

C. W. H. BLOOD.
POWER DRIVEN ROLLER HOLDDOWN AND FEED ROLL.
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952,094.

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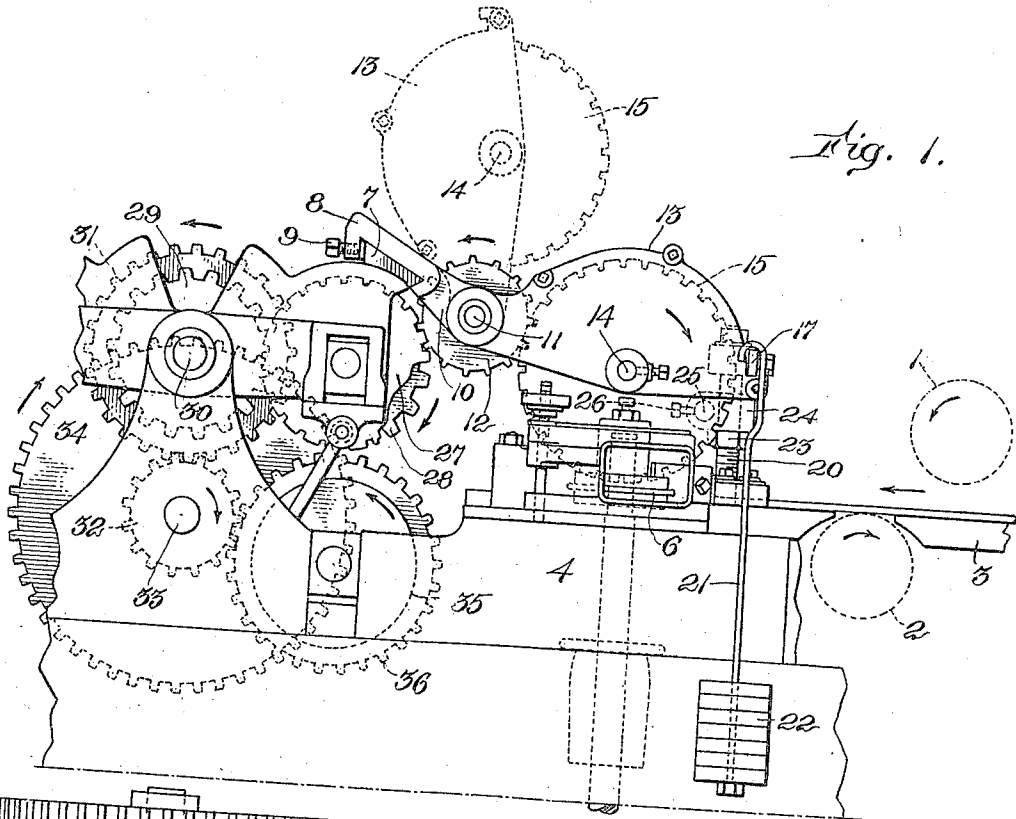


Fig. 1.

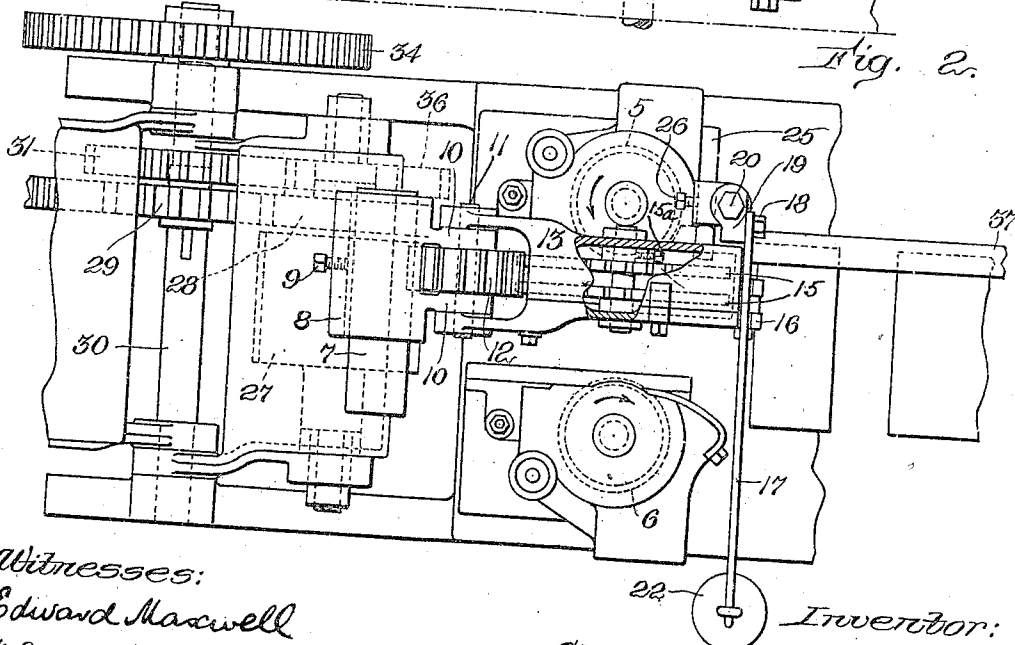


Fig. 2.

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UNITED STATES PATENT OFFICE

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POWER-DRIVEN ROLLER-HOLDDOWN AND FEED-ROLL.

952,094.

Specification of Letters Patent. Patented Mar. 15, 1910.

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To all whom it may concern:

Be it known that I, CHARLES W. H. BLOOD, a citizen of the United States, and resident of Winthrop, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Power-Driven Roller-Hold-downs and Feed-Rolls, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

My present invention has for its object the provision of a positively driven roller hold-down whereby said hold-down acts also as a feed roll between the matchers of a planing machine. The distance between the regular feed rolls of a planer is so great that hard wood flooring is apt to break adjacent the matcher head because of the pressure of the opposite edge guide, and accordingly I provide a combined hold-down and feed roll so constructed as not to overhang the matcher head or project in the way of any of the parts which commonly need adjustment and close attention. In its preferred embodiment my combined hold-down and feed roll is movable out of the way and also movable laterally for different widths of matching and for different positions of the matcher heads.

Further constructional details and advantages of my invention will appear from the following description, taken with reference to the accompanying drawings, in which I have shown a preferred embodiment thereof.

In the drawings, Figure 1 shows my invention in side elevation; and Fig. 2 in top plan, parts being broken away for clearness of illustration.

My invention is intended to be applied to the usual varieties of wood planers, and accordingly I have omitted the constructional details of the planer itself, the upper and lower cutter heads being indicated at 1, 2 respectively above and below the work table 3 on the bed 4 of the machine, and the matcher heads being indicated at 5, 6, between which my present invention is applied to coöperate therewith. Secured to any convenient operating portion of the machine, preferably to the adjacent feeding mechanism, I provide a transverse guideway, herein shown as a dovetail plate or bed piece 7 on which is mounted a relatively heavy slide block 8 adapted to be clamped thereto by any

suitable means as by a set bolt 9. At its forward end this slide block has preferably integral ears or brackets 10 in which is mounted a shaft 11 carrying a pinion 12 between said ears or brackets, and on its end beyond the latter a swinging arm herein shown as in the shape of a housing 13 in which is journaled at 14 a combined feed roll and hold-down 15 made in two parts, relatively adjustable by a set screw 15^a through the hub of one part. A notched lip or rest 16 projects from the forward lower edge of the housing 13 adapted to receive a lever 17 pivoted at 18 on a bracket 19 carried at the upper end of a post 20. Hooked on the outer end of the lever 17 is a weight rod 21 provided with a series of weights 22. The post 20 is threaded at its lower portion and provided with a heavy nut for supporting a bracket 24 horizontally apertured to receive a pin or rest 25 held in adjustment by a set screw 26. This rest 25 forms a stop against which the lower edge of the hood 13 strikes and on which it is supported when the work runs out of the machine, so as to prevent the driven roll 15 from striking the bed of the machine. The hold-down 15 is provided with as much unbroken peripheral surface as possible in order to engage the board to the best advantage with as smooth a surface as possible, and accordingly the indentations to receive the teeth of the pinion 12 are spaced apart double the distance which is usual in gears, and the teeth of said pinion are correspondingly separated, every alternate tooth being cut out, and every alternate space in the hold-down omitted. The roll 15, as stated, is driven by a pinion 12 in mesh with a toothed upper feed roll 27 driven by a gear 28 in mesh with a gear 29 fast on a shaft 30 driven by a gear 31 and pinion 32 on a shaft 33 driven in turn by a gear 34. The pinion 32 drives the under feed roll 35 through a gear 36.

In operation, as the flooring or other material being matched passes through the machine against the edge gage 37 between the opposite matchers 5, 6 it is engaged by the hold-down 15, which, however, instead of simply holding the work down according to the manner of previous roller hold-downs, positively feeds forward the work, said hold-down being positively driven by the train of gears 12, 27, 28, 29, etc. The hold-down is maintained under the precise frictional

engagement desired by means of the weights 22 suspended by the rod 21 from the free end of the lever 17. If anything occurs requiring that the work be inspected between the
 5 matcher heads, the weight rod 21 is unhooked, lever 17 swung back, and the hold-down-feed-roll and its housing are turned back on their pivot 11 to the dotted line position, Fig. 1. The roller and its support-
 10 ing and driving mechanism are shifted laterally on the guideway 7 in accordance with the width of the stock and as the matcher heads are close to each other or far apart, the broad driving member 27 maintaining
 15 driving engagement notwithstanding this lateral shifting of the driven parts. The hold-down is made narrow for very narrow stock and wider for wider stock so as to apply pressure as near the edges as possible.
 20 Because of the narrow construction of the hold-down and its housing and adjacent parts, and the fact that there is no projecting shaft or stationary journal bearings beyond said housing for said hold-down and feed
 25 roll, the latter does not interfere in any way with the ready inspection and careful watching of the stock by the operator, so that ordinarily there is no need of turning up the mechanism on its pivot 11. As the work
 30 passes from beneath the power driven hold-down, the latter is prevented from falling on the bed of the machine by the engagement of its hood with the stop or rest 25.

As already intimated, my invention is
 35 considerable of a variety of embodiments differing in details from the preferred construction herein presented, and accordingly I wish it understood that I am not limited to this preferred mechanism otherwise than
 40 as expressed in the appended claims.

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

1. In a planing machine, the combination
 45 with the matcher heads, of a vertically movable roller hold-down located to engage the stock between said matcher heads, and means for positively driving said roller hold-down to feed the work.

50 2. In a planing machine, a roller hold-down, vertically movable in engagement with the work, means for positively driving said roller hold-down to feed the work, and supporting means permitting the lateral
 55 shifting of said hold-down according to the varying widths of work.

3. In a planing machine, a roller hold-down, a housing inclosing and supporting the same, laterally movable means support-
 60 ing said housing, a toothed pinion movable with said housing in driving engagement with said roller hold-down, and means for driving said pinion including a rotary member meshing with said pinion having a
 65 width coextensive with the required lateral

adjustment of the hold-down for different widths of work.

4. In a planing machine, a roller hold-down, a housing inclosing and supporting the same, laterally movable means support-
 70 ing said housing, a toothed pinion movable with said housing in driving engagement with said roller hold-down, and means for driving said pinion including a toothed upper feed roll meshing with said pinion and
 75 having a width coextensive with the requirements of the work handled by the machine.

5. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the
 80 stock between said matcher heads, means for positively driving said roller hold-down to feed the work, and means confined to one side of the machine and to one side of the path of the work for preventing said hold-down from dropping against the bed of the machine in the absence of work, said hold-down being movable entirely away from the
 85 work when not in use.

6. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the
 90 stock between said matcher heads, means for positively driving said roller hold-down to feed the work, supporting means carried by said driving means and extending transversely thereof, including cooperating sliding members permitting the roller hold-down to be transversely adjusted between
 95 said matcher heads independently of the driving means.

7. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the
 100 stock between said matcher heads, means for positively driving said roller hold-down to feed the work, and a weighted lever pivoted on a relatively stationary part separate from the hold-down at one side of the
 105 machine in position to be swung across the machine into engagement with the free forward end of the hold-down for maintaining the latter on the work.

8. In a planing machine, the combination
 110 with the matcher heads, of a vertically movable roller hold-down located to engage the stock between said matcher heads, means for positively driving said roller hold-down to feed the work, and a stop, comprising a
 115 vertical post at one side of the machine, and a transverse rest adjustably mounted on said post and projecting at its free end in position to engage said hold-down to prevent the latter from striking the bed of the ma-
 120 chine in the absence of work.

9. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the
 125 stock between said matcher heads, means for

positively driving said roller hold-down to feed the work, said hold-down including a pivoted housing closed excepting at its bottom, and two work-engaging rolls journaled within said housing and separable toward the side walls of the housing for expanding the hold-down widthwise to accommodate varying widths of work between said matcher heads.

10 10. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the stock between said matcher heads, and means for positively driving said roller hold-down to feed the work, including a driving gear 15 having a width substantially coextensive with the requirements of the work handled by the machine, a pinion driven by said gear and itself meshing with said hold-down, 20 and means supporting said pinion for lateral adjustment longitudinally of said gear.

11. In a planing machine, the combination with the matcher heads, of a vertically movable roller hold-down located to engage the 25 stock between said matcher heads, a gear

having a width approximately coextensive with the requirements of the work handled by the machine, a pinion meshing with said gear, means supporting a slide block in which said pinion is journaled, a slideway 30 mounted transversely of said gear for said block to slide on, and a housing pivoted concentrically of said pinion and within which said hold-down is journaled, said pinion meshing with said hold-down. 35

12. In a planing machine, a roller hold-down having transverse peripheral grooves at wide intervals apart, and driving means therefor provided with narrow teeth fitting said grooves and wide spaces between said 40 teeth corresponding to said wide peripheral intervals of the hold-down.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES W. H. BLOOD.

Witnesses:

ESTHER E. PADDOCK,
HARRY E. BUMP.