3 Sheets--Sheet 1.

R. SMITH.

Shingle-Machines.

No. 133,730. Patented Dec. 10, 1872.

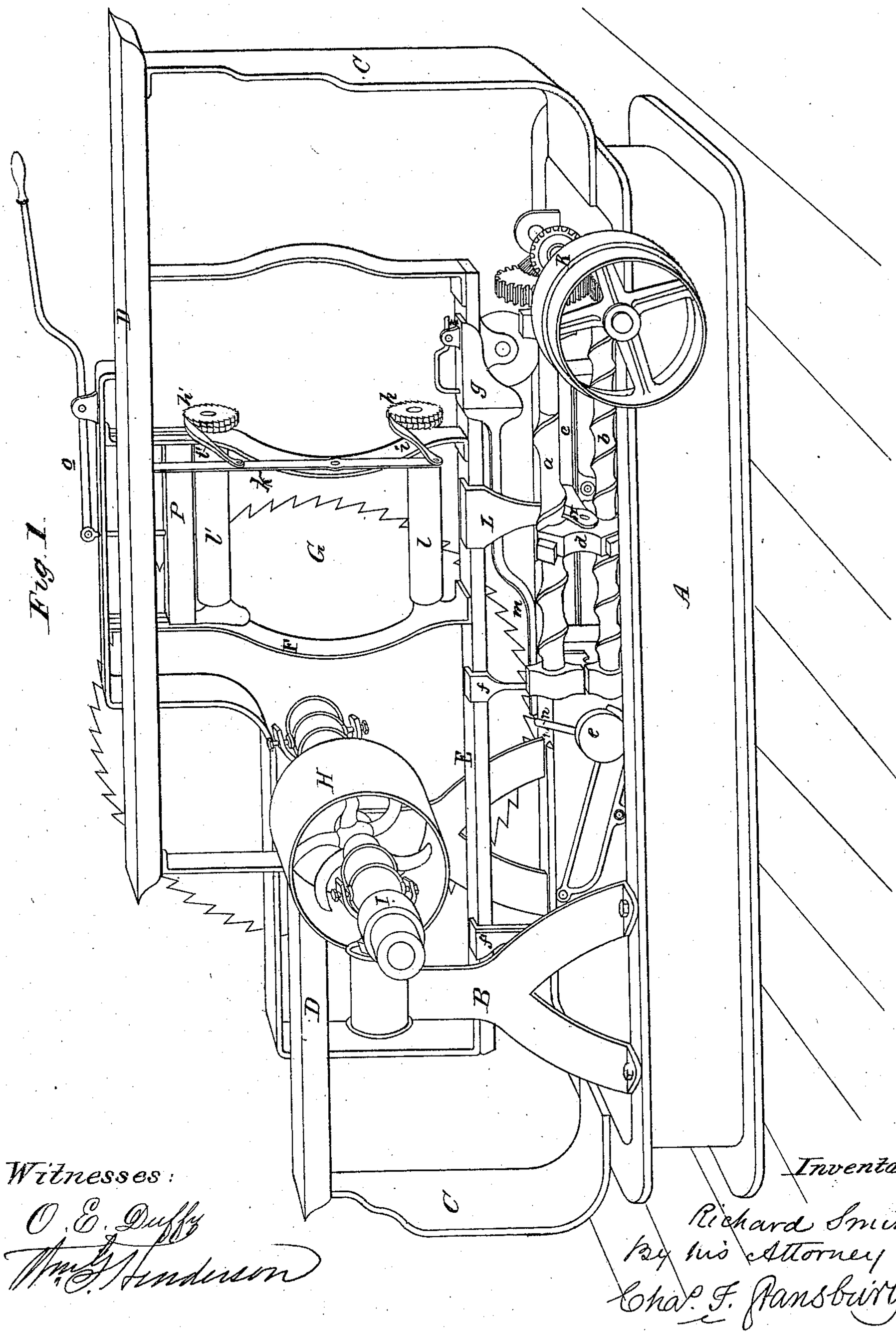

Fig. 1.

Witnesses:

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Wm. G. Henderson

Inventor.

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by his Attorney

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Fig. 2.

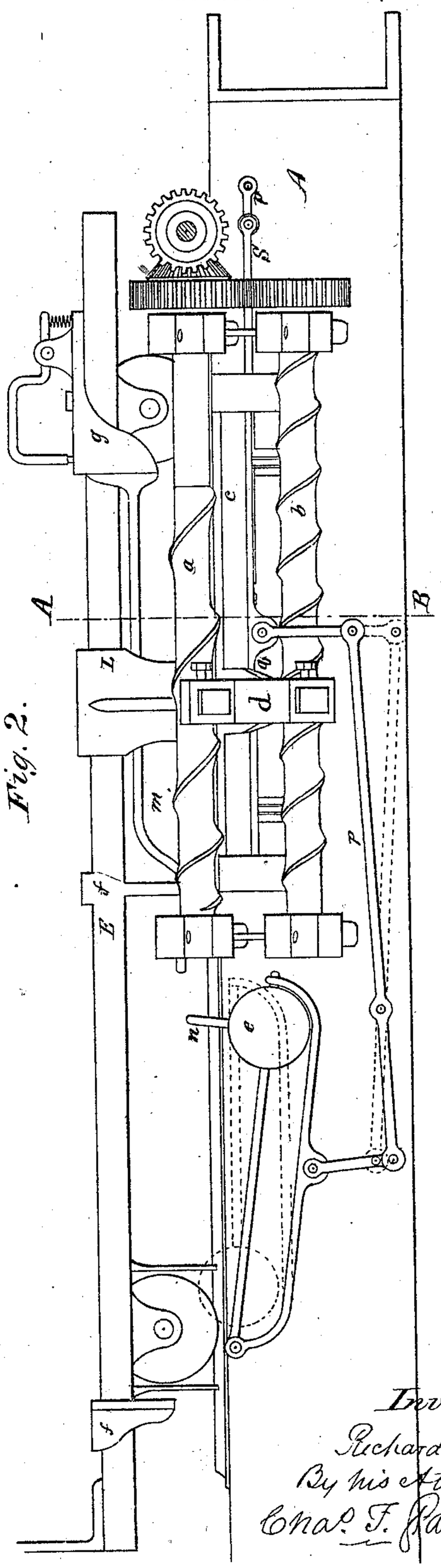

Fig. 3.

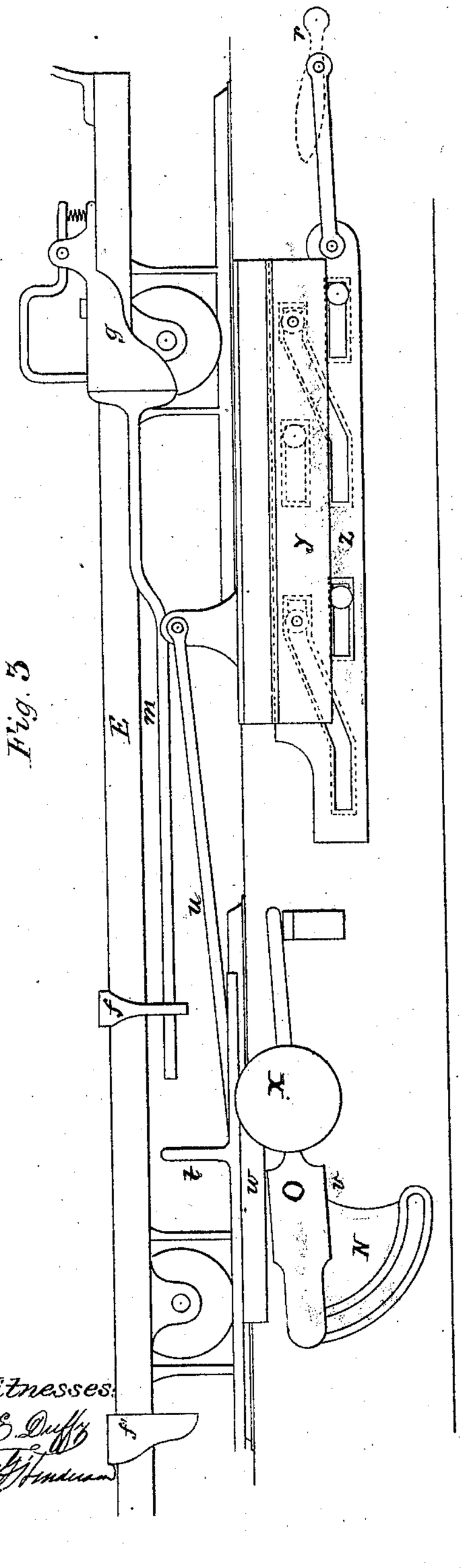

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Fig. 4.

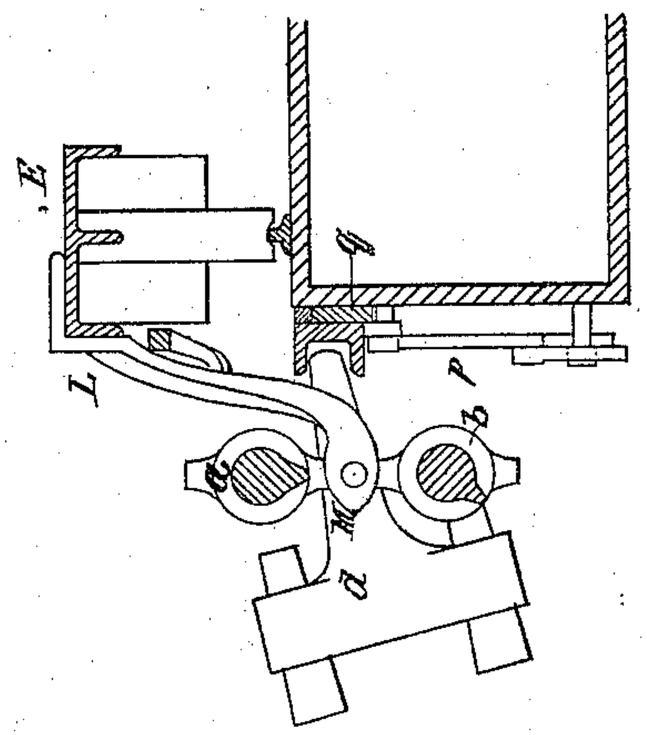
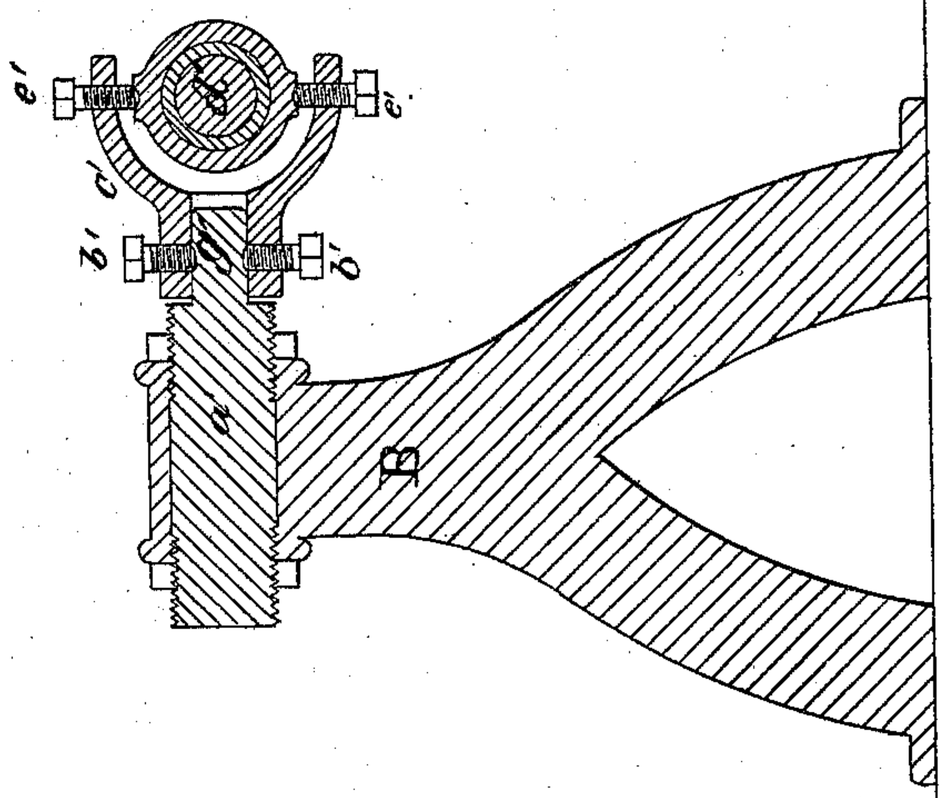


Fig. 5.



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Inventor.
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UNITED STATES PATENT OFFICE.

RICHARD SMITH, OF SHERBROOKE, CANADA, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM FARWELL, JR., OF SAME PLACE.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. **133,730**, dated December 10, 1872.

To all whom it may concern:

Be it known that I, RICHARD SMITH, of Sherbrooke, in the Province of Quebec, Dominion of Canada, have invented a new and Improved Shingle-Machine; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side view, in perspective, of the machine; Fig. 2 is a side elevation of the traverse motion; Fig. 3 is a side elevation of a modified form of traverse motion; Fig. 4 is a transverse vertical section on line A B of Fig. 2; and Fig. 5 is a vertical section of the standard B of the saw-arbor.

The same letters indicate the same parts in the several figures.

My improvements relate to the method of giving the traverse motion to the carriage, to the construction of the top rail, and to the construction of the standard B for the saw-arbor, all as hereinafter more particularly set forth.

In the drawing, A marks the bed-piece of the machine; B, the standard for the saw-arbor; C C, the uprights which support D, the top rail, having a drop in it, as shown in Fig. 1, for the purpose of giving free access to the saw. E is the traversing-carriage, to which is attached the frame F, which carries the block or bolt of timber. G is the saw, and H the driving-pulley on its arbor. I is a small cone-pulley on the saw-arbor, and K a large cone-pulley, the shaft of which is geared to the screws *a b*, of which *a* is a gain-screw, and *b* a screw of uniform pitch. *c* is a grooved plate; *d*, a tilting or oscillating nut, which engages alternately with the screws *a* and *b*. *e* is a sliding weight connected with the short arm of lever *p*. *f* is a guide for the dog-rod *m*; *f'*, a dog; *g*, an adjustable dog; *h h'*, ratchet-wheels on the ends of rollers *l l'*; *i i'*, dogs to lever *k*; *l l'*, feed-rollers; *m*, dog-rod; *n*, pin projecting from weight *e*, by which it is moved on its rod; *o*, a lever for raising the upper feed-roll; and *p*, a weight for depressing said roller. *q* is a wedge secured in the rear of plate *c*, and operated by crank *r* and rod *s* for the purpose of throwing nut *d* out of contact with screw *a*, and thereby stopping the motion of the carriage. A bracket, L, secured to the carriage extends downward and forms at M a bearing for the nut *d*, and by means of this connection of the carriage with nut *d* the traverse motion of said nut, imparted by screws *a b*, is transmitted to the carriage.

The operation of this part of my machine is as follows: Motion having been imparted to the cone K, the screws *a b* are rotated and the block in the lower end of nut *d* will engage with the thread of screw *b*, and thereby the carriage will be moved, and the block in frame F will be brought up to the saw. When the nut *d* has arrived at the end of screw *b* the dog-rod *m* will have engaged with rod *n* of weight *e*, and carried said weight to the opposite end of its oscillating frame, which causes the grooved plate *c* to fall both by reason of its connection with lever *p* and by its own unsupported weight. This draws the nut *d* away from screw *b* and throws the block in its other end into the thread of screw *a*, when the carriage will be rapidly brought back, owing to the form of the thread of screw *a*. As the carriage is returning dog *f'* engages with pin *n* and brings the weight back again, which, as the nut gets to the end of the screw, moves plate *c* up, which throws nut *d* back into screw *b*. The dog *g* with its rod *m* is made adjustble by a spring-pawl or other device so as to accord with the distance to be traversed by the carriage. To stop the carriage, crank *r* is thrown back in a direction opposite to that shown in the drawing, the wedge *q* is drawn back by rod *s* so that the plate *c* falls, and the block in the upper end of nut *d* engages with the screw *a*, and is carried out of and entirely freed from its thread.

A modification of the mechanism for operating the nut *d* is shown in Fig. 3, in which *y* is a plate, to which the grooved plate *c* of Figs. 1, 2, and 3 is attached. *z* is a plate having diagonal slots, in which pins on plate *y* work. The rod *s* with crank *r* is attached to plate *z*, for adjusting it. The plate *y* is connected with a quadrant, N, having a circular groove by a rod, *u*. O is a lever provided with a weight, *x*, on its long arm, and a toothed wheel, *v*, on its shaft. The wheel *v* meshes with a toothed rack, *w*, to move it back and forth. *t* is a pin on rack *w*. As the carriage is moved along its track the dog-rod *m* strikes the pin *t*, causing

the rack *w* to rotate the wheel *v*, whereby the lever O is elevated. This moves the quadrant N, and it, by means of rod *n*, causes the plate *y* to fall, whereby the nut *d* is thrown in contact with the screw *a* and the carriage moved back. When the nut has run to the end of screw *a* the plate *y* is released, and the weight of lever O causes it to rise to its former position. The drop or top rail D is made in two parts, one lower than the other, the object being to allow free access to the saw for filing, repairing, &c.

In Fig. 5 the construction of the standard B is shown. A mandrel, *a'*, having threaded ends, is secured in the hollow head of said standard by nuts. To a gudgeon, *g'*, on one end of said mandrel, a clevis, *c'*, is secured by set-screws *b' b'*, and the saw-arbor *d'* is adjustably held in this clevis by set-screws *e' e'*, which pass through the ends of the clevis, and bear against said arbor.

As will be seen, the saw can be set at any distance from the standard B by adjusting the mandrel in said standard, the threaded ends of said mandrel and the nuts being for this purpose. By means of the set-screws *b' e'* the clevis is allowed to turn on gudgeon *g'* and the saw-arbor is rendered adjustable in the clevis.

The other parts of the machine, being of the ordinary construction, do not require to be particularly described.

What I claim is—

The screws *a b*, in combination with the nut *d*, grooved plate *c* with its operating mechanism, and carriage E, substantially as and for the purpose specified.

The above specification of my said invention signed and witnessed at Sherbrooke, Province of Quebec, Canada, this eighteenth day of March, A. D. 1872.

RICHARD SMITH.

Witnesses:

STEPHEN EDGELL,

JAMES MCKINNON.