R. H. Pindell,

Wood Planing Machine.

No. 10,100. Patented Oct. 4, 1853.

Fig. 3

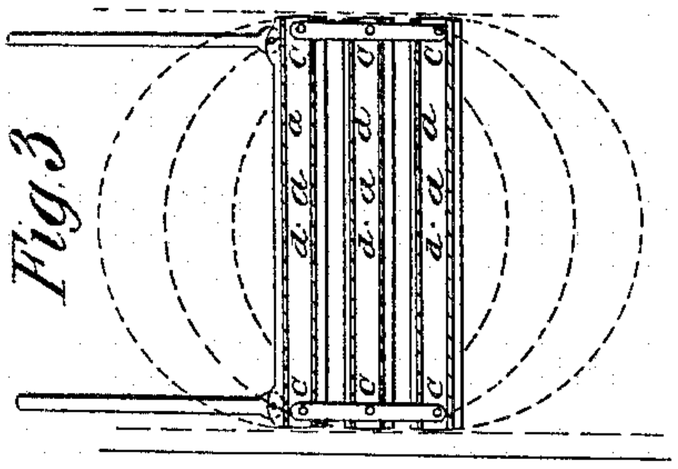


Fig. 2

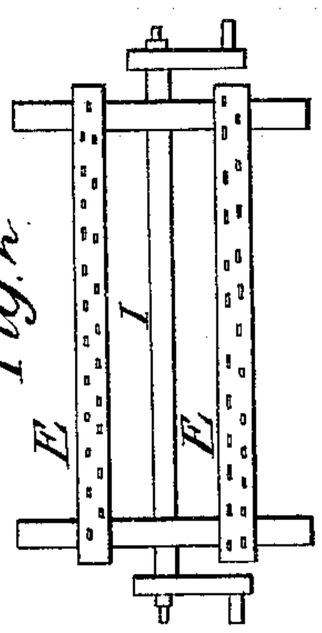
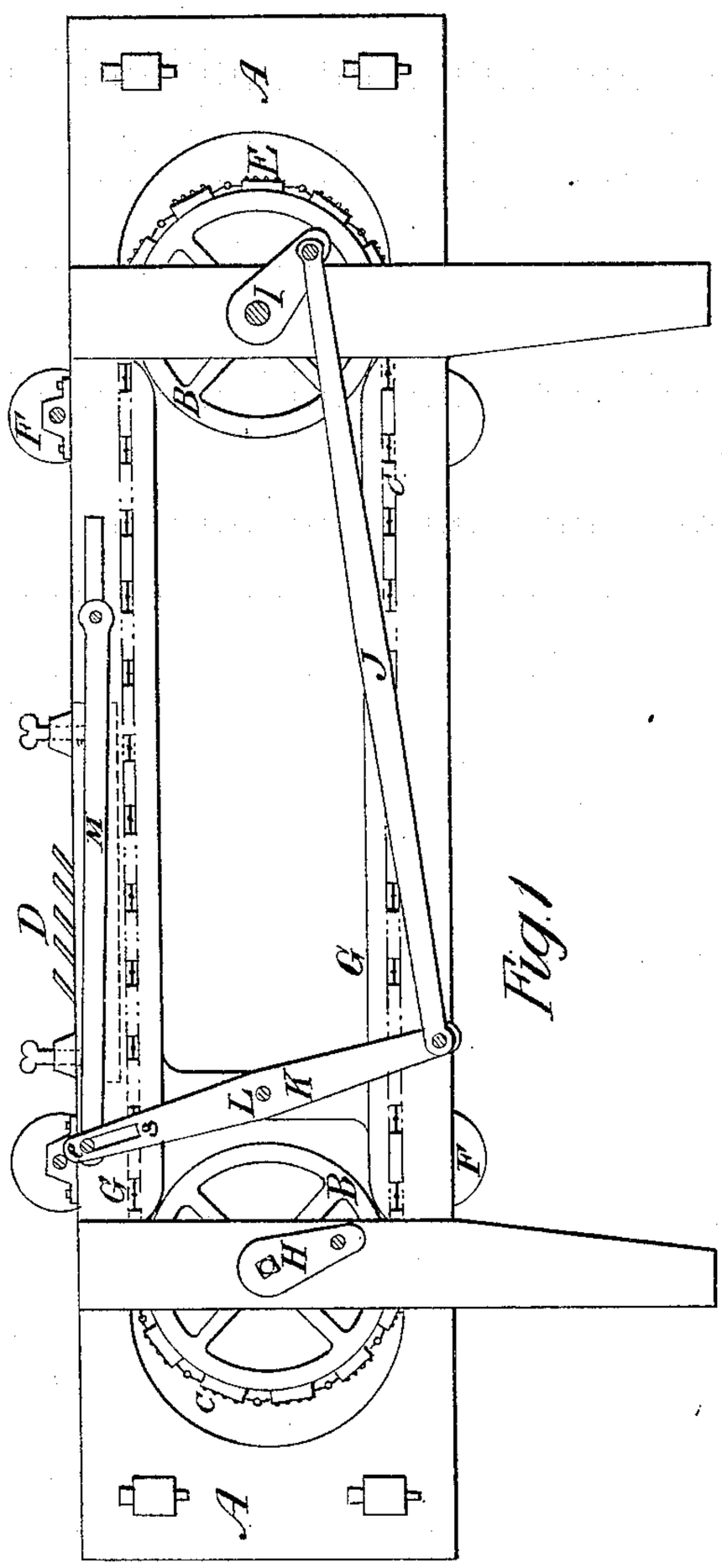


Fig. 1



UNITED STATES PATENT OFFICE.

RICHARD PINDELL, OF FAYETTE COUNTY, KENTUCKY, ASSIGNOR TO WM. I. THURMAN.

PLANING-MACHINE.

Specification of Letters Patent No. 10,100, dated October 4, 1853.

To all who n it may concern:

Be it known that I, RICHARD PINDELL, of the county of Fayette, State of Kentucky, have invented a new and Improved Machine for Planing Lumber; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

The nature of my invention consists in planing boards with reciprocating knives, having uniform and continuous feed motion, the planes cutting on their backward, as well as forward stroke; possessing at the same time, a partial reciprocating rotary motion, about an axis perpendicular to the surface planed.

It is well known, reciprocating knives do their work with less power, less breakage, smoother and easier than stationary ones; but, in reciprocating knives, one serious difficulty presents itself, that is, they cut intermittently; and from the nature of machinery it has been practically shown that they will mark the surface at those points where they stop, and recommence the shaving; moreover, they lose, on their back stroke just half the time.

The object of my invention is to avoid these two and other objections now known.

The machine is so simple a brief description will enable any skilful mechanic to construct it.

Figure 1: I construct a suitable iron frame A, (which may be cast from but two patterns—the ends and the sides being respectively identical,) in which two equal pairs of wheels, B, revolve, carrying the endless feeding and planing bed, *c*, by the planes D. This bed is constructed of bars or slats E, suitably connected by hinge joints, and has slight chisel projections, on which the plank is impressed by pressure rollers F, as it is fed to the machine. The ends of these bars slide in grooves G in the frame, and gradually depart from said grooves, to the carrying wheels, and are concave at their parts of contact with the wheels to fit snugly thereon. The axle of one pair of wheels is adjustable to or from the other, to regulate the tension of the traveling bed. The power is applied directly to the crank H, to operate the entire machinery.

The plane stocks may be constructed in any well known method, and are operated as follows: Two equal cranks, one on each extremity of the axle I, operate two equal pitmen J, which rock two equal levers K, on fulcrums L, and to their other extremities are attached to equal driving pitmen M, which operate the knives. A slot, *s*, is cut in each rocking lever so as to decrease, at pleasure, the effective arms; thus given any differential velocity, (compared with that of the bed,) found to be best. Assuming the effective arms to be one half the length of the motor crank H, and the stroke of planes eighteen inches, then on the forward motion of knives, they will cut 18+36=54; and on the backward stroke, they will cut 18+0=18; hence, at each revolution there will be planed 54+18=72=6 feet. The best reciprocating planes now known, run sixty revolutions per minute, (cutting only on forward stroke,) and finish not over 4,000 feet per hour. It is evident that by attaining but thirty revolutions per minute with my machine there will be finished per hour, ten thousand, eight hundred feet; and this is working at but half the ordinary speed; and in this the great value of this machine consists, *i. e.* working at low velocities, and doing double the work now done at very high velocities.

I propose to construct the stocks thus, (Fig. 3): Each stock, (four in all,) to contain two knives, (*a*, *a*, and *c*), the stocks to be separated by about three inches, and to be connected by two bars, and free to turn on the pins *c*, *c*, and *c;* each to have a partial reciprocating rotary motion, about its own center, (*d*); which is caused by simply giving, by means of slot pin, (*e*), to one of the driving pitmen M, a more extended, or longer stroke. For this purpose, each plane stock has its extremities circular; the circle having its center in the center of the stock. This will greatly facilitate the cutting; will keep the knife edges clear of splinters, etc., and cut knots and cross grain, far better than straight moving knives. The stocks are adjustable to and from the bed, in any well known manner.

By attaching tongueing and grooving knives to the machine, on the side opposite the planes, without any other additions, the machine will plane and match double as much as any other machine per hour. The only friction, causing loss of power, is on the ends of the bars forming the bed; about one tenth of the friction in any stationary planer; and no plane known, tongues and

grooves well while planing. The failure of the present matchers to perform their work certainly, is owing to the slipping of the plank on the bed. It is evident that the plank, having been fed properly to my machine, will, by means of the chisel projections, continue its direction without the possibility of slipping.

The simplicity and cheapness, the small power required, together with its style and manner of working, etc., must suggest the great advantage over all other machines of this class.

What I desire to secure by Letters Patent, as my invention, is—

1. The combination of the differential velocities of feed motion, and the motion of the knives; that is, when their relative speed is such that the knives shall cut on their back, as well as on their forward motion; in the manner and for the purposes substantially herein before set forth.

2. Giving to straight edged planes, for dressing lumber, a partial reciprocating rotary motion about their own center; for the purposes, and in any manner substantially the same, as herein before described and shown in the drawings.

3. I claim a yielding pressure roller, placed in front of the stocks, in combination with an endless planing bed, for the purpose of feeding planks, etc., to the planes, operated in any manner substantially the same as herein before set forth.

RICHARD H. PINDELL.

Witnesses:

JNO. BRENT,

A. B. SIMS.