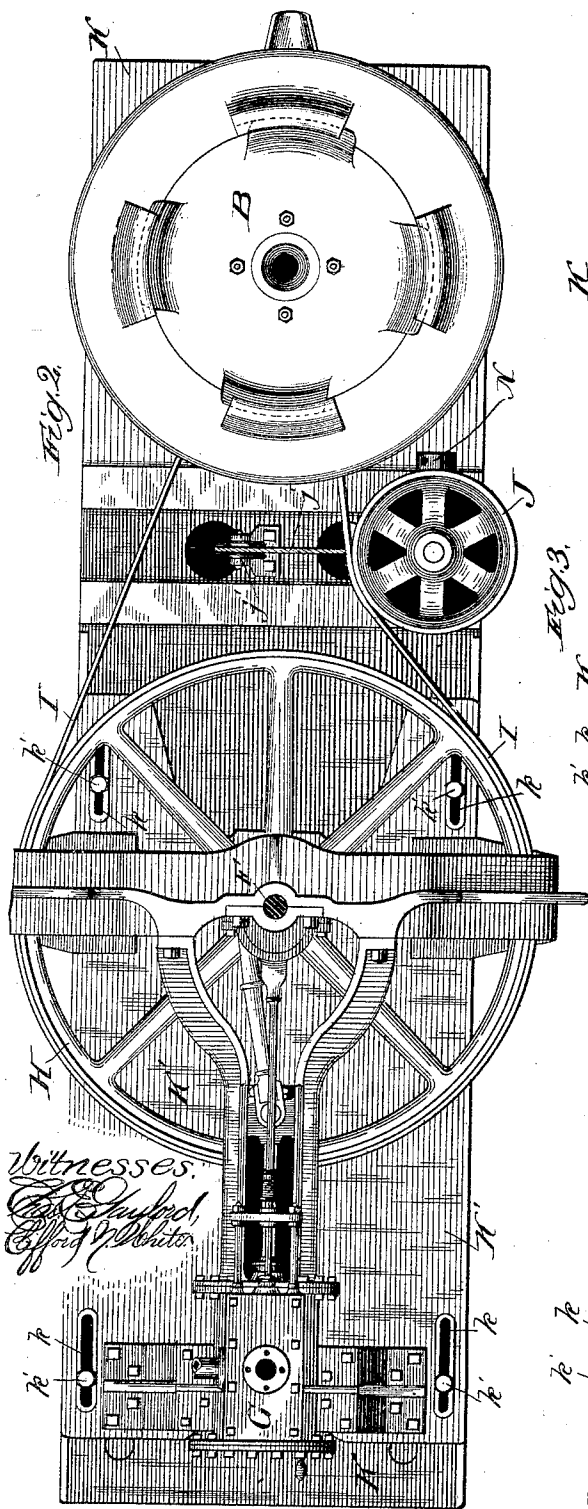
3 Sheets—Sheet 2.

O. B. PECK.

APPARATUS FOR CENTRIFUGALLY TREATING MOLTEN MATERIAL.

No. 433,140.

Patented July 29, 1890.



Witnesses:
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(No Model.)

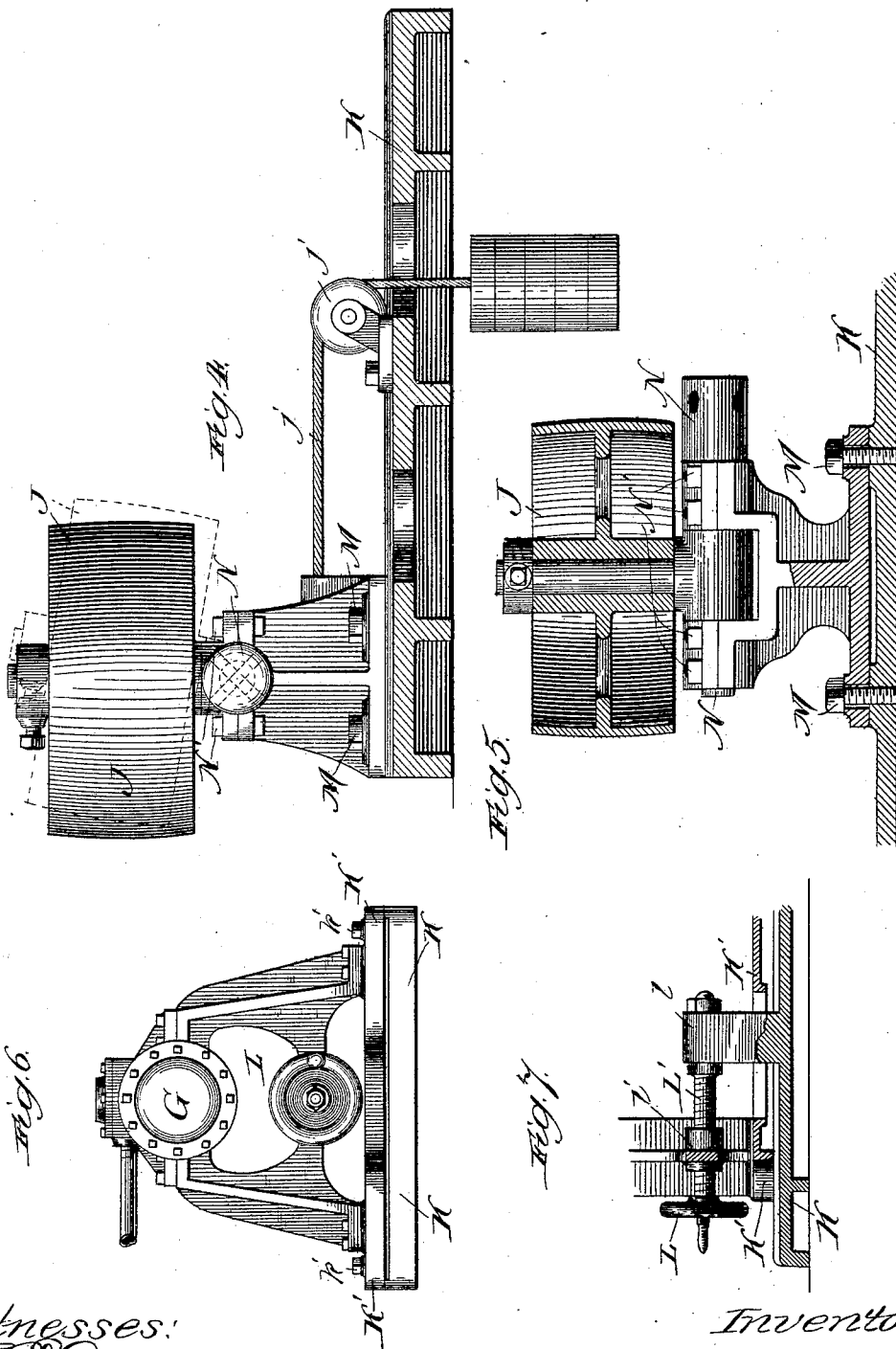
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O. B. PECK.

APPARATUS FOR CENTRIFUGALLY TREATING MOLTEN MATERIAL.

No. 433,140.

Patented July 29, 1890.



Witnesses:
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UNITED STATES PATENT OFFICE.

ORRIN B. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO MELINDA PECK, OF
SAME PLACE.

APPARATUS FOR CENTRIFUGALLY TREATING MOLTEN MATERIAL.

SPECIFICATION forming part of Letters Patent No. 433,140, dated July 29, 1890.

Application filed March 3, 1890. Serial No. 342,431. (No model.)

To all whom it may concern:

Be it known that I, ORRIN B. PECK, a citizen of the United States, residing at Chicago, Illinois, have invented a new and useful Improvement in Apparatus for Centrifugally Treating Molten Material, of which the following is a specification.

The object of this invention is to provide convenient means for developing and applying the operating-power and for adjusting the various parts of the apparatus relatively to each other; and the invention consists in the features and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation, partly in section, of the entire machine; Fig. 2, a plan view of the apparatus shown in Fig. 1; Fig. 3, a plan view of the bed and engine plates and adjusting mechanism; Fig. 4, a side elevation of an adjustable guide-pulley; Fig. 5, a side elevation, partly in section, taken at right angles to Fig. 4; Fig. 6, an end elevation of a portion of Fig. 1, and Fig. 7 a detail view of the adjusting mechanism shown in Fig. 1.

V is the receiving-vessel; B, the curb; C, the shaft for supporting and rotating the vessel; D D, journal-boxes for supporting and maintaining the vertical position of the shaft; E, a driving-pulley rigidly attached to the shaft C; F, the engine-shaft driven by the engine G; H, a driving-wheel mounted on the shaft F; I, a driving-belt passing around the wheel H and pulley E; J, an adjustable guide-pulley; K, a bed plate or frame on which the parts are assembled; K', an engine-plate for supporting the engine and adjustably attached to the bed-plate; L, a hand-wheel; and L', a screw-shaft, by means of which the engine-plate is moved back and forth.

The invention consists, essentially, of a centrifugal machine having a receiving-vessel, a curb surrounding the same, a shaft provided with suitable bearings for supporting and revolving the receiving-vessel, suitable mechanism for economically and effectively developing and applying the motive power for operating such machine, and suitable means for adjusting the various parts relatively to each other.

The bed plate or frame K is constructed of suitable length and breadth to accommodate all parts of the apparatus, as hereinafter set forth. I prefer to have a portion of this bed-plate somewhat raised above the general level of the plate, as shown at the right-hand end of Fig. 1, and upon this raised portion I place the centrifugal machine, which, as stated, has a revolving receiving-vessel, a curb surrounding the same, and a shaft provided with suitable bearings for supporting and revolving the vessel, such shaft being provided with a suitable driving-pulley, the details of which will be apparent from an inspection of the drawings, and require no further description.

I next construct the engine-plate K'. This plate should be of suitable size to receive and support the various parts of the engine, as hereinafter described. It is mounted upon the bed-plate, which is preferably provided with suitable ways or guides upon which the engine-plate rests and moves.

The engine-plate is provided, preferably, with a sufficient number of slots or openings *k*, through which pass bolts or screws *k'*, attached to the bed-plate. These bolts serve to assist in guiding the engine-plate and serve to hold it in any desired position.

In order to move the engine-plate back and forth, I prefer to provide a hand-wheel L, connected to the screw-shaft L'. This shaft is suitably connected to a lug or projection *l*, passing through a suitable opening in the engine-plate and secured rigidly to the bed-plate. The shaft also passes through an internal screw-threaded bearing *l'*, secured to the engine-plate. In the drawings I have shown this bearing as made integral with the supporting frame-work of the engine; but it may be attached to the engine-plate in any other suitable manner that will serve the purpose for which it is intended. From this method of construction it will be evident that as the hand-wheel and shaft thereto attached are turned in one direction or the other the engine-plate K' will be moved back and forth upon the bed-plate and held in any position desired. To assist the screw-shaft L' in holding the engine-plate firmly in any position to which it is moved, screw down the bolts *k'*,

and of course when it is desired to move the engine-plate these bolts should first be loosened; but while I have shown and described the hand-wheel and screw-thread shaft for
 5 adjusting the engine-plate I have done this merely for the purpose of illustrating one means by which such plate may be adjusted, but without any intention of limiting myself to such means solely, as any other suitable
 10 mechanism—such as a rack and pinion—might be used for the same purpose, the gist of this part of my invention consisting in making the engine adjustable toward and from the centrifugal machine.

15 To the engine plate or frame I attach, by means of any suitable frame-work, the engine G and the driving-wheel H, mounted upon the shaft F.

It has heretofore been customary in the
 20 operation of centrifugal machines having a vertical shaft to place the driving-wheel in a vertical position, giving a quarter-twist to the driving-belt. This is difficult or impracticable, owing to the great size of the machine and the necessarily-increased size of the belts
 25 required to drive the same, and the speed at which it is driven. I have therefore found it more practicable and convenient to attach the driving-wheel directly to the engine-shaft, such shaft being placed vertically, thus bring-
 30 ing the driving-wheel into a horizontal position. From this method of constructing the apparatus I derive great efficiency through the direct application of the power of the engine to the driving-wheel, and I am able to
 35 operate the machine without twisting the belt. This construction allows a very compact arrangement of the machinery, and enables me to make use of a short straight driving-belt of any desired size or strength.

The belt I passes over the driving-wheel to the pulley E upon the shaft of the centrifugal machine. The tension of this belt may be adjusted in whole or in part by moving
 45 the engine-plate back and forth in the manner above described, the engine and driving-wheel H partaking, of course, of the motion of the engine-plate. Although the belt may be adjusted by this means, yet the exact
 50 amount of tension obtained thereby cannot be very closely determined. To regulate this tension and to provide means for obtaining any given amount of tension, I preferably provide the adjustable guide-pulley J. This
 55 pulley is located at some suitable point between the driving-wheel and the shaft of the centrifugal machine, and is so placed as to bear against the surface of the belt, and is adjustable to the frame and belt.

60 The supporting-frame of the guide-pulley is preferably connected to the bed-plate by means of bolts and slots, as heretofore described when speaking of the engine-plate, and as more particularly shown in Fig. 3, so

as to allow of the adjustment thereof to and 65 away from the belts.

In order to obtain the proper amount of pressure which may be desired from time to time, I preferably provide a rope or wire *j*, fastened to the frame-work of the pulley and
 70 running, as shown in the drawings, over a sheave *j'*, which supports or has attached to it any desired weight. When it is desired to apply any certain amount of pressure to the belt, the bolts M M are loosened and a suffi-
 75 cient weight to create the pressure desired is attached to the end of the rope *j*. This weight will draw the pulley against the belt, creating the desired pressure, and the bolts M M may then be tightened to hold the pul-
 80 ley in this position. If at any time it be desired to increase or diminish this pressure, the bolts may be loosened and the weights attached to the rope increased or diminished,
 85 allowing the pulley to move toward or from the belt, and the bolts then tightened.

While I have shown and described the rope and weight as a means for adjusting the pulley, I do not intend to limit myself thereto, as other means—such as a spring—might be em-
 90 ployed for this purpose. By this means the machine is enabled to be operated with the driving-belt at any predetermined degree of tension.

To serve as a guide for the belt to hold it 95 in its place, and to prevent its rising or falling through stretching or any other change that may take place in the belt, I preferably support the pulley J in such a manner as to allow of its being adjusted to either side of
 100 the horizontal position, as desired. In the drawings I have shown the pulley supported upon trunnions N N, and capable of being rocked one side or the other, in order to guide the belt. When it is desired to rock the pul-
 105 ley in either direction the bolts N' are loosened, and the trunnions N N, rotated by any suitable means, as a bar, bring the pulley into position one side or the other of the hori-
 110 zontal line in Fig. 4. I have shown the pulley as rocked toward the right; but it is evident that if desired it might be rocked in the other direction. The pulley being rocked into the desired position, the bolts N' may then be tightened to maintain the pulley in
 115 place.

I claim—

In combination with a centrifugal machine for the treatment of molten material, a bed plate or frame, an engine plate or frame, 120 means for adjusting the engine to or from the machine, and an adjustable pulley to guide the belt between the engine and machine, substantially as described.

ORRIN B. PECK.

Witnesses:

GEORGE S. PAYSON,
 SAMUEL E. HIBBEN.