

(No Model.)

2 Sheets—Sheet 1.

C. McNEAL.
RABBETING MACHINE.

No. 368,845.

Patented Aug. 23, 1887.

Fig. 1.

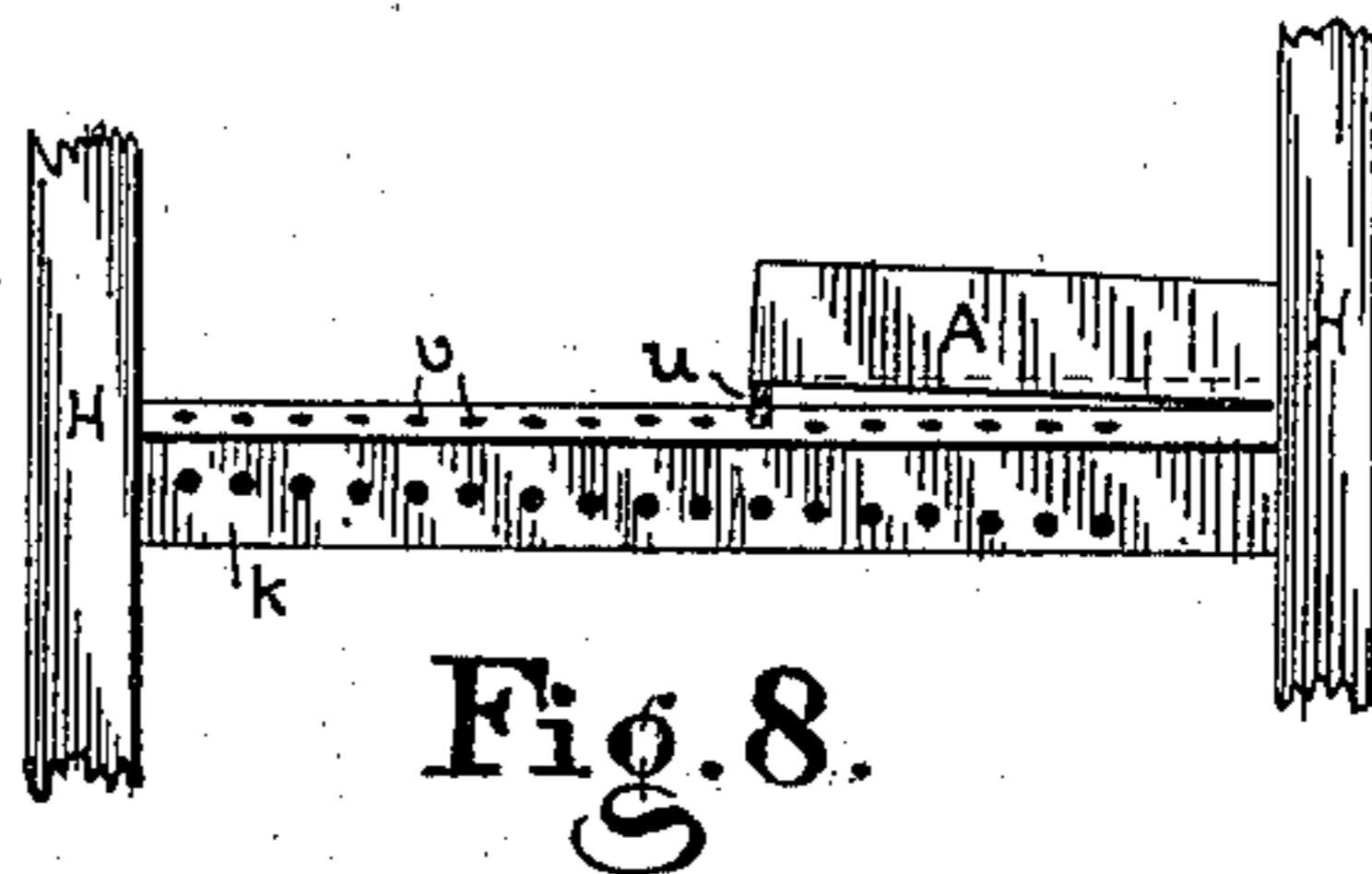
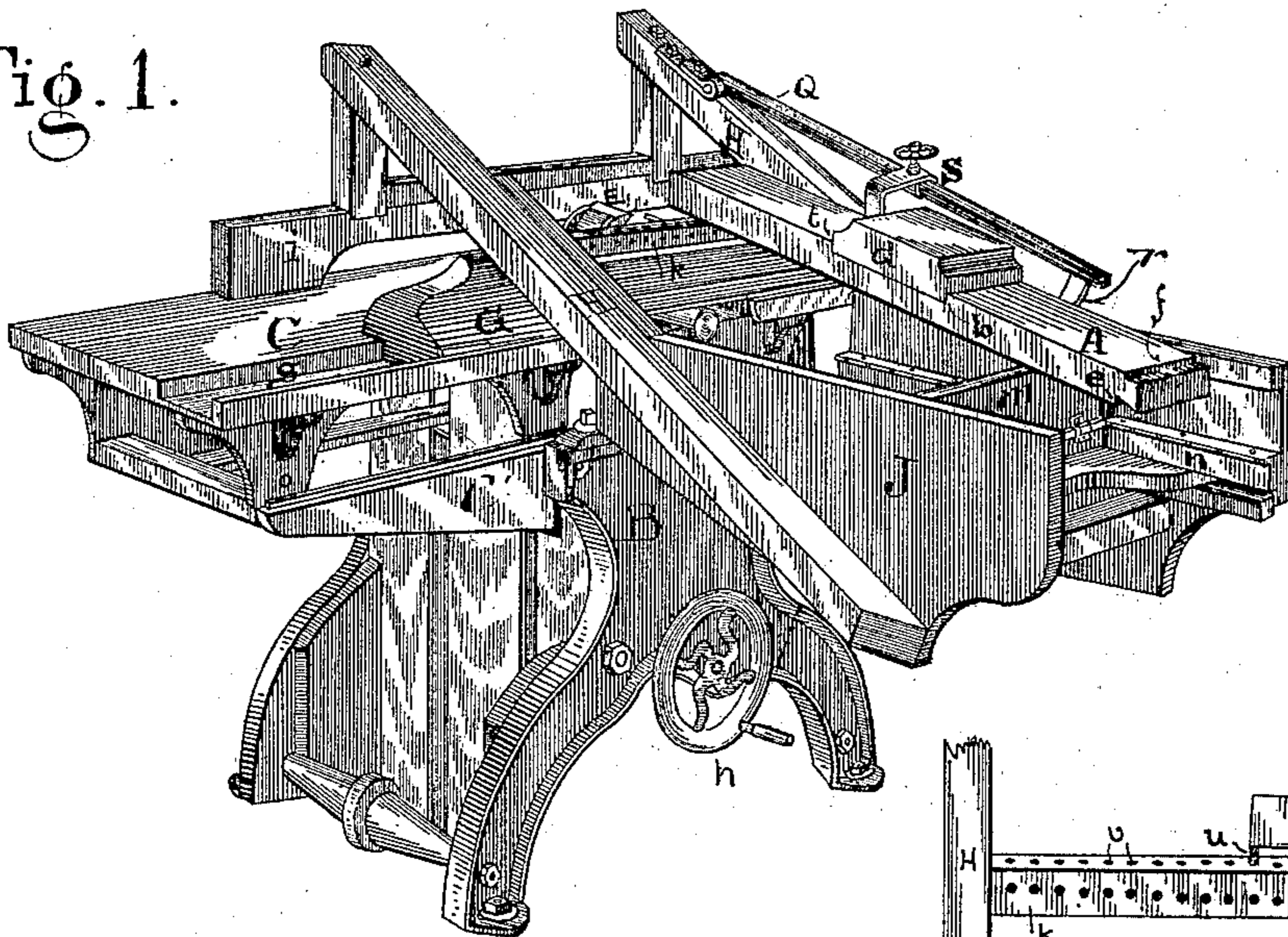
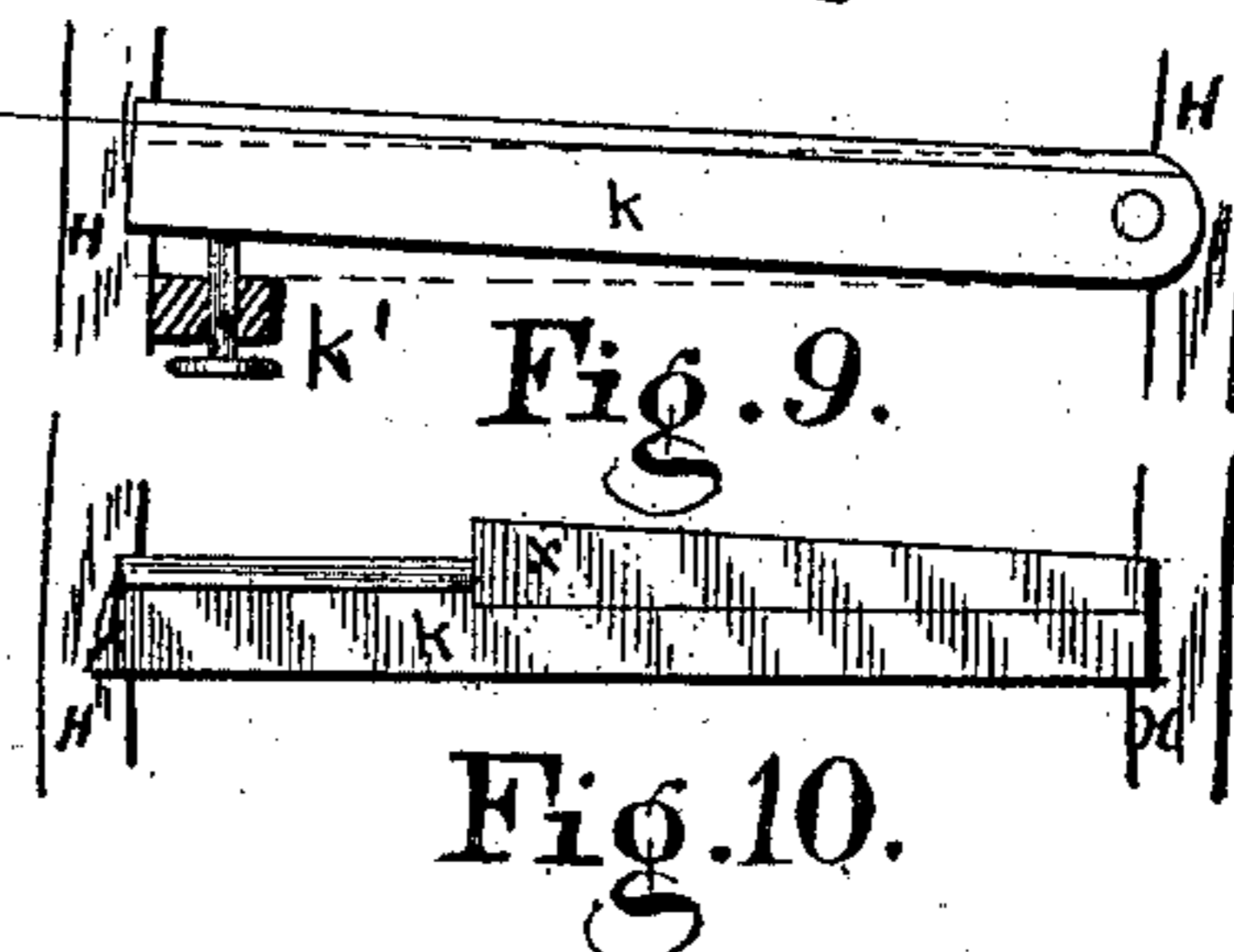
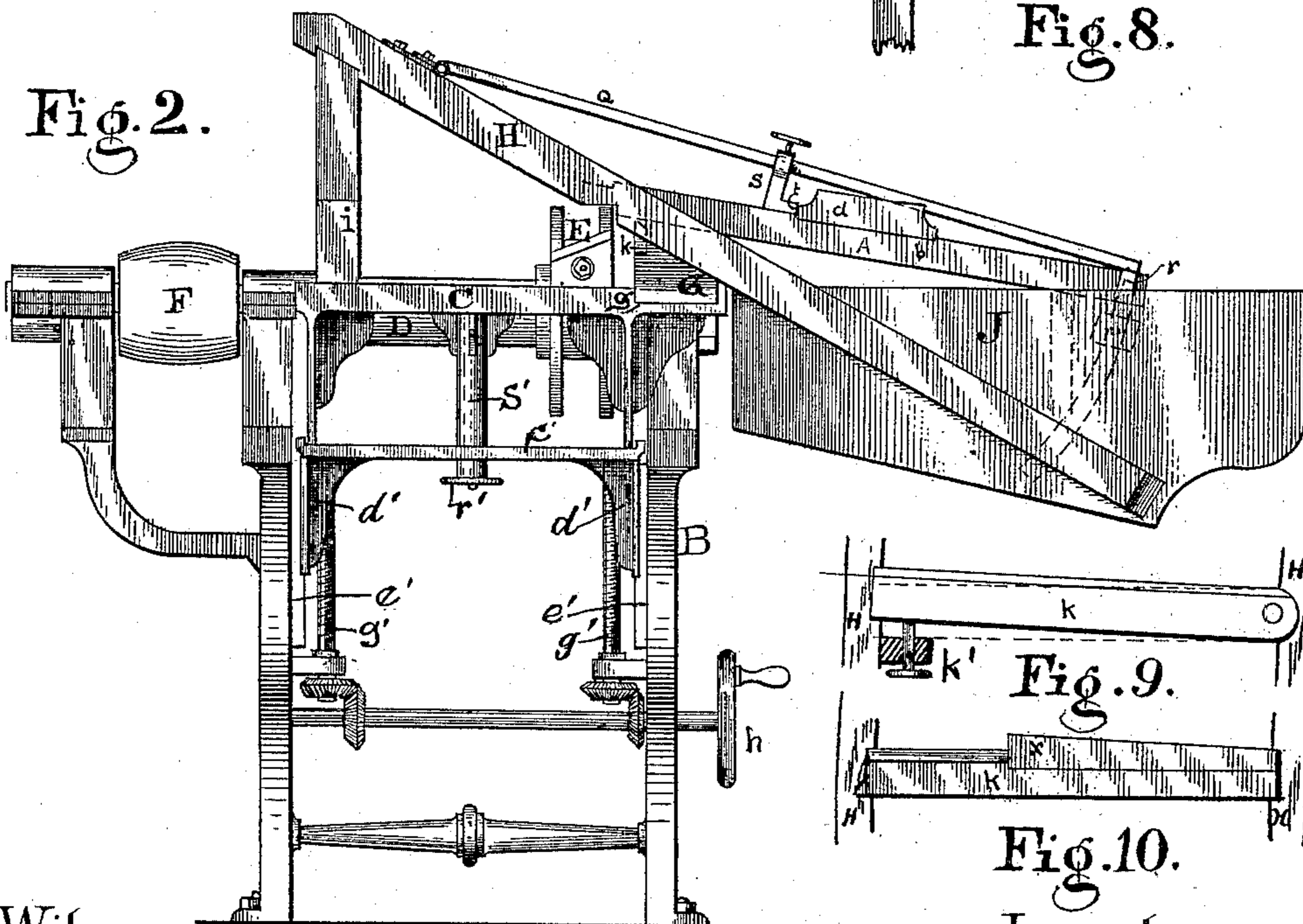
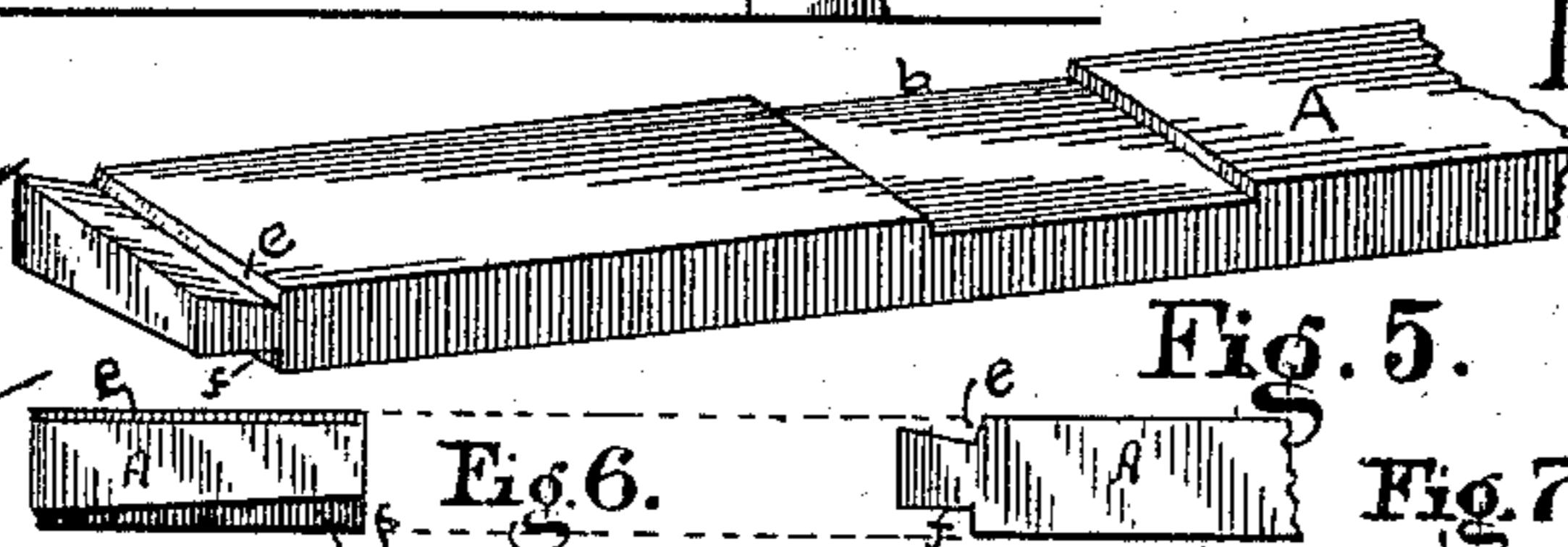


Fig. 2.



Witnesses:

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Inventor.

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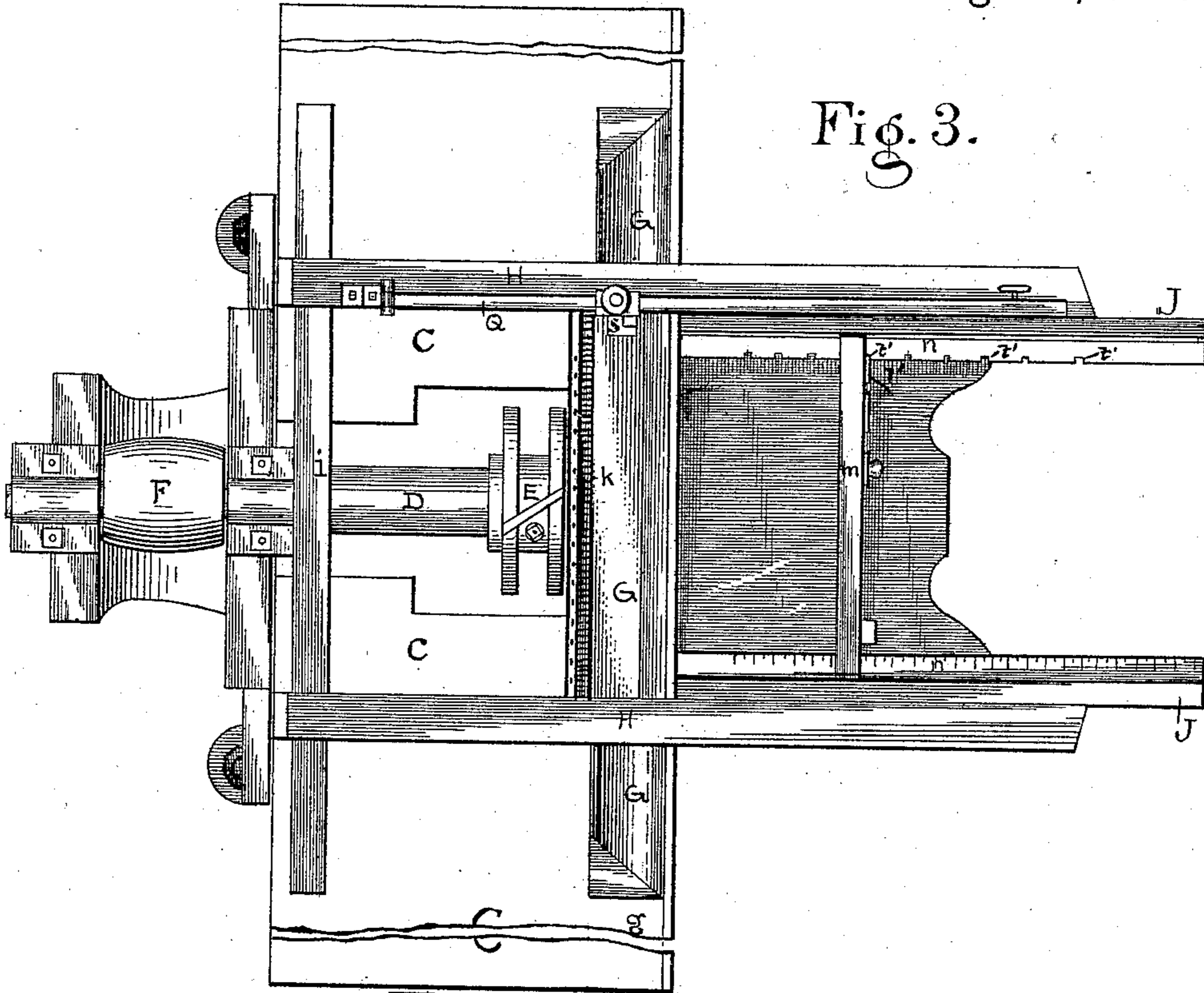


Fig. 3.

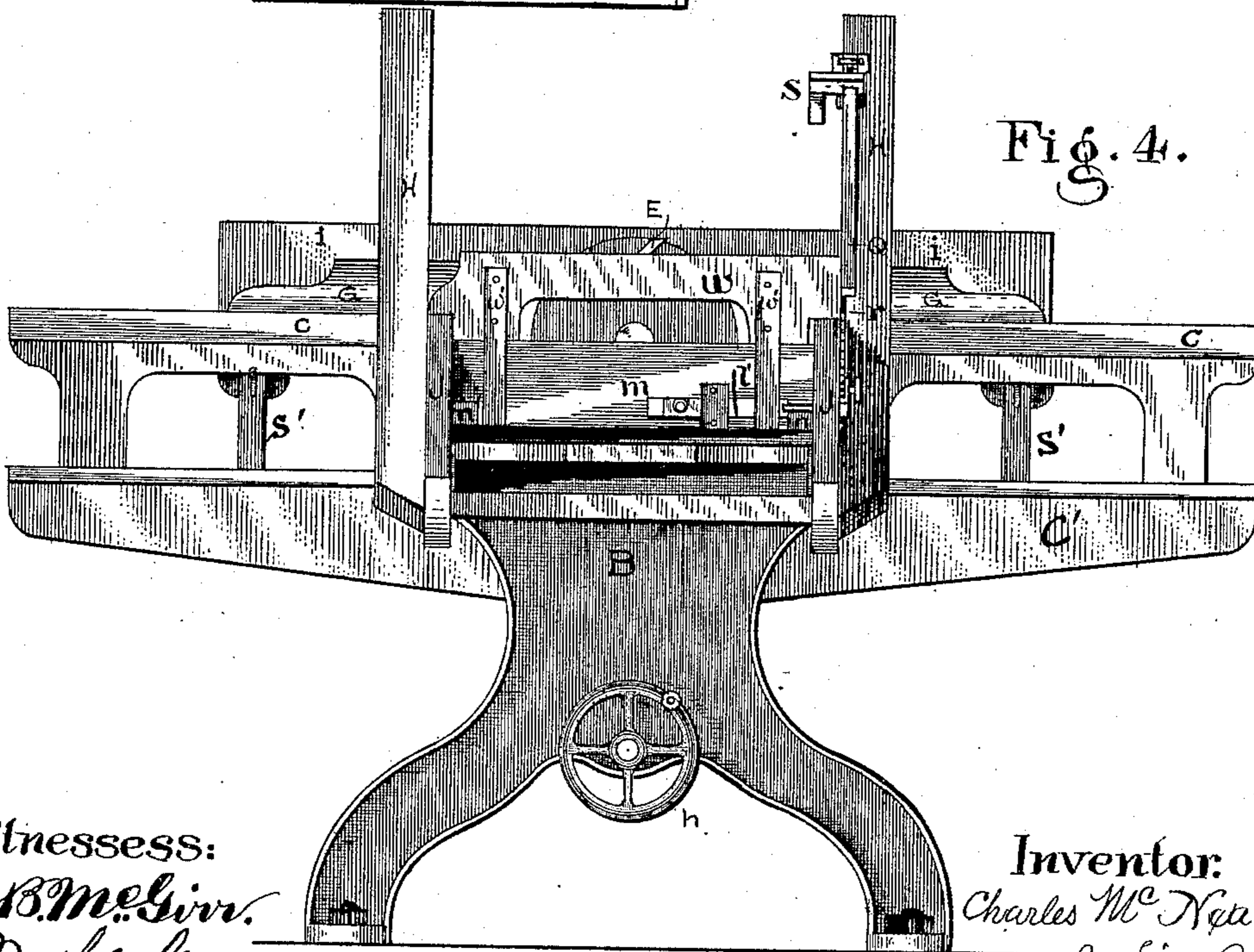


Fig. 4.

Witnessess:

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UNITED STATES PATENT OFFICE.

CHARLES McNEAL, OF MISHAWAKA, INDIANA, ASSIGNOR TO THE DODGE MANUFACTURING COMPANY, OF SAME PLACE.

RABBETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 368,845, dated August 23, 1887.

Application filed August 4, 1886. Serial No. 209,977. (No model.)

To all whom it may concern:

Be it known that I, CHARLES McNEAL, of Mishawaka, in the county of St. Joseph and State of Indiana, have invented a new and
5 useful Improvement in Rabbeting-Machines; and I do hereby declare that the following is a full and accurate description of the same.

Figure 1 is a perspective view of my machine. Fig. 2 is an end elevation of the same.
10 Fig. 3 is a plan of the same. Fig. 4 is a front elevation of the same. Fig. 5 is a perspective view of one end of the pulley-arm, showing the parts produced by my machine. Figs. 6 and 7 are respectively an end and a side elevation of the end of said arm. Figs. 8, 9, and
15 10 represent modifications of the rest-bar.

This invention relates to a machine adapted to use in the manufacture of the spoke-arms for the wooden pulleys described in my patent
20 granted October 19, 1886, and for other similar purposes. For convenience, and to impart a full understanding of my invention, I will briefly describe the pulley and its arm. The rim of the pulley is made from short
25 curved segments cut from suitable boards properly packed so as to break joints with each other and firmly glued together, thus constituting a solid composite rim. The arms or spokes I make of two pieces of suitable
30 planks of hard wood, long enough to reach across the interior diameter of the rim and be embedded at each end in said rim. These spokes are placed parallel with each other, and at their centers each arm is provided with a
35 block which serves as one-half the hub. At each end of the pulley-arm I make a dovetail tenon to enter a proper mortise in the pulley-rim. This firmly unites the rim and arm, so that they cannot separate and so that the rim
40 cannot spread. To facilitate the fitting of the dovetail tenon to the dovetail notch or mortise, and to secure a solid and sound joint without difficulty, I cut said tenon a little thinner at one edge than the other, so that a wedge
45 may be driven in to force all the surfaces solidly together. The hub-block at the center is seated in a shallow transverse groove cut in the arm to render solid and secure the attachment of the block to the arm.

50 The machine described and claimed herein is designed for the purpose of cutting the trans-

verse rabbets and grooves which provide the arm with the dovetail tenons and seat for the hub-block.

The spoke-arm A is therefore provided with
55 the transverse rabbets, forming shoulders *e* and *f* at each end, and a transverse groove, *b*, across its middle to receive and seat the block *d*, which constitutes one-half the hub of the pulley, as shown in Fig. 1. 60

B is the frame of my machine, and C is the table, provided near one edge with a longitudinal groove, *g*, to serve as a guide for the carriage-frame H, upon which the blank A rests and is carried to the cutter. 65

D is the shaft for the cutter-head E, and F is the driving-pulley for the same.

The table C may be raised or lowered to adjust its surface properly as to the cutters, and for convenience it is also usually made in two
70 parts, so that that part which is on one side of the cutter may be adjusted independently of that part which is on the opposite side of the cutter. It is also common to make these parts independently adjustable toward or away from
75 the cutter, because cutters of different diameters are used. Therefore each part of the table C is mounted upon the under frame, C', and adapted to slide longitudinally in guides thereon, and is provided with a standard, S',
80 and a set-screw, *s'*, whereby it may be locked fast to the under frame, C', at any desired point. The under frame, C', is provided with pendent arms *d'*, which move in vertical guides
85 *e'* on the frame B, and is controlled by the screws *g'*, actuated by means of the hand-wheel *h* and its shaft and miter-gears. This structure of frame and table is that common to machines of this class, but is not essential to the particular duty required of it in connection
90 with this invention. The groove *b*, and the end rabbets are cut with the ordinary grooving-head, E, the blank arm being presented in different positions, according to the required direction of the cut. 95

The carriage H is adapted to slide on the table C and be guided thereon by the part G, which fits into the groove *g*. Said part G may be of equal width with said groove, as shown
100 in Figs. 2 and 3, or may overlap and rest partly on the surface of the table, as shown in Fig. 1; but this is not material. The carriage

is adapted to overhang the machine frame and table, so as to support the blank spoke-arm A with one end only presented to the cutter. It is necessary to overhang as shown, because it is necessary to support said arm in a position oblique to the horizon, and because the presence of the driving-pulley F on the opposite side of the machine would prevent the passage of any but very short spoke-arms if arranged to be presented to the cutter from the other side of the machine. The carriage is conveniently made with two inclined side bars, which rest upon the sliding bar G at their middle, and are supported upon the sliding bar *i* at their inner ends. The sliding bar *i* rests upon the table C on the pulley side. The outer ends of the side bars sustain the gage-frame J, which is provided with two horizontal rest-rails, *n*, for the adjustable rest-board *m*, which is designed to support one end of the spoke-arm A. A rest-bar, *k*, is attached to the carriage parallel with and close to the plane of the cutters to support that end of the spoke-arm which is being acted on by the cutters.

The rest-board *m* and the rest-bar *k* being on different levels, it follows that the distance between them will determine the inclination of an object resting on both. I therefore make the rest-board *m* adjustable along the rails *n* and provide a clamp or latch to hold it in the desired position. A convenient lock consists of a latch, *l'*, to engage in one of a series of notches, *t'*, made in one of the bars *n*, and one of said bars may also be inscribed with a scale of inches for convenience in changing the adjustment of the board *m*.

It will be understood that the end tenon is dovetailed with the characteristic dovetail cut all on one side and with the shoulder *e* inclined to correspond with the curve of the pulley-rim. As this curvature will vary with the diameter of said rim, a change in the position of the rest-board *m* is necessary to secure the proper inclination of the spoke-arm. As before stated, one edge of the tenon is cut thinner than the other edge to permit the insertion of a wedge. I therefore provide means for supporting the arm A with one edge higher than the other, so that the cutter will penetrate deeper at the lower edge. I desire to cut this transversely-inclined side of the tenon with its surface longitudinally parallel with the side of the arm A, and therefore it is necessary to support said arm horizontal longitudinally, and for that purpose it is necessary to raise the rest or support on the board *m*. This may be conveniently done by an addition thereto of the board *w*, attached to said board in some convenient way, as by means of strips *w'*.

The transverse inclination of the spoke-arm A may be attained in a variety of ways. The rest-bar *k* may be pivoted at one end and its inclination determined by a screw, *k'*, which passes through a screw-nut attached to the carriage H, as shown in Fig. 9, or a shoe, *x*, with an inclined surface may be put on the bar *k*,

as shown in Fig. 10; and an easy and efficient means is by means of a series of holes, *v*, successively increasing in depth, and a pin, *u*, which may be placed in either one of said holes. The series of holes in the side of the bar *k*, Figs. 1 and 8, are merely for the escape of dirt which may fall into the pin-holes *v*.

A gage-rod, Q, is hinged at one end to the carriage H, preferably at its inner or higher side, and is provided with a segment, *r*, at its outer end. Said segment passes through a loop on the outside of the carriage, said loop being provided with a set-screw to clamp the segment in position. A traveling gage, S, is mounted on said rod.

When the rests *k* and *m* are in proper relative position and an arm, A, properly located thereon by measurement, the traveling gage S is moved along the rod Q until it engages some shoulder or end of the arm A, and thereafter it serves to locate successively the other similar arms as they are placed on the machine.

In operation an arm is placed on the carriage and held there while said carriage is pushed forward and the arm thereby presented to and carried over the cutter.

Having described my invention, I claim as new—

1. The table C, provided with the guide-groove *g*, shaft D, and cutter-head E, combined with the inclined carriage H H, adapted to slide on the table C, conducted by the groove *g* and to overhang the side of said table, said carriage being provided with a longitudinal rest-bar, *k*, to support the end of the spoke-arm blank near to the cutter, and with the adjustable gage-board *m*, to support the opposite end of said blank in the desired position as to the horizon, and the gage S, adapted to engage some shoulder of said blank and thereby definitely locate the place to be cut by said cutter, substantially as set forth.

2. The table C, provided with the shaft D and cutter-head E, combined with the inclined carriage H H, adapted to slide and be wholly supported in guides upon the table C and to overhang the same, provided with a longitudinal rest-bar, *k*, near to the plane of the cutter, and the gage-board *m*, laterally exterior to the base of the machine, said gage-board being adjustable laterally to vary the angle at which the spoke-arm blank is presented to the cutter, and the adjustable gage S, substantially as set forth.

3. The table C, provided with the shaft D and the grooving cutter-head E, and the inclined overhanging carriage H H, adapted to slide and be wholly supported on said table, combined with the rest-bar *k*, the supporting-bars *n*, the gage-board *m*, adjustable longitudinally thereon, and the hinged bar Q, provided with the adjustable gage S, substantially as set forth.

4. The table C, provided with the shaft D and grooving cutter-head E, combined with the carriage H, overhanging the side of said table and adapted to slide and be supported

wholly thereon, provided with the gage-board *m*, and a rest near to the cutter adapted to hold the spoke arm with one edge higher than the other, for the purpose of cutting the rabbet *f* deeper at one edge of the arm than at the other.

5 5. In a rabbeting-machine having a table, C, shaft D, and cutter-head E, a carriage to receive and carry the blank spoke-arm to the cutter, and a rest-bar, *k*, provided with a series of
10 holes, *v*, progressively increasing in depth, combined with a rest-pin, *u*, for an adjustable support to hold one edge of said blank higher than the other, to cause the rabbet *f* to be cut
15 deeper at one edge of said arm.

6. In a rabbeting-machine, a carriage to receive and hold the blank spoke-arm and carry it to the cutter, a rest-bar, *k*, near to said cutter to support one end of said blank, and a gage-board, *m*, to support the other end of the same, combined with the supplemental supporter *w*, removably attached to said gage-board *m*, to raise the supporting-surface to the level of the rest-bar *k*, substantially as described.

CHARLES McNEAL.

Witnesses:

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