

Aug. 20, 1935.

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2,011,971

COAL BRIQUETTE

Filed Feb. 29, 1932

2 Sheets-Sheet 1

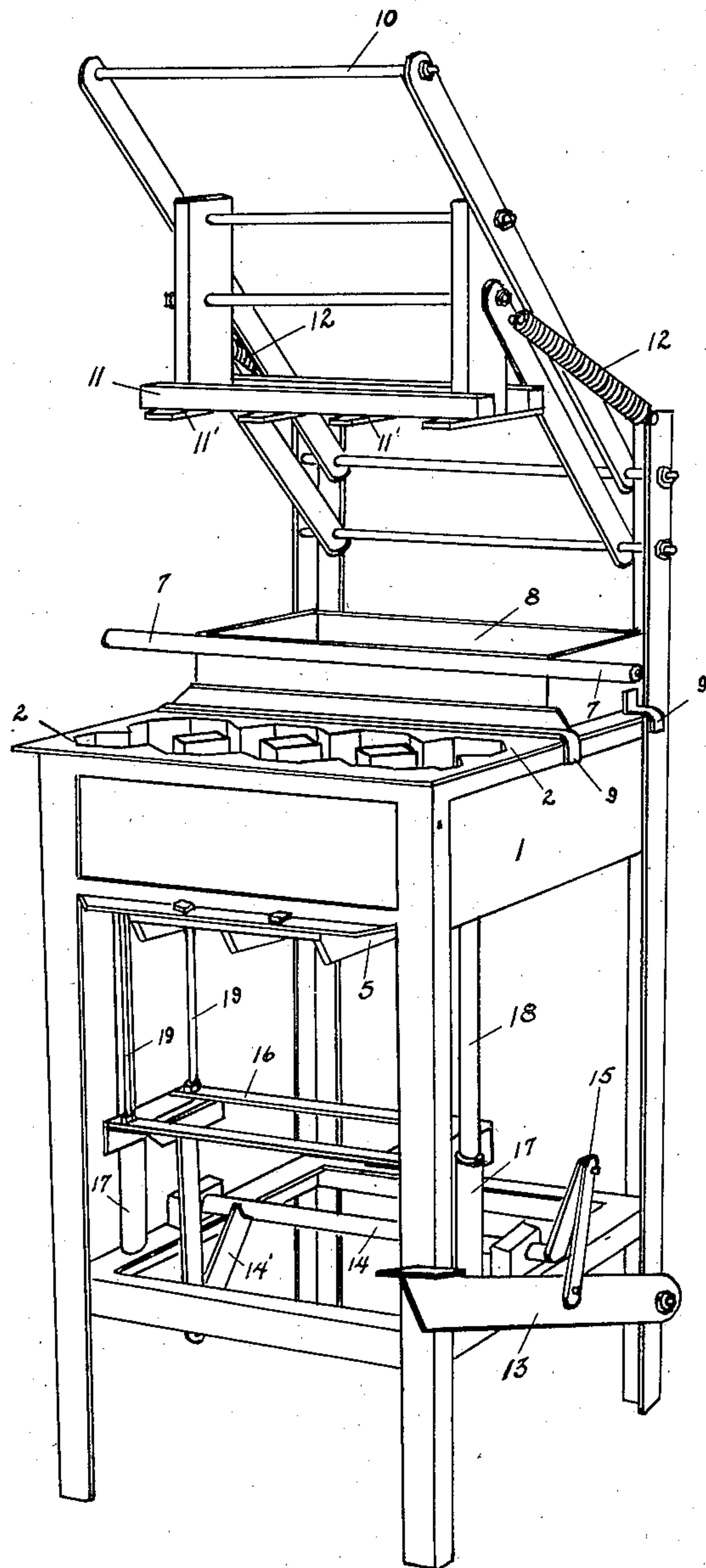


Fig. 1

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2 Sheets-Sheet 2

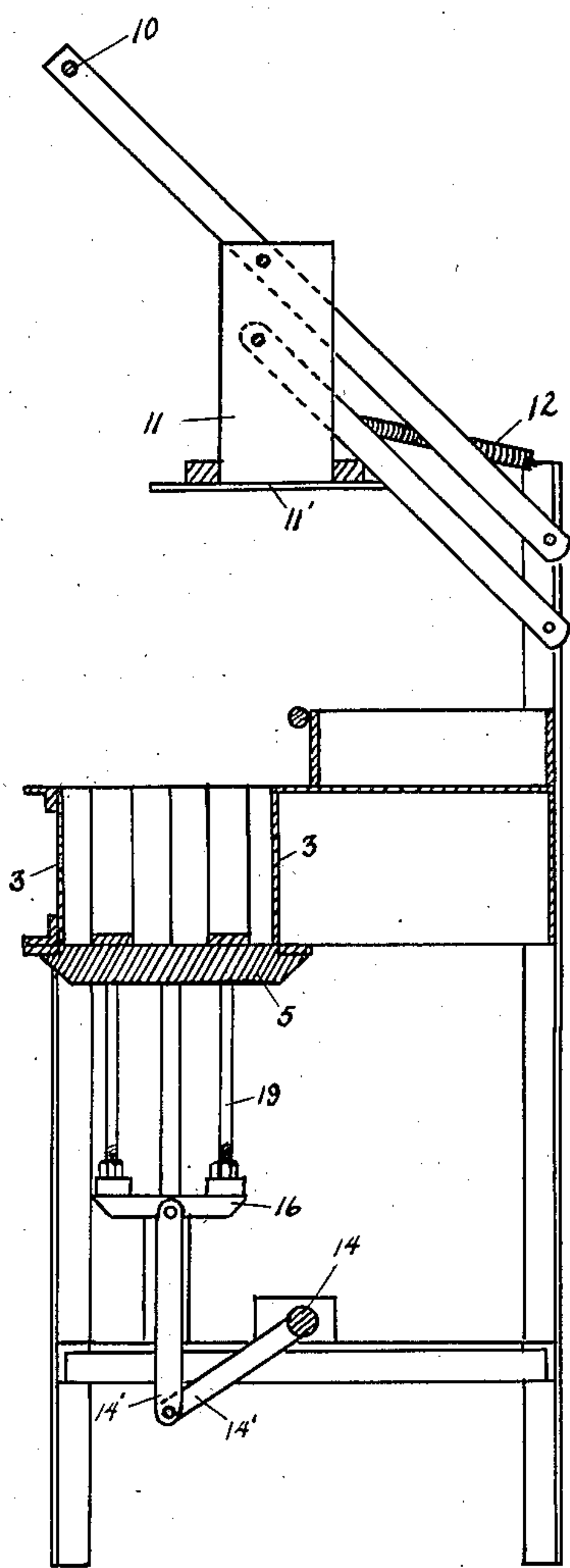


Fig. 2

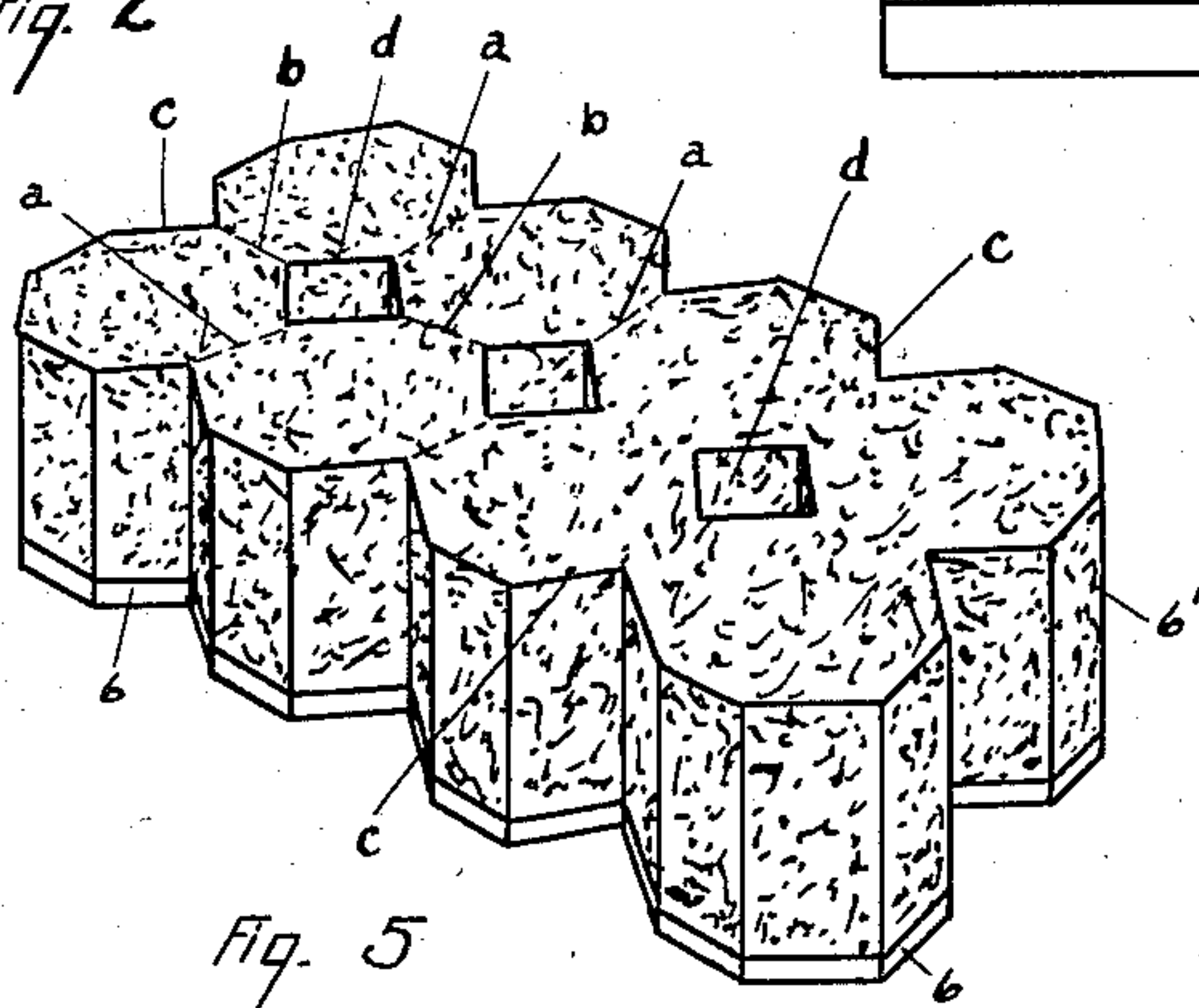


Fig. 5

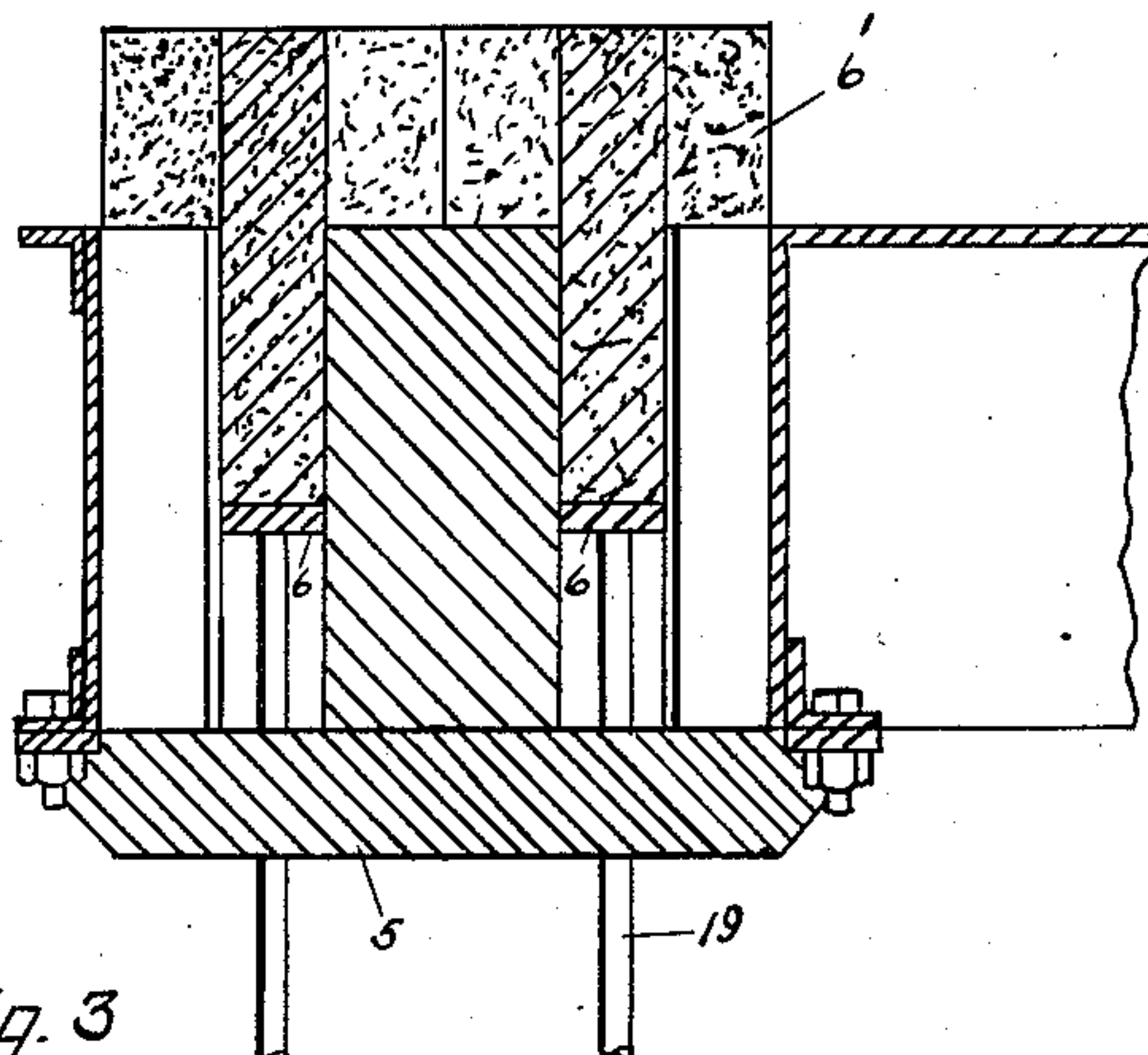


Fig. 3

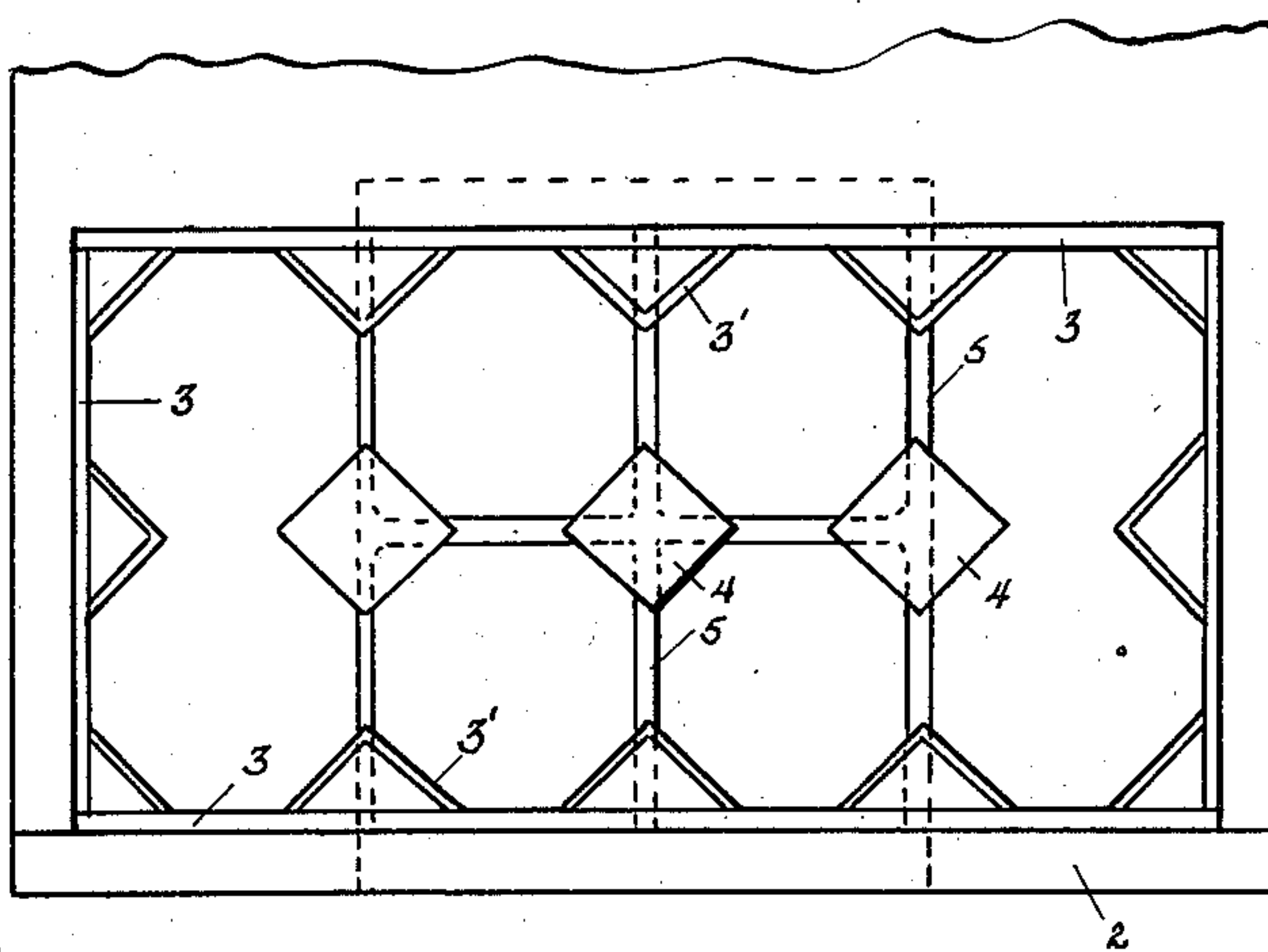


Fig. 4

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UNITED STATES PATENT OFFICE

2,011,971

COAL BRIQUETTE

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Application February 29, 1932, Serial No. 595,737

1 Claim. (Cl. 44-14)

The present invention relates to an improvement in coal briquettes and in particular resides in a coal briquette of specific physical construction.

5 In the handling of coal by the dealer there results a high percentage of coal dust and siftings which, in such form, has no market and represents a total loss.

10 The present invention has for its purpose to provide an inexpensive, molded briquette made from such coal dust and siftings whereby the coal dust and siftings in the form of briquettes may be readily handled and disposed of at a profit.

15 The principal object of this invention is to provide a coal briquette made up of a plurality of regular sections integrally forming a single brick which may be handled and stored as a unit but which may be broken up into smaller sections at the time of consumption.

20 It is a further object of this invention to provide the briquette, in its original form, with a plurality of channels forming flues to facilitate burning.

25 With this and other objects which appear as the description proceeds, this invention resides in the combination and arrangement of elements hereinafter described and set forth in the claim.

30 In the accompanying drawings wherein one preferred embodiment of my invention is set forth:

Fig. 1 is a perspective view of my manually operated coal briquette machine.

Fig. 2 is a vertical cross sectional view of Fig. 1 taken upon the center line.

35 Fig. 3 is an enlarged detailed vertical cross-sectional view taken through one of the cores of the matrix and a completed briquette showing the briquette being partially removed from the matrix.

40 Fig. 4 is a partial top view of the matrix.

Fig. 5 is a perspective view of the molded coal briquette supported upon the pallet employed to remove the briquette from the matrix.

45 As shown in Figs. 1 to 4 the molding machine consists of a frame-work 1 having constructed therein a matrix 2 formed of side and end walls 3 having angle irons 3' welded thereto at spaced intervals and cores 4 in the form of square ended prisms supported at the bottom of the matrix 2 upon a frame 5 secured in the frame-work 1. The faces of the core prisms 4 are similar in form and area to the faces of the angular walls formed by the elements 3 and 3' and are so located in the interior of the matrix 2 as to produce
55 a molded briquette 6, consisting of a plurality of

octahedral prisms joined along substantially right angle frangible planes *a* and *b* as shown in Fig. 5 to provide parallel rows. The recesses *c* in the outer faces of the unit and channels *d* together with the frangible joints define the uniform geometric shapes making up the briquette and assist in the burning of the briquette as a unit. The geometric shapes of the briquette are of a configuration providing substantially right angle frangible joints between adjacent shapes in the same row and in the adjacent row. It will be apparent that when such shapes are broken up and stacked together there will always be provided air passages between adjacent shapes which will facilitate burning.

15 As shown in Fig. 5, pallets 6 are provided to form a bottom for the matrix 2 and a supporting member for the briquette 6' while the same are being removed from the molding machine to harden.

20 In the operation of the briquette machine, a pallet 6 is first placed in the matrix 2 and supported therein on the frame 5; the operator then, by means of the handles 7 secured to the strike off 8, draws the same forward over the matrix 2, the strike off 8 being guided in its forward movement by guiding members 9. With the strike off 8 in a forward position, coal dust and siftings which have been previously mixed with a suitable binder capable of retaining the coal in a unit during subsequent handling and burning is shoveled into the strike off 8 and matrix 2. Altho the type of binder employed forms no part of my invention, bituminous binder and admixtures of Portland cement with calcium chloride have proven successful. With the matrix 2 and the strike off 8 substantially filled with the loose mixture of coal and binder, the operator pulls downward upon the bar 10 to lower the tamper 11 into the strike off 8 and matrix 2 and tamps the loose mixture into the matrix 2, the tamper 11 being equipped with bars 11' which pass between the cores 4 to compress the mixture therebetween. The bar 10 is then released by the operator and the tamper 11 is returned to the position shown in Fig. 1 by the springs 12.

45 With the tamper 11 in a raised position, the strike off 8 is pushed rearward smoothing off the top of the briquette 6' and removes the excess mixture to the rear of the machine. To remove the pallet 6 and briquette 6' from the machine, the foot lever 13 is depressed rocking the shaft 14 through the linkage 15. The rocking of the shaft 14, through the linkage 14' elevates the frame-work 16 guided for vertical movement by sleeve
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member 17 slidably mounted on vertical rods 18. Vertical push rods 19 are threadedly secured to the corners of the frame-work 16 upon the rocking of the shaft 14 are adapted to contact with the bottom of the pallet 6 forming the bottom of the matrix 2 and elevates the same as shown in Fig. 3 to the top of the matrix to permit the operator to remove the pallet 6 and the briquette supported thereby from the machine. To replenish the machine, the operator removes his foot from the foot lever 13 and the frame-work 16 and supported rods 19 are lowered by gravity to again elevate the lever 13 whereupon another pallet 6 may be placed in the matrix 2.

Altho in the description and drawings, I have shown and described an eight sided prism, a similar uniform product could be produced having an increasing number of sides represented by a multiple of four until a cylindrical shaped briquette unit was approached. However, as the product approaches a cylindrical shape the necessary shape of the cores and side and end walls from the manufacturing standpoint made such shape impractical.

From the foregoing description it will be apparent that I have provided a briquette machine which may be profitably employed to manually mold coal dust and siftings into large units capable of being readily handled during the process of manufacture and delivery to the con-

sumers and which may be readily broken up by the consumer into regular prisms of a structure which will burn with an even and open fire in a furnace.

Having thus shown and described my invention it will be seen that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention and I do not wish to be limited to the details herein disclosed but what I claim is:

A molded fuel unit to be burned as such or adapted to be broken into a plurality of uniform geometric shapes, said unit being provided with a plurality of internal vertically disposed channels, a plurality of vertically disposed recesses in the outer surfaces of the unit in opposed relationship to said channels to provide frangible joints, said channels, recesses and frangible joints defining parallel rows of uniform geometric shaped sections, said frangible joints common to any one of said sections and to said rows being substantially at right angles to each other, said channels and recesses facilitating the burning as a unit, said sections when broken along said frangible joints being of a shape whereby axially extending air passages are defined between superimposed sections and burning of the separate sections is improved.

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