

J. B. DOE.  
Boiling Soap.

No. 1,529.

Patented Mar. 31, 1840.

Fig. 1.

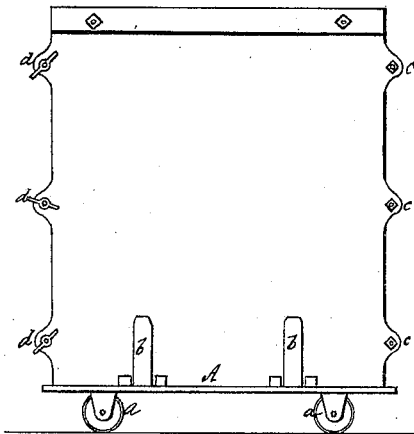


Fig. 2.

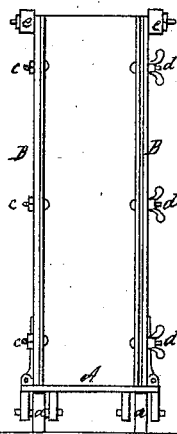


Fig. 3.

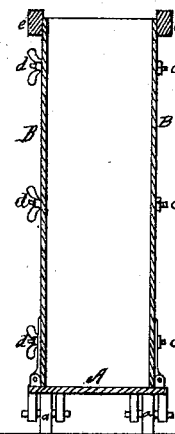


Fig. 5.

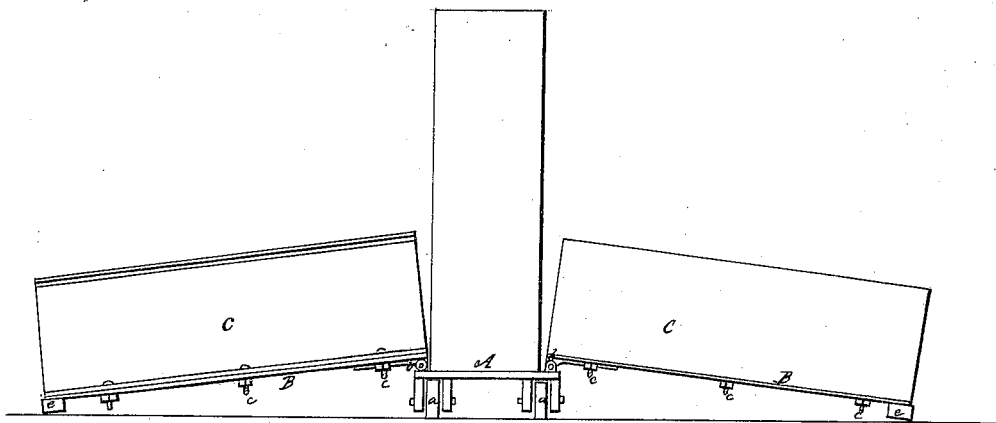


Fig. 4.

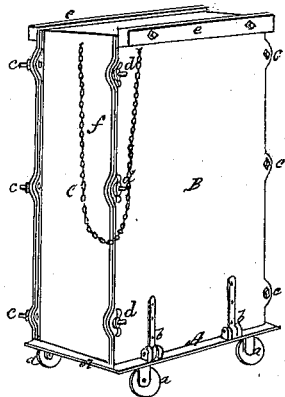
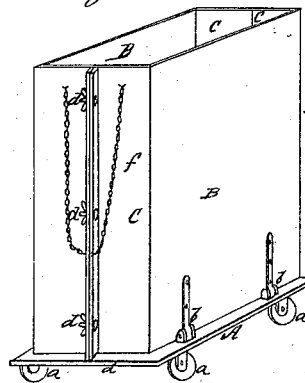


Fig. 6.



Witnesses:

W. M. Minto.  
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Inventor:

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# UNITED STATES PATENT OFFICE

JOSEPH BOLTON DOE, OF LONDON, ENGLAND.

## IMPROVEMENT IN THE CONSTRUCTION OF SOAP-FRAMES.

Specification forming part of Letters Patent No. 1,529, dated March 31, 1840.

*To all whom it may concern:*

Be it known that I, JOSEPH BOLTON DOE, iron-founder, a subject of the Queen of Great Britain, and now residing at Hope Street, Whitechapel, in the county of Middlesex and Kingdom of England, have invented or discovered a new and useful invention of certain Improvements in Apparatus Used in the Manufacture of Soap; and I do hereby declare that the following is a full and exact description thereof.

My invention of certain improvements in apparatus used in the manufacture of soap consists in the construction and adaptation of a novel and improved frame of metal or other suitable material to be used in place of the ordinary wooden frames employed in such manufacture. Into these frames the hot liquid soap is poured from the boilers or coppers, in order to be cooled and set or hardened, so that the soap may be cut up into bars or cakes of the usual form in which it is sold as an article of commerce.

In the ordinary process of soap-making the apparatus (commonly called the "soap-frames") consists of a number of rectangular frames of wood, called "lifts," which lifts of wood are commonly attached together by tenon and mortise or by grooves, (and placed one upon another to any height required by the manufacturer,) in order to prevent the soap leaking or escaping between them. These wooden frames are necessarily of sufficient thickness to insure the required strength, and wood (the material of which they are composed) being a bad conductor of heat the cooling proceeds slowly. The soap is therefore required to remain a long time in those frames before it becomes properly set or hardened, which generally occupies from five to seven days, and when it is so set or hardened these wooden lifts have severally to be removed from the block of soap by hand, in order that the block of soap may be cut up agreeable to the excise regulations for sale, whereas my new or improved soap-frames being constructed of metal or other material which is a quick conductor of heat the caloric is given off from the mass of soap in much less time than from the wooden lifts, and being formed of three or more parts are capable of being quickly separated and removed

from the mass or block of soap with very little labor. These improved soap-frames are in preference made of cast or malleable iron or other metal or mixtures of metal, each consisting of a bottom plate or bed with two sides and ends, which when fastened together at their junctions form a rectangular chamber, and may be made of any height desired, and can be quickly disconnected when the soap is cold and set. This will be better understood by reference to the accompanying drawings, exhibiting two arrangements or constructions of the soap-frame, which will be sufficient to explain my invention, although I do not mean or intend to confine myself to the precise form or construction therein shown, as the same may be varied to suit the will of the manufacturer.

Figure 1 is a geometrical elevation of the side of my improved soap-frames; Fig. 2, a similar elevation of the end of the same, and Fig. 3 a section taken transversely through the frame to show the interior. Fig. 4 is a perspective representation of the frame in the same condition as the former figures—viz., when put together and supposed to be filled with melted soap; and Fig. 5 is a geometrical elevation of the same when the sides and ends are thrown open and the mass or block of soap is left exposed ready to be cut up into cakes.

A is the bottom plate or bed, mounted upon casters or rollers *a a a* to facilitate its removal from one place to another.

B C are the two side plates, each of which is connected in this instance to the bottom plate A by strong hinge-joints *b b*.

C C are the end plates, one of which is attached to the side plate B by permanent fastenings, as screw-nuts and bolts *c c c*; but they may in some instances be riveted or connected together in any other suitable way or manner. The other junctions between the ends and side pieces are secured by movable bolts and screw-nuts *d d d*, which can be attached or detached at pleasure.

*e e* are pieces of wood fastened to the top edges of the side plates for the purpose of forming rests for the ladles containing the liquid soap when the frames are being filled.

*f f* are chains connected to the opposite ends and sides for the purpose of allowing

the attendant to lower them easily and as safeguards against accidents.

These metal frames are brought into use in the following manner: The workman first secures the joints of the two ends and sides by the movable bolts and thumb-screws *d d*, which will render the frame ready to receive the soap. When the soap has become cooled and hardened, (which will seldom take more than from forty to fifty hours in these metallic frames,) he unscrews and withdraws the bolts of the movable fastening *d d*, and lowers the two side plates, each carrying with it one of the ends of the frame, as seen in Fig. 5, when the mass of soap is left exposed to be cut up for sale.

Fig. 6 is a perspective representation of another construction of my improved metal soap-frames, in which the ends are divided into two parts, each side plate having two portions of the ends attached to it either by being cast together in one piece or by being connected to the sides by other means. The operation of this frame is precisely the same as in the former instance; but the two sides when removed from the mass of soap carry with them a portion of each end.

Having now described and ascertained the nature of my invention and the manner in which the same is to be carried into effect, I wish it to be understood that I do not intend to confine myself to the precise arrangement and construction above shown or described, as the same may be varied without departing from my improvements, and that various kinds of fastenings may be used in lieu of the screw nuts and bolts above named, (for instance, bolts with slots or grooves formed in them with wedge-formed keys may be applied to fasten the portions together;) also, that the hinges on the side pieces may be dispensed with by placing studs or pins on the bottoms of the side and end pieces, which may take into grooves or holes in the bed or bottom plate; and, further, that long bolts

may be passed through both side pieces with screw-nuts at the ends to fasten the sides and ends together, instead of the short screw bolts and nuts shown in the drawings, and by many other contrivances, all of which will be well understood by any practical engineer or mechanic, and therefore it is not necessary for me to particularize them; also, that any packing, as wood or leather, may be placed between the junctions of the various parts, if thought desirable, and that these metallic frames may be easily secured by a chain or some other contrivance passed round the whole and fastened by a padlock.

In conclusion, I would remark that the invention which I desire to be secured to me by the above-in-part-recited Letters Patent is a frame generally composed of metal, but which may be made of stone, slate, or other material, and consisting of a bottom plate or bed with movable ends and sides capable of being securely joined together so as to form a chamber to receive the liquid soap to be cooled and hardened, and capable of being readily separated and removed in the manner set forth.

What I claim as constituting my improvement in soap-frames is—

The constructing of such frames from metal or other material which is a good conductor of heat in the manner herein described—that is to say, by making them in one entire frame, in lieu of in separate frames placed over each other, and having movable sides and ends secured together by bolts or other analogous devices—substantially as herein set forth.

In witness whereof I, the said JOSEPH BOLTON DOE, have hereunto set my hand and seal this 11th day of February, A. D. 1840.

JOS. B. DOE. [L. S.]

Witnesses:

W. E. NEWTON,

J. W. MOFFATT,

*Clerks to Newton & Berry.*