2 Sheets—Sheet 1.

C. B. WYATT.

CLAY-GRINDER.

No. 182,398. Patented Sept. 19, 1876.

Fig. 1.

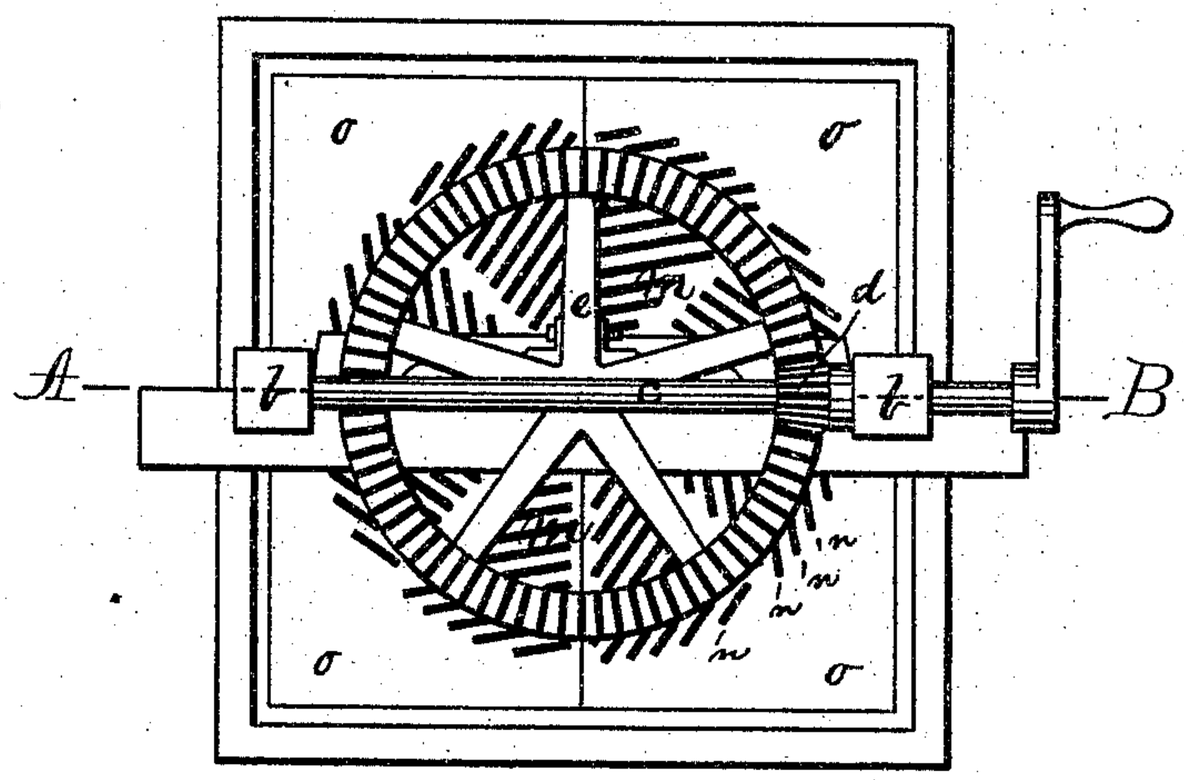
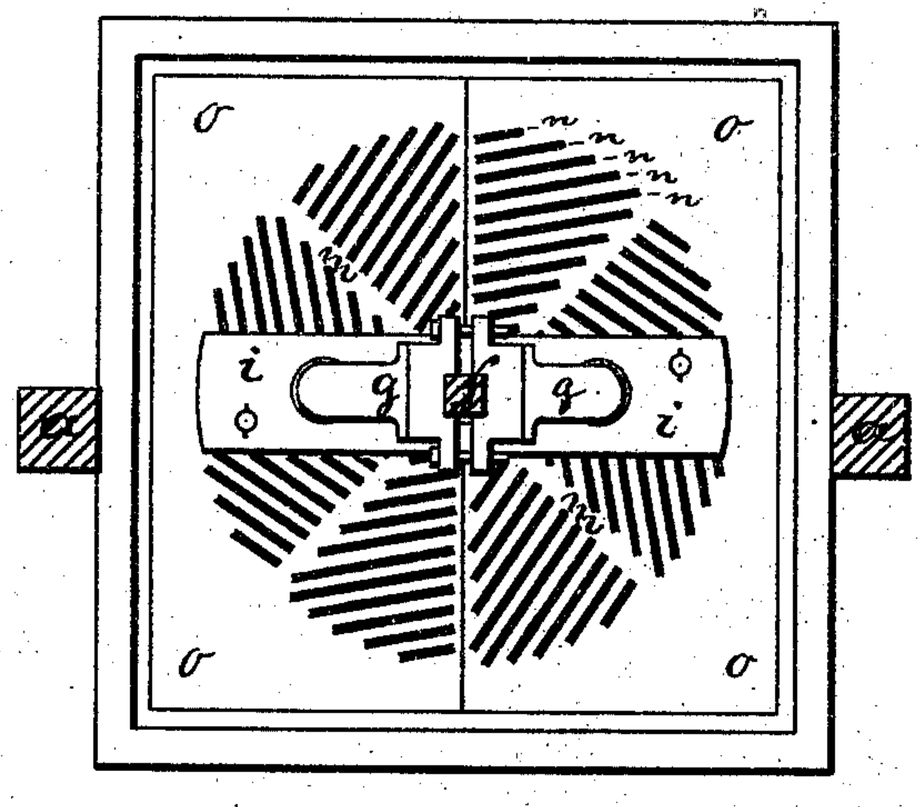


Fig. 2.



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F. Allen.

Inventor:

Charles B. Wyatt.
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his atty.

2 Sheets—Sheet 2.

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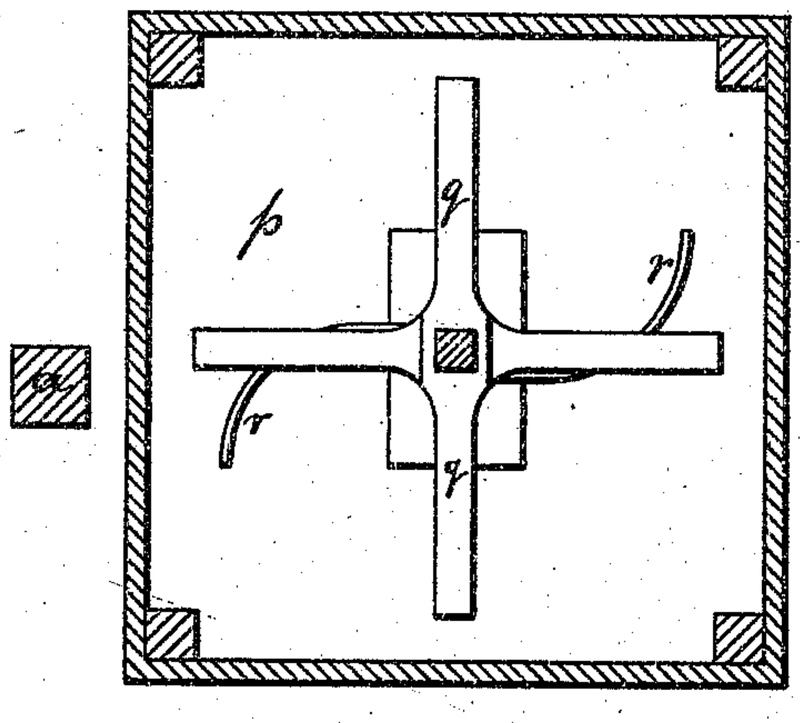


Fig. 3.

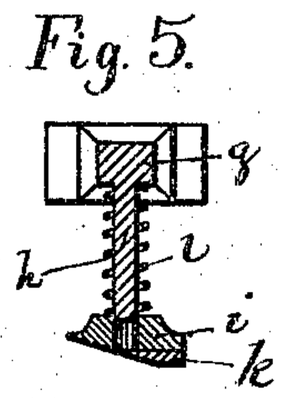
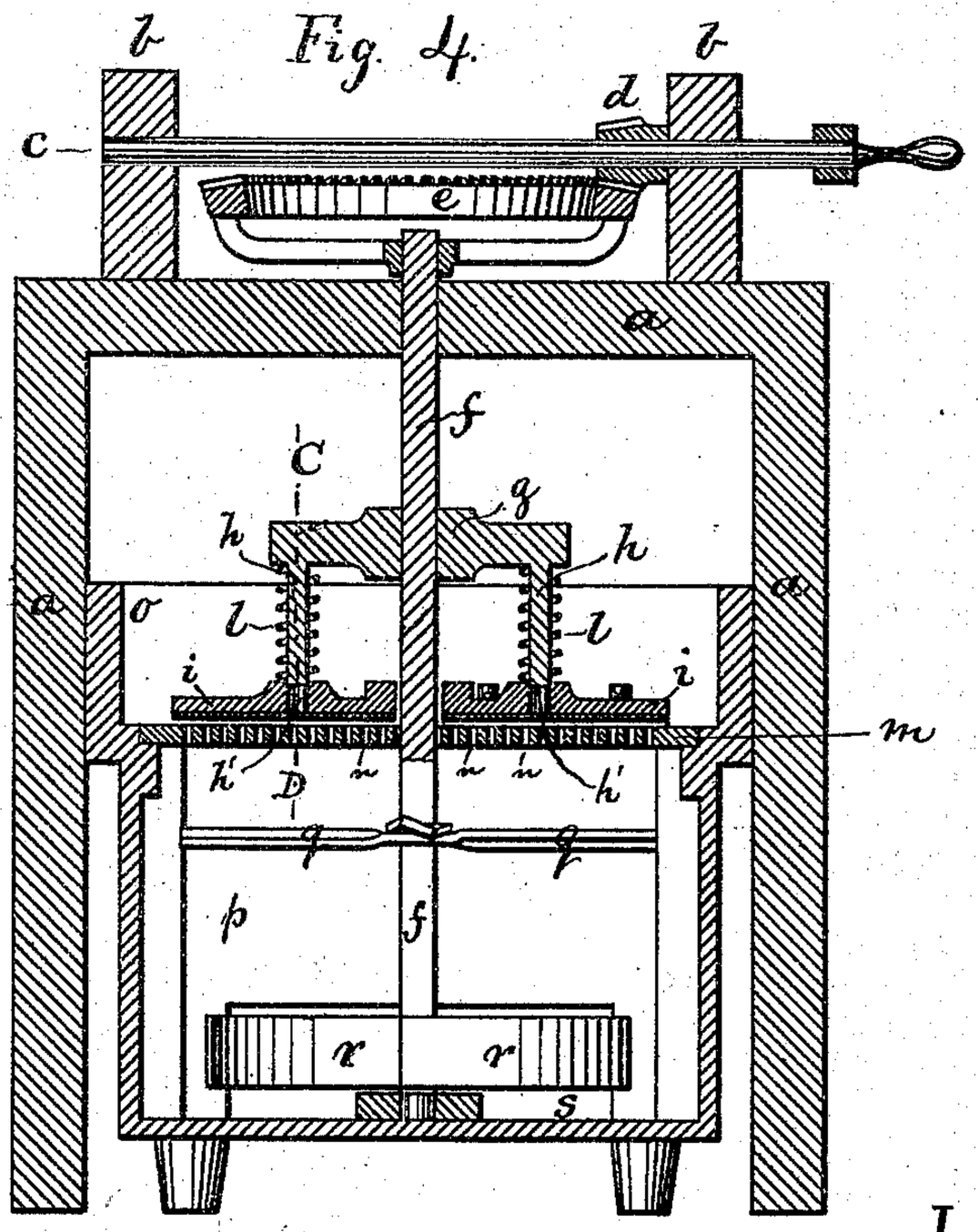


Fig. 5.

Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES B. WYATT, OF SOMERVILLE, MASSACHUSETTS.

IMPROVEMENT IN CLAY-GRINDERS.

Specification forming part of Letters Patent No. **182,398**, dated September 19, 1876; application filed April 3, 1876.

To all whom it may concern:

Be it known that I, CHARLES B. WYATT, of Somerville, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Clay-Grinding Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in clay-grinding machines; and consists in the combination of a rotary upright shaft, movable in suitable bearings, to which shaft is secured a head or double arm, having vertical rods projecting downward on two opposite sides of the rotary shaft. The lower ends of said vertical rods rest loosely in corresponding perforations in rotary yielding grinders or knives that are provided on the under side with tapering or inclined shoes, made in one piece with or secured to said knives. By the employment of said yielding knives and their springs, I am able to run this, my improved apparatus, equally well with steam-power as with horse-power, without any breakage.

Around each vertical rod or projection is arranged a coiled spring, resting against the under side of the head or double arm in its upper end, and against the upper part of the knife or grinder in its lower end, by which the said knives are made to yield automatically upward in case they should happen to pass over stones or similar hard and unyielding substances that are common in clay. Below the said rotary yielding knives is located a stationary grate, having openings diverging from the center outward, which grate rests in the bottom of the clay-receptacle in which the yielding-knives are rotated. Said clay-receptacle is shown in the accompanying drawings of a square form, somewhat wider than the extreme width of the knives, by which the latter during their rotation will throw stones and gritty substances out into the space surrounding the grate, where they may be collected and removed when required.

Below the grate is a receptacle for the collection of the clay after it has passed through the grate. The rotary upright shaft extends down into said lower receptacle, in the bottom of which it has its step or bearing. In the said receptacle are located on the shaft radial and curved arms or wings, by which, as they rotate, the clay is forced downward and out through a side opening in the lower part of said receptacle into the molding apparatus. By means of this my improved grinding apparatus I am able to grind the clay directly from the bank or natural deposit from which it is taken, thereby saving much time and labor as compared with ordinary machines for this purpose. It is also useful for the purpose of separating stones, &c., from clay.

On the accompanying drawings, Figure 1 represents a ground plan of my invention. Fig. 2 represents a plan view of the clay-receptacle and diverging grate. Fig. 3 represents a cross-section of the lower receptacle. Fig. 4 represents a longitudinal section on the line A B, shown in Fig. 1; and Fig. 5 represents a cross-section on the line C D, shown in Fig. 4.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

a represents a suitable frame-work carrying the bearings *b b* for the driving-shaft *c*, to which the pinion *d* is keyed in the usual manner. *e* represents a bevel-gear engaging into the pinion *d*, and secured to the upright shaft *f*. To the shaft *f* is secured the head or double arm *g*, being made in two halves bolted together by screws, as seen in Fig. 2. *h h* are the downward-projecting rods made in one piece with or secured to the arm or head *g*. *i i* represent the rotary and yielding knives or grinders, the under sides of which are made inclined, and provided each with a hardened shoe-plate, *k k*, that is secured to each of the knives *i i* in a suitable manner. The lower end of each of the vertical rods *h h* projects loosely into each of the holes *h' h'*, by which arrangement the said knives may rise automatically upward, so as to pass over any stones or hard substances that may have become mixed up with the clay. Around each of the rods *h h* is located a coiled spring, *l l*, for the purpose of forcing down the knives *i i*

against the grate *m* beneath, as soon as the said knives have passed by the obstructions alluded to above, and of sufficient strength to force the clay through the grate. *n n n* represent the diverging slots in the grate *m*. *o* represents the clay-receptacle in which the yielding knives *i i* rotate. *p* represents the receptacle below the grate *m n n*, in which the radial wings *q q q* and curved arms *r r* are set in a rotary motion, being for this purpose secured to the rotary shaft *f*. *s* is the outlet-opening for the ground clay at the lower part of the receptacle *p*.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

In combination, the rotary shaft *f*, arm or head *g*, rods *h h*, springs *l l*, rotary yielding knives or grinders *i k i k*, the diverging grate *m n n*, and the clay-receptacle *o*, as and for the purpose herein set forth and described.

In testimony that I claim the foregoing as my own invention I have affixed my signature in presence of two witnesses.

CHARLES B. WYATT.

Witnesses:

ALBAN ANDRÉN,

HENRY CHADBOURN.