No. 858,879. PATENTED JULY 2, 1907.

R. S. LAWRENCE.

MACHINE FOR FORMING AND COMPRESSING PEAT.

APPLICATION FILED SEPT. 12, 1906.

2 SHEETS—SHEET 1.

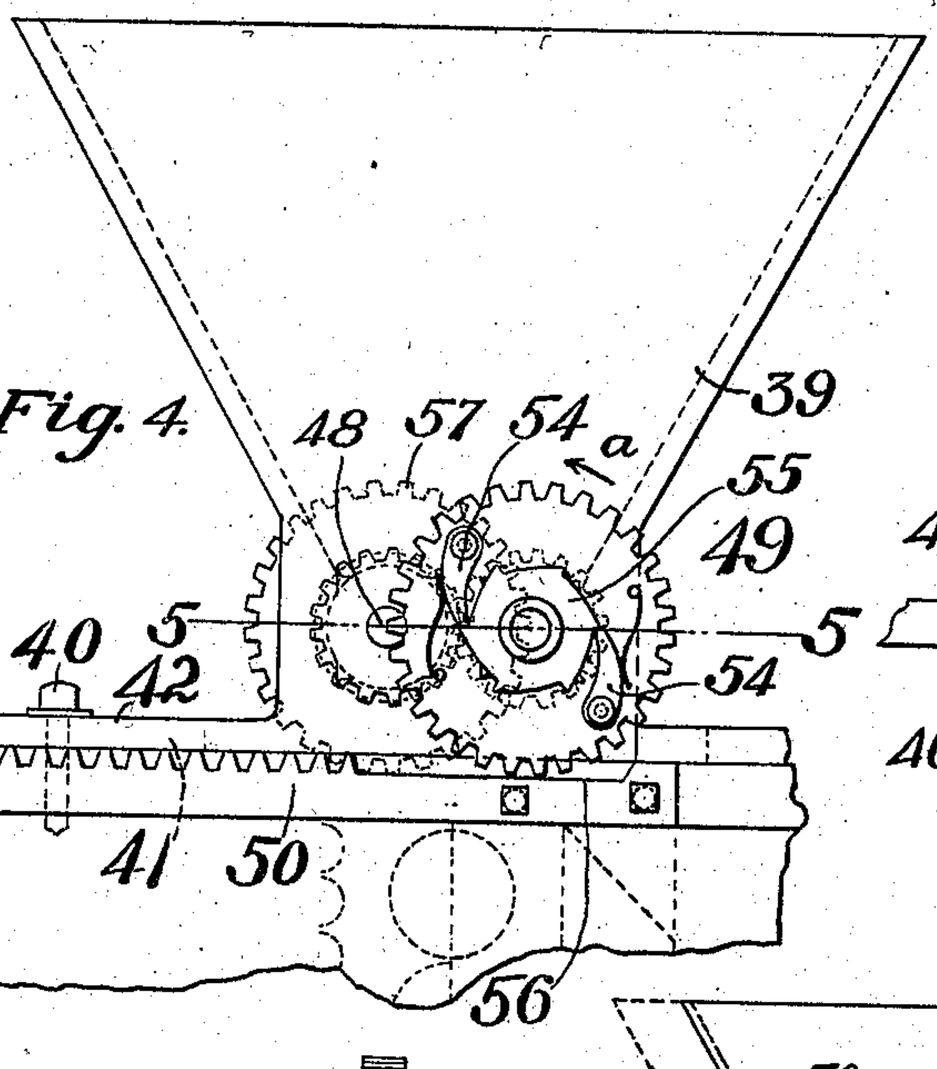

Fig. 4.

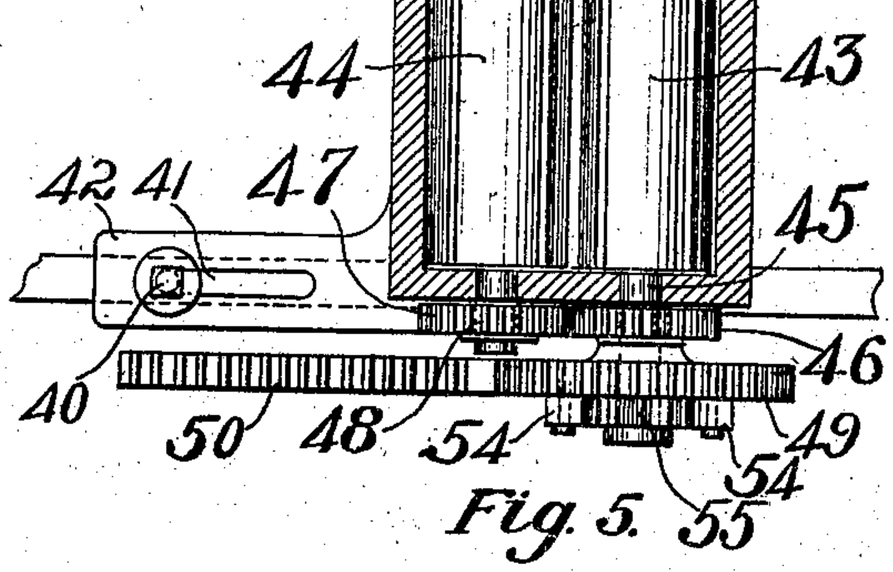

Fig. 5.

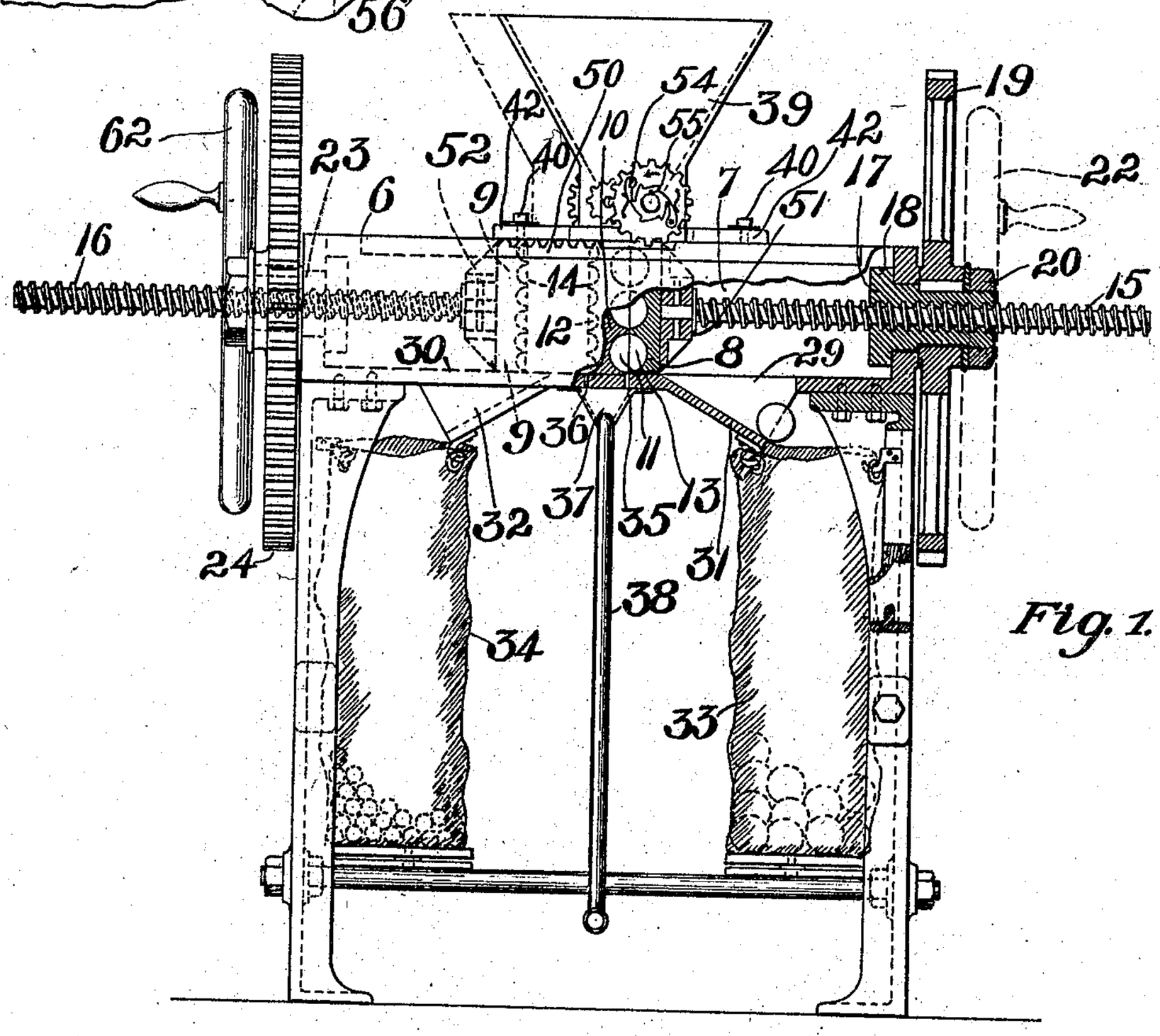

Fig. 1.

Witnesses:
Walter L. Pierce
Annie J. Dailey.

Inventor:
Robert S. Lawrence
by his attorney, Charles S. Fowling

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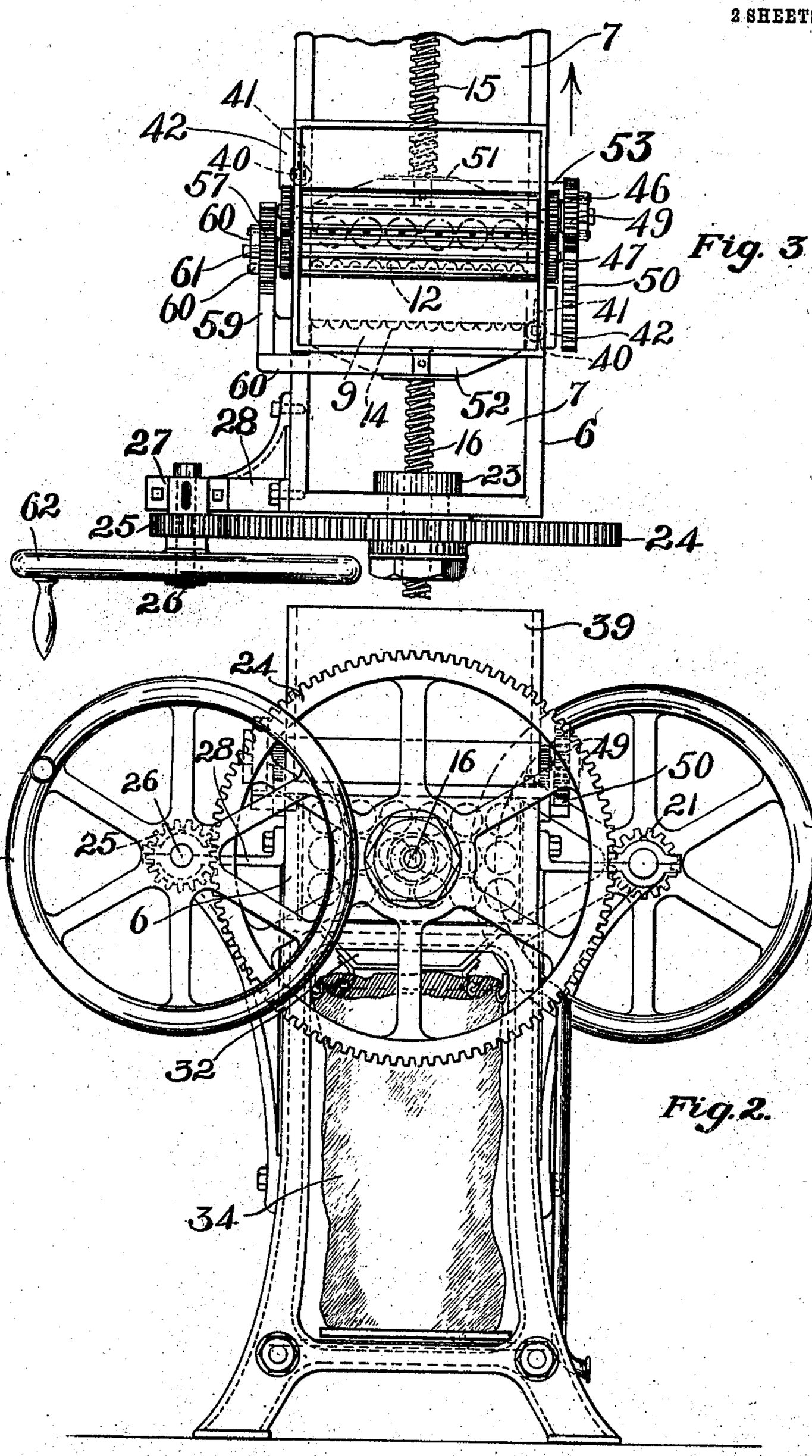

Fig. 3

Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

ROBERT S. LAWRENCE, OF BOSTON, MASSACHUSETTS.

MACHINE FOR FORMING AND COMPRESSING PEAT.

No. 858,879. Specification of Letters Patent. Patented July 2, 1907.

Application filed September 12, 1906. Serial No. 334,224.

To all whom it may concern:

Be it known that I, ROBERT S. LAWRENCE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Machines for Forming and Compressing Peat, of which the following is a specification.

The object of this invention is to provide a simple and effective means for producing peat fuel in a form and condition suitable to the varied requirements of cooking ranges, open fire grates, stoves, furnaces, automobiles and for coking and charcoaling.

The object of the invention is further to provide a machine in which different forms of peat fuel may be produced in the same machine by changing some of the parts therein, said adjustable parts being capable of being changed by an ordinary laborer and not requiring a skilled mechanic therefor.

The object of the invention is still further to take peat in bulk and form the same into balls, preferably of different sizes, so that the resultant fuel, when used in a stove, range, or the like will allow a free circulation of air throughout said fuel, thus securing as nearly as possible perfect combustion and preventing the formation of clinkers from the presence of silica and aluminium.

The object of the invention is still further to provide a machine which can be operated by one man to manufacture a large number of peat balls in a short space of time. The peat when compressed by the machine of this invention eliminates the necessity of drying said peat by the sun, as is the custom at present, or saves the expense of drying said peat by artificial heat, thus greatly reducing the expense of the peat fuel and presenting the same in a neat, compact and practical commercial form free from dust and loose particles and producing a fuel greatly superior to the commercial peat fuel as at present manufactured. The machine of this invention finally compresses the peat from a bulk form and also forms the peat into balls, cubes or any desired shape.

The invention consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings. Figure 1 is a front elevation of my improved machine for forming and compressing peat, the same being partly broken away and shown in section. Fig. 2 is an end elevation of the same as viewed from the left of Fig. 1. Fig. 3 is a plan view of the same broken away to save space. Fig. 4 is an enlarged front elevation of the hopper and the mechanism by means of which the feed rolls in said hopper are rotated. Fig. 5 is a plan section taken on line 5—5 of Fig. 4.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings 6 is a holder into which the peat which is to be formed is fed. Said holder consists of a hollow rectangular box or casing having a chamber 7 in the interior thereof. In this chamber 7 are located two formers 8 and 9 which are movable longitudinally within said chamber toward and away from a centrally located partition 10. The partition 10 has recesses 11, 11 and 12, 12 upon opposite sides thereof, respectively. These recesses may be of any desired shape. In the drawings they are illustrated as hemispherical in form. The former 8 is also provided in the face adjacent to the partition 10 with a series of recesses 13 which aline with the hemispherical recesses 11. The former 9 is provided with a series of hemispherical recesses 14 which aline with the hemispherical recesses 12 in the partition 10.

The partition 10 is detachably fastened to the holder 6 and the formers 8 and 9 are detachably fastened to heads 51 and 52 fast to screws 15 and 16, respectively. The screw 15 has screw-threaded engagement with a sleeve 17 journaled to rotate in one end of the holder 6 and having a flange 18 thereon which prevents the same from moving longitudinally thereof toward the right (Fig. 1). A gear 19 is keyed to the sleeve 17 and bears against the outside of the right hand end of the holder 6 (Fig. 1). Said gear is still further fastened to said sleeve by means of a nut 20 having screw-threaded engagement with the outer end of said sleeve. The gear 19 is rotated by a pinion 21 meshing thereinto and rotated by means of a hand-wheel 22, shown in dotted lines (Fig. 1.)

The mechanism for imparting a reciprocatory motion to the former 9 is substantially the same as that hereinbefore described for imparting a reciprocatory motion to the former 8 and consists of the screw 16, sleeve 23, gear 24 fast to said sleeve and meshing into a pinion 25, said pinion 25 being fastened to a shaft 26 journaled to rotate in a bearing 27 upon a bracket 28 fast to the holder 6.

In the bottom of the holder 6, upon opposite sides of the partition 10, are two holes 29 and 30 (Fig. 1) which are located upon opposite sides, respectively, of said partition and above chutes 31 and 32 fast to the bottom of said holder. These chutes lead, respectively, to bags 33 and 34 which receive the peat balls when the same have been formed. Holes 35 and 36 are also provided in the bottom of said holder which lead into a trough 37 extending transversely of said holder beneath the bottom thereof. Said trough is connected by a pipe 38 to a suitable drain pipe or receptacle for the water which is pressed out of the peat.

A hopper 39 is adjustably fastened to the holder 6 by means of screws 40, 40 which extend through slots 41, 41 formed in ears 42, 42 integral with said hopper, said screws having screw-threaded engagement with the holder 6.

When it is desired to manufacture peat balls of large size suitable for use in furnaces, the hopper 39 is placed in the position shown in full lines (Fig. 1) and the former 8 having the large recesses 13 is employed. When it is desired to manufacture peat balls of small size suitable for use in cooking ranges and other small stoves, the operator loosens the screws 40, 40 and slides the hopper 39 from the position shown in full lines (Fig. 1) to the position shown in dotted lines and then tightens the screws 40, 40, thus clamping said hopper to the holder 6.

In the interior of the hopper 39 are two feed rolls 43, 44 which are journaled in said hopper and feed the peat which is placed in the hopper 39 in bulk downwardly between the partition 10 and the former 8 or 9, according to whether the hopper is fastened to the holder in the position illustrated in full lines (Fig. 1) or in the position shown in dotted lines in said figure. The roll 43 is fastened to a shaft 45 (Fig. 5) which rotates in one end of the holder 6 and projecting upwardly therebeyond has fastened thereto a gear 46. The gear 46 meshes into a gear 47 fast to the shaft 48, said shaft 48 being fastened to the feed roll 44, so that when one of said feed rolls is rotated the other will be rotated in the opposite direction. The shaft 45 has a gear 49 loosely mounted thereon which is adapted to be engaged by a rack 50 fast to the head 51 by means of an arm 53 rigidly connected thereto.

The gear 49 has pivotally mounted thereon pawls 54, 54 which engage a ratchet 55 fast to the shaft 45. The rack 50 has a space 56 thereon which is not provided with teeth but which contacts with the teeth of the gear 49. The roll 44 is rotated by similar mechanism to that hereinbefore described by means of which the roll 43 is rotated, consisting of a gear 57 loosely mounted upon the shaft 48, to which shaft the roll 44 is fastened; said gear 57 being arranged to mesh into a rack 59 fastened by an arm 60 to the head 52. The gear 57 has pawls 60 pivotally mounted thereon and engaging a ratchet 61 fast to the shaft 48.

The operation of the mechanism hereinbefore specifically described is as follows: Assuming the parts to be in the position illustrated in Fig. 1, the operator rotates the hand wheel 22 in the proper direction to move the screw 15 toward the right in said figure through the pinion 21 and gear 19. This will move the former 8 away from the partition 10 and after it has moved a certain distance the balls which have previously been pressed between said former and said partition will roll out of the partition through the chute 31 and into the bag 33. During the last part of the retreating motion of the former 8, the rack 50 will engage the gear 49 and rotate said gear in the direction of the arrow *a* (Fig. 4), thus rotating the feed rolls 43 and 44 by means of the pawls 54, ratchet 55, shaft 45 and the gears 46 and 47. A certain amount of peat will thus be fed downwardly between the former 8 and the partition 10 at each backward movement of the former. When the operator reverses the rotary movement of the hand wheel 22 the former 8 will be brought forward to the position illustrated in Fig. 1 and the peat which has been fed between said former and partition will be squeezed into the recesses 11 and 13 to form balls. A substantially similar action takes place when the hand wheel 62, which is fastened to the shaft 26, is rotated in the proper direction, the rotation of said hand wheel rotating the pinion 25, gear 24 and the screw 16 to move the former 9 toward or away from the partition 10, thus feeding peat into the space in the holder between said former 9 and partition 10 in a substantially similar manner to that hereinbefore described, whereby the peat is fed between the former 8 and the partition 10, it being understood that the hopper 39 is located in the position indicated in dotted lines (Fig. 1) when the former 9 is being operated and that said hopper is located in the position illustrated in full lines (Fig. 1) when the former 8 is being operated.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. In a machine for forming balls of peat, a holder provided with a chamber adapted to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in two opposite faces thereof, two formers located in said chamber on opposite sides, respectively, of said partition, each of said formers provided with a plurality of recesses in one face thereof in alinement with the recesses in the face of said partition adjacent thereto, mechanism to move said first former longitudinally of said chamber toward and away from said partition, independent mechanism to move said second former longitudinally of said chamber toward and away from said partition, and a hopper movably mounted on said holder.

2. In a machine for forming balls of peat, a holder provided with a chamber adapted to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in two opposite faces thereof, two formers located in said chamber on opposite sides, respectively, of said partition, each of said formers provided with a plurality of recesses in one face thereof in alinement with the recesses in the face of said partition adjacent thereto, mechanism to move said first former longitudinally of said chamber toward and away from said partition, independent mechanism to move said second former longitudinally of said chamber toward and away from said partition, a hopper movably mounted on said holder, and mechanism to feed said peat from said hopper into said chamber between said partition and former.

3. In a machine for forming balls of peat, a holder provided with a chamber to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in one face thereof, a former located in said chamber and provided with a plurality of recesses in one face thereof in alinement with the recesses in said partition, mechanism to move said former longitudinally of said chamber toward and away from said partition, a hopper, a pair of feed rolls journaled to rotate in said hopper, and mechanism actuated by said former to rotate said rolls to feed peat from said hopper into said chamber between said partition and former.

4. In a machine for forming peat balls, a holder provided with a chamber to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in one face thereof, a former located in said chamber and provided with a plurality of recesses in one face thereof in alinement with the recesses in said partition, mechanism to move said former longitudinally of said chamber toward and away from said partition, a hopper, a pair of feed rolls journaled to rotate in said hopper, gears fast to said feed rolls and meshing one into the other, and a rack fast to said former, said rack adapted to rotate one of said gears.

5. In a machine for forming balls of peat, a holder provided with a chamber to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in two opposite faces thereof, two formers located in said chamber, on opposite sides, respectively, of said partition, each of said formers provided with a plurality of recesses in one face thereof in

alinement with the recesses in the face of said partition adjacent thereto, mechanism to move said formers toward and away from said partition, a hopper adjustably fastened to said holder, a pair of feed rools journaled to rotate in said hopper, and mechanism actuated by the forward motion of each of said formers to rotate said rolls and feed peat from said hopper into said chamber between said partition and its respective former.

6. In a machine for forming balls of peat, a holder provided with a chamber to receive said peat, a stationary partition extending thereacross, said partition having a plurality of recesses provided in one face thereof, a former located in said chamber and provided with a plurality of recesses in one face thereof in alinement with the recesses in said partition, mechanism to move said former longitudinally of said chamber toward and away from said partition, and a chute located beneath said chamber beneath a hole provided in the bottom thereof, said former being adapted to move entirely across and beyond said hole to permit said balls to pass outwardly through said hole into said chute.

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

ROBERT S. LAWRENCE.

Witnesses:

CHARLES S. GOODING,

ANNIE J. DAILEY.