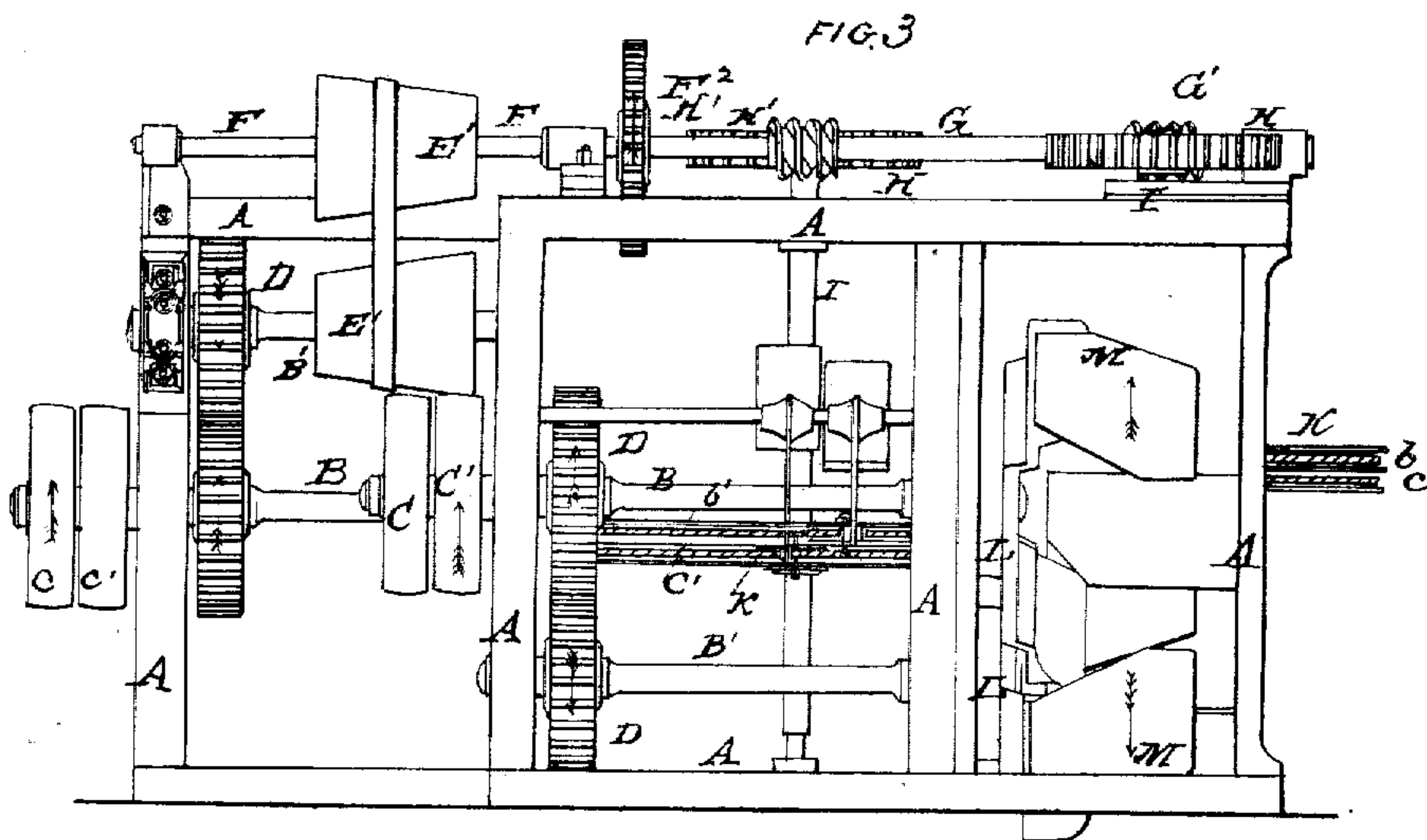
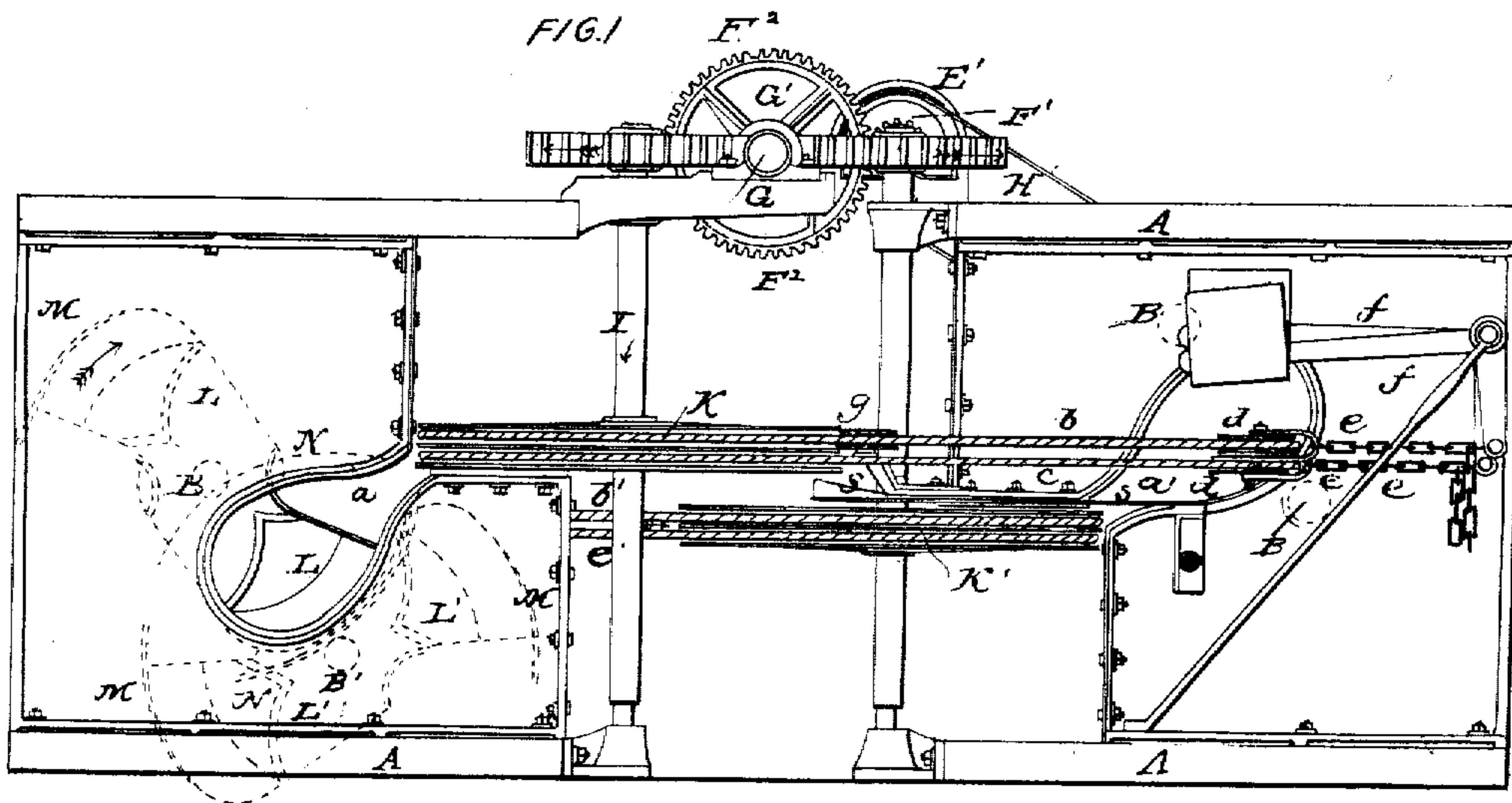


W. C. McBRIDE.

Hackling Machine.

No. 22,738.

Patented Jan'y 25, 1859.



WITNESSES
Geo. C. Grant
Hon. Sec. of War

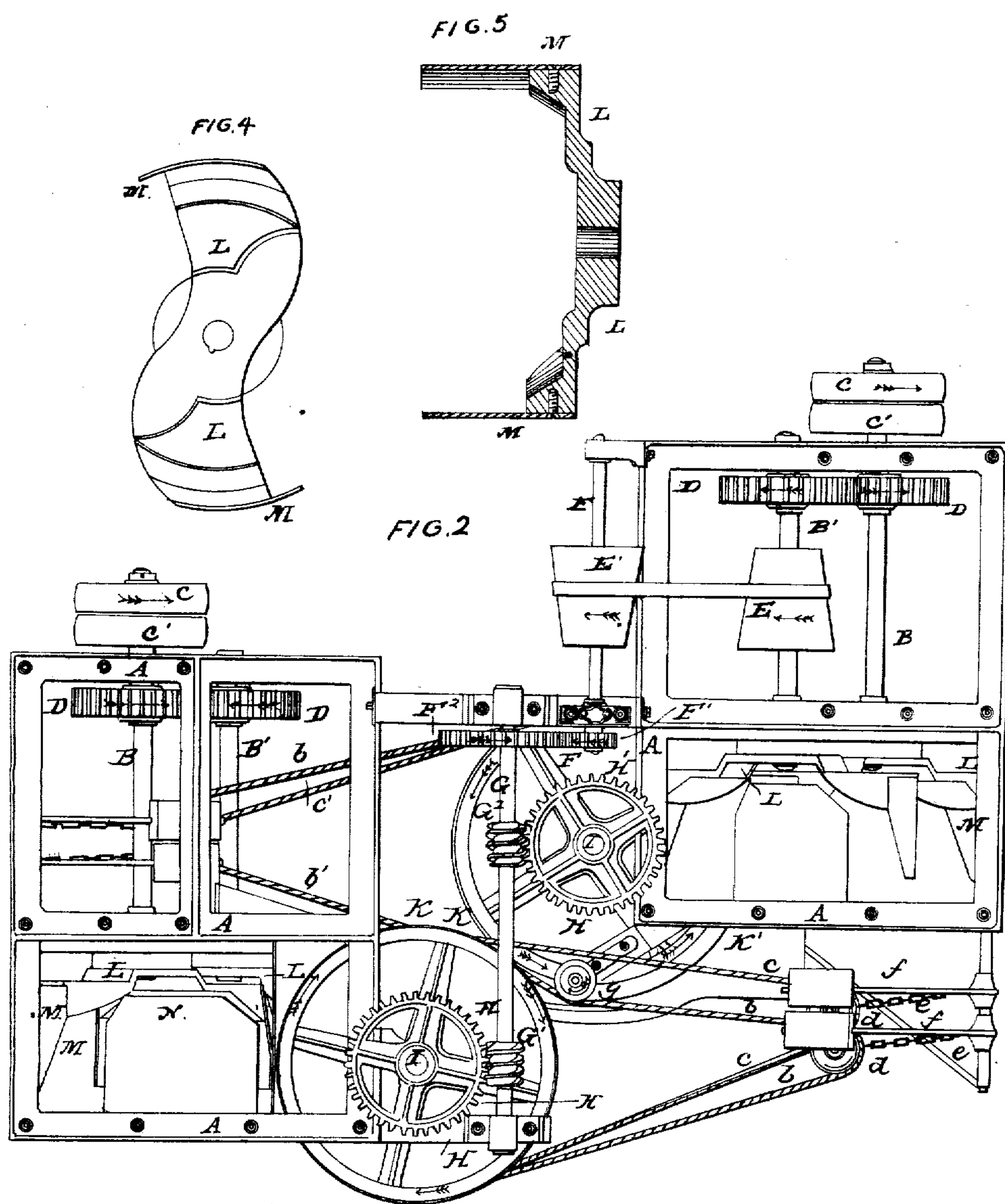
INVENTOR
W. C. McBride

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Patented Jan'y 25, 1859.



WITNESSES
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UNITED STATES PATENT OFFICE.

WM. C. McBRIDE, OF RARITAN, NEW JERSEY.

IMPROVEMENT IN MACHINERY FOR SCUTCHING FLAX.

Specification forming part of Letters Patent No. 22,738, dated January 15, 1889.

To all whom it may concern:

Be it known that I, WILLIAM CARDWELL McBRIDE, of Raritan, county of Somerset, in the State of New Jersey, have invented certain new and useful Improvements in Machinery for Scutching Flax and other Vegetable Fibrous Substances; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation, Fig. 2 a plan, and Fig. 3 an end elevation, of a double scutching-machine. Fig. 4 is a section of one set of scutchers, taken in a plane at right angles with their axes to represent the manner of their operation on the fibers; and Fig. 5, another section thereof, taken in the plane of their axes.

The same letters indicate like parts in all the figures.

In the said scutching-machine the flax or other fibrous substance to be scutched is presented to an arrangement of bands and gripped near one end between the bands and the periphery of a grooved wheel, and thus held and moved along is presented to the action of a pair of scutchers, whose mode of operation constitutes part of my said invention, and after having one end thereby scutched by the continued motion of the wheel and bands it is carried away from this pair of scutchers, and the scutched end is presented to another set of bands passing around another grooved wheel below, and by them gripped, the upper end, not yet scutched, dropping onto a guidetable which guides it as it is moved along and presented to the second pair of scutchers, of like construction with the first pair, but acting in the reverse direction, by which the other end of the fibers is scutched.

As the two pairs of scutchers are constructed in like manner, the description of the first pair will apply to the second pair, the corresponding parts in both being indicated by the same letters of reference.

In the accompanying drawings, A represents the frame-work, and B B' two parallel shafts geared together to turn in opposite directions, by two spur-wheels, D D, one of the said shafts being provided with a fast and loose pulley, C C', to receive a driving-belt from some suitable motor. On the other end

of each shaft is properly secured a pair of arms, L L' L' L', projecting to an equal distance each side of the axis. To the outer end of each arm is properly secured a blade or beater, M, at right angles to the arm, and hence parallel with the shaft, so that each shaft carries two such blades or beaters, which beaters are segments of a hollow cylinder, and generally of the form represented. By the rotation of the two shafts in opposite directions the beaters of each shaft pass within the beaters of the other—that is, between the other shaft and its beaters; and in the space between the paths of the two sets of beaters are placed two curved stocks, N N', (see Fig. 1,) attached to the frame A on each side of the feed-opening *a*, which may be termed the "scutching-compartment." These stocks are curved and about equal in length to the beaters, and each is outside of one set of beaters and inside of the other set—that is, the outside of the beaters on shaft B is presented to the inside of the lower stock, N', and the outside of the beaters on shaft B' to the inside of the upper stock, N, so that the fibers presented and held by the feeding bands and wheel, to be presently described, are beaten and scutched by the beaters alternately on opposite sides, first against one stock and then against the other.

The feeding apparatus for the first set of scutchers consists of a double-grooved horizontal wheel, K, on a vertical shaft, I, which carries a worm-wheel, H, receiving motion from a screw, G', on a shaft, G. The motion of shaft G is derived from the shaft B' of the second scutcher by a belt and pair of cones, E E', on said shaft B' and a parallel shaft, F, which carries a pinion, F', that gears into a spur-wheel, F'', on shaft G. In this way a slow rotary motion in the direction of the arrow is imparted to the grooved wheel K. Two bands, *b c*, pass around in the grooves of this wheel, and thence around two tension-rollers, *d d*—one for each band—connected by chains *e e* with weighted levers *f f*. The upper band, *b*, also passes against and is deflected by a guide-pulley, *g*, for a purpose to be presently described. As the wheel K rotates with a slow motion, the stocks of flax (or other fibers to be scutched) presented by an attendant are gripped near the upper end between the periphery of the wheel and the bands, and by

them held and carried around. The lower suspended ends enter the feed-opening *a* of what has been termed the "first scutching-compartment," and as it is carried through this compartment the lower half its length is scutched by the action of the scutchers in manner already described, and as it is drawn out of this compartment by the continued rotation of the wheel *K* it is carried toward and delivered to and caught by the bite of another wheel, *K'*, below. The ends of the flax are liable to be bent over the upper band, *b*, in passing around the wheel *K* and to hang onto that band, and to be thereby drawn into the second feeding apparatus. To prevent this the upper band, *b*, is deflected by the guide-roller *g* before described, so that along that part of its course it travels in a different direction from the lower band, *c*, which has the effect of taking the bend out of the stocks and delivering them freely to the second feeding apparatus. The wheel *K'* receives motion from the shaft *G* in the same manner as wheel *K* by a worm, *G'*, and worm-wheel *H'*, and provided in like manner with two feeding-bands, *b' c'*, passing around tension-rollers with weighted levers in every respect like the bands *b c*. The two sets of feeding apparatus, it will be seen, as indicated by the arrows, travel nearly in the same direction where the transfer takes place, which facilitates that operation, and as the second feeder is below the plane of the first feeder the lower portion of the fibers which have been scutched are caught and gripped between the bands and wheel of the second feeder, and as the upper and unscutched ends are liberated by the first feeder they fall onto a table, *S*, which sustains and guides them as they are carried around and passed through the feed-opening *a'* into the second scutching-compartment of the second scutcher, which is constructed in every respect like the first, but placed higher, and with the motions reversed to perform their operation in the reverse direction to scutch the opposite ends of the

fibers. After passing through the operation of the second scutcher the fibers are delivered by the feeding apparatus where the bands *b' c'* leave the periphery of the wheel *K'*. In some cases, where the flax or other fibers require more scutching at one end than the other, the speed of one of the scutchers is increased by changing the size of the driving-pulley, or by other suitable means.

In scutching soft fiber to prevent the edges of the blades or beaters from breaking or otherwise injuring it, I apply what I term "shields," which are plates secured to the inside of the edges of the beaters and capable of being protruded more or less.

I do not claim either set of feeders, separately, as making part of my present invention, having described a similar arrangement in Letters Patent granted to me by the Government of Great Britain in the year 1852.

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

1. The mode of operation of the combined rotating blades or beaters with the interposed stocks, substantially as described.
2. Combining two scutching-machines, substantially such as herein described, or equivalents thereof, by means of the two feeding-wheels with their bands, arranged substantially as herein described, for transferring the fibers which have been scutched at one end that the other end may be properly presented to the second scutcher, as set forth.
3. In combination with the two sets of feeding-bands and wheels, or their equivalents, the sustaining and guiding table, substantially as described, by which the upper unscutched ends of the fiber are held up, guided and properly presented to the second scutcher, as set forth.

WM. C. McBRIDE.

Witnesses:

GEO. D. SARGEANT,
HORACE ANDREWS.