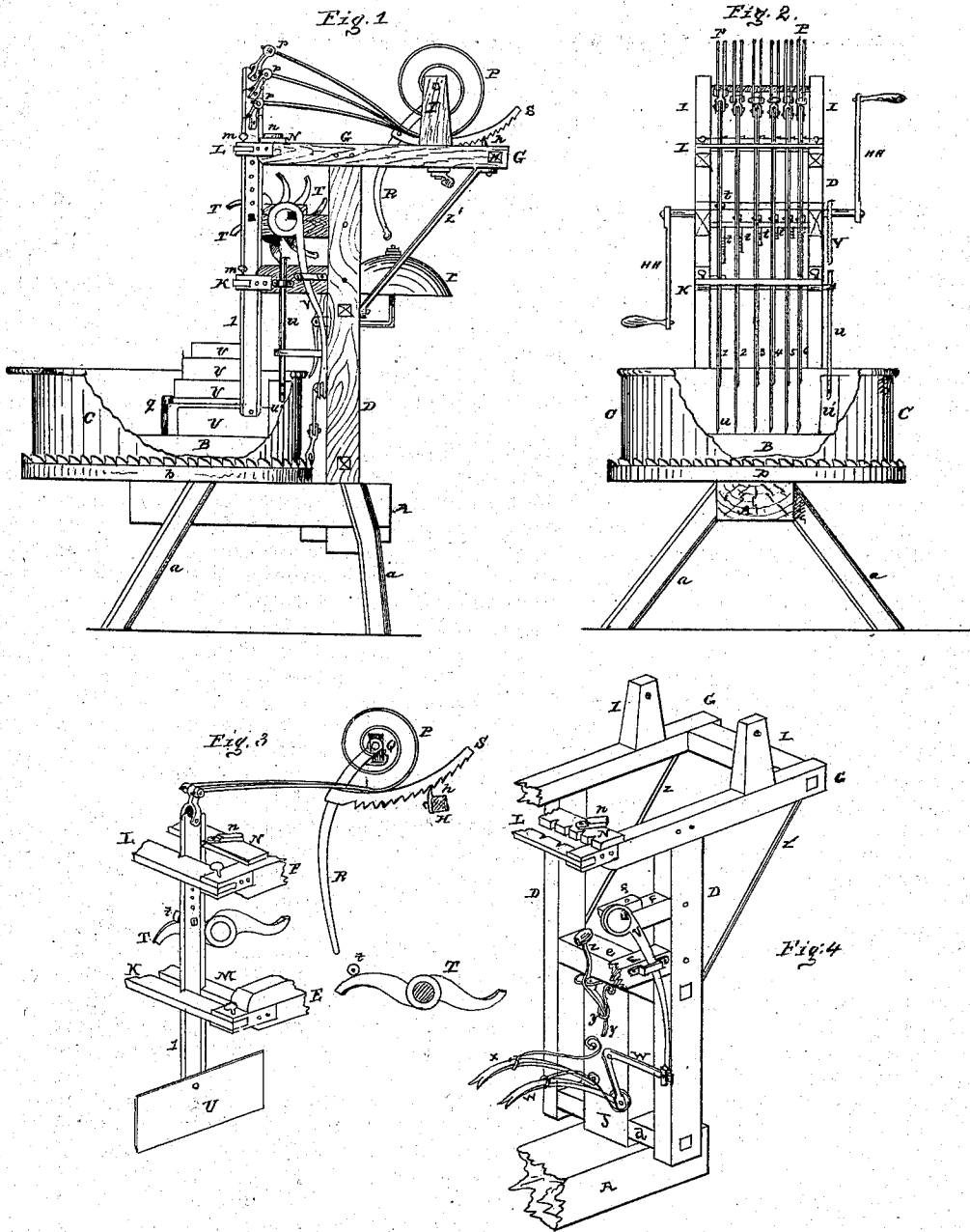


G. SPIEHLMAN.
Meat Chopping-Machines.

No. 136,624.

Patented March 11, 1873.



Witnesses—
George W. Miller
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GEORGE SPIEHLMAN, OF STRASBURG, PENNSYLVANIA.

IMPROVEMENT IN MEAT-CHOPPING MACHINES.

Specification forming part of Letters Patent No. 136,624, dated March 11, 1873.

To all whom it may concern:

Be it known that I, GEORGE SPIEHLMAN, of Strasburg, in the county of Lancaster and State of Pennsylvania, have invented certain Improvements in Meat-Chopping Machines, of which the following is a specification:

The nature of my invention relates to a combination of a series of coiled springs, an adjusting cross-bar, lever, curved rack, and catch, and so hinged to the top of adjustable vertical shafts connected with the cutting-blades or choppers as to relieve the strain upon said springs when rapidly and successively actuated by a series of lifters spirally placed around a horizontal shaft; said shaft also actuating a revolving block supporting a cylinder having an inclined plane upon its rim for operating a bell to time the revolutions.

The accompanying drawing illustrates my improved construction and arrangement of the several parts of the machine, in which Figure 1 is a side elevation; Fig. 2, a front elevation of the same; Figs. 3 and 4, detached portions to show parts hidden from view, reference being had to the letters marked thereon, will more clearly appear.

A shows the supporting-block on legs *a a*, with a frame-work, *D D d J e G G H*, and arms *E F*, an ordinary revolving block, *B*, with a hoop-ratchet, *b*, around the bottom, and a cylinder, *C*, of the ordinary kind, only that I provide an inclined plane on the outer upper margin of the cylinder, for the purpose of actuating the stem *Y* of a hammer, *Z*, to strike a bell, *r*, on completing each revolution of the block *B*. This revolution is produced by a pawl, *w*, connected to an elbow-lever, *W*, and with a connecting-rod and eccentric, *V*, on the outer end next the handle *H H*, by which motion is given to the main shaft. Crank-handles *H H* are shown on both ends of said shaft, on which also is a series of six pair of *S*-shaped lifters, so arranged as to have their termini equidistant apart in the circle they form spirally across the shaft for operating the six shafts 1, 2, 3, 4, 5, and 6 of the cutting-blades or choppers *U*. These shafts are flat, and have the edges beveled, and are held in a vertical position by the inner and outer guide-bars *K L M N*, having triangular notches for the bevel edge of the shaft to slide in. The

outer guide-bars *K L* are hinged at one end and held at the other by pin, *m*, in an open slotted plate, so that they can be turned aside to remove the shafts of the cutters. These shafts have each a notch, say, at a point one-third of their length from the top, in order to support them by means of a turn-button, *n*, on the top of the inner guide-plate *N*, resting on the top frame-piece *G*, so that all the shafts can be raised and held without danger, when cleaning or turning the block, or being moved by turning or the action of the springs. Each shaft is provided at its upper end with a hinged cross-head, *p*, the central pin being sufficiently thick to be perforated for the end of a coiled spring, *P*, to pass through, thus forming a double hinge to prevent undue friction in the rise and fall of the shafts. These shafts are further provided with anti-friction pulleys *t* on bolts; these bolts can be shifted by means of a series of holes made in the shaft for their reception to raise the pulleys *t* to the center height of the lifting-shaft, as the block wears down in the course of time and use.

Each hinged cross-head *p* on the chopper-shaft has a double spiral-spring action. These springs *P*, of which six pair are shown, are coiled around a central cross-bar, *Q*, having its bearings in the studs *I I* mounted on the top beam *G* of the machine. This cross-bar *Q* is connected to or embraced by the forked end of a lever, *R*, which has a curved rack, *s*, the proper radius so that the teeth will engage into a fixed catch, *h*, on the rear cross-piece *H* from *G G*. The two brace-rods *Z' Z'* are shown, and the bell *r*.

The chopping or cutting blades *U* are centrally the longest, and cut down closely to the sides of a central plug, *g*, in the block, inserted to occupy the point on which meat usually lodges and escapes the cutting-blades. There is a like tendency of larger pieces of meat getting behind the cutters, and close to the cylinder or case *C* and lodge. To prevent this I provide a vertical plate, *u*, on a stem, *g*, held in keeper on the frame *D*. This plate closes the space between the outer cutter *6* and the side of the cylinder *C*, diagonally on the block. This plate, while it acts as a check-plate to arrest and convey the meat next the inner side of the case so as to bring it all under the ac-

tion of the cutting-blades, also performs the office of scrapers to cleanse the sides of the cylinder.

The eccentric action of V on the pawl, by the intervention of the elbow-lever, gives the block a comparatively slow motion—a notch to each revolution of the lifters—causing the blades each to cut twice, or producing twelve distinct cuts. This slow movement of the block and rapid motion of the cutters or choppers is so effectual that it has been found on trial that three revolutions of the block will mince forty-five pounds of meat, be they slow or fast, as the same number of cuts will be made.

In order to indicate each revolution of the block I have attached a bell, *r*, with a hammer and spring action, actuated by an inclined plane or hammer-lifter on the outer top edge of the revolving cylinder. I also use a stationary pawl, *x*, with a spring, to hold or prevent a retrograde movement of the block.

I am aware that spiral springs and vertical shafts and lifters of various kinds have been used before; but in order to secure the proper action of adjustable coiled springs, so as to prevent too great a strain and danger of breaking,

I use the springs P in pairs affixed to a central turning-pivot in the eyes of the pieces forming the cross-head *p*, hinged to the top of the shafts 1, 2, 3, 4, 5, and 6, respectively, thereby lessening the strain on the springs and the friction of the shafts, differing substantially from any arrangement heretofore used.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The coiled springs P, made adjustable by the cross-bar Q, lever R, and curved rack S, and catch *h*, in combination with the cross-heads *p*, hinged to the top of the vertical shafts of the cutting-blades or choppers U, arranged and operating substantially in the manner and for the purpose specified.

2. The attachment of the bell *r*, hammer *z*, and appliances, when actuated by means of an inclined plane on the upper and outer portion of the rim or cylinder C on the revolving block B, arranged substantially in the manner and for the purpose mentioned.

GEORGE SPIEHLMAN.

Witnesses:

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