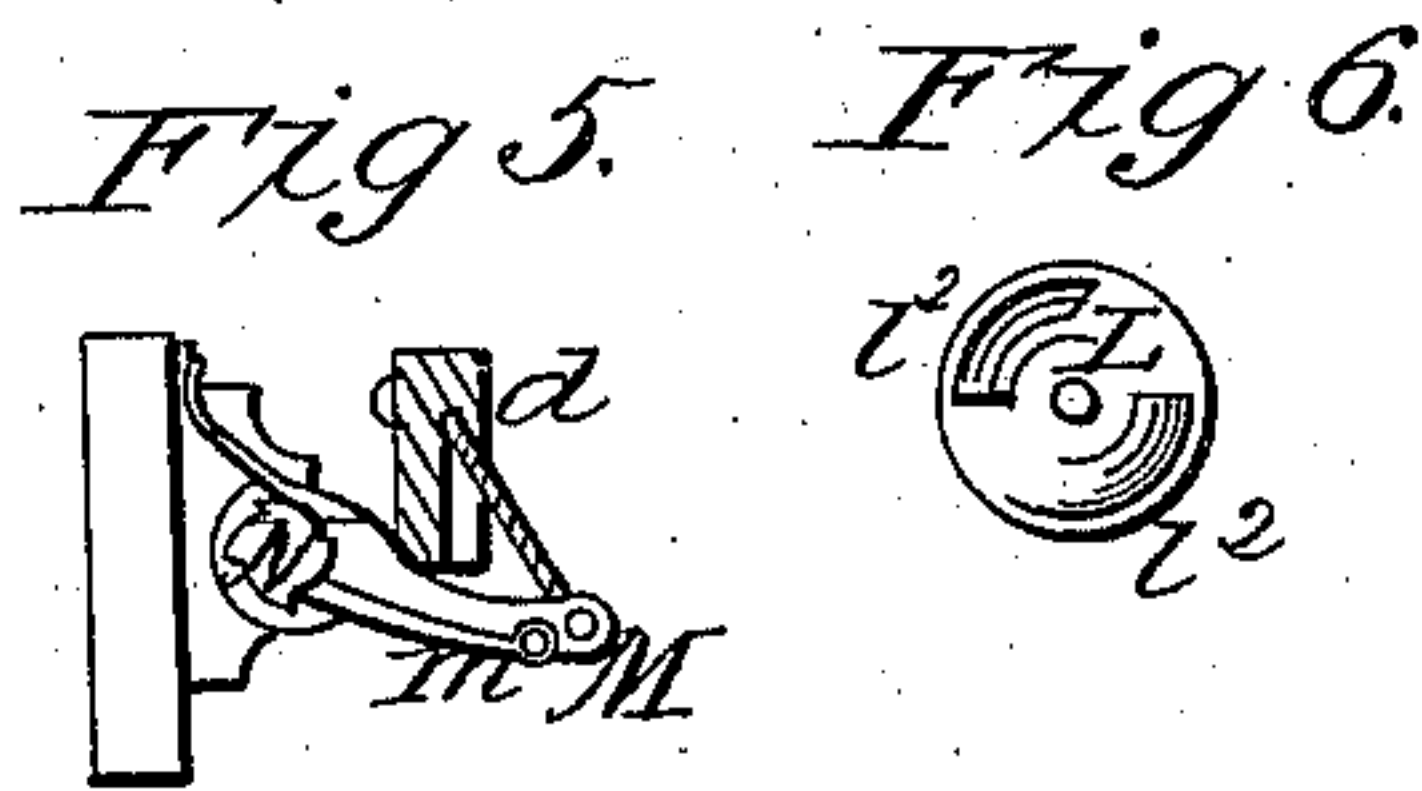
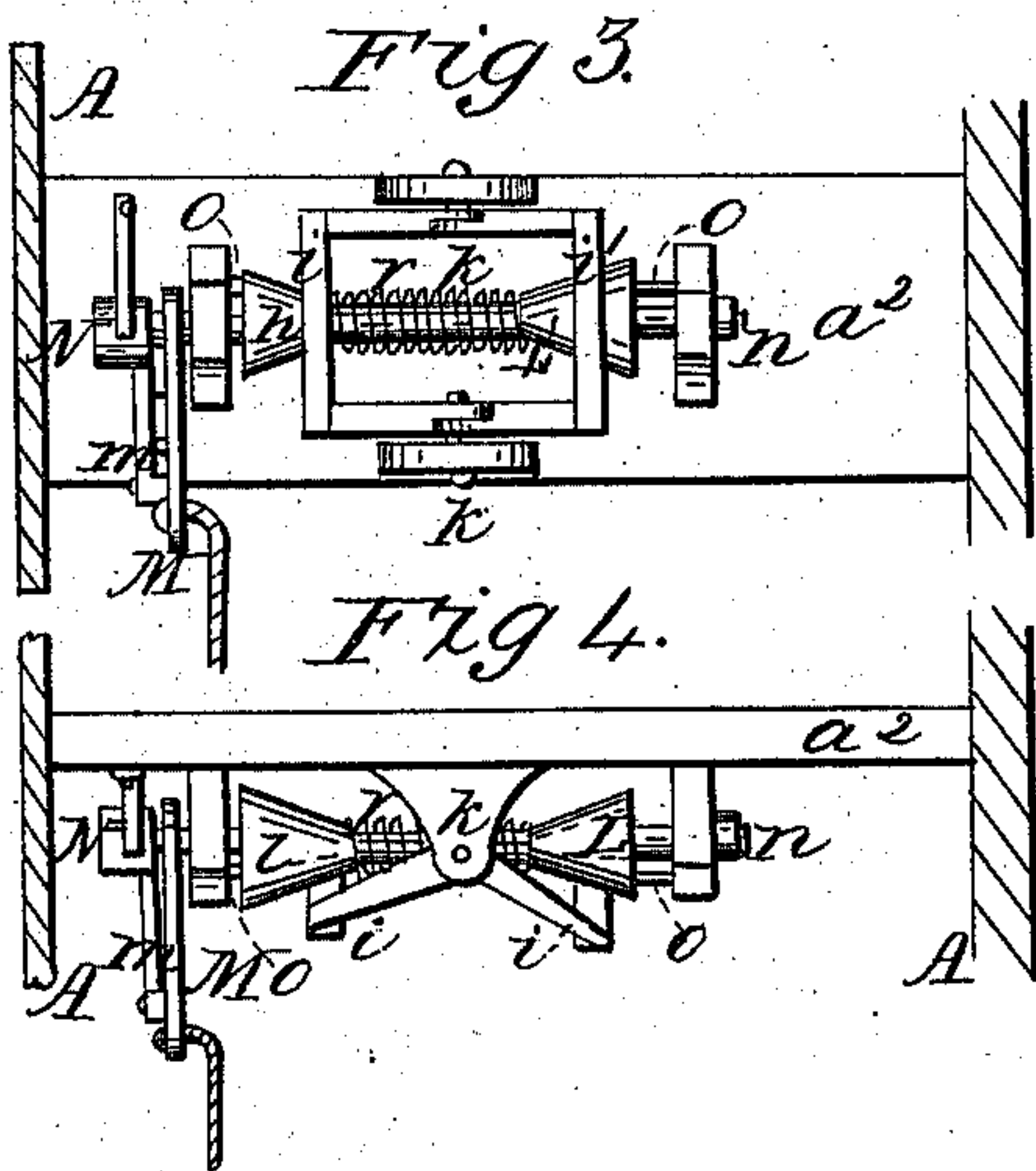
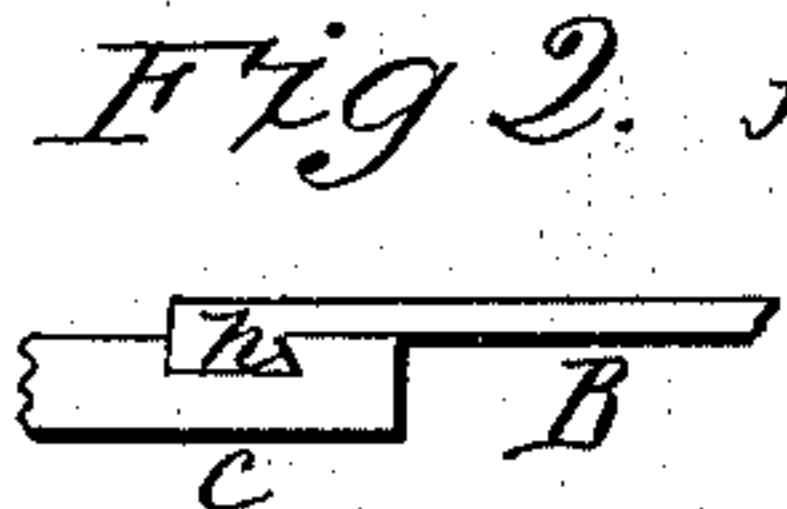
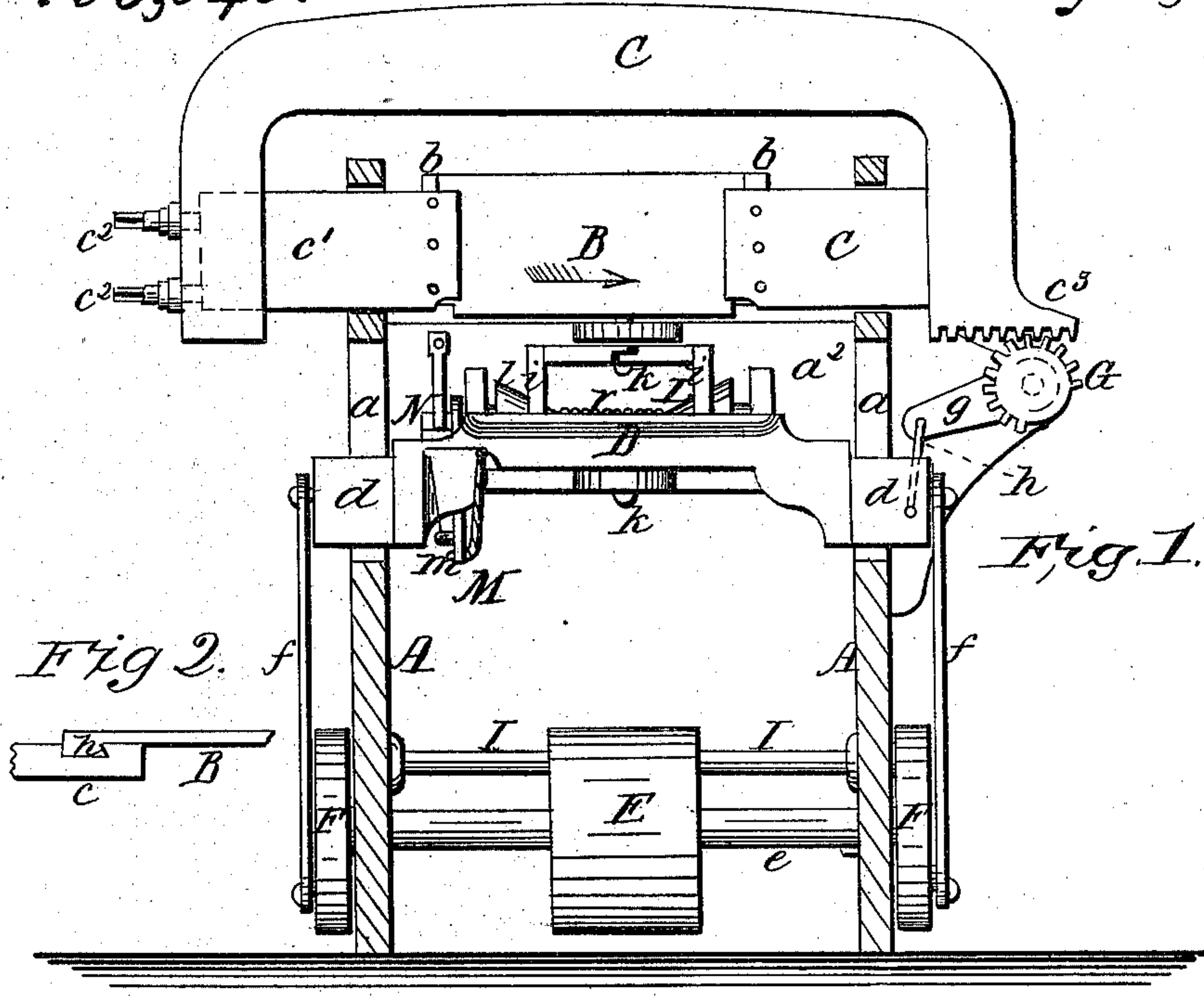


J. E. Austin,
Shingle Machine.

N^o 105,540.

Patented July 19, 1870.



Witnesses:

Wm J. Dodge
J. A. Morley

Inventor:

J. E. Austin

UNITED STATES PATENT OFFICE.

JAMES E. AUSTIN, OF OSWEGO, ASSIGNOR TO HIMSELF AND JNO. C. O. REDINGTON, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN SHINGLE-MACHINES.

Specification forming part of Letters Patent No. 105,540, dated July 19, 1870.

To all whom it may concern:

Be it known that I, JAMES E. AUSTIN, of Oswego, in the county of Oswego and State of New York, have invented a new and useful Improvement in Shingle-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification.

Figure 1 is a front view of my improved shingle-machine, the frame-work of which is shown in section, and Figs. 2, 3, 4, 5, and 6 are detail views.

Similar letters of reference indicate like parts in the several figures.

This invention relates to a machine for cutting shingles; and consists, essentially, in a strained knife and mechanism by which it is operated, as hereinafter more fully described.

I employ a wide and thin cutting-knife, B, Fig. 1, said knife being about a foot or fourteen inches in width, and its thickness at the thickest place being only about three-eighths of an inch. This knife is placed in and carried by a stout straining-beam, C *c c'*, and by getting a powerful endwise strain on the knife, its thickness can be much less than the cutting-knives in use heretofore, and the strain on the shingle, as it is cut from the block, is thereby greatly reduced.

The straining of the knife can be accomplished by set-screws *c² c²*, the piece *c'* sliding in the beam C, or the piece *c'* can be attached rigidly to the beam C, and the knife strained by keys or wedges driven through the ends of *c' c*, and the end or ends of the knife B. The knife B has a piece of metal bolted across each of its ends, and these pieces *b* form dovetail heads that fit into corresponding grooves in the sides of *c c'*, as shown by top view of the knife B *b* in Fig. 2.

D is the cutting-table, on which the block or shingle-bolt is placed. This table is mounted on a beam, *d d*, which works vertically in guide-slots *a a* in the frame-work A A, and at each upward movement of the table D the shingle-bolt is carried to the knife B, and a shingle cut from said bolt or block. The vertical move-

ment of the cutting-table D is obtained by a driving shaft and pulley, *e E*, crank-wheels F F, and pitmen *f f*.

As the table D is thrown up for a cutting movement, the knife B, with its straining-beam, makes a sliding movement in the direction of the arrow B, the parts *c c'* of the beam C sliding endwise in guide-slots in the frame-work A A; and by this endwise motion of the knife B a drawing cut is obtained that separates the fibers of the wood with less strain to the shingle, and the knife slices through the wood more easily, and makes smoother work. This endwise or sliding movement of the knife and straining-beam B C is obtained by a toothed rack, *c³*, on one end of the beam C, and by a segmental pinion or gear wheel, G, the said pinion being operated by a lever, *g*, and rod *h*, the said rod *h* connecting with the table-beam *d d*, so that the pinion G moves the knife endwise as the table E is elevated to make a cut.

I, Fig. 1, is one of the stay-rods or cross-bars that form a part of the frame-work A A of the machine.

When the machine is cutting, the attendant or operator feeds the block up to the knife by hand, and in doing so has merely to press the block against the set devices or gages *i i'*, Figs. 1, 3, and 4, which are swinging frames pivoted, at *k*, to a heavy cross-bar, *a²*, of the frame-work.

The gage *i'* is pushed out by the endwise movement of a cone, L, so as to make the thin end of the shingle, and at the next stroke of the table the cone L is withdrawn, so that the thick end of the shingle is made at that gage, and so the gages *i i'* alternate in their action, the gage *i* being operated in the same manner as the first by a second cone or round wedge, *l*.

The conical wedges L *l* are actuated by a lever, M, and pawl *m*, Fig. 5, which act on the ratchet-head N of a shaft, N *n*, and, as this shaft is rotated intermittently, the cones L *l* are also rotated, and cams *l² l²*, Fig. 6, on the base of each cone, come in contact with stationary projections or pins *o o*, Figs. 3 and 4, to give the said cones the proper endwise movement, by which the gages *i i'* are set, to make the butts of the shingles alternate. The cones L *l* are each connected with the shaft N *n* by

a feather, so that they are compelled to rotate with the shaft, but are left free to slide longitudinally thereon.

A spiral spring, *r*, Figs. 1, 3, and 4, is placed on the shaft between the cones *L l*, and this spring acts on both cones, to give them their backward or withdrawing movements as their cams recede from the said pins *o o*. The lever *M* is connected to the table-beam *d d* in such manner as to be operated by the vertical movement of said beam.

This machine has been tried, and works well. The shingles are cut out without being checked by overstraining the wood, and good sound shingles are produced, which, being more smooth than the sawed shingles, do not retain dampness as long, and are, consequently, more durable than the sawed shingle of equal soundness.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a thin cutting-blade, strengthened and held taut, as described, a table for supporting a block of timber, and mech-

anism to impart to said blade a reciprocating or shearing movement in reference to the table, or a reciprocating movement of the table in reference to the knife.

2. The combination of the straining-beam *C*, knife *B b*, parts *c c*¹, and screws *c*², all constructed, arranged, and operating substantially as described.

3. The set works or gages *L l i i'*, constructed and operating substantially as described.

4. The knife *B*, provided with the dovetail heads *b b* for attaching the said knife to the beam *C c c*¹, as and for the purpose specified.

5. The arrangement of the sliding knife *B*, the straining-beam *C*, the movable table *D*, the set-works *L l i i'*, and operating devices *c*³ *G F f e*, and frame *A A*, all constructed and operated as and for the purpose herein specified.

The above specification of my invention signed by me this 13th day of April, 1870.

JAS. E. AUSTIN.

Witnesses:

D. B. SPOONER,

F. A. MORLEY.