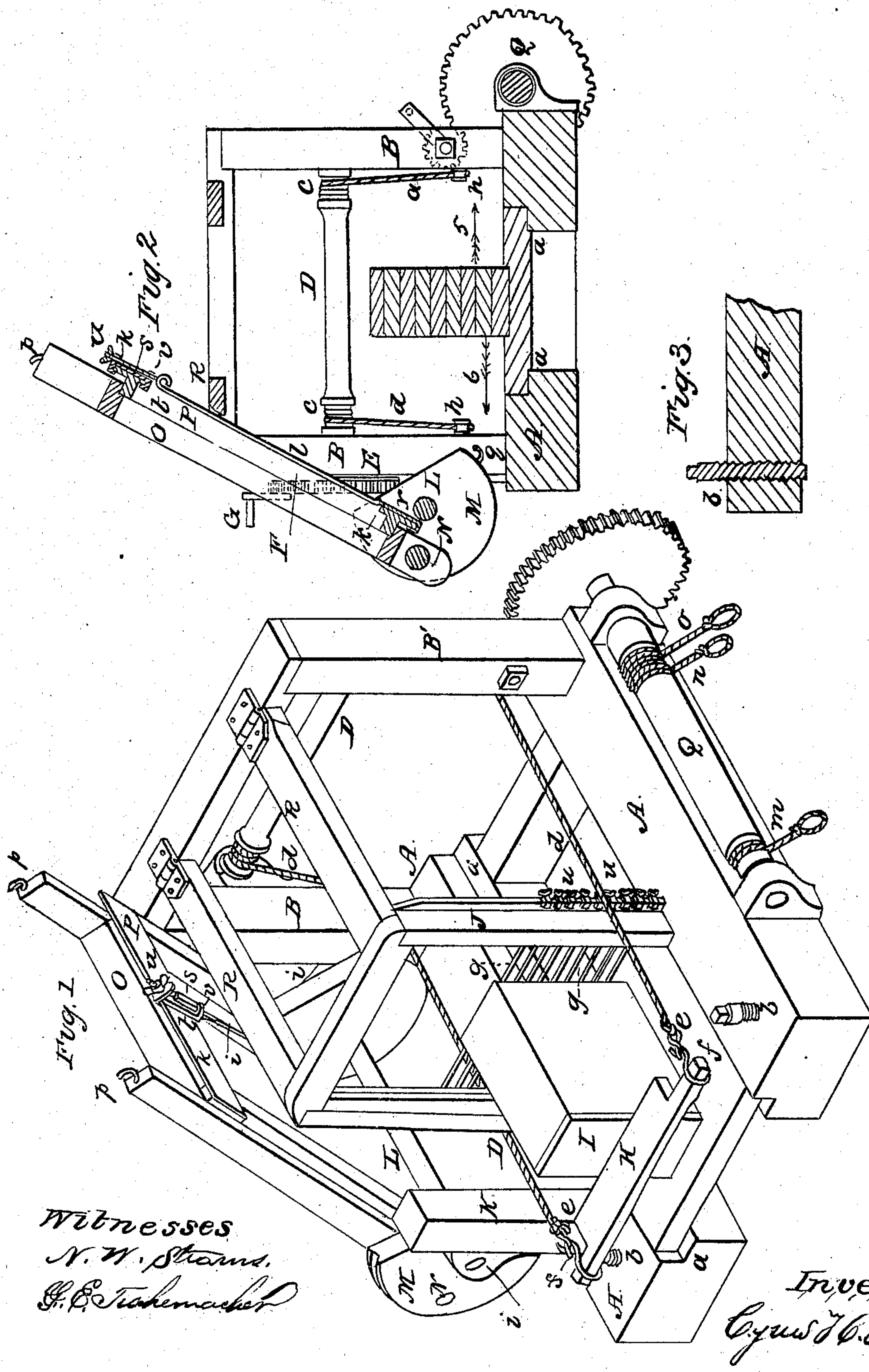


C. H. HARDY.
Soap Cutter.

No. 70,205.

Patented Oct. 29, 1867.



Witnesses
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CYRUS H. HARDY, OF CHARLESTOWN, MASSACHUSETTS.

Letters Patent No. 70,205, dated October 29, 1867.

IMPROVED MACHINE FOR CUTTING SOAP.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, CYRUS H. HARDY, of Charlestown, in the county of Middlesex, and State of Massachusetts, have invented a Machine for Cutting Soap, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

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

Figure 2 is a transverse vertical section through the same, the position of the block of soap being changed.

Figure 3, detail to be referred to.

The object of my invention is to dispense with much of the manual labor now required in the ordinary methods of cutting soap into bars, and consists in sliding the frame or receptacle containing the solid block of soap to be divided, from the truck to the ways of a machine, and drawing the block of soap against a series of horizontal wires, by which it is subdivided into slabs of the thickness required for the bar of soap; another series of parallel wires being afterward drawn down vertically through the block, by which the slabs are divided into bars of the required width, the operation being performed in much less time and with greater accuracy than when done by hand.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the framework, provided with suitable ways *a*, upon which the frame or receptacle containing the solid block of soap is deposited by drawing the truck, not shown, upon which it rests between the ways, and raising the end of the machine next to it by turning the screw *b*, the frame being gradually lifted by the machine from off the truck, which is then free to be withdrawn. Rising from the framework are standards B B', to which are secured bearings C for the reception of a horizontal roll, D, to one end of which is fitted a cog-wheel, E, which is turned by a pinion, F, driven by hand applied to a crank, G. To near each end of the roll D, at points *c*, within the bearings, is fastened one end of a cord or rope, *d*, the other end of which is provided with a hook, *e*, which fits over a hook, *f*, on each end of a cross-bar, H, (see fig. 1,) which bears against the outer end I of the "frame" in which the solid block of soap was made; the sides and opposite ends of the frame being removed to allow the block of soap to be drawn through a series of horizontal wires, *g*, made adjustable at any required distance apart, corresponding to the thickness of a bar of soap, and tightened in place upon the sides of an open vertical frame, J. *h* are guide-rolls or pulleys, under which the ropes *d* are conducted, in order to insure the direction of the draught line being horizontal when the block of soap is drawn through the horizontal wires *g*, after which the block is left divided into a number of slabs, the width of each one of which is equal to the length of a bar of soap, and its thickness corresponding to that of the bar.

The mechanism for cutting the slabs into equal divisions corresponding to the width of the bar will now be described.

K is a post rising from the framework, to the side of which and the standard B are secured bearings *i*, in which the ends of a horizontal shaft, L, are free to turn. M are segments of circular disks, which are secured immovably to the shaft L, and vibrate in common therewith. Within these segmental disks rest the ends of a horizontal cross-piece, N, which connects the lower ends of a rectangular frame, O, into which fits an open frame, P, of similar form, provided with flanges or edges *k*, upon which are secured the ends of wires *l*. Q is a horizontal drum or shaft, to one end of which is attached one end of each of three cords or ropes *m n o*, the other ends of the ropes being looped and fitting over pins *p* in the ends of the rectangular frame O, and a pin, *q*, at one end of one of the segmental disks M, the outer periphery of which is slightly concave to prevent the rope *o* from slipping off when wound up on the shaft Q, by power applied to a crank and gearing similar to that described for operating the frame J. Before commencing to bring the wires *l* down transversely across the slabs of soap, two hinged bars R are thrown up so as to allow the frame P and its wires *l* to be drawn down into a horizontal position, which, through the construction and connection of the disks M, shaft L, and cross-piece N above described, is readily done. The wires are first brought down so that the direction of their cut is for a short time almost vertical, after which they are pressed outward against the soap, and at a slight inclination thereto, in the direction of the arrow 5, and finally drawn through it in a contrary direction, as indicated by the arrow 6. The frame is now detached from the rectangular frame or seat O, and if made narrow enough

to fit between the frame J and standards B B', and sufficiently short to pass between the standards B B', it may be drawn upon the ways *a* out of the machine by the truck, with the soap cut in bars, which is then taken to a suitable place, where it is dried in a well-known manner.

Each of the wires *g* and *l* is constructed as follows: At one end of the wire is secured a curved strip or hook, *r*, which fits over and slides upon one of the flanges at the side of its frame, the other end of the wire being fastened to a short rod, *s*, which passes through a guide-bar, *t*, which fits over the other side of its frame, the wire being tightened and held at any required place by turning a screw-nut, *u*, which fits on the outer end of the short rod *s*, the form of which at *v* is square in section to prevent it from being turned in its guide-bar when turning the screw-nut *u*. It is evident that cord, or thin plates of metal, or other material, may be used instead of the wires, if desired, without departing from the spirit of my invention.

Claim.

I claim a machine for cutting soap provided with ways *a* for receiving the soap from and delivering it upon the "truck," substantially as described.

I also claim one or more screws *b*, operated as described, for lifting the block of soap from the "truck" to the ways of the machine, substantially as set forth.

I also claim pivoting the rectangular frame O to one side of the centre of vibration of the segmental disks M, in order that the position of the wires *l* when cutting the block of soap may be nearly horizontal, substantially as and for the purpose described.

I also claim the rod *s* with its screw-nut *u*, in combination with the guide-bar *t* and shoe *r* for adjusting and tightening the wire in place, substantially as described.

CYRUS H. HARDY.

Witnesses:

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