Oct. 17, 1939. E. YOUNG 2,176,808

CRUSHING MACHINE

Filed Aug. 20, 1937 3 Sheets-Sheet 1

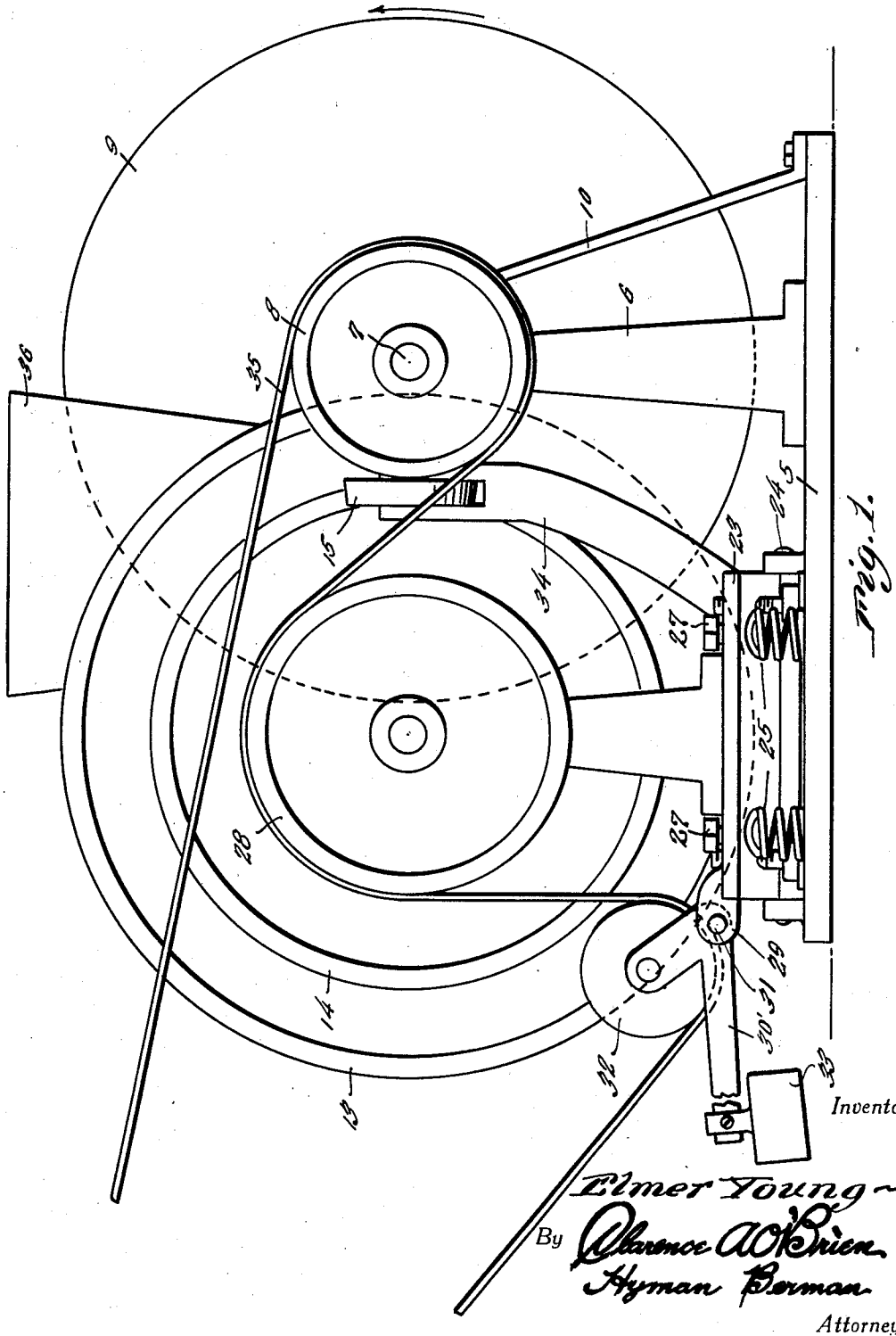


Fig. 1.

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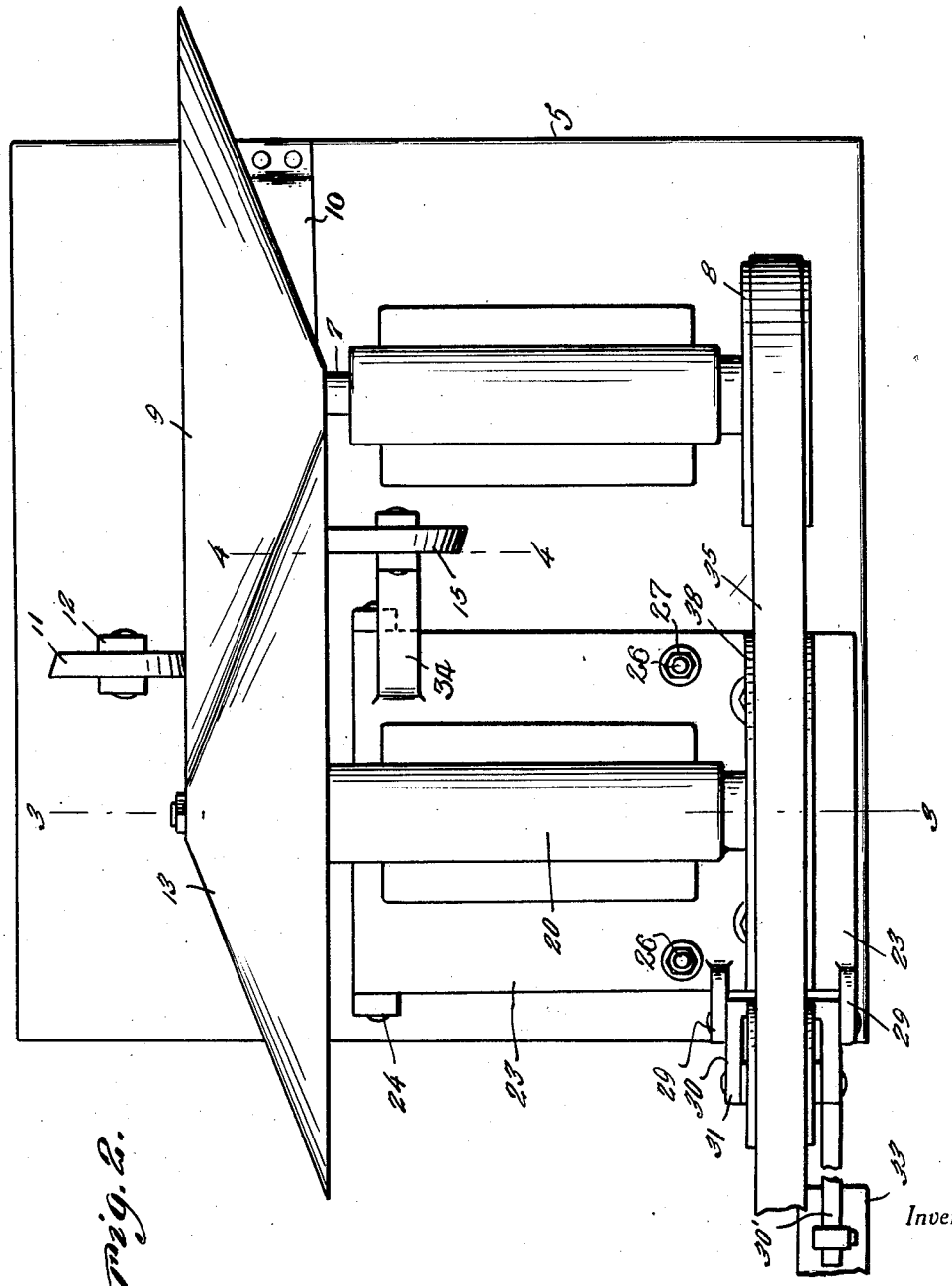


Fig. 2.

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Fig. 4.

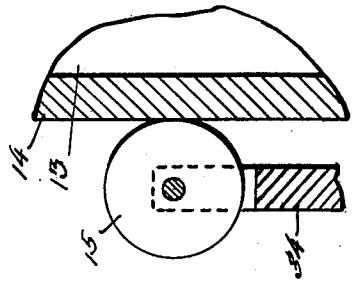


Fig. 5.

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UNITED STATES PATENT OFFICE

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CRUSHING MACHINE

Elmer Young, Whitlock, Tenn.

Application August 20, 1937, Serial No. 160,155

1 Claim. (Cl. 83—7)

This invention relates to new and useful improvements in crushing machines and more particularly to a machine for crushing clays and other plastic material thoroughly to facilitate drying.

Another important object of the invention is to provide a crushing machine of the character stated wherein the crushing elements can be readily adjusted to each other in a positive and efficient manner.

Other important objects and advantages of the invention will become apparent to the reader of the following specification:

In the drawings:

Figure 1 represents a side elevational view of the machine.

Figure 2 is a top plan view of the machine, with the hopper removed.

Figure 3 is a section on line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view on line 4—4 of Figure 2.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the numeral 5 represents the base. Upon the base 5 is the upright 6 having a bearing in its upper edge for supporting the short shaft 7 on which is located the belt pulley 8 and also the grinding cone 9.

It will furthermore be seen in Figure 2, that a roller 11 mounted upon an upright 12 bears against a rib not shown on the inner side of the cone 9 so as to steady the cone 9 with respect to the cone 13, the cone 13 being constructed substantially identical with the construction of the cone 9, the cone 13 being provided with the internal circumferentially extending rib 14 against which the roller 15 rides in order to steady cone 13, the rib of cone 9 being similar to the rib 14 of cone 13. The hub 16 of cone 13 fits over the shaft 17 and the reduced threaded portion 18 of the shaft extends through the apex portion of the cone 13 and is equipped with the nut 19. The shaft 17 extends through the bearing 20 at the top of the post 21, the post 21 being provided with the foot plate 22 suitably secured to the hinged plate 23, this plate being hingedly secured as at 24 to the base plate 5. Between the free end portion of the hinged plate 23 and the base plate 5 are the coiled compressible springs 25, and threaded members 26 extend upwardly from the base plate 5 and pass through openings in the hinged plate 23 with their upper ends equipped with nuts 27 which can be fed downwardly or upwardly on the said members 26 to adjust the inclined position of the hinged plate 23.

The remaining end of the shaft 17 is equipped with the pulley 28, while carried by the hinged plate 23 is the bifurcated formation 29 pivotally carrying the bell crank 30 on its fulcrum pin 31. The upper portion of this bell crank has the pulley 32 mounted therein while the lower extended part 30' of the bell crank has the adjustable weight member 33 thereon.

As will be observed in Figures 1 and 2, the roller 15 is mounted at the upper end of the arm 34 which projects upwardly from the hinged plate 23.

For driving the disks in opposite directions, it can be seen that the belt 35 (see Figure 1) passes over the pulley 8, around and under the same and backwardly over the top of the pulley 28 from where it is disposed downwardly and under the idler 32. Numeral 10 denotes a scraper assembly for clearing the cone 9 of wet material. A hopper is shown at 36 in Figure 1 for feeding material to the cones.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and material may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention what is claimed as new is:

A crushing machine of the class described comprising a base, an upright on the base, a shaft horizontally arranged and rotatably supported by the upright, a cone attached to one end of the shaft, a pulley attached to the opposite end of the shaft, a plate hingedly connected at its inner end to the base, an upright carried by the plate, a horizontal shaft journaled in the last-mentioned upright, a second cone attached to the inner end of the last-mentioned shaft and overlapping the first cone, a pulley on the opposite end of the second shaft, spring means between the plate and the base and tending to raise the plate to press the second cone against the first cone, bolts carried by the base and passing through the plate, nuts on the upper ends of the bolts for adjustably limiting the upward movement of the plate, a belt passing over the pulleys for driving the shafts in opposite directions, a small upright on the plate, a roller rotatably supported by the upper end of said small upright, said roller having its axis at right angles to the axis of the second cone and an annular rib on the rear face of the second cone engaged by the roller, said roller being held by the small upright in engagement with that part of the said cone which overlaps the first cone.

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