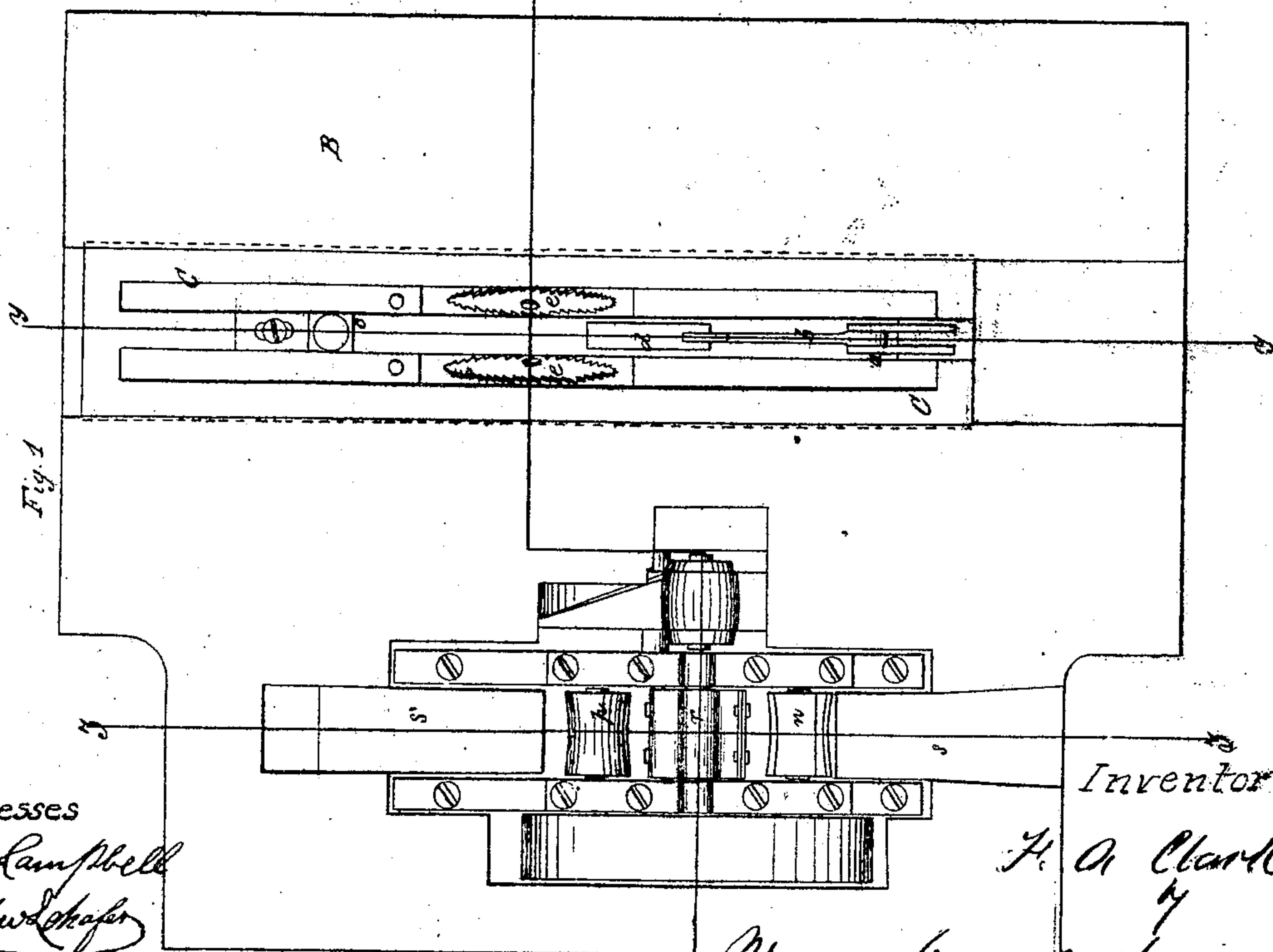
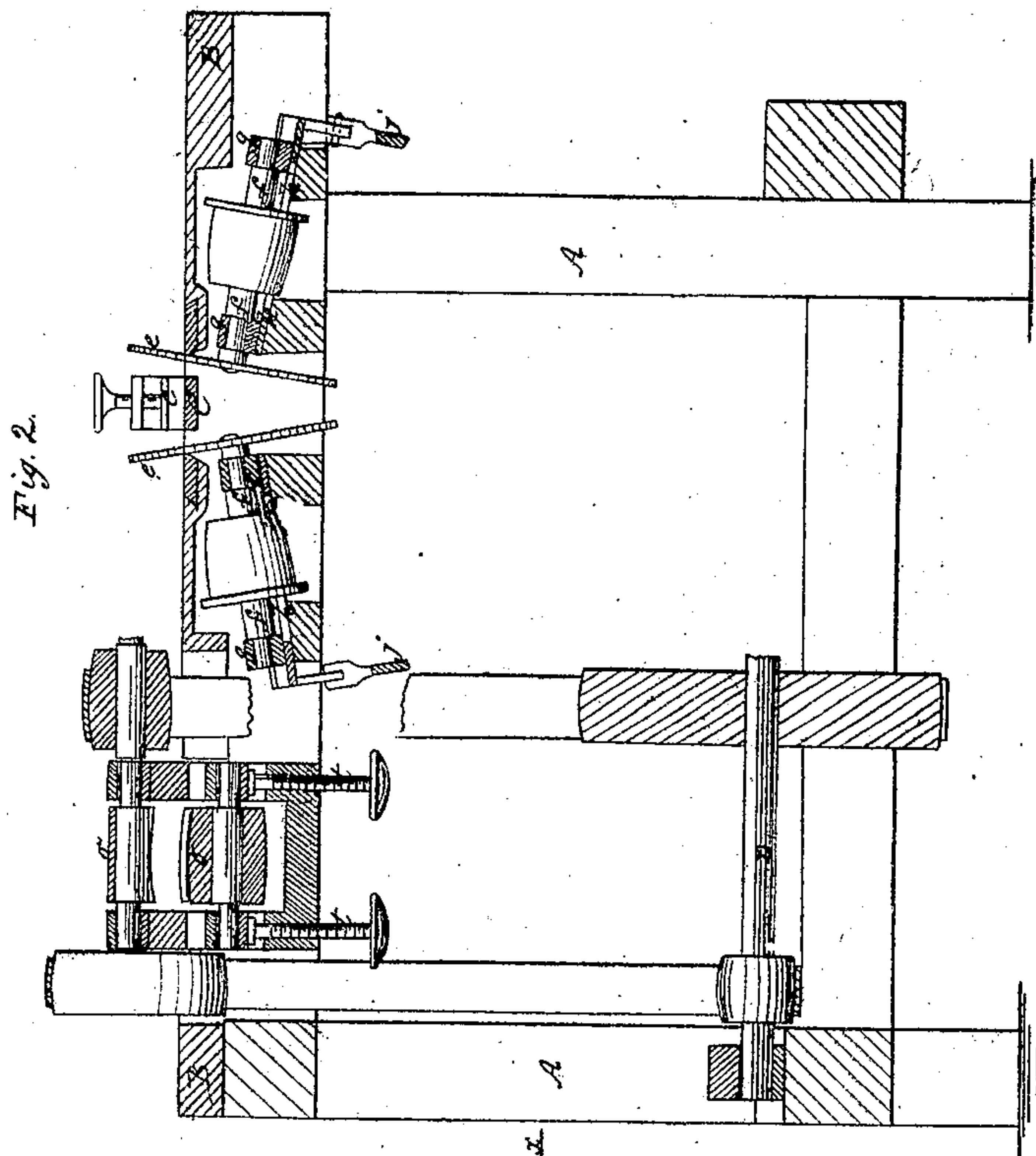


F. O. Clark.
Stave Machine.

Nº 71277

Patented Nov. 26, 1867.



Witnesses
R. J. Campbell
Edw. Schaper

Inventor

F. O. Clark

Wm. Smith & Son

F. O. Clark.
Slave Machine.

Nº 71277

Patented Nov. 26, 1867.

Fig. 3

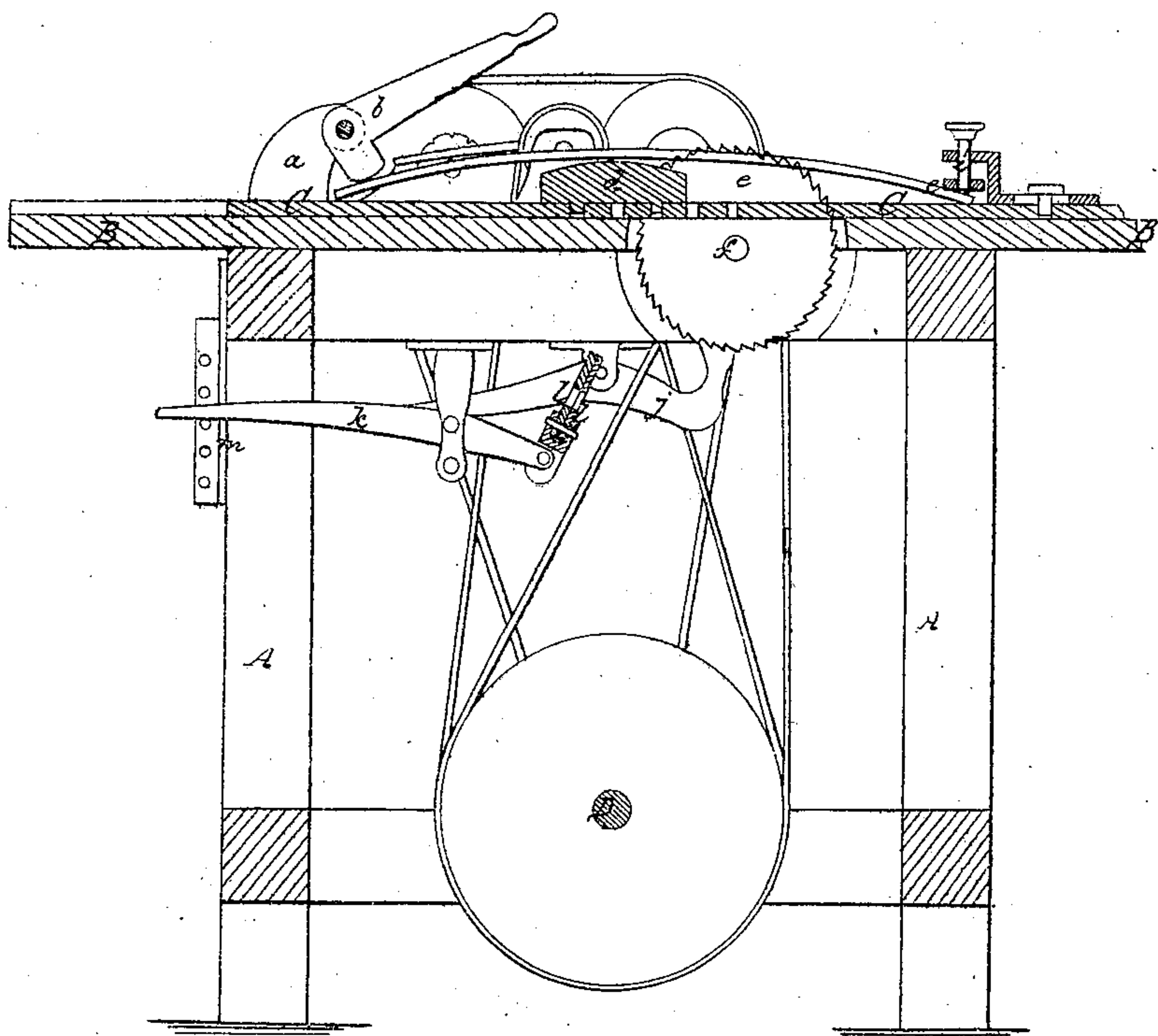
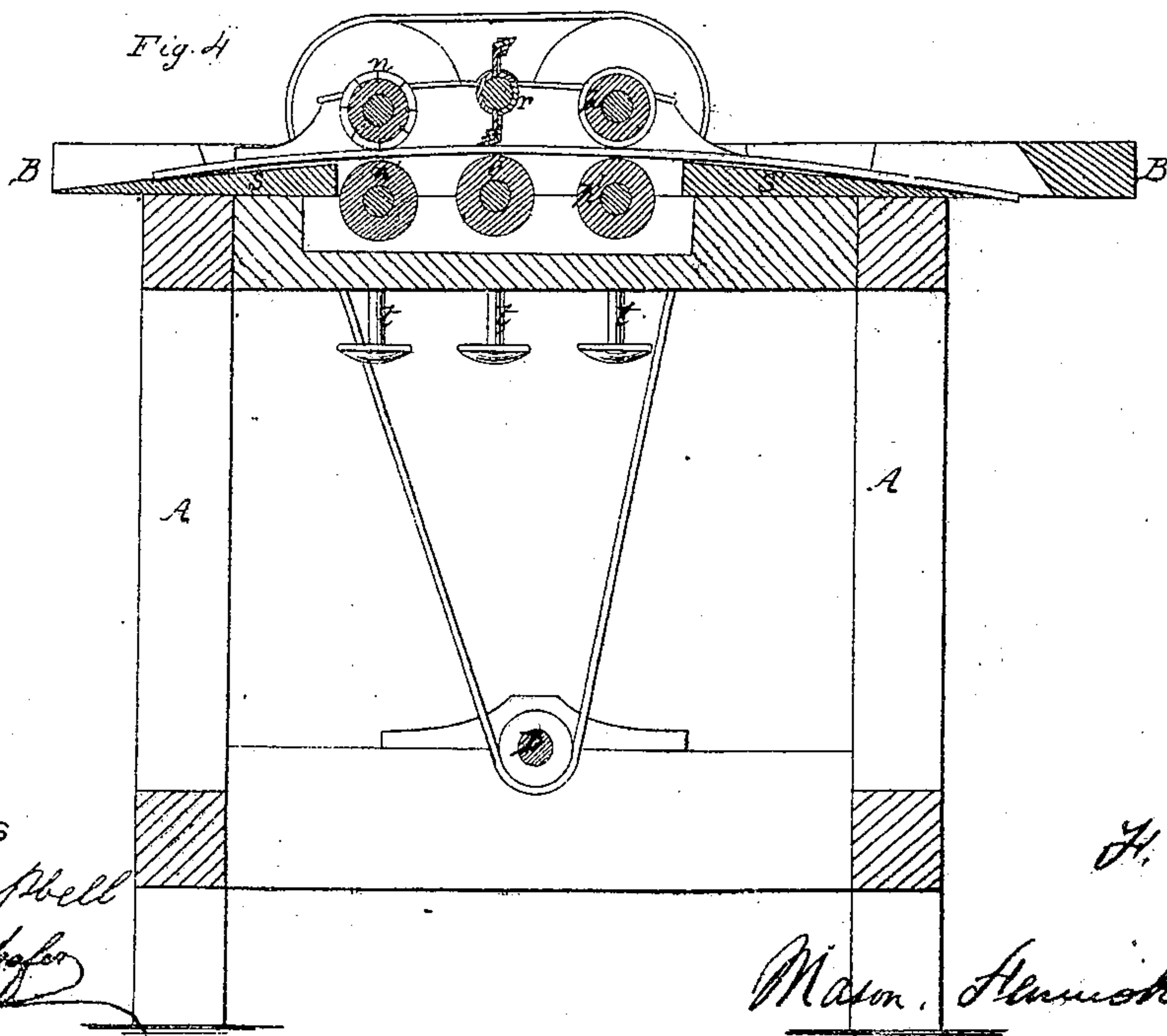


Fig. 4



Witnesses

R. G. Campbell

Edward Hofer

Inventor

J. A. Clark

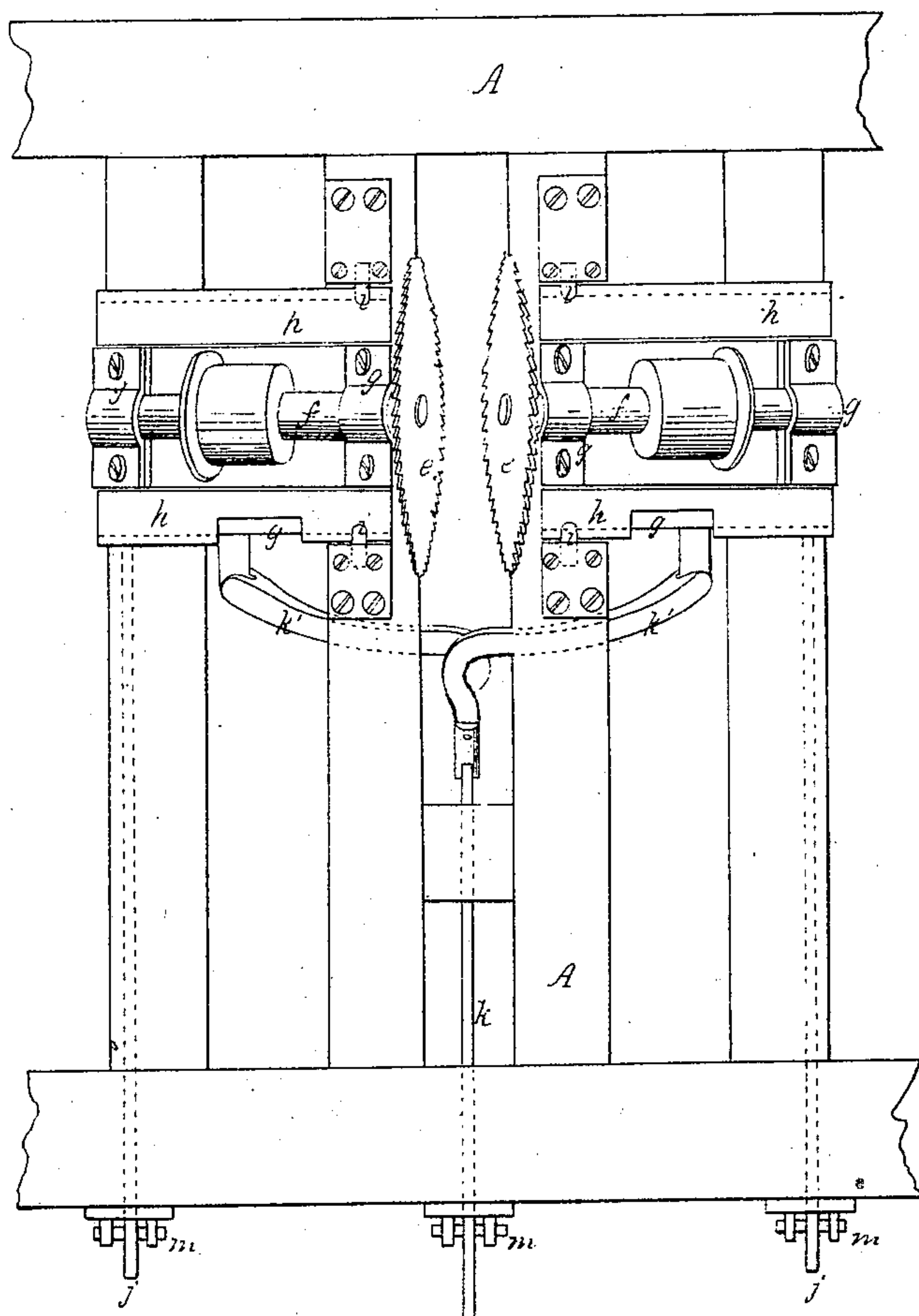
Mason, Henrik Lawrence

F. O. Clark.
Stave Machine.

Nº 71277

Patented Nov. 26, 1867.

Fig. 5



Witnesses
W. J. Campbell
Edw. Schafer

Inventor
F. O. Clark
by
Matth. Flewisch & Co.

United States Patent Office.

FRANCIS O. CLARK, OF BENTON'S PORT, IOWA, ASSIGNOR TO HIMSELF AND
JOHN E. REININGHAUS, OF THE SAME PLACE.

Letters Patent No. 71,277, dated November 26, 1867.

IMPROVEMENT IN STAVE-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, FRANCIS O. CLARK, of Benton's Port, in the county of Van Buren, and State of Iowa, have invented a new and improved Machine for Dressing Barrel-Staves; 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 plan view of the improved machine.

Figure 2 is a longitudinal section taken in the vertical plane indicated by red line *x x* in fig. 1.

Figure 3 is a transverse section taken in the vertical plane indicated by red line *y y* in fig. 1.

Figure 4 is a transverse section taken in the vertical plane indicated by red line *z z* in figs. 1 and 2.

Figure 5 is a detail of the saw-frames.

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

This invention relates to certain novel improvements on machinery which is designed for dressing staves on their outside surfaces, so as to prepare the staves to be fitted together and hooped in the form of barrels.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents a table, which is adapted for sustaining the devices for jointing and dressing staves. Upon the top B of this table is a sliding carriage, C, which is fitted to move in a groove extending transversely across the table-top; and through longitudinal slots, which are made through this carriage, two inclined circular saws project, for bevelling or jointing the staves which are confined upon said carriage. Near one end of the carriage C is a standard, *a*, to which is pivoted a right-angular lever, *b*, the object of which is to bend and confine one end of a stave upon the carriage. The opposite end of the stave is confined beneath a clamp, *c*, on the end of a set-screw, which is tapped through a bracket upon the carriage. Between the two clamps is a block, *d*, which is attached to the carriage by means of short studs, and which is movable. This block forms an elevated support for the middle of a stave when bent and held down, as shown in fig. 3, and by adjusting it in a direction with the length of its carriage, and bending the staves over it, more or less, the staves can be brought to the exact curved shape which they will take when hooped together in a barrel.

The edges of the staves are bevelled or "jointed" by means of two inclined circular saws *e e*, which are keyed on the ends of arbors *f f*, and driven by means of belts leading from the main shaft D. The saw-shafts *f f* have their bearings upon frames *g g*, which are inclined in opposite directions, and which are allowed to have an endwise adjustment, so that the two saws can be moved nearer together or further apart, according to the width of the staves to be jointed. The saw-frames *g g* are supported in guide-frames *h h*, which are pivoted by the trunnions *i i* to the table-frame, thus allowing the saw-frames to be vibrated, and the saws adjusted and set at any desired inclination, according to the diameter of the barrels for which the staves to be jointed are designed. The two levers *j j* are intended for adjusting the saws and holding them at any desired angle with respect to the table A; and the lever *k*, with its toggle-joints *l l*, is designed for adjusting the saw-frames and setting the saws at the required distance apart. The three levers *j j* and *k* extend to the front part of the table, and pass through hangers *m*, to which the levers are attached by means of pins passed through said hangers.

Alongside of the sliding carriage C are the devices for dressing the external surfaces of the staves after they have been jointed. For this purpose I employ feed-rollers *n n'*, one of which is concave and the other correspondingly convex, a supporting-roller, *o*, and two guide-rollers *p p'*. Between the two rollers *n* and *p* are the cutters, which are secured to a cutter-head, *r*, upon a shaft which receives its motion from the main driving-shaft E through the medium of a belt.

The staves are guided up to the work upon the curved bed *s* made in the table-top B, and allowed to pass off after they are dressed over the curved bed *s'*. This bed *s s'* and the lower set of rollers *n' o p'* are arranged in a curved line, corresponding to the curved shape of the sawed staves, consequently the latter will not be bent or strained while they are being dressed.

In order to adapt this part of the machine for dressing staves of different thicknesses, I shall employ vertically adjustable bearings or journal-boxes for the ends of the feed-roller and cutter-head shafts, or simply for the feed and supporting-roller shafts, which bearings will be adjusted by means of the set-screws *t t*, shown in fig. 4.

By my arrangement of jointing and dressing contrivances alongside one another, as shown, the attendants at one end of the machine can conveniently pass the staves to and from the jointing-machine and to the dressing-machine, and thus the operation of jointing and dressing curved staves can be carried on uninterruptedly after the machine is started.

My combined machine prepares curved staves ready for being set up into a barrel, and to be crozed, after they have been bent or are sawed from a bolt, and the staves which are thus produced are more perfect and cost less, for the reason that I employ new and improved machinery in their production, such machinery being much simpler in construction and arrangement than any with which I am familiar for doing like and the same amount of work in a given time.

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

The curved beds *s s'*, formed in the table-top B, in combination with feed-rollers *n n' p p'*, supporting-roller *o*, and cutter-head *r*, arranged as described, for the purpose of dressing curved staves.

FRANCIS O. CLARK.

Witnesses:

EDW. SCHAFER,

EDM. F. BROWN.