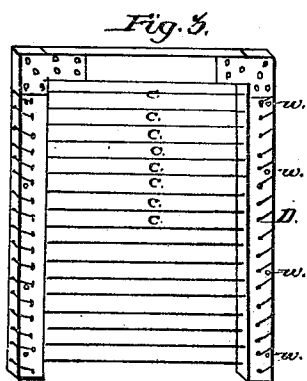
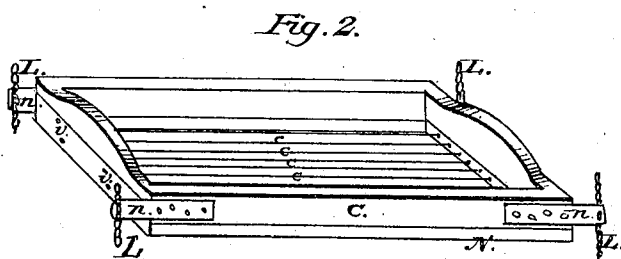
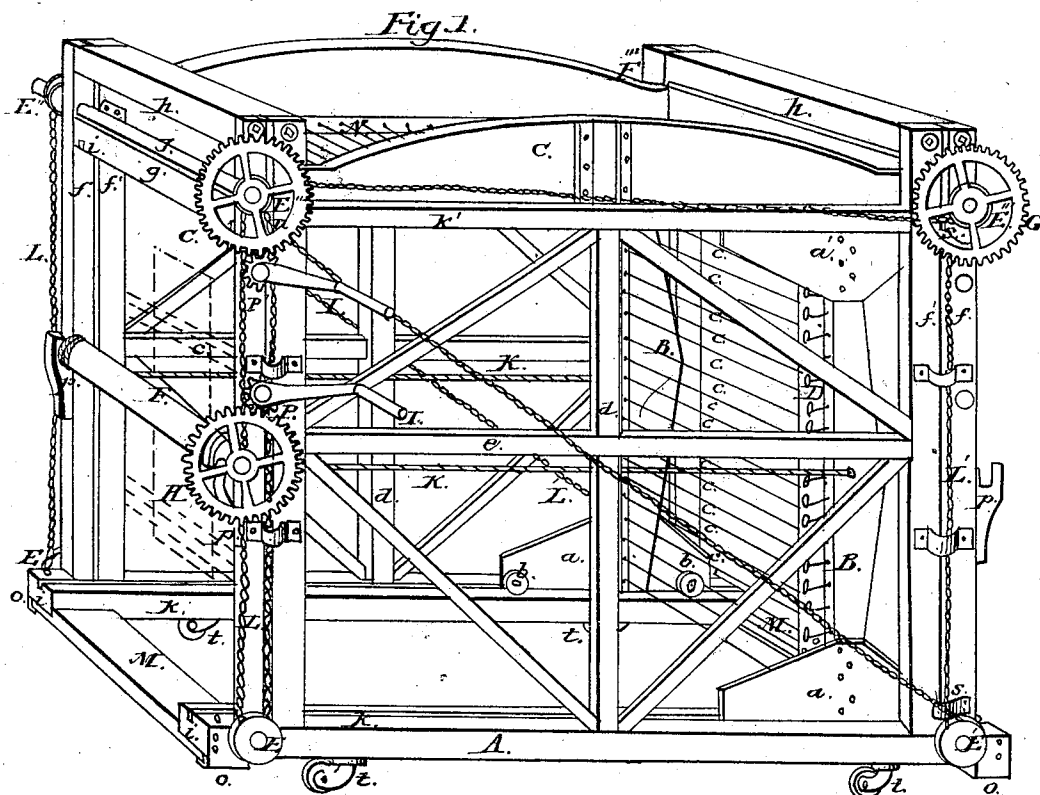


No. 81,200.

PATENTED AUG. 18, 1868.

G. T. PALMER & P. P. BUSH.
MACHINE FOR CUTTING SOAP INTO SLABS.



WITNESSES:

P. C. Bush
L. W. Mpharr

INVENTOR:

Geo. T. Palmer
Phil P. Bush

United States Patent Office.

GEORGE T. PALMER, OF BROOKLYN, NEW YORK, AND PHILO P. BUSH, OF
NEW HAVEN, CONNECTICUT.

Letters Patent No. 81,200, dated August 18, 1868.

IMPROVED MACHINE FOR CUTTING SOAP INTO SLABS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, GEORGE T. PALMER, of Brooklyn, in the county of Kings, in the State of New York, and PHILO P. BUSH, of New Haven, in the county of New Haven, in the State of Connecticut, have invented a new and useful Machine for Cutting Masses of Soap into Slabs and into Bars; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation thereof, reference being had to the annexed sheet of drawings, which make a part of this specification.

The nature of our invention more particularly consists in making a machine to cut masses of soap into slabs and into bars, while the soap remains upon the bed-piece of the frame in which it has been moulded, and the bed-piece resting upon the floor of the factory; and after the cutting has been effected, to be enabled to pass the frame of the machine onward in a direct line over the cut soap, and over the next mass of soap in line which is to be cut, and thus proceed in like manner from one mass of soap to another in line, until the frames of soap (which may be the whole length of the factory-room) have been cut, when it will be only necessary to roll the machine to the first mass of soap in the next line, and proceed in like manner, until the whole of the soap which is ready for cutting has been rendered into bars.

The machine and cutting-frames are so made and arranged that a mass of soap can be cut into bars, and the machine passed off from the cut soap, leaving it free, and clear of obstruction to the workmen when the bars are being stamped and racked; also, the whole work of cutting the mass of soap into slabs and bars, and the machine passed off from the cut soap, can be done without the necessity of making a back draw of the wires after the cutting is effected.

The machine is equally well adapted to be run over a mass of soap, and cut it up, when the masses of soap are in line, with their sides toward each other, and then be withdrawn and run over the next mass of soap, and repeat the operation of cutting.

In the annexed drawings—

Figure 1 is a perspective view of our improved machine for cutting soap.

Figure 2 is a perspective view of the frames C and N, by which a vertical cut is made through the soap.

Figure 3 is a face view of the removable cutting-wire frame D, by which a horizontal cut is made through the mass of soap.

Similar letters in the different drawings denote like parts, and in which—

A is the frame of the machine, and is mostly made of wood. The sides of the machine are composed of uprights *f f'*, rails *k k'*, and such other suitable parts and braces which would be adapted to the arrangement of the slides, or guides to the cutting or carrier-frames, and the gearing or connections for the purpose of effecting the cutting, however they may be arranged. The sides of the frame A are combined and held together by the cross-rails *g* and *h*, and are supported at the bottom by the removable braces M M, which prevent the lower part of the frame A and lower part of the cutting-wire frame D from being compressed or drawn inward when the frame D is pressing its cutting-wires through the soap.

B is a horizontally-moving, open-bottomed, or inverted U-shaped carrier-frame, upon which the open-bottomed or inverted U-shaped cutting-wire frame D is secured on the face thereof.

a a are steadying-plates, attached to the frame B, and whose extreme edges protrude into the grooves *i i*, in rails *k k*.

b b are rollers, attached to plates *a a*, but ribs, additional rollers, or other suitable means of support, may be substituted therefor.

c c c are cutting-wires, on frames D and N.

The cutting-wire frame D is secured, by pins or screws through holes *w w*, to the carrier-frame B, but spring-catches, or other suitable means of securely holding it in position, that can be readily detached, will serve the purpose.

F is a removable windlass, which is supported in bearings *p p*, and extends across the end of the frame A. K K are ropes, one end of which is secured to the windlass F, and the other ends attached to the sides of the frame B by links or hooks.

C is a carrier-frame, to which the cutting-wire frame N is attached by means of pins *v v*. The pins *v v* may be substituted by spring-catches, or other well-known devices, whereby the frame N may be held against the carrier-frame C, and also readily released therefrom when required.

n n are projecting arms to frame C, which protrude through between the unrights *f f'*, and to which the chains L L' are attached, parts of which are shown in fig. 2.

E E' are grooved chain-pulleys, attached to the bottom of frame A. E'' E'' are double driving chain-pulleys. E''' E''' may also be driving-pulleys, in order to drive or work the cutting-frames from both ends of the machine, if it should be required; but in all ordinary cases it will be sufficient to work the cutting-frames from one end of the machine only.

The chains L L are attached to the arms *n* of the frame C, and pass over the driving-pulleys E'' E'', and under the loose pulleys E E. The chains L L are flat-linked chains, and are attached to the arms *n*, at the opposite end of frame C, and pass over pulleys E''' E''', and driving-pulleys E'' E'', and under pulleys E', so that when the driving-pulleys E'' E'' are turned, the frames C and N will be moved up or down, in accordance with the direction that the driving-pulleys are turned.

J is a shaft, to which the driving-pulleys E'' E'' and wheel G are attached.

o o are lipped plates, secured to the rails *k k*, which support the braces M M in place. The braces M M may be hinged to the frame A, or supported and secured to it in any suitable way.

t t are caster-rollers.

P P' are pinions, which gear into the wheels G and H.

I I are driving-handles.

R is a removable board, (which is shown by the dotted lines,) for the purpose of supporting the mass of soap against the pressure exercised upon it when it is being cut by the wires of the frame D.

Any suitable means may be used to adjust the machine or cutting-wire frames to the proper position to cut the soap, but the bed-piece of the mould-frames should be made uniform, and of a size to fit the bottom of the machine, which would supersede the necessity of special adjustment.

We have herein shown a simple means of gearing and connections for operating the cutting-wire frames, but we do not confine ourselves to any particular arrangement or description of gearing or connections for moving the frames for cutting the soap; neither do we confine ourselves to the position or arrangement of the guides to the carrier and cutting-wire frames, as they may also be modified, so that the guides may be made at the centre of the frames, or at any position between the ends of the frames. The pulleys and chains, and the ropes herein shown, may be placed either inside or outside of the frame A, which may be best suited to any change made in the arrangements for operating the cutting-frames, and the parts of the frame A may be changed to adapt it to such alteration. Cross-wires may also be used in the same frame, to cut bars in short lengths.

The operation of the machine is thus: Strip the sides of the mould-frames from the mass of soap. Remove from the machine the braces M, windlass F, support R, and frames B D, or such parts as may be necessary. Then run the machine over the mass of soap; place the support R in position at the windlass-end of the machine, and the frames B D at the opposite end; place the windlass F in the supports *p*, hook on the ropes K to the frame B, replace the braces M, and the machine will be ready for work. Then turn the pinion P by means of handle I, which will rotate the wheel H and windlass F, and wind up the ropes K, and thereby draw the cutting-wires *c c c*, of frame D, through the soap, in a horizontal line, and cut it into slabs, after which remove the windlass F, support R, and frames B D. The soap being cut into slabs, turn the pinion P' by means of handles I, which will rotate the wheel G and pulleys E'' E'', which will operate the chains L L', and bring the frames C and N downward, and thereby produce a vertical cut through the slabs of soap, and render it into bars, after which remove the pins *v v*, when the frame N will be released from the frame C, and rest at the bottom of the vertical cut in the soap, and run the carrier-frame C up to the top of frame A, clear of the cut soap. Then remove the braces M, and roll the machine away from the cut soap, and over the next mass of soap to be cut, when replace the cutting-wire frame N by a duplicate thereof, and replace the removed parts, when the machine will be ready to repeat the operation of cutting.

When duplicates of the cutting-wire frames N are kept on hand, the machine may be kept to work while the cut soap or bars are being stamped and racked.

When it is required to cut a different-sized bar, the frames N and D are replaced by other frames, having cutting-wires gauged to the proper width.

The machine may be provided with a register or tally, to denote the number of masses or frames of soap cut by it, should it be required, and attached to it at any place convenient, to connect with the working parts of the machine to make it register.

It will be observed that in our machine the frame A is open lengthwise at the bottom, and can be made to pass on and embrace the mass of soap, and cut it into slabs, and then into bars, and then passed off, and away from the cut soap, in the same direction, thus passing over and away from the soap in a direct line; also, that both the cutter-wire frames move in the process of cutting the soap, each cutting-frame independently of the other, the soap remaining still upon its bed-piece, and not moved in the process of being cut.

The three principal features we claim in our improved machine are, first, that the frame of the machine can pass on and over the mass of soap to be cut, and after the soap has been cut, pass away from it in a straight line to the next mass of soap, and repeat the operation of cutting; second, that the horizontally-slabbings frame

and the vertically-cutting frame both move, and independently of each other; third, that the soap is cut into slabs, and then into bars, while it is at rest, and the machine moved away, clear from the cut soap, without the necessity of back-drawing the cutting-wires.

Our improved machine (when properly constructed, and arranged with the bed-pieces of the soap-mould frames) will enable one man to cut a mass of soap weighing from ten to fifteen hundred pounds into slabs, and then into bars, (inclusive of moving the machine to and from the soap,) in much less time than the space of ten minutes, and cut it more evenly, and in a superior manner, than it is possible to cut the soap by hand, in the manner now practised.

There has not been made, as yet, a soap-cutting machine that has come into general use, or that would meet the exigencies of the case, or the requirements of soap-manufacturers, apart from this, our improved machine.

Having thus described our improved soap-cutting machine, what we claim as our invention therein is—

1. The open-bottomed frame A, made in such manner that it may be passed entirely over a mass of soap, substantially as and for the purpose herein shown and described.
2. The reciprocating carrier-frame C, when made separate from the cutting-wire frame N, for the purpose shown and described.
3. The combination, and arrangement, in relation to each other, of the carrier-frame C and removable cutting-wire frame N, substantially as and for the purpose set forth.
4. The horizontally-moving, open-bottomed, or inverted U-shaped carrier-frame B, for the purpose herein shown and described, said frame moving independently of and disconnected from frames C and N.
5. The open-bottomed or inverted U-shaped cutting-wire frame D, for the purpose of cutting masses of soap, said frame being independent of and disconnected from frames C and N.
6. The combination, and arrangement in relation to each other, of the carrier-frame B and removable cutter-wire frame D, substantially as and for the purpose shown and set forth.
7. The windlass F, arranged across the end of the frame of the machine, for the purpose shown and described.
8. The removable or shifting braces M M, or their equivalents, for the purpose herein shown and set forth.
9. Operating the cutting-wire frames of a soap-cutting machine with chains and pulleys, and such suitable gearing and means of propulsion as may be required therefor, substantially as herein shown and set forth.
10. A soap-cutting machine, composed of frame A, independent vertically-moving cutting-frame N, and independent horizontally-moving cutting-frame D, when combined with suitable gear or means for operating the cutting-frames, substantially as herein described.

GEORGE T. PALMER,
PHILO P. BUSH.

Witnesses:

T. C. BUSH,
LEWIS W. UPHAM.