(No Model.) 2 Sheets—Sheet 1.

H. N. BERRY.

PLANER ATTACHMENT FOR SAW MILLS.

No. 417,854. Patented Dec. 24, 1889.

Fig. 1.

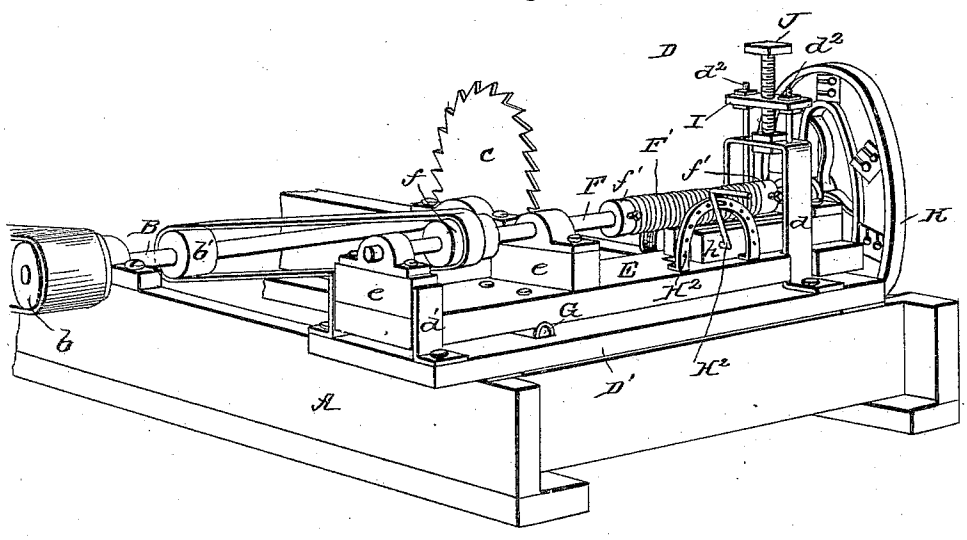


Fig. 2.

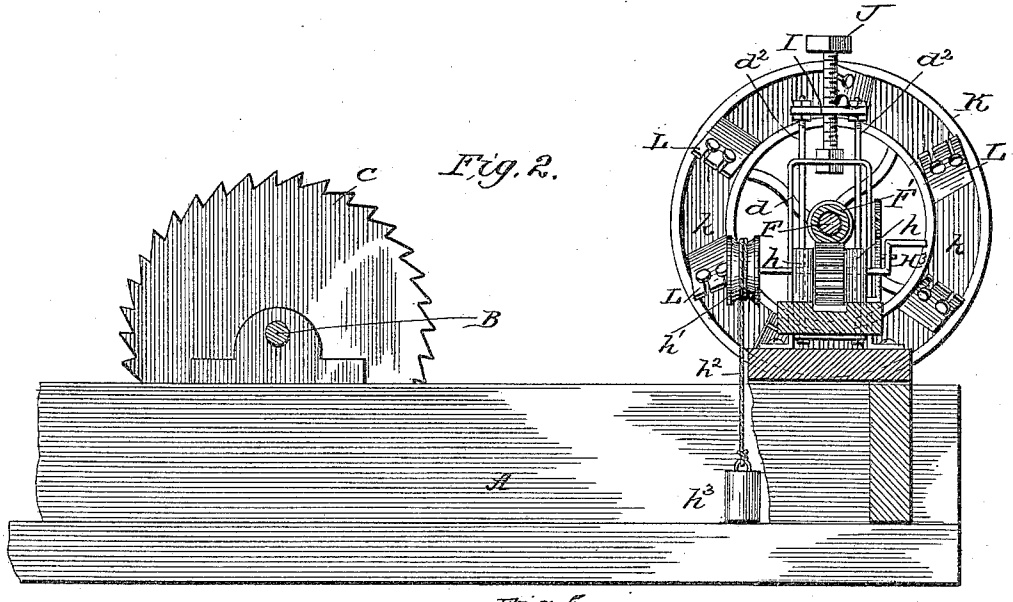
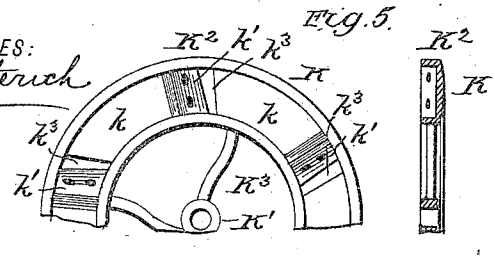


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

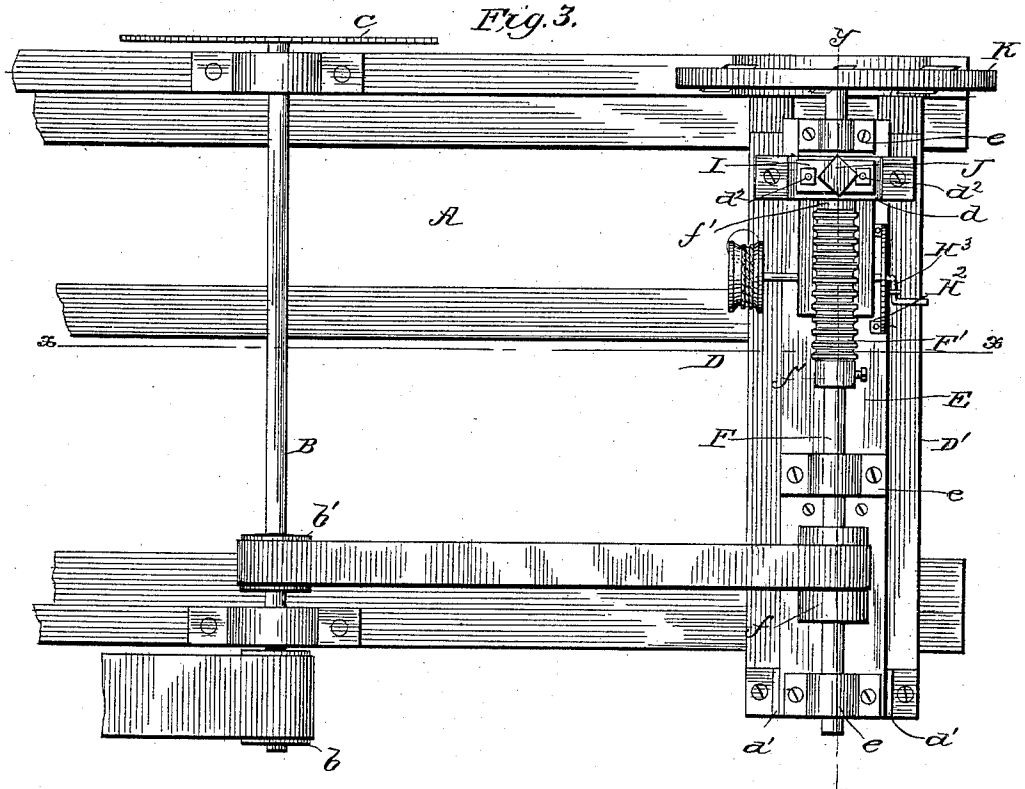
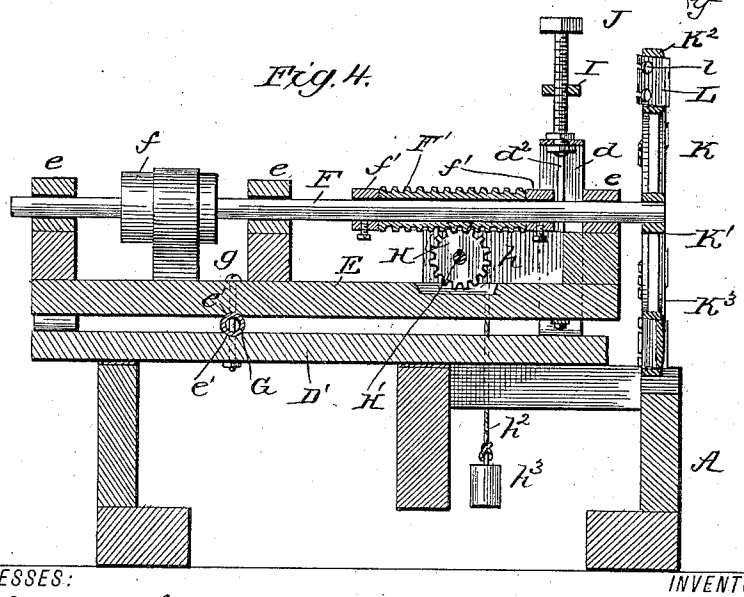


Fig. 4.



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UNITED STATES PATENT OFFICE.

HIRAM NEWTON BERRY, OF MERIDIAN, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO MICAJAH F. BERRY, OF SAME PLACE.

PLANER ATTACHMENT FOR SAW-MILLS.

SPECIFICATION forming part of Letters Patent No. 417,854, dated December 24, 1889.

Application filed May 17, 1889. Serial No. 311,192. (No model.)

To all whom it may concern:

Be it known that I, HIRAM NEWTON BERRY, of Meridian, in the county of Lauderdale and State of Mississippi, have invented certain new and useful Improvements in Planer Attachments for Saw-Mills, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, forming part thereof, in which—

Figure 1 is a perspective view of my planing attachment applied to a saw-mill frame. Fig. 2 is a sectional view on the line $x\,x$, Fig. 3. Fig. 3 is a plan view of the parts shown in Fig. 1. Fig. 4 is a sectional view on the line $y\,y$ of Fig. 3. Fig. 5 is a detail in plan and cross-section of a portion of the planer wheel or head.

The planer is designed to operate just in advance of the saw and plane the side of the saw-log as it passes to the saw, which cuts off any thickness desired, with one side dressed or planed. The logs may thus be sawed into planks or boards, or merely be squared and planed for sills, bridge-timbers, &c.

The invention consists, essentially, in a planer adjustable longitudinally toward and from the log, and also adjustable at its front or planer end vertically to slightly incline the planer-head.

The invention consists in the various details and combinations of parts, as will be hereinafter described, and pointed out in the claims.

A represents the saw-mill frame; B, the transverse saw-shaft; C, the circular saw. The shaft B has a drive-pulley b and a power-transmitting pulley b'.

D represents the planer attachment, having a bed-piece D′ bolted transversely to the front end of the main frame, having a vertical yoke d at its forward end, or end next to the saw-mill carriage, (not shown,) and vertical guide-arms d' at its opposite end.

Upon the bed-piece and extending through the yoke d and between the guides d' is the bar or piece E, carrying on its upper side aligned bearings $e\,e\,e$, in which the planer-shaft F is mounted to slide and to rotate. The adjacent surfaces of the bed-piece D′ and the bar or piece E are slightly recessed transversely, as shown at $e'\ e'$, to receive the round fulcrum G, bolts g being passed through the bed-piece, the bar, and the fulcrum to secure them together, and yet let the bar or piece E be rocked slightly, for a purpose to be presently described.

The front end of the bar or piece E is provided with two vertical rods d^2, which pass up through apertures in the top cross-piece of the yoke d, and also through apertures in the ends of a centrally-apertured nut or cross-head I on an adjusting-screw J, swiveled at its lower end in the cross-piece of the yoke d, between the two rods d^2. The screw J, being swiveled at its lower end, has rotary movement only, and therefore will, when turned, raise or lower the forward end of the planer-shaft F. The shaft F has a pulley f belted to the saw-shaft, and has two collars $f'\,f'$ fixed to it between its intermediate and forward bearings e.

F′ is a tubular rack, loose upon the shaft F, between its collars, and engaged on its lower side by a pinion H, secured on a crank-shaft H′, journaled transversely in bearings h on the bar or piece E. The inner end of the crank-shaft H′ has a grooved pulley h', around which passes a cord or chain h^2, provided with a weight h^3, the tendency of which is to throw the planer-shaft forward against the log to be planed. The crank-shaft may be held in any desired position by means of the perforated segmental bar H^2 and pin or latch H^3.

K is the planer-head formed of a hub K′, a rim K^2, and spokes K^3, connecting the hub and rim. The outer face or side of the rim is made slightly rounding, and the inner face has a series of recesses k, separated by inclined knife-bearings k', and through the rim the tangential knife-slots k^3 extend.

L are the planer knives or bits, having longitudinally-extending slots, through which pass set-screws l into the inclined bearings k'. The planer-head is cast in a single piece.

The operation is as follows: As the saw-mill carriage (not shown) brings the slabbed log up to the saw its slabbed side will be first acted upon by the planer and then by the saw. When the log is brought again for the

next board to be sawed off, the planer will smooth the previously-sawed surface evenly, if the saw has cut evenly; but if the upper edge of the log requires more planing in order to even the surface the screw J will be turned to lower the front end of the planer-shaft slightly or to the desired extent, which will incline the upper edge of the planer toward the log. The face of the planer being rounding, its periphery will not strike the log when it is set at an incline, as will be readily understood. As the tubular rack is loose on the planer-shaft between two collars, the shaft will be free to turn therein, and the weighted crank-shaft will hold the planer up to its work. When the crank is turned over toward the left, the planer-shaft will be slid rearward and the planer will be thrown out of action to allow the saw only to act.

The planer attachment may be sold separately for attachment to sawing-machines.

The mechanism for raising and lowering and sliding the planer-shaft may be varied without departing from the spirit of my invention. As the rack F′ is circumferentially grooved, it makes no difference about its turning on the shaft F, for it cannot get out of mesh with its operating-pinion.

The bed carrying the planer mechanism forms an auxiliary frame when in place on a saw-frame.

The weight not only holds the planer up to its work, but will allow the planer-shaft to yield in case of unusual obstruction.

It will be noticed that by having the rack F′ loose on the shaft it will not turn and wear out its ribs and the teeth of the pinion, and a half-turn of the shaft H′ by hand will instantly throw the shaft F forward or backward.

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

1. The combination, with a bed or support, of a longitudinally-sliding shaft journaled thereon and vertically adjustable at its front end, and the planer-head on said front end, substantially as set forth.

2. The combination, with a bed or support, of the longitudinally sliding and yielding shaft vertically adjustable at its front end, and the planer-head at said front end, substantially as set forth.

3. The combination, with the bed or support, of the longitudinally-sliding shaft vertically adjustable at its front end, a planer-head on said front end, gearing for sliding the shaft longitudinally in its bearings, and a weight exerting its force to hold the planer-head to its work, substantially as set forth.

4. The combination, with the vertically-rocking bar having bearings and a shaft journaled therein and provided with a planer-head at its front end, of a yoke through which said bar passes at its front end, rods passing from the bar up through the yoke, and a screw swiveled in the yoke between the rods and provided with a nut or cross-head engaged by said rods, substantially as set forth.

5. The combination, with the planer-shaft having a rack loose thereon, stops or collars on the shaft at the ends of the rack, and a shaft provided with a pinion engaging said loose rack to slide the shaft in its bearings, substantially as set forth.

6. The combination, with the planer-head shaft having two collars thereon, and a rack loose on the shaft between said collars, of a crank-shaft having a pinion engaging said rack, and a weight tending to turn the crank-shaft and throw the planer-shaft forward.

7. The combination, with the longitudinally-adjustable planer-shaft having a loose tubular circumferentially-grooved rack, of a shaft having a pinion engaging said rack to move the shaft longitudinally without affecting its rotation, substantially as set forth.

8. The combination, with the bed and the bar thereon, a round fulcrum between the two, and bolts extending through the bed, bar, and fulcrum, of the yoke on the bed, the screw swiveled on the yoke and having a nut connected with the forward end of said bar, the planer-shaft journaled longitudinally on said bar to slide thereon, and mechanism for sliding said shaft.

9. The combination, with the saw-mill frame and its transverse shaft having a saw thereon, of an auxiliary frame secured transversely on the front end of the saw-frame in advance of the saw, and consisting in a bed, a rocking bar or piece thereon, a sliding shaft journaled on said bar and having a planer-head at its front end, mechanism for raising and lowering the front end of the said bar to incline the planer-head, and gearing for sliding the planer-shaft in its bearing, substantially as set forth.

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Witnesses:
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