

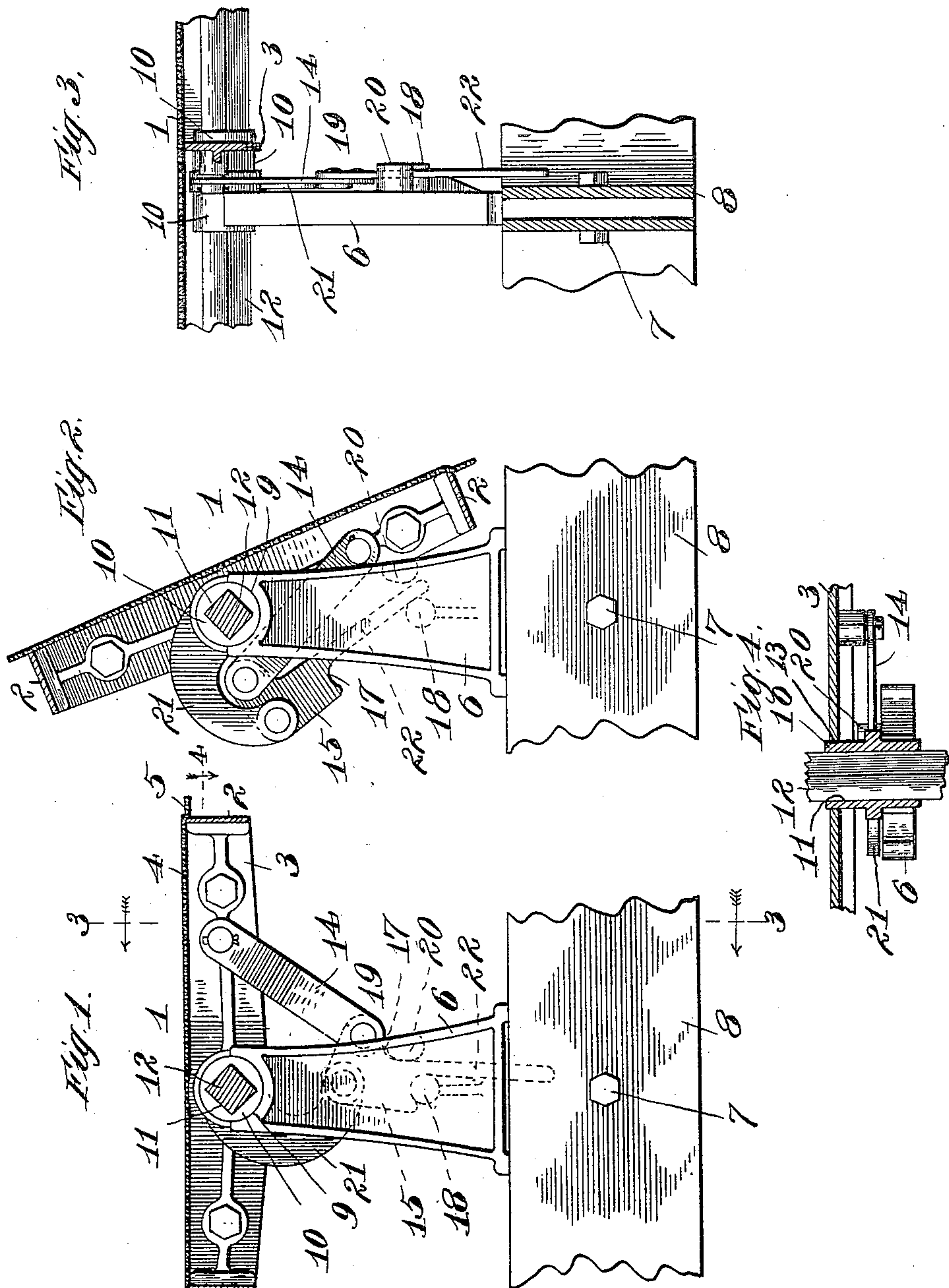
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DUMPING FLOOR.

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DUMPING-FLOOR.

No. 816,716.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN F. DORNFELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dumping-Floors, of which the following is a specification.

This invention relates to sectional dumping-floors, such as those commonly used in malting-kilns.

One of the objects of this invention is the production of a tilting floor-section which shall be self-locking in the horizontal or operative position—in other words, one that when forming a section of a dumping-floor shall be self-supporting in the operative position independently of the remaining sections of the floor.

Another object of the invention is the provision of improved means for locking a dumping floor-section in the operative position.

A further object is the production of means for operating the dumping-floor or a dumping floor-section which shall apply the greatest force at the time when it is most needed. In the embodiment herein shown the operating means is arranged to exert the greatest force when the section is nearing the horizontal position.

The invention also relates to the various advantageous features of construction in dumping-floors hereinafter set forth.

In the accompanying drawings, Figure 1 is a transverse vertical sectional view through a dumping floor-section embodying the features of my invention, said floor-section being represented in the horizontal or operative position. Fig. 2 is a similar view, but showing the section in the dumped position. Fig. 3 is a longitudinal vertical section on the plane of dotted line 3 3 of Fig. 1. Fig. 4 is a detail sectional view on dotted line 4 4 of Fig. 1.

As hereinbefore stated, dumping-floors, such as those used in malt-kilns, are ordinarily made up of a number of sections. In the drawings I have represented but one section, as the remaining sections of the floor may be identical with the one illustrated or, if desired, one or more of the remaining sections may be somewhat modified without affecting the construction or operation of the other sections.

1 refers to a dumping floor-section, said section extending from side to side of the room and comprising the longitudinal side bars 2, a suitable number of cross-bars 3, and

the perforated floor-plate 4. If desired, the edges of said floor-plate may be extended beyond the longitudinal side beams 2, so as to overlie the edges of the floor-plates of the adjacent floor-sections, one of the edges of the floor-plate of each section being depressed to form a rabbet 5, in which the overlapping edge of the next adjacent floor-plate may lie.

The floor-section 1 is carried upon a suitable number of standards 6, secured by means of bolts 7 to girders 8, extending lengthwise of the floor. At its upper end each standard is provided with a semicircular bearing-socket 9, adapted to receive a sleeve 10. The sleeve 10 has a square central opening 11, through which a square shaft 12 extends, said shaft running from one end of the floor-section 1 to the other and extending beyond one end of said section to a point where a socket wrench or crank may be placed upon it for turning said shaft. In the present embodiment the sleeve 10 is long enough to extend through a bearing-opening 13, formed in the adjacent cross-bar 3. It will thus be seen that the floor-section 1 is rotatably supported at a number of points in its length upon the standards 6. The shaft 12 extends somewhat to one side of the longitudinal center of the floor-section, which latter therefore tends to tilt into the position shown in Fig. 2. The means for supporting it in the horizontal position will next be described.

A link 14 is pivotally connected at one end with a suitable part of the floor-section—as, for example, the cross-bar 3 adjacent to the standard 6—and at its other end said link is pivotally connected with a block 15. Said block has a notch 17 in its lower side adapted to engage a stud 18, projecting from the side of the standard. By reference to Fig. 1 it will be seen that the link 14 and the block 15 constitute the two members of a toggle-lever 19 and that said members are aligned with each other when the floor-section is in the horizontal position. Said toggle-lever is prevented from flexing in one direction by a stop-stud 20 upon the standard. For flexing the lever in the opposite direction I employ in the embodiment herein shown a curved arm 21, fixed at one end with relation to the sleeve 10 and at its other end pivotally connected with the block 15. A rotation of the shaft 12 moves the arm 21 and flexes the toggle-lever 19, whereupon the unbalanced weight of the floor-section and its load will cause said floor-section to tilt, thereby fur-

ther flexing said lever. The block 15 is provided with an extension or tailpiece 22, adapted to slide between the studs 18 and 20 in order to guide said block to its proper place upon the restoring or straightening movement of the toggle-lever 19. It will be seen that by reason of the notch 17 and extension 22 the member 15 of said toggle-lever has a loose or sliding connection with its fulcrum 18. It is obvious that a sliding connection might be obtained by other means.

The operation of a floor constructed of sections similar to the one herein illustrated will now be understood. When it is desired to dump the floor, the shafts 12 of the sections 1 are successively rotated in any convenient way. The arm 21 being fixed with relation to said shaft, the pivotal joint of the toggle-lever 19 is flexed, as shown in Fig. 2, causing a tilting of the section. The load upon the sections having been dumped, said sections are restored to the horizontal position by rotating the shafts 12 in reverse order, when the toggle-levers 19 will be straightened into the position shown in Fig. 1. At the beginning of the restoring movement, when the floor-section is in a position approximating the vertical there is a considerable amount of movement of the floor with reference to the movement of the shaft; but when the floor-section is nearing the horizontal and the force needed to move it is greater the extent of movement of the floor diminishes with reference to the movement of the shaft 12, thereby providing the additional power needed in accordance with the well-known action of toggle-levers. When the floor-section is in the horizontal position, its unbalanced weight is supported upon the straightened toggle-lever 19 and the stud 18. It will be seen that each floor-section is supported in the horizontal position independently of the other floor-sections.

I claim as my invention—

1. In a dumping-floor, in combination, a floor-section; a standard for pivotally supporting said floor-section; and means on said floor-section and said standard for supporting the unbalanced weight of said section.

2. In a dumping-floor, in combination, a pivotally-supported floor-section; a stationary member; and a toggle-lever connected with said floor-section and said stationary member and adapted to support the unbalanced weight of said section.

3. In a dumping-floor, in combination, a supporting-standard; a floor-section pivotally supported upon said standard; and a toggle-lever connected with said floor-section and with said standard for supporting the unbalanced weight of said section.

4. In a dumping-floor, in combination, a pivotally-supported floor-section; a stationary member; and a toggle-lever connected with said stationary member and said floor-

section, one of said connections being a sliding connection.

5. In a dumping-floor, in combination, a pivotally-supported floor-section; a toggle-lever, one member of which is pivotally connected with said floor-section; and a fulcrum for the other member of said toggle-lever, said last-mentioned member having a sliding connection with said fulcrum.

6. In a dumping-floor, in combination, a supporting-standard; a floor-section pivotally supported upon said standard; and a toggle-lever pivotally connected with said floor-section and loosely connected with said standard.

7. In a dumping-floor, in combination, a floor-section; a shaft therefor; a standard for supporting said shaft; a toggle-lever connected with said floor-section and said standard; and an arm moving with said shaft for flexing said toggle-lever.

8. In a dumping-floor, in combination, a floor-section; a standard; a shaft; a sleeve on said shaft rotatably supported in said floor-section and said standard; means for locking said floor in the operative position; and an arm fixed to said sleeve for operating said locking means.

9. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting member; a toggle-lever, one member of which is pivotally connected with said floor-section and the other member of which lever is adapted to rest upon said supporting member; means for preventing said toggle-lever from flexing in one direction; and a guide extension on the second-mentioned toggle-lever member.

10. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting-standard; a stud on said standard; a toggle-lever connected with said floor-section and adapted to bear against said stud; and a stop-stud on said standard.

11. In a dumping-floor, in combination, a pivotally-supported floor-section; a supporting-standard; a stud on said standard; a toggle-lever pivotally connected with said floor-section and adapted to bear against said stud; a stop-stud on said standard; and an extension on one member of said toggle-lever adapted to move between said studs.

12. In a dumping-floor, in combination, a supporting-standard; a floor-section; a shaft supported in said floor-section and said standard; an arm fixed with relation to said shaft; a block pivotally connected with said arm, said block having a notch in its lower side; a stud on said standard adapted to lie in said notch; a link connected with said floor-section and with said block; and a stop-stud for limiting the movement of said block and link in one direction.

13. In a dumping-floor, in combination, a floor-section provided with a bearing; an an-

gular shaft; a sleeve fitted upon said shaft,
one end of said sleeve lying in said bearing; a
standard having a bearing for the other end
of said sleeve; an arm fixed with relation to
5 said sleeve; a block pivotally connected with
said arm; a link pivotally connected with
said block and said floor-section; a stud for
supporting said block; a stop-stud for limit-

ing the movement of said block and link in
one direction; and a guide extension on said 10
block adapted to lie between said studs.

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