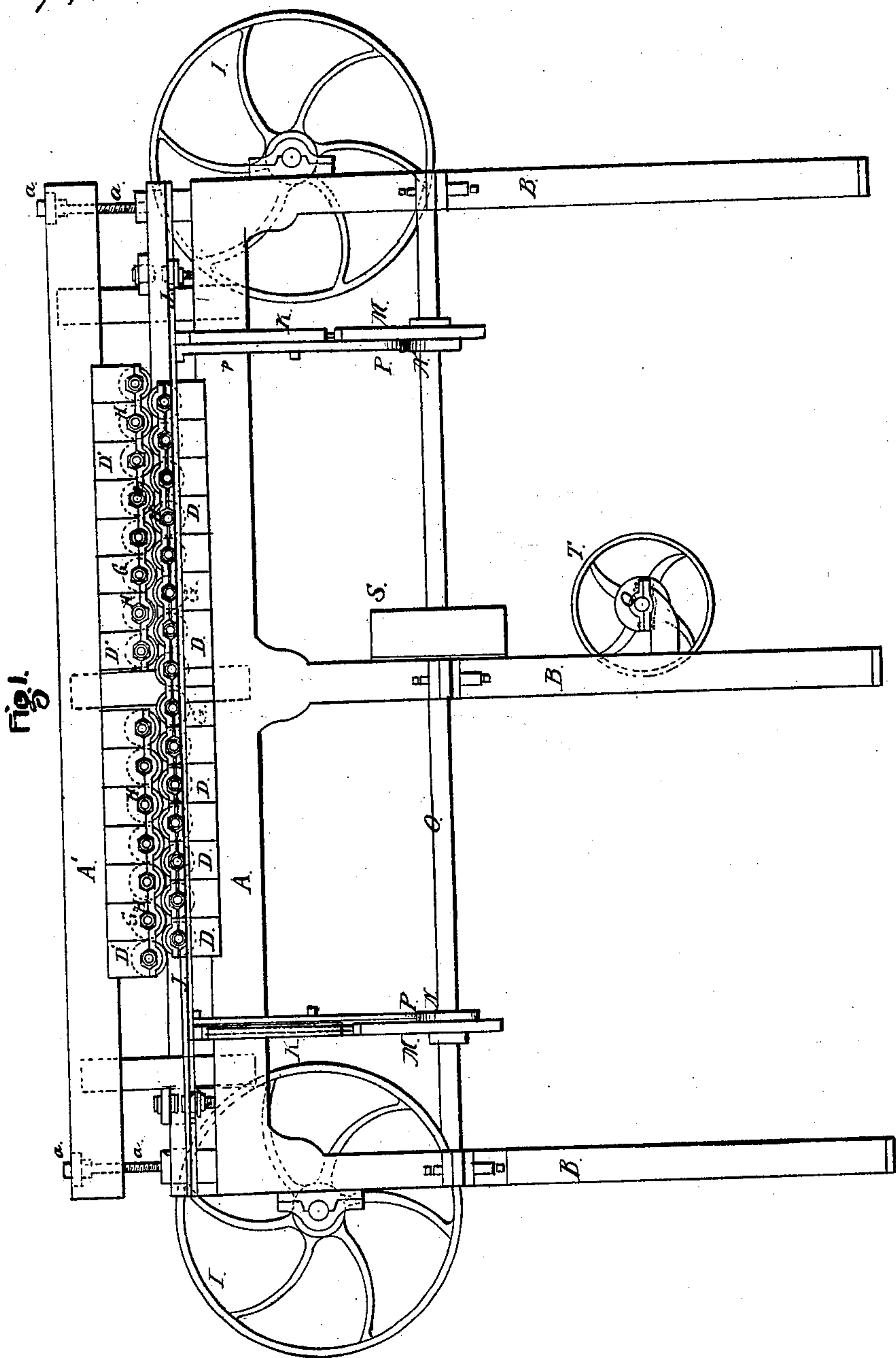


Ninn, Kindleberger & Arnold.

Mach. for Boring Blind Stiles.

N^o 98,455.

Patented Dec. 28, 1869.



WITNESSES:

G. H. Strong
Wm Gerlach

Witnesses Wm Dennis
Chas. H. adaway.

INVENTORS:

Jefferson Kindleberger
William Augustus Arnold

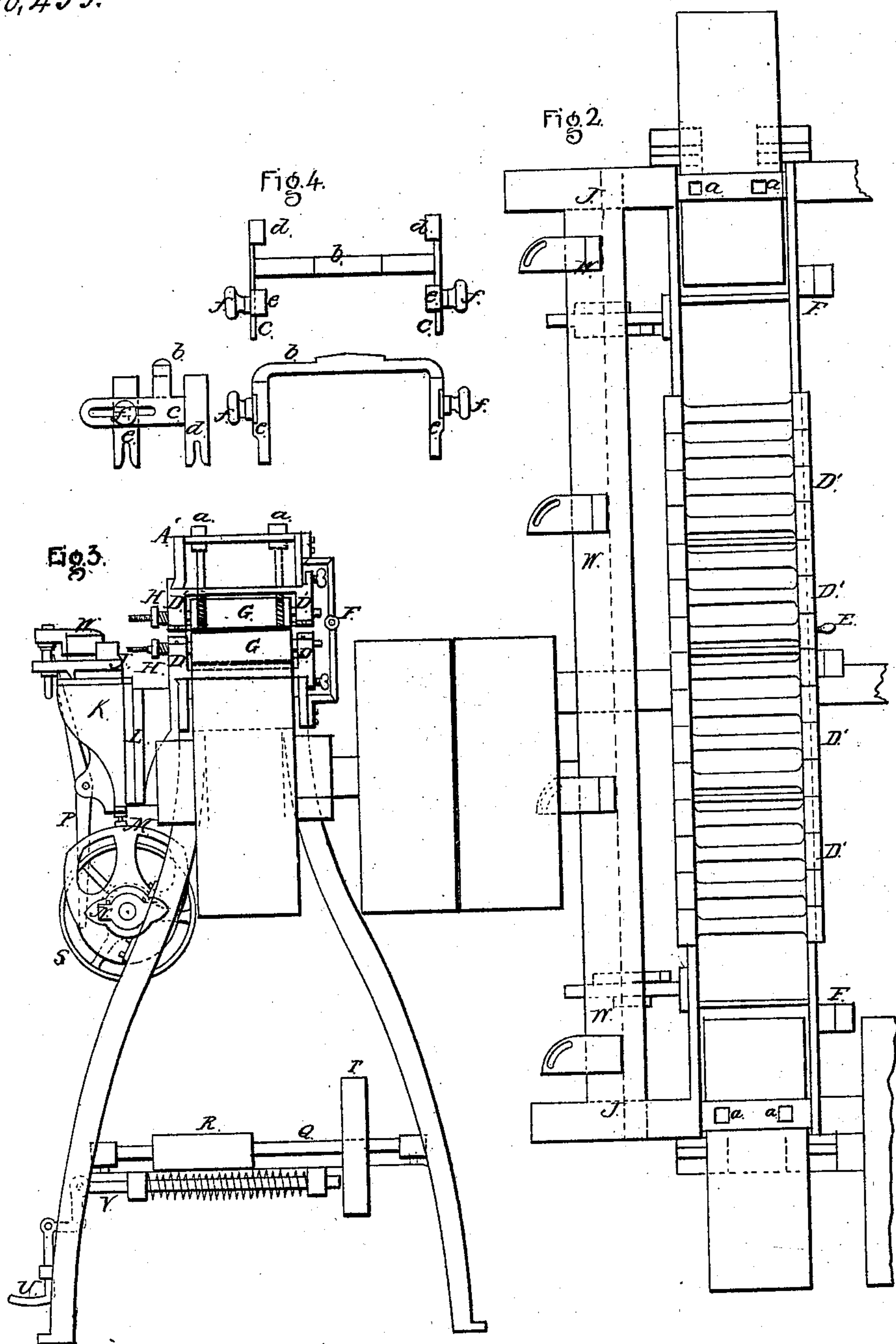
Assignors to the
Inventors Association of S. & Cal.

Winn, Kindleberger & Arnold.

Mach. for Boring Blind Stiles.

N^o 98,455.

Patented Dec. 28, 1869.



Witnesses:

Geo H Strong.
Wm Gerlach
commissary Wm Dennis
for Am. Home Chas. Hoadway.

Inverfor:

amolina
Jefferson Kinellbager
William Angersted handle
Assignors to the
Inventors Association of S. F. Cal

UNITED STATES PATENT OFFICE.

ALBERT M. WINN, JEFFERSON KINDLEBERGER, AND WILLIAM AUGUSTAS ARNOLD, OF SAN FRANCISCO, CALIFORNIA, ASSIGNORS TO THE INVENTORS' ASSOCIATION, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR BORING BLIND-STILES.

Specification forming part of Letters Patent No. 98,455, dated December 28, 1869.

To all whom it may concern:

Be it known that we, ALBERT M. WINN, JEFFERSON KINDLEBERGER, and WILLIAM AUGUSTAS ARNOLD, all of the city and county of San Francisco, State of California, have invented an Improved Machine for Boring Blind-Stiles; and we do hereby declare that the following description and accompanying drawing are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use our said invention or improvements without further invention or experiment.

The object of our invention is to provide an improved machine for boring blind-stiles.

It also consists in the use of a spacer, by which the distance between the holes to be bored is adjusted after the size of the blind to be manufactured is decided upon.

The machine consists of a frame having two pulleys—one at each end. The augers for boring the stiles are driven by transverse rollers, in the center of one end of which they are made fast. There are two sets of rollers, one above the other, so that those in the upper set stand over the space between those in the lower set, and thus every alternate hole is made by the lower set and those between by the upper set. These rollers are driven by a belt passing from one of the above-mentioned pulleys to the other and extending between the sets of rollers, its upper surface driving one set and the lower surface the other set. A supporting-table for the stiles extends along the front of the machine and is operated by a cam, so as to present the stile first to one set of augers and then withdraw it and present it to the other set, the finished stile being then removed.

Referring to the accompanying drawing for a more complete description of our invention, A A' is the frame or bed of the machine, and it may be supported by suitable legs B, which also serve as points of support for the different shafts. The lower frame A has a series of sliding blocks D extending across it and set at any point by screws E. The upper part of the frame A' is hinged to the lower part at F, and may be held in place by screws a or other convenient device. This

allows the upper part of the frame to be turned back when necessary to inspect or repair any portion or to change the spaces, and the screws may be used to raise or lower the upper rollers, so as to vary their pressure on the belt. This portion of the frame has also a similar series of sliding blocks D', which stand over the spaces between the set below and are fastened in the same way. These blocks are provided with boxes, which support the rollers G, by which the bits or augers are driven.

The front end of each of the roller-mandrels is perforated and split into quarters and has a nut H, which can be moved forward to close the parts of the mandrel together and hold the bit firmly, or by turning the nut back the bit will be released.

At each end of the frame is placed a pulley I, and the belt that passes over them extends between and drives the rollers G, the upper surface of the belt driving the upper series and the lower surface the lower series, the two sets being adjustable, so as to press the belt sufficiently to be moved. As the two series are driven in contrary directions, one set of bits must be left-handed and the other set right-handed.

The reason for using two series or sets of bits is because the spaces between the holes in the stiles are not sufficient to admit of all the rollers being placed on the same line. Therefore one set bores every alternate hole and the other set bores the holes which fall between the first ones.

If preferred, the boring may all be done by one row or set of borers, the stile being moved endwise by hand or by any suitable device after boring the alternate holes, so as to bore the intermediate holes with the same bits, and in that case the use of the cams M may be dispensed with, or two stiles may be placed on the table J together, one above the other, so that one may be bored by the upper set of bits and the other by the lower set, in the manner just described.

The number of rollers may be sufficient for the longest stiles to be bored.

The table J, which supports the stiles while being bored, is made to slide back and forward on ways in the upper part of the blocks

K, and these in turn move up and down in ways at L. Motion is imparted to the table in these two directions by two sets of cams, M and N, which are fixed on the shaft O. The cams M raise and lower the table by means of the vertical ways L. The cams N act on levers P, which have their fulcrum on the sides of the blocks K, and their upper ends attached to the table J, so as to slide it forward and back. The shaft O is driven by a cross-shaft Q, either as shown through the medium of pulleys R and S or by gearing, as may be most suitable. A belt from the main driving-shaft drives the shaft Q by means of a pulley T. A sliding bar V is operated by a foot-lever U and a spring, the spring forcing it forward, so that it intercepts a lug on the pulley T and stops it when the table J is at its highest position and drawn back from the bits. By pressing on the foot-lever the bar is withdrawn and the pulley allowed to make a revolution, which carries the table through all its movements and returns it to the starting-point.

The object of this is to allow the operator time to put on and take off the stiles.

The operation of our invention is as follows: The table J being at its stationary point, a stile is placed upon it and held fast by the sliding holder W. The foot-lever U being then pressed down, the pulley T is permitted to rotate, and the table is depressed by the action of the cams M till the stile is brought opposite the lower set of bits. The cams N then move the table forward by means of the levers P, and the stile is forced against the bits and one-half the desired number of holes bored, the cams N then allow the table to be drawn back by springs and the cams M raise it to a position opposite the upper set of bits, when the cams N again force the stile forward and the holes are bored between those first made. The table is again drawn back and the motion of the pulley T checked by the sliding bar, when the table is in its first position and the stile can be removed and another one placed on the table.

In order to adjust the spaces for different lengths or sizes of blinds we use a spacer, which consists of a bent frame *b*, having slotted arms *c*. At one end of each of the arms is a stationary fork *d*, and a movable one *e* is adjusted at any point in the slot by a set-screw *f*. These forks are set so as to clasp the mandrels of the rollers which are adjacent, beginning at the first roller after making due allowances for the mortises for the rails. The first one being set by the screw E, the next one is moved up till the forks *d* and *e* will just clasp the mandrels of the two when this second one is set, and so on through the entire number.

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

1. The combination of the upper and lower series of adjustable bit-holders D' and D, herein described, with the table J, substantially as and for the purpose specified.

2. The combination of the cams M and N, lever P, and block K, or equivalent devices, with the table J, when constructed and arranged substantially as herein described.

3. The sliding bar V and pulley T, in combination with the operative mechanism described in the second claim.

4. The spacer *b*, composed of the fixed forks *d* *d*, and the adjustable forks *e* *e*, substantially in the manner and for the purpose described.

In witness whereof we have hereunto set our hands and seals.

A. M. WINN.

JEFFERSON KINDLEBERGER.

WILLIAM AUGUSTAS ARNOLD.

[L.S.]

[L.S.]

[L.S.]

Witnesses for a A. M. Winn:

WM. DENNIS,

CHAS. HADAWAY.

Witnesses for Jefferson Kindleberger and William Augustas Arnold:

JNO. L. BOONE,

WM. GERLACH.