F. Brown,

Sugar Cutter.

No. 109,295.   Patented. Nov. 15. 1870.
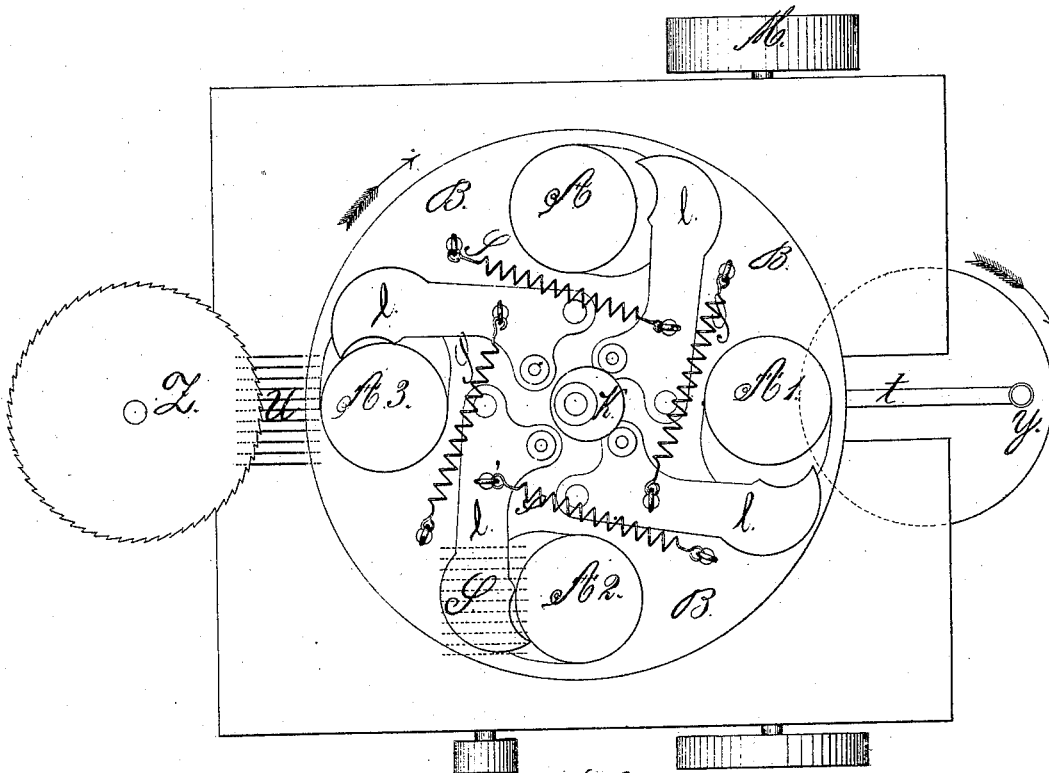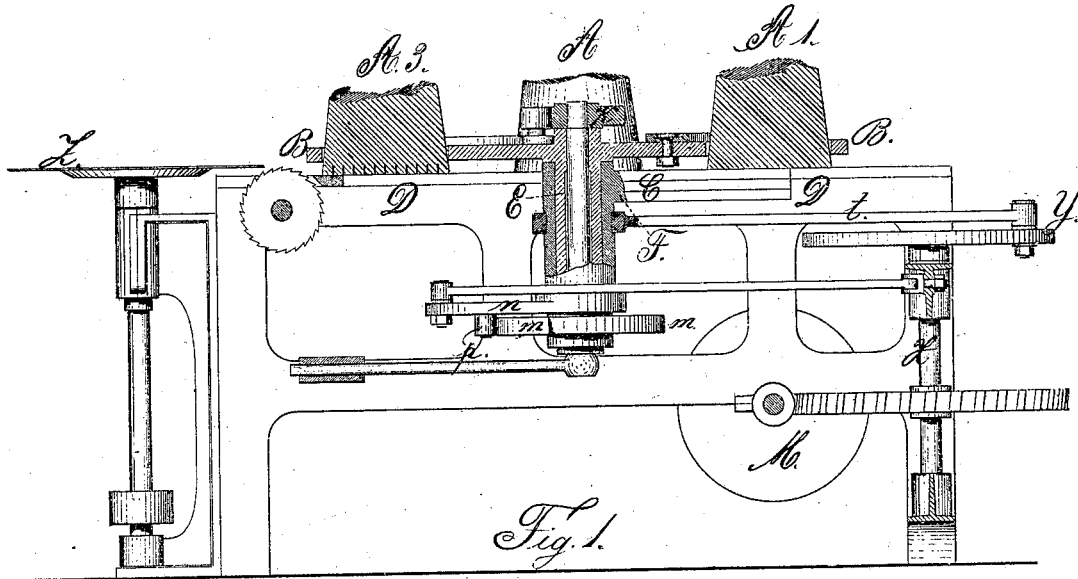
Fig. 1.

Fig. 2.

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IMPROVEMENT IN MACHINES FOR CUTTING LOAF-SUGAR.

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

I, FELIX BROWN, of the city, county, and State of New York, have invented certain Improvements in Machines for "Cutting Loaf-Sugar," of which the following is a specification.

Nature and Object.

This invention relates to that class of machines for cutting sugar into cubical blocks, in which the entire operation is performed by the use of saws, and the object is to combine the feeding mechanism with the saws, so that the operation will be carried on automatically, and with less waste from pulverization than is now done where saws alone are used.

Drawing.

Figure 1 is a side elevation of my machine, with two of the sugar loaves and carrying-tables in section.

Figure 2 is a plan, as seen from the top of the machine, and with the loaves in position for being cut into cubical blocks.

A, A¹, A², and A³ represent four loaves of sugar to be cut into blocks, placed in oval-shaped openings in a guiding-table, B, that is mounted in a sliding bed, C, which moves back and forth on the main frame of the machine D.

Said loaves are held in position in said guiding-table by levers or clamps *l*, pivoted near the center of the table B, and pressed against the loaves by the coil springs S.

Upon a projection or brackets on the inner edge of said levers is mounted a small friction-roll to operate against an eccentric or cam, K, in the center of the guiding-table B, and in such relation to each other that when the table revolves the levers will be thrown back from the loaves, or be permitted to close upon them, as the various operations progress.

The table B being mounted upon a central sleeve, as at E, in a hub, F, of the sliding bed C, has two motions, one on its own axis, seen at sleeve E, and the reciprocating motion of the bed C.

Upon the lower end of the axis of the table B is a ratchet, M, with four teeth or notches corresponding to the four oval-shaped holes in the table where the loaves are to be placed, and the pawl *p* engages with these notches, said pawl being attached to a crank-arm, which is concentric with the sleeve E of table B.

Said crank-arm being held in a fixed position with shaft X, serves to rotate the ratchet M, when the sliding bed C receives motion from the shaft X by the connecting-rod *t* connecting with the hub F of bed C, and a crank at the upper end of shaft X, as at Y.

Said crank at Y must be sufficiently great to move the bed C back and forth the full diameter of the loaf.

At S, fig. 2, and underneath the table B, is arranged a gang of circular saws, so mounted on the same shaft that they will score grooves into the loaf as it passes over them, and said saws are raised far enough above the bed upon which the loaves slide to make scores or grooves to the depth of the size of the block to be formed.

A similar gang of saws is also arranged at U, working in the same plane to those at S, so that after grooves are formed in the base of the loaf S, and when it receives a quarter of a revolution, it is then moved over the saws at U, and similar grooves are formed, but at right angles to the previous ones.

At Z is mounted the cut-off saw, which may be either a circular or a band-saw; but if circular, it should be made like a veneer-saw, so as not to waste the loaf by cutting such curfs as is now done with the common saws.

The operation of such a machine will now be easily understood.

A sugar-loaf is placed in the guiding-table B at A, and when motion is imparted to the shaft X by any convenient gearing from a driving shaft, as at M, the ratchet will revolve the table B sufficiently far to bring the loaf A to where A' is shown, or one-quarter of a revolution.

At this point the crank Y will move the bed C forward, so that were a loaf at A² it would travel over the saws at S, and then another revolution would be given to the table B, which would bring A¹ to A², and A² to A³, when another reciprocation would take place that would carry the loaf over the saws at U, and thereby form grooves in the base of the loaf at right angles to each other, and so nearly formed into cubes that separation from the loaf is only required, and this is performed by the cut-off saw at Z, which may be either a circular or band-saw, as already mentioned.

The compactness of such a machine, and its continuous operation without the necessity of sawing the loaves into slabs, as heretofore done, in connection with the use of very thin cut-off saws, make it superior to anything with which I am acquainted, and, therefore—

What I claim is—

1. The combination of saws by which grooves are formed in the loaves at right angles to each other, as described, and for the purposes set forth.

2. The guiding-table B, in combination with two sets of saws, as S and U, as hereinbefore described.

3. The guiding-table B, with the sliding bed C, in combination with a cut-off saw, as described.

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Witnesses:
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