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ROTARY TABLET OR BRIQUETTING MACHINE

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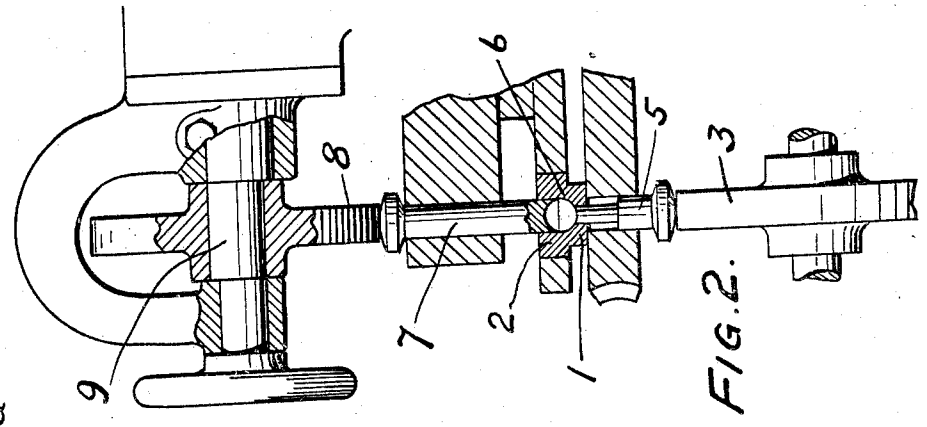


FIG. 2.

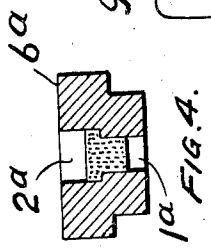


FIG. 4.

FIG. 1.

FIG. 3.

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UNITED STATES PATENT OFFICE

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ROTARY TABLET OR BRIQUETTING MACHINE

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To manufacture tablets or briquettes of certain shapes and kinds by means of a rotary type of machine, when the pressure applied is obtained by forcing punches between compressing rolls, the dies in the rotating head must have two internal diameters, and in the manufacture of tablets and briquettes of other shapes and kinds by means of such machines the result of wear is that the dies, originally of one diameter, become dies of two diameters.

The principal object of the present invention is to provide for the manufacture and proper ejection of tablets or briquettes with dies of two diameters employed in the machines of the type specified.

To this and other ends hereinafter set forth or appearing the invention, generally stated, comprises a rotary type of tablet or briquetting machine, where the pressure applied is obtained by forcing the punches between compressing rolls, having the feature that both rolls are adjustable, instead of one as heretofore, so that dies of two internal diameters and top punches, corresponding with the portion of larger internal diameter, and bottom punches, corresponding with the portion of smaller internal diameter, may be successfully employed, and so that punches of the same diameters may be successfully employed with dies of two internal diameters.

The invention also comprises the improvements to be presently described and finally claimed.

In the following description reference will be made to the accompanying drawings in which

Figure 1 is a side elevation of so much and of such parts of the machine as are necessary for an understanding of the invention.

Fig. 2 is a transverse sectional view showing a die of two internal diameters, and

Figs. 3 and 4 are sectional views, drawn to an enlarged scale, and showing other types or kinds of dies having internal diameters of different dimensions.

Referring to Fig. 2 and assuming that a generally spherical or like tablet or briquette is to be made, but without intending to limit the invention to that or to any particular shape of tablet or briquette, a portion 1 of the die is of relatively small internal diameter and a portion 2 of the die is of relatively large diameter. The bottom roll 3 is adjustable as by an adjustment 4, and in compressing, the top of the bottom punch 5 is properly positioned in respect to the die 6, otherwise necks, indentations or malformations would be formed on the tablets or briquettes. Unless the stroke of the top punch 7 is accurate the material under compression in the part 2 of the die of large internal diameter will not be compressed to the required density. To accomplish this the top roll 8 is made adjustable. The eccentric 9 illustrates one, but not the only, means of providing such adjustment. In Fig. 4 the die 6^a is of two internal diameters 1^a and 2^a, and in the use of the constructions of the dies of both Figs. 2 and 4, the end of the bottom punch lifts the tablet or briquette out of the mold in such a manner that the tablet or briquette can be knocked off the end of the bottom punch and so ejected from the machine. For example, in the case of a generally spherical briquette or tablet, Fig. 2, if the die were of one internal diameter and the top and bottom punches were of the same diameter, the tablet or briquette would be broken, in many cases, in knocking or otherwise removing it sidewise, as is customarily done in this type of machine, from the end of the bottom punch when in elevated position.

In referring to a die of two internal diameters the meaning is two or more internal diameters.

Referring to Fig. 3, the construction and operation are as above described, except that the larger internal diameter 2^b was produced by wear, and by adjustment of the bottom punch the compression between the punches is effected at a portion 1^b of small diameter, so that the tablet or briquette can be properly ejected by the bottom punch. For this purpose both the top and bottom rollers are adjusted. The useful life of the die is also prolonged.

In all cases the fact that both the top roll and the bottom roll are adjustable in respect to each other and to the portions of the die

of unequal internal diameter, permits the compression action of the punches to be made to take place at any desired elevation in the die and in proper manner.

It will be obvious to those skilled in the art to which the invention relates that modifications may be made in details of construction and arrangement and matters of mere form without departing from the spirit of the invention which is not limited to such matters or otherwise than the prior art and the appended claim may require.

I claim:

A rotary type of tablet or briquetting machine including a rotary head and top and bottom punches, dies mounted in the head, top and bottom rolls for applying compressive force to the punches, and means for adjusting both top and bottom rolls in respect to each other and to the portions of the dies.

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