

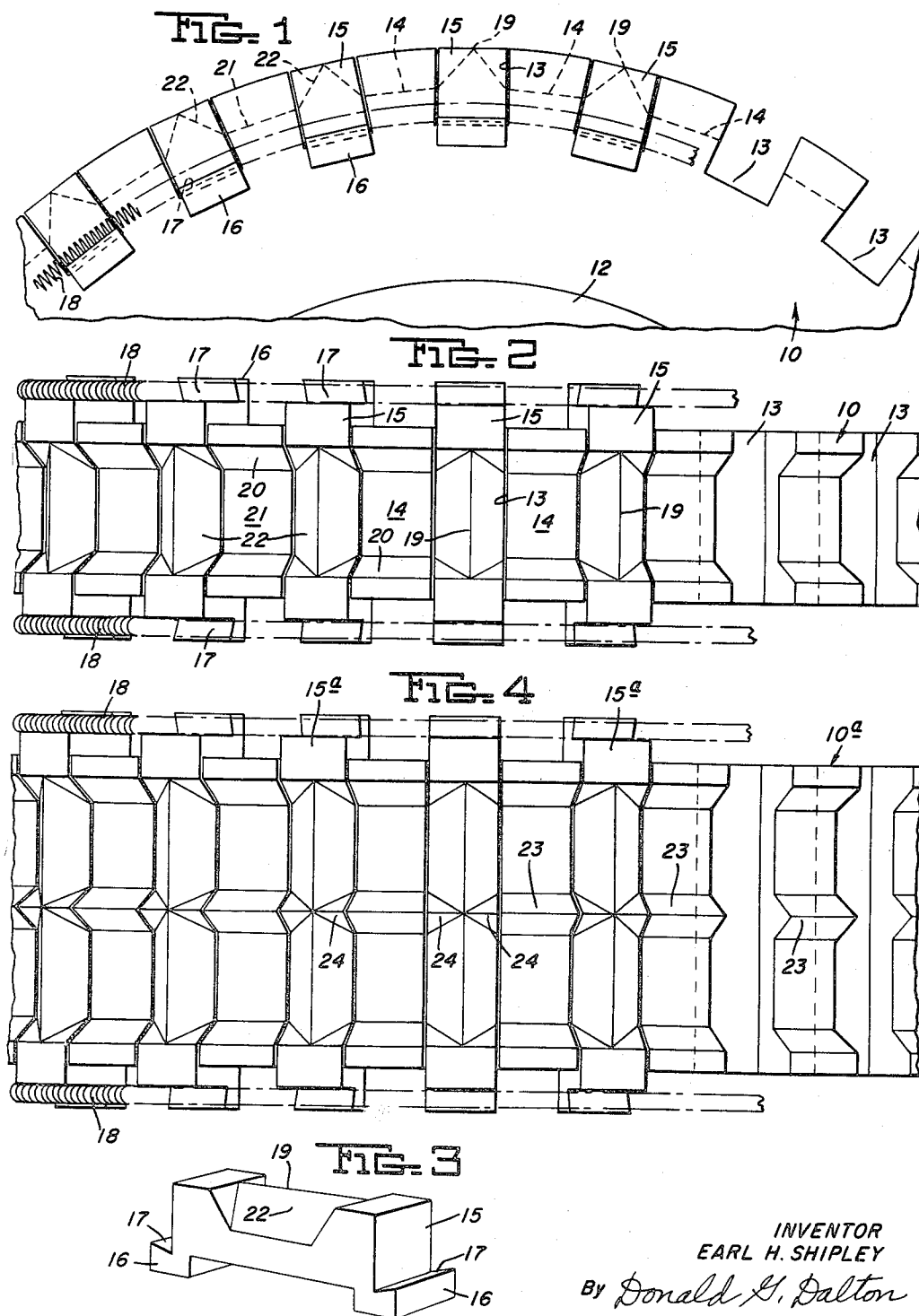
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BRIQUETTING ROLL

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BRIQUETTING ROLL

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2 Claims. (Cl. 18—9)

This invention relates to an improved roll construction for roll-type briquetting presses.

A conventional roll-type briquetting press includes a pair of power driven rolls which are journaled on parallel axes and whose circumferential faces contain a series of mating cavities. The rolls are forced together under suitable spring loading, whereby as they rotate loose material fed between them is compacted within the cavities. Such presses may be used for briquetting hot abrasive materials under relatively high loads. For example iron ore fines may be briquetted while at a temperature as high as 2000 F. and under loads as great as 100,000 pounds per inch of effective roll width. When roll surfaces are subjected to such severe treatment, they wear rapidly and frequent replacement is necessary.

An object of the present invention is to provide an improved briquetting roll whose circumferential face is formed with removable inserts which can be replaced when worn without replacing the remainder of the roll.

A more specific object is to provide an improved briquetting roll in which the side walls of the cavities, the working faces most subject to wear, are formed on removable and replaceable inserts fixed within slots in the roll body.

A further object is to provide an improved briquetting roll in which the working faces most subject to wear can be of harder material than the roll body without need for welding the parts together.

In accomplishing these and other objects of the invention, I have provided improved details of structure, preferred forms of which are shown in the accompanying drawing in which:

Figure 1 is an end elevational view of a briquetting roll constructed in accordance with my invention, some of the inserts being removed to facilitate illustration of the roll body;

Figure 2 is a top plan view of the roll shown in Figure 1;

Figure 3 is a perspective view of one of the inserts; and

Figure 4 is a top plan view of a roll of modified construction.

As shown in Figures 1 and 2, my briquetting roll includes a substantially cylindrical body 10, preferably of tool steel, and necks 12 extending therefrom. Alternatively the roll body may be constructed by welding hard surfacing material on a suitable metal base. The circumferential face of the roll body 10 contains a plurality of uniformly spaced slots 13 which extend the full width of the body. The lands between these slots contain grooves 14 which extend circumferentially of the body and are of less depth than the slots 13. Inserts 15 are fitted within the respective slots and overhang the ends of the roll

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body. These inserts may be formed of tool steel or castable high temperature wear resistant alloys which can be precision cast or shell molded to tolerances close enough to permit their use as cast. The overhanging portions of the inserts carry integral lugs 16 which engage the end faces of the body to hold the inserts against endwise movement. The extremities of the inserts carry integral ledges 17. A pair of garter springs 18 encircle the ledges 17 on opposite ends of the roll body to hold the inserts in place. The upper edges of each insert are truncated leaving a central ridge 19. The walls and bottoms of grooves 14 form end and bottom working faces 20 and 21, and the ridges 19 form side working faces 22 of the cavities in which briquettes are formed.

Figure 4 shows a roll of modified construction which has a double series of briquette-forming cavities around its circumference. The construction is similar to that already described, except that the roll body 10a and inserts 15a are wider, and the roll body carries a ridge 23 and the inserts carry ridge sections 24 separating adjacent cavities along the width of the roll.

Rolls of my improved construction can be used in a conventional briquetting press, such as that shown in Komarek Patent No. 2,766,109. In such service the greatest wear takes place on the side working faces 22 of the cavities. Since these working faces are formed on the inserts 15 or 15a, it is only necessary to remove and replace individual inserts when wear occurs. Thus my improved construction greatly facilitates roll maintenance without otherwise altering the structure or operation of a conventional briquetting press.

While I have shown and described certain preferred embodiments of my invention, it is apparent that other modifications may arise. Therefore, I do not wish to be limited to the disclosure set forth but only by the scope of the appended claims.

I claim:

1. A briquetting roll comprising a substantially cylindrical body having uniformly spaced slots in its circumferential face extending the width of the body, and a groove extending around its circumference but being of less depth than said slots, respective inserts received in said slots, and means removably fixing said inserts to said body, said roll having briquette-forming cavities uniformly spaced around its circumferential face, each of said cavities having side, end and bottom working faces, said side working faces being formed on said inserts, said end and bottom working faces being formed on said body by the walls and bottom of said groove.

2. A roll as defined in claim 1 in which said inserts overhang the ends of said body, the overhanging portions of said inserts having lugs engaging the end faces of said body to prevent endwise movement of said inserts, and in which the means fixing said inserts to said body includes ledges formed on opposite ends of said inserts and springs encircling said ledges on opposite ends of said body.

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