

(No Model.)

2 Sheets—Sheet 1.

S. M. KING.

ROTARY SHINGLE PLANING MACHINE.

No. 281,520.

Patented July 17, 1883.

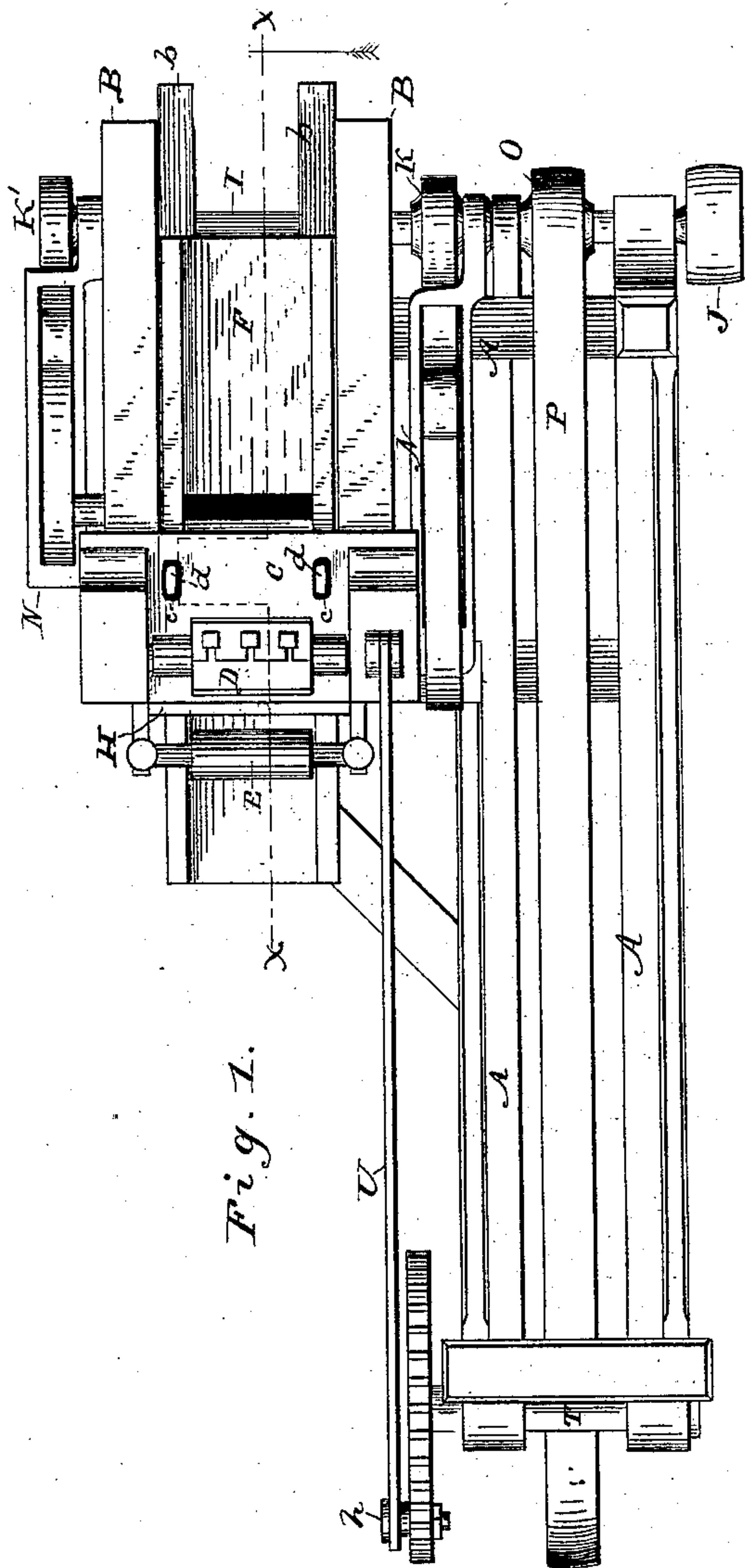


Fig. 1.

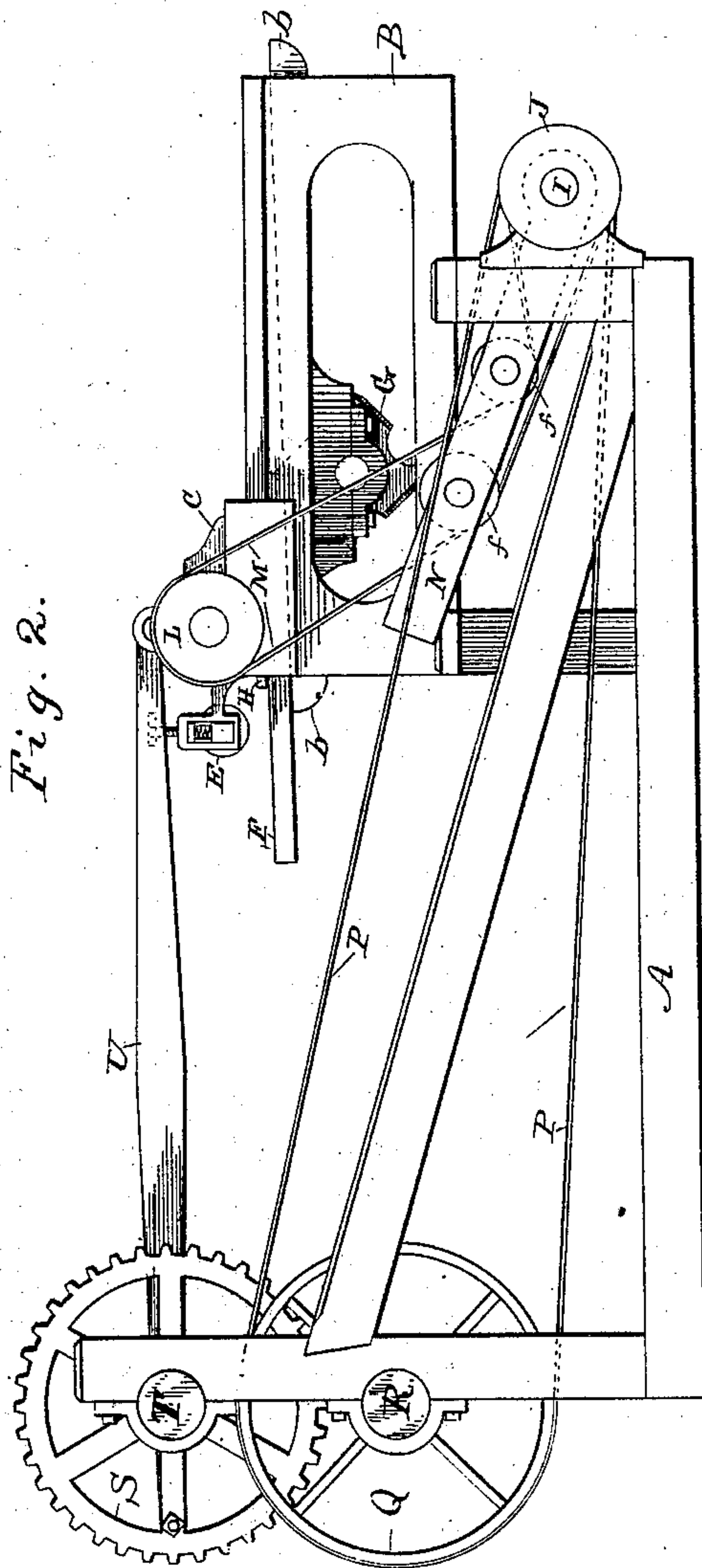


Fig. 2.

WITNESSES:

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SAMUEL M. KING, OF LANCASTER, PENNSYLVANIA.

ROTARY SHINGLE-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 281,520, dated July 17, 1883.

Application filed April 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. KING, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented a new and useful Improvement in Rotary Shingle-Planing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view; Fig. 2, a side elevation; Fig. 3, a vertical section through the line *x x* of Fig. 1, looking in the direction of the arrow. Fig. 4 is a side elevation of the side opposite to that shown in Fig. 2.

My invention relates to a machine for planing sawed shingles; and it consists in the combination of two rotary cutter-heads journaled in reciprocating frames which are loosely connected together and reciprocate in planes inclined toward each other, and between which cutter-heads is a table upon which the shingle is placed, and by which mechanism both of the tapering sides of a shingle are planed in one operation.

My improvement also consists in the combination, with the cutter-heads, of mechanism for rotating them, and still allowing them to have a reciprocating motion, as will be fully described hereinafter.

In the drawings, A represents the framework of the machine, which may be of any desired material, either wood or iron, and of any approved shape.

B B are elevated side frames mounted upon the main frame A, and arranged to carry the reciprocating shingle-table and cutter-heads. The upper surfaces of these side frames, B, are horizontal, and form guideways upon which slides the carriage C, (see Fig. 3,) carrying the upper cutter-head, D, and also the presser-roller E, arranged in front of the cutter-head. Upon the inner faces of these side frames are fastened inclined strips *aa*, surmounted by detachable gibs *b b*, which form guides upon which reciprocate the shingle-table F and the lower cutter-head, G, which works through a slot in the shingle-table, and whose bearings are fastened to the said table. The upper cutter-head carriage is slotted at *c c*, Figs. 1 and 3, and through these openings there project

two horns or arms, *d d*, from the shingle-table. The object of this connection is to cause both the cutter-heads to reciprocate together, and yet compensate for the divergence of the ways or guides upon which the two move. Thus as the shingle-table and the lower cutter-head move toward the lower end of the inclined ways the horns *d* move downwardly in the holes *c* of the upper carriage, and in the reverse direction they rise therethrough.

H is a cross-bar fastened to the two side frames, B, at the ends and in a plane just above the shingle-table. This bar forms an abutment against which the butt-end of the shingle rests, and which forces said shingle between the cutters as the latter move toward it.

For rotating the cutter-heads a main shaft, I, is journaled in bearings in the main frame A, and is provided with a pulley, J, by means of which power is applied to the shaft from any suitable source. On this shaft, upon opposite sides of the frame B B, are two pulleys, K K', one of which, K, imparts rotary motion to the upper cutter-head, and the other of which, K', imparts rotary motion to the lower cutter-head.

For the upper cutter-head a pulley, L, is arranged on its shaft, and a belt, M, passes around it, and then around two pulleys, *f f*, in a swinging frame, N, hung upon shaft I, and thence passes around and is driven by the pulley K on said drive-shaft. This swinging frame, it will be seen, with its pulleys *f f*, allows the drive-belt to change its angle, and by rising and falling compensates for the reciprocating movement of the cutter-head, and thus imparts a continuous rotary movement without interfering with its reciprocation. On the other side of the machine a similar swinging frame, N', with pulleys *f' f'*, and belt M' serve to impart rotary motion from the pulley K' to the pulley L' of the lower cutter-head, securing for it the same result of rotating it without interfering with its reciprocation.

For imparting the necessary reciprocating movement to the shingle-table and the cutter-heads, a pulley, O, is fixed on the main shaft, and a belt, P, is made to connect it with a large pulley, Q, on a shaft, R, bearing a pinion, *g*, and journaled in an upright frame some distance from the planing devices. This pin-

ion gears into a toothed wheel, S, of large diameter, carried by a shaft, T, which gear-wheel has a wrist-pin or crank, *h*, to which is jointed a connecting-rod, U, which at its other end is
5 hinged or pivoted to the carriage of the upper cutter-head. By this mechanism it will be perceived a relatively slow reciprocating movement is imparted to the cutter-head carriages and table, making about thirty strokes a minute.

10 The operation of my invention is as follows: When the cutter-heads are farthest away from the lower end of the inclined ways, a shingle is laid on the table. Then on the reverse
15 movement the shingle strikes against the cross-bar H and the table slides beneath it, while the cutter-heads advance upon it and plane its upper and lower surfaces, operating upon it first at its thin edge and then upon its butt-
20 end. As the table moves them back again this dressed shingle is discharged, and a fresh one is placed on the table in front of the cross-bar H.

I am aware of the fact that two shaving-
25 knives have been arranged to slide in planes inclined to each other to dress shingles, as shown in my prior patent, No. 158,946, dated January 19, 1875, and I do not claim this, broadly.

30 I am also aware that it is not new to distend a driving-belt around a swinging frame for the purpose of imparting a rotary motion to a reciprocating cutter, and I do not claim this, broadly.

Having thus described my invention, what I claim as new is—

1. The combination, in a shingle-planing machine, of two rotary cutter-heads mounted upon reciprocating frames, guideways for the same, arranged at an inclination toward each other to correspond to the taper of the shingle, a table placed between the two cutter-heads and connected to one of the same, and means for connecting the two cutter-heads, so as to cause them to move together in right lines, but permit them to approach and recede from each other to correspond to the taper of the shingle, substantially as described.

2. The combination, in a shingle-planing machine, of two rotary cutter-heads mounted upon reciprocating frames, guideways for the same, arranged at an inclination to each other, as described, a reciprocating table placed between and connected to one of said cutter-heads, a stationary cross-bar arranged in the plane of the shingle, means for connecting the two cutter-heads to cause them to reciprocate at an inclination to each other, the two driving-belts for the cutter-heads, provided with swinging tension-frames, and means for reciprocating the cutter-heads and table, substantially as shown and described.

SAML. M. KING.

Witnesses:

CHAS. A. PETTIT,
SOLON C. KEMON.