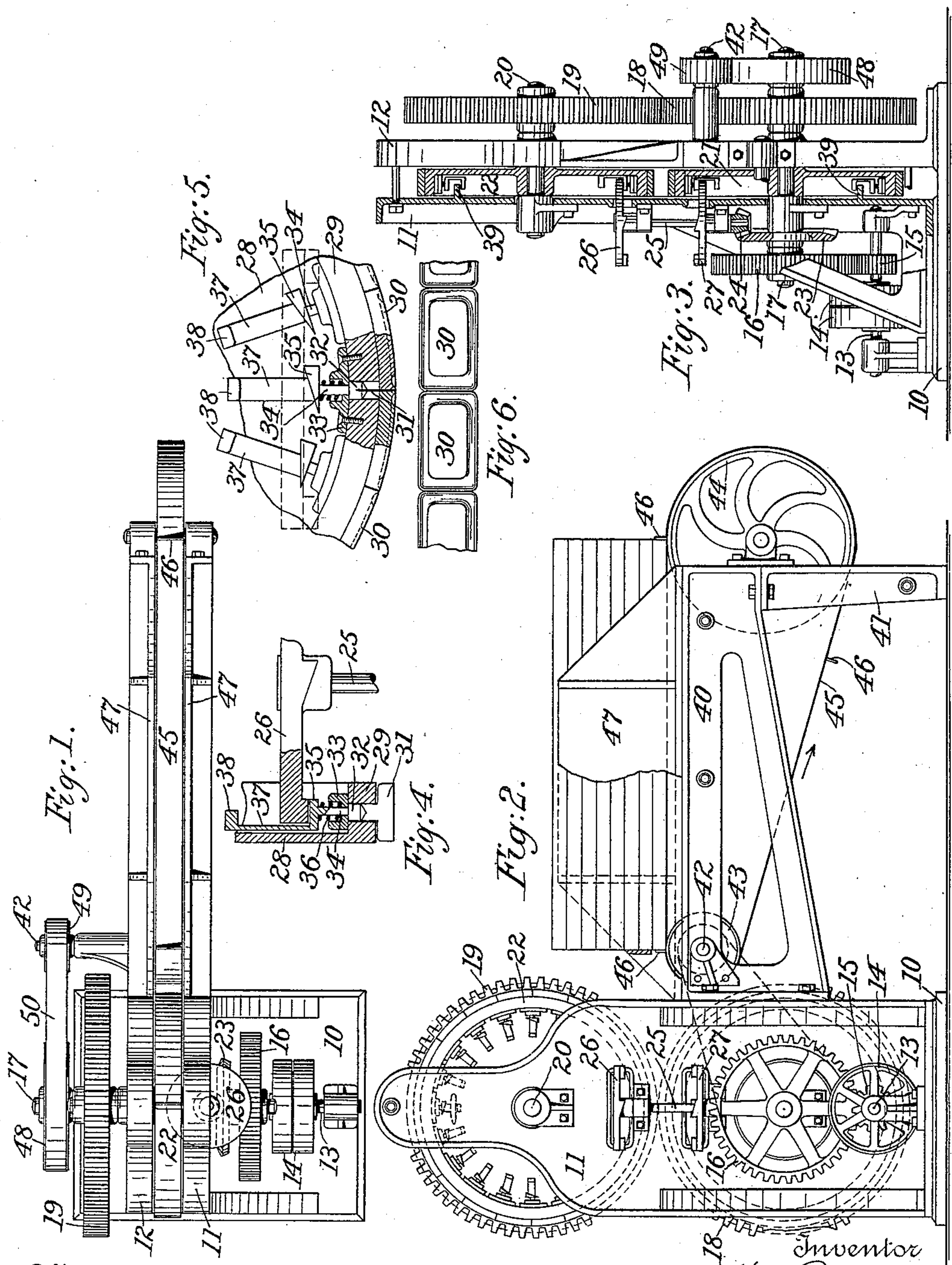


(No Model.)

O. W. BAND.  
AUTOMATIC SOAP PRESS.

No. 487,818.

Patented Dec. 13, 1892.



Witnesses  
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# UNITED STATES PATENT OFFICE.

OTTO W. BAND, OF BROOKLYN, NEW YORK.

## AUTOMATIC SOAP-PRESS.

SPECIFICATION forming part of Letters Patent No. 487,818, dated December 13, 1892.

Application filed February 26, 1892. Serial No. 422,834. (No model.)

*To all whom it may concern:*

Be it known that I, OTTO W. BAND, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Automatic Soap-Presses; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the figures of reference marked thereon, making a part of this specification.

The object of my invention is to produce a machine in which long bars of soap are fed automatically to a cake forming and pressing mechanism in which at one operation cakes of any desired shape may be formed and separated from each other.

To this end my invention consists in the mechanism hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a plan view of the machine. Fig. 2 is a side elevation of the same, partly broken out. Fig. 3 is a view, partly in elevation and partly in transverse section, with a part of the feeding mechanism broken away. Figs. 4, 5, and 6 are detail views, on an enlarged scale, of a portion of one of the die-rolls.

Upon a suitable base 10 are erected the side frames 11 and 12, which support the cake forming and pressing devices. A shaft 13 rotates in bearings, also supported by the base, and is fitted with driving-pulleys 14 and a pinion 15. The latter meshes with a gear 16, fast upon a shaft 17, which is journaled in the side frames 11 and 12 and has fixed thereon a gear 18. The latter drives a gear 19, of equal size, which is fixed to a shaft 20, journaled in the said frames 11 and 12 above the shaft 17. The two shafts 17 and 20 bear, respectively, the lower and upper die-rolls 21 and 22. The shaft 17 may also bear a bevel-gear 23, which meshes with a bevel-pinion 24 upon the lower end of a vertical shaft 25, which rotates in bearings supported by the side frame 11. Said shaft 25 has fixed thereto, near its upper and lower ends, cam-disks 26 and 27, for a purpose to be referred to.

Each die-roll is formed, preferably, with a web 28 and a lateral flange 29, (see Figs. 4 and 5,) the dies 30 being secured to the rolls by bolts, (not shown,) which pass through the flange 29. The dies 30 are separated from

each other by a space sufficient to permit the free movement of a knife 31, which is fixed to a head 32, adapted to slide in an aperture formed in the flange. A block 33 is secured on the inside of the flange over the aperture and is itself perforated to receive a stem 34, which projects from the head 32 and carries a lug or cam-piece 35. A spring 36 may encircle the stem between the block 33 and the cam-piece 35 to keep the knife 31 normally retracted. The stem 34 or the cam-piece 35 also has fixed thereto an arm 37, which bears a lug 38, projecting inwardly over the cam 35. As the rolls are rotated and as each knife approaches the point where the peripheries of the two rolls are nearest its cam-lug 35 is engaged by a cam on one of the disks 26 27 and is caused thereby to thrust the knife outwardly, the gearing for driving the rolls and for driving the cam-disks being timed, so that the cams on the disk shall co-operate properly with the cam-lugs on the knife-stems. As the rolls continue to move each knife may be withdrawn by the spring 36, or it may be withdrawn by an incline 39, which is fixed to the inner side of the side frame 11 to co-operate with the lug 38.

The bars of soap might be fed to the pressing mechanism by hand; but I prefer to provide means for feeding the bars one at a time and in close succession from a pile of bars. To this end a frame 40 may be supported at one end by the side frames 11 12 and at the other by a lug 41. Near the inner end of the frame 40 is journaled a shaft 42, which has fixed thereto a drum 43, and near the outer end of the frame is journaled a drum 44. A belt 45, carried by the two drums, is provided with lugs or ears 46, which are spaced far enough apart to receive between them lengthwise a single bar of soap. A number of bars may be placed upon the belt between guide-plates 47, as represented in Fig. 2, and as the belt is caused to travel each lug or ear 46 as it comes up behind the pile of bars will engage the lowermost bar of the pile and feed it forward between the die-rolls. The belt may be driven by pulleys 48 and 49, fixed, respectively, on the shafts 17 and 42 and connected by a belt 50.

In the operation of my machine the bars



are fed forward singly, as just described, and as they pass between the die-rolls are pressed and formed into cakes according to the shape of the dies on the rolls. At the proximate  
5 points in the peripheries of the rolls and on the line between two successive dies the two corresponding knives are advanced, as described, each knife moving half-way through the bar, and thereby separating each cake  
10 from its successor.

I do not intend to limit myself to the exact form of apparatus shown in the drawings, as various modifications of details of construction might be made without departing from  
15 the spirit of my invention.

I claim as my invention—

1. In a soap-press, the combination of a pressing-roll, a series of dies secured about the periphery of said roll and slightly separated from each other, a series of knives supported by said roll and adapted to move radially thereon between said dies, and means to  
20 actuate said knives to separate successive cakes, substantially as shown and described.

25 2. In a soap-press, the combination of a pressing-roll, a series of dies secured about

the periphery of said roll and slightly separated from each other, a series of knives supported by said roll and adapted to move radially thereon between said dies, an independently-rotatable cam-disk adapted to actuate  
30 said knives, and means for driving said cam-disk, substantially as shown and described.

3. In a soap-press, the combination of a pair of pressing-rolls, a series of dies secured  
35 about the periphery of each roll, the dies of each series being slightly separated from each other, a series of knives supported by each roll and adapted to move radially thereon between the dies, independently-rotatable cam-  
40 disks mounted upon an axis at right angles to the axis of the rolls and adapted to actuate the corresponding knives of each series in unison, and means for driving said cam-  
45 disks, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

OTTO W. BAND.

Witnesses:

A. N. JESBERA,  
L. C. L. JORDAN.