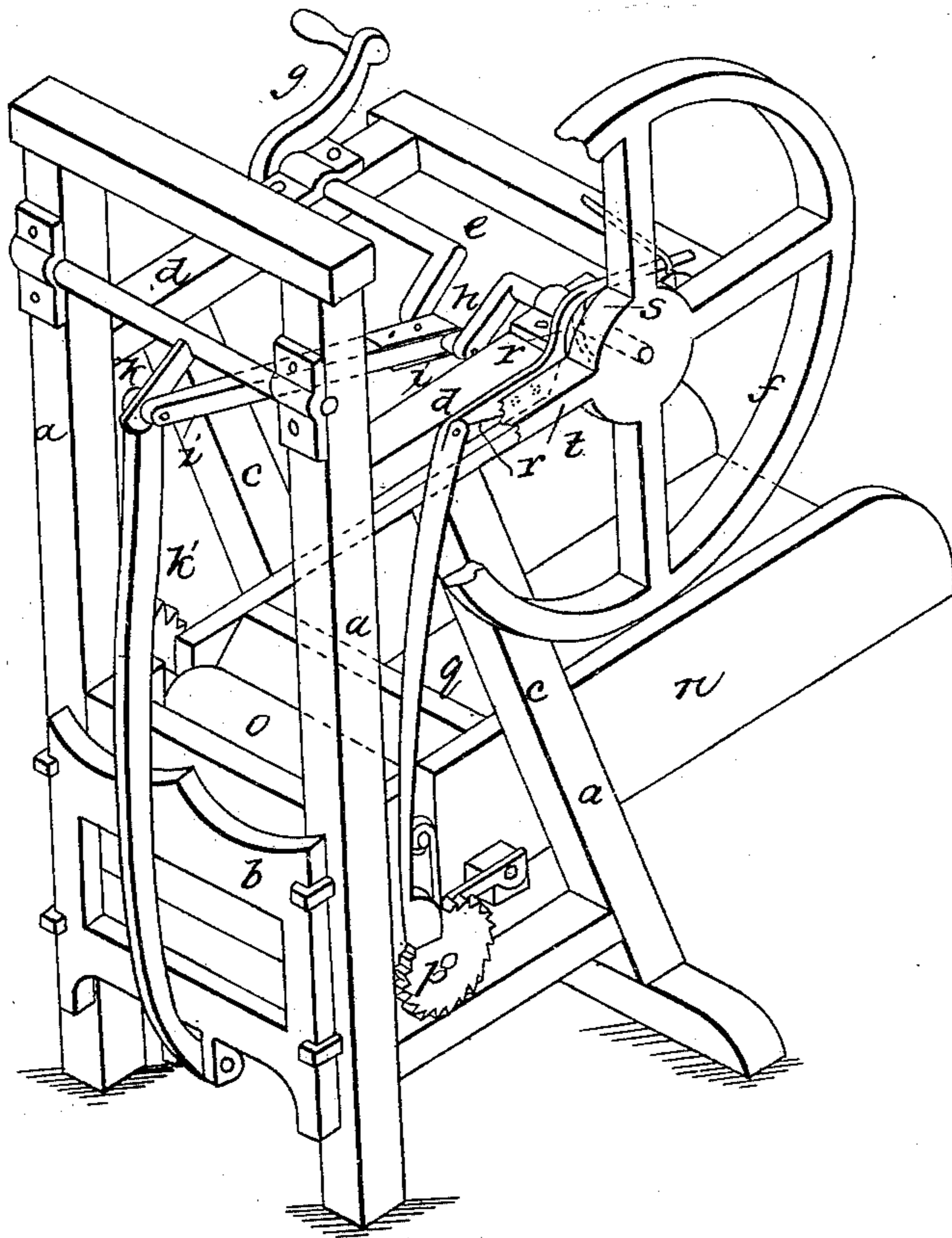


I. J. RICHARDSON.

Straw Cutter.

No. 6,319.

Patented April 2, 1849.



# UNITED STATES PATENT OFFICE.

I. J. RICHARDSON, OF NEW YORK, N. Y.

## STRAW-CUTTER.

Specification of Letters Patent No. 6,319, dated April 2, 1849.

*To all whom it may concern:*

Be it known that I, ISRAEL J. RICHARDSON, of New York, in the county of New York and State of New York, have invented a new and Improved Machine for Cutting Straw, and that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawing, which makes a part of this specification, in which an isometrical projection of the machine is represented, such parts being removed as will admit a clear representation of all the moving parts of the machine.

The nature of my invention consists in adapting the double motion of the gate to one revolution of the crank, by means of the interposition of the toggle joint to the purpose of cutting straw. This motion I find peculiarly fitted to the purpose of cutting straw; and when combined with a proper machine for that purpose, produces new and most useful results; for as the straw becomes compressed by the descent of the knife, the power increases in an equal ratio, and just as it cuts through the densest part thereof the joint is straightened; and by this arrangement of the parts a double blow of the knife is produced by one revolution of the crank shaft, a thing so essential in straw cutters that they are usually geared up from the crank shaft for that purpose.

The construction is as follows, viz: There is a suitable frame (*a*,) for the knife frame (*b*,) to play in, and properly braced by inclined posts (*c*,) in the rear, connected with the front ones by caps (*d*,); on this cap piece the bearings of the crank shaft (*e*,) are located; this crank shaft has a fly wheel (*f*,) on it at one end, and at the other there is a hand crank (*g*,) a sunk crank (*h*,) is made

in the center of this shaft, between the bearings, to which a pitman (*i*,) is connected, the other end of which connects with a toggle joint where the arms (*k*, *k'*,) join; the upper end of the arm (*k*,) of this joint is connected with and projects radially from a horizontal shaft, suspended in the frame (*a*,) near the top; the lower arm (*k'*,) connects with the sliding frame (*b*,) in which the knife is bedded, which frame slides up and down in guides fixed in the frame (*a*,) above named; it will thus be perceived, that by the revolution of the crank (*h*,) the toggle joint is vibrated both ways from the center, and a double motion is produced.

In the lower part of the standing frame of the machine the trough (*n*,) for feeding, is situated, with the usual feeding rollers (*o*,) in front; on the axle lower roller (not shown in the drawing) outside the frame, a ratchet wheel (*p*,) is situated, on to which a pawl, or hand (*q*,) works; said pawl being jointed to a horizontal lever (*r*,) above which lever (*r*,) extends back over the shaft (*e*,) when it is moved up and down by a double cam (*s*,) on said shaft; by this movement the feed motion is produced. The fulcrum of the horizontal lever can be shifted to either of the holes (*t*,) therein, to change the feed, the motion for all the different parts being given from the one shaft, without any gear wheels being interposed.

Having thus fully described my improvement, what I claim as my invention, and for which I desire to secure Letters Patent, is—

The combination of the toggle joint with the crank shaft *h* for the purpose of operating the knife and giving the double or accelerated motion substantially as above set forth.

ISRAEL J. RICHARDSON.

Witnesses:

T. R. PEALE,  
L. D. GALE.