

(No Model.)

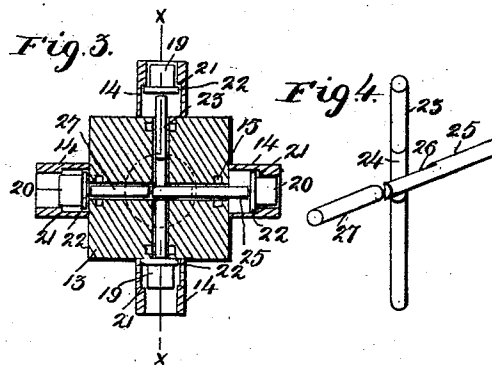
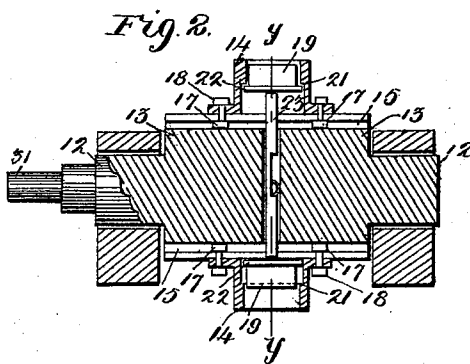
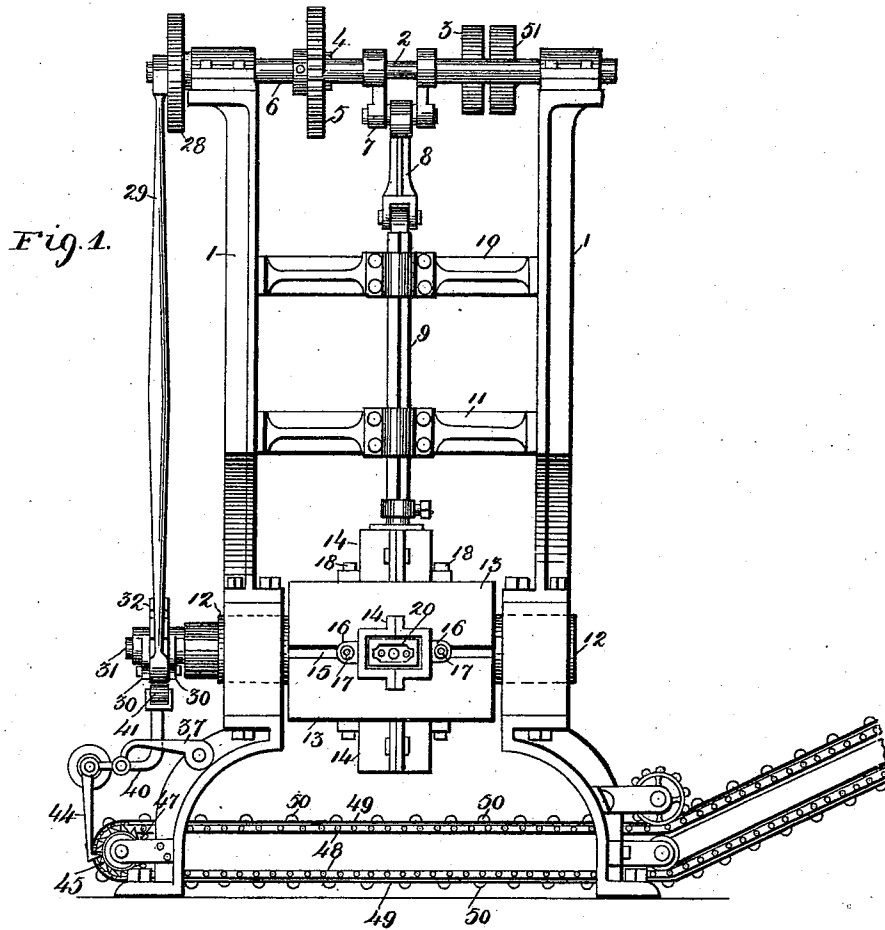
2 Sheets—Sheet 1.

E. ELBERT.

SOAP PRESSING OR STAMPING MACHINE.

No. 525,070.

Patented Aug. 28, 1894.



Witnesses

John B. Schuyler
Edw. Beckmann Jr.

Inventor

Emil Elbert.

By *his Attorneys,*

Keller & Storer

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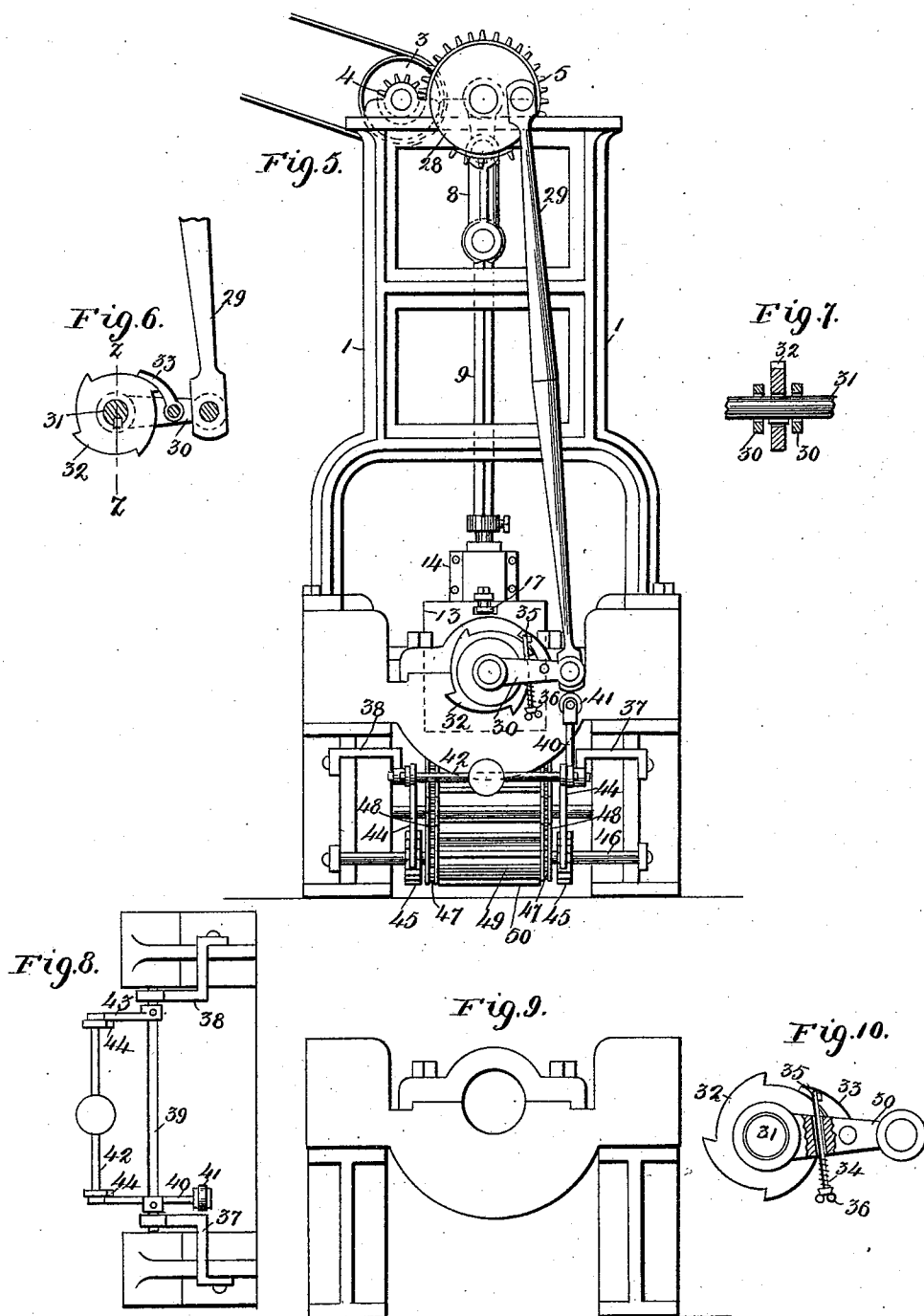
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UNITED STATES PATENT OFFICE.

EMIL ELBERT, OF ST. LOUIS, MISSOURI.

SOAP PRESSING OR STAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 525,070, dated August 28, 1894.

Application filed May 5, 1894. Serial No. 510,131. (No model.)

To all whom it may concern:

Be it known that I, EMIL ELBERT, of the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Soap Pressing or Stamping Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in soap pressing and stamping machines and consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a front elevation of my complete invention. Fig. 2 is a section taken on the line $x-x$ of Fig. 3. Fig. 3 is a section taken on the line $y-y$ of Fig. 2. Fig. 4 is a perspective detail of the operating rods for the die heads. Fig. 5 is a side elevation of my invention. Fig. 6 is a detail of the ratchet wheel and pawl and the lower portion of the pitman operating the same. Fig. 7 is a section on the line $z-z$ of Fig. 6. Fig. 8 is a top plan of the mechanism for operating the carrier. Fig. 9 is a detail of the side of the bottom of the bed of frame; and Fig. 10 is an enlarged detail similar to Fig. 6, but showing in addition the spring for operating the pawl.

The object of my invention is to construct a soap stamping machine wherein the soap cakes can be introduced and suitably stamped, and in regular order be delivered therefrom upon a suitable carrier, the receptacle or head wherein the dies for stamping the soap operate being adapted to revolve in a vertical plane so as to present a new opening for the reception of the head of the main plunger, and the reception of a fresh cake of soap, and at the same time to eject a cake previously stamped.

The invention consists in details to be described as follows:

Referring to the drawings, 1 represents an upright frame over which is mounted a main driving shaft 2 with driving pulley 3 leading to any suitable source of power. The shaft 2 carries a gear 4 meshing with a gear 5 mounted centrally over the frame 1 on the shaft 6. At the medial portion of the shaft 6 is a crank arm 7 with which co-operates a connecting rod 8 operating a reciprocating

plunger 9, the plunger being guided within suitable openings of the transverse brace rods 10 and 11. Mounted at the base of the frame and supported upon suitable trunnions 12 is a rectangular head 13 adapted to revolve in a vertical plane. Each of the longitudinal faces of the head has a central opening cut therein over each of which openings is secured a rectangular open receptacle 14 for receiving a cake of soap and also for receiving the die head of the plunger 9. To accurately adjust each receptacle under the head of the plunger I form a longitudinal slot 15 centrally disposed along each face of the head 13, and each receptacle is provided with a lug 16, a suitable belt 17 being made to pass through each lug and slot the parts being firmly secured by nuts 18. By this arrangement each receptacle can be slid along the slot 15 until accurate adjustment is attained when it can be firmly secured to the face of the head. The receptacles 14 are directly opposite each other on the four faces of the head 13, suitable die heads 19 and 20 being adapted to operate within the receptacles. The outward movement of each die is limited by a shoulder 21 along the inner wall of the receptacle striking a flange 22 on each die head. The pair of dies 19 are operated by an integral rod 23 having a central reduced portion 24, and the pair of dies 20 are operated by the rod 25 secured to one die and having a reduced portion 26 overlapping the reduced portion 24; and the rod 27 operating the opposite die, the adjacent ends of the rods 25 and 27 striking each other during the reciprocation of the dies. The pairs of dies are operated by the plunger head as will be hereinafter described.

Secured at one end of the shaft 6 is a crank disk 28 to the outer face of which is loosely secured the pitman 29 whose opposite or lower end is loosely secured to one end of each of the arms 30 whose opposite ends loosely embrace the reduced projecting end 31 of one of the trunnions 12; and between the said arms is rigidly secured on the reduced end 31 a ratchet plate 32, said plate having the same number of teeth disposed along its periphery as there are receptacles to the box 13. Pivoted between the arms 30 at a convenient point is a pawl 33 co-operating with the teeth

on the plate 32, the pawl being held against the teeth by the spring 34 encircling a rod 35 interposed between the arms 30 and which has one end secured to the pawl, its free end carrying a thumb nut 36 between which and the under surface of the arms the spring is confined and encircles the rod. The operation of this portion of the machine is obvious from the description: It is to be observed that when the plunger 9 is in its lowest position, the point at which the pitman 29 is secured to the crank disk 28 will be approximately at right angles to the direction of the depending crank arm 7 operating the plunger. This is best seen in Fig. 5. Upon further rotation of the shaft 6, the crank arm 7 will withdraw the plunger head from the receptacle 14 within which it has just been operating, and at the same time the pitman 29 will be carried downward by the rotation of the crank disk 28, until the lower end of said pitman to which the arms 30 are attached depresses the latter sufficiently for the pawl 33 pivoted between them, to take hold of the tooth of the next succeeding quadrant of the plate 32. Further revolution of the crank disk 28 will carry the pitman 29 upward, the pawl 33 carrying the plate 32 and consequently the head 13 a quarter of a revolution, so that the next receptacle 14 on the adjacent face of the head is presented opposite and in line with the now again descending plunger. It is obvious of course that as the upper end of the pitman 29 revolves its lower end merely has an up and down motion for purposes of causing the pawl to engage the teeth on the plate 32. As each receptacle 14 of the head 13 is successively presented in line with the plunger, a cake of soap is introduced therein, the impressions on its opposite faces being made by the forms on the plunger head and the reciprocating dies within the box. As the head 13 revolves the cake of soap will be retained in its receptacle 14 until forced out by the die reciprocating in an opposite direction, which happens when its opposite end is pushed down by the plunger. This is shown in Figs. 1 and 3, Fig. 1 showing an endless apron or carrier the operation of which I shall now proceed to describe.

At the bottom of the frame 1 under the lower end of the pitman 29 are brackets 37 and 38 between the free ends of which is mounted a rocking bar 39, there being secured at one end of the bar immediately under the pitman 29 a bent rocking lever 40 whose upper end carries an anti-friction roller 41, and from the outward projecting end of which extends a rod 42 suitably weighted to an arm 43 secured to the opposite end of the rocking bar 39. From either end of the rod 42 and adjacent to its connection with the lever arm 40 and arm 43 depend the hooked swinging bars 44, the hooked end of each being adapted to co-operate with a toothed ratchet disk 45 mounted on a shaft 46. Mounted on the shaft 46 between the disks 45 are sprocket wheels

47 over each of which passes a sprocket chain 48 between which is spread a canvas sheet 49 on which the soap cakes drop as before stated. A series of transverse rods are mounted over the canvas sheet as indicated by the numeral 50 to prevent the cakes from rolling back as the carrier advances along the incline indicated in Fig. 1. The operation of the carrier is obvious from the description. As the lower end of the descending pitman 29 strikes the anti-friction roller 41 of the rocking lever 40, the lever will be rocked so as to elevate the hooked bars 44 normally in engagement with the teeth of the toothed disks 45, each elevation of the hooks turning the toothed disks mounted on the shaft 46, and hence advancing the belt secured to the sprocket chains passing over the sprocket wheels mounted on said shaft 46. As the lower end of the pitman 29 ascends thus releasing the lever 40 and its co-operating parts, the hooked bars 44 will be depressed to their normal position by reason of the weight on the rod 42, in readiness for the next succeeding operation. It is to be understood of course that the parts are proportioned so that the belt will advance sufficiently to accommodate each cake as it is successively forced from the receptacles 14. The crank disk to which the upper end of the pitman 29 is secured can have a substitute in the form of a crank arm, and in fact the machine can be altered in many details without departing from the spirit of my invention. 51 is a loose pulley on the main driving shaft.

The soap is fed to the die receptacles by hand. It is to be observed that the receptacles on the side faces of the revolving box are in alignment or opposite one another, and that as a cake of soap in one receptacle is stamped that in the aligning receptacle above the traveling belt is ejected, both operations resulting from a single action of the plunger. The object of making one rod 23 integral and the rods 25 and 27 in two pieces results from the manner of constructing the dies. The integral rod is inserted into the die box first, and it is evident that to insert the second rod at right angles to the first the second must be made in two pieces to pass the first and yet be central with respect to the dies that it is to operate. The receptacles on the opposite faces of the box are thus in alignment and each pair is operated simultaneously.

Having described my invention, what I claim is—

1. In a soap stamping machine, a suitable frame, a reciprocating plunger mounted on said frame, a head adapted to rotate in a vertical plane, a series of aligning receptacles on the side faces of said head adapted to successively come in line with the plunger head, and suitable dies operating simultaneously in each pair of aligning receptacles to stamp one cake of soap and successively eject the one previously stamped, substantially as set forth.

2. In a soap stamping machine, a rotating

head having a receptacle on each side face thereof and oppositely located suitable dies for each receptacle, a rod having a reduced medial portion, operating one opposite pair
5 of dies, a second rod operating one of the second pair of dies and having a reduced portion overlapping the reduced portion of the first rod, and a rod operating the second die of the second pair and in line with the rod
10 operating the first die of the second pair, substantially as set forth.

3. In a soap stamping machine, a suitable frame, brackets secured to the lower portion thereof, a bent rocking lever having an anti-
15 friction roller at one end, mounted on one of said brackets, a suitable rocking bar between said brackets to which the rocking lever is

secured, an arm secured to the rocking bar adjacent to the second bracket, a weighted rod connecting the ends of the rocking lever 20 and arm, depending hooked bars adjacent to the ends of the weighted rod, a ratchet wheel co-operating with each hooked bar, a shaft for said ratchet wheels, an endless carrier on said shaft, and an oscillating pitman adapted 25 to strike the anti-friction end of the rocking lever for operating the several parts, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

EMIL ELBERT.

Witnesses:

JAMES J. O'DONOHUE,

EMIL STAREK.