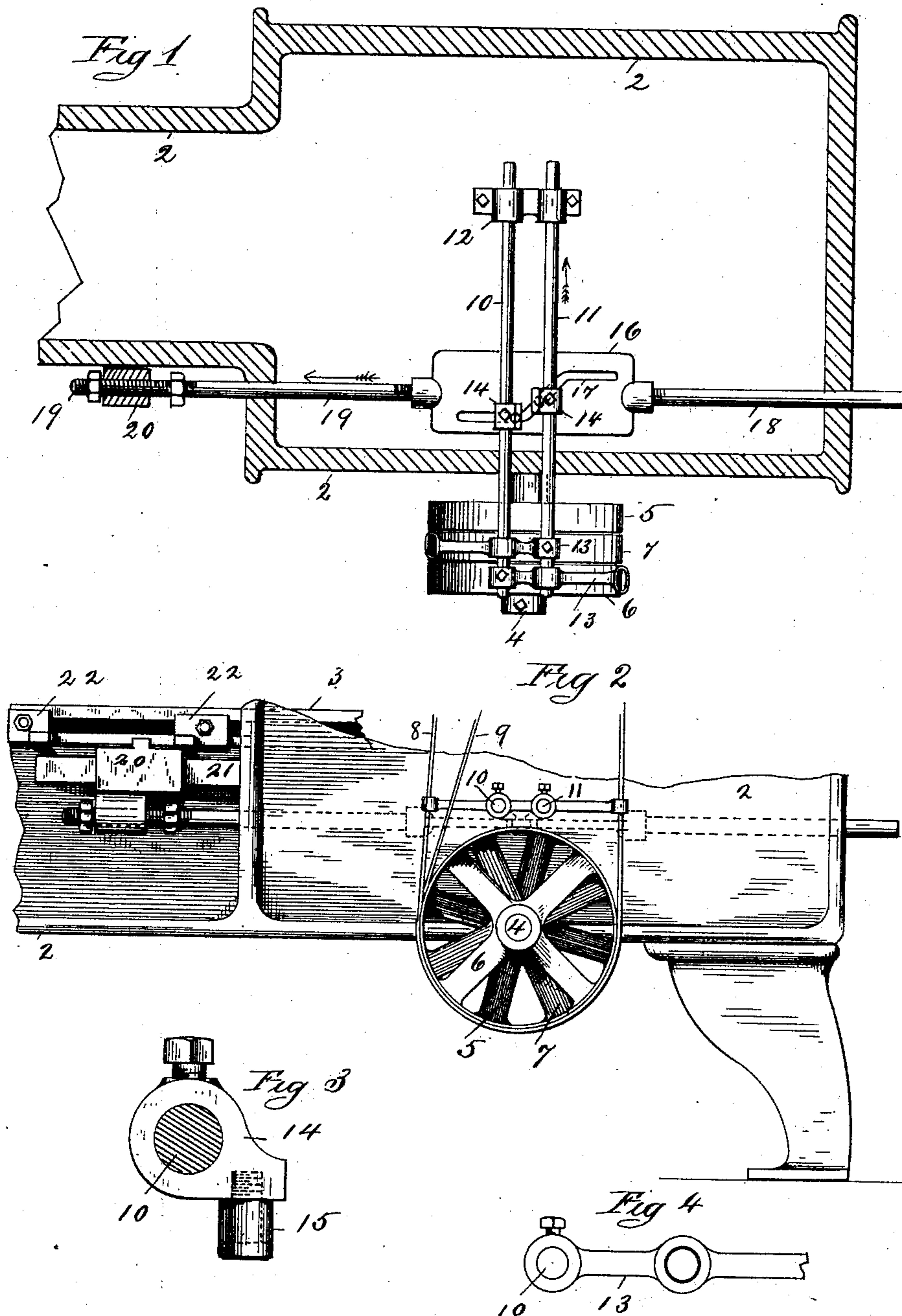


(No Model.)

E. R. HYDE.
BELT SHIFTING DEVICE.

No. 375,752.

Patented Jan. 3, 1888.



Witnesses.
Wm H Chapin
G. M. Chamberlain.

Inventor
Elwin R Hyde
By Chapin & Co
Atty

UNITED STATES PATENT OFFICE.

ELWIN R. HYDE, OF SPRINGFIELD, MASSACHUSETTS.

BELT-SHIFTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 375,752, dated January 3, 1888.

Application filed July 19, 1886. Renewed July 5, 1887. Serial No. 243,441. (No model.)

To all whom it may concern:

Be it known that I, ELWIN R. HYDE, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Belt-Shipping Devices, of which the following is a specification.

This invention relates to improvements in belt-shipping devices for iron-planers; and the invention consists in the peculiar construction and arrangement of parts, as hereinafter fully described, and pointed out in the claim.

In the drawings forming part of this specification, Figure 1 is a plan view illustrating belt-shipping devices constructed according to my invention, and there shown in connection with a portion of the body of a planer, the top of the latter being removed and that part thereof below the top being shown in section. Fig. 2 is a side elevation at one end of a planer having my improvements applied thereto, the top thereof being broken away. Figs. 3 and 4 illustrate detail parts, which are hereinafter fully described.

In the drawings, 2 indicates a part of the body of a planer at one end thereof, on which the planer-bed 3 (a portion of which is shown in Fig. 2) has a reciprocating motion by the ordinary connection with the driving-shaft 4, which, in practice, extends under said bed 3; but such connection is not shown in the drawings. One pulley, 7, is fixed on the driving-shaft 4, and on each side of said pulley 7 is placed a loose pulley, 5 and 6. Two belts, 8 and 9, as usual, are run on said pulleys, one open and one crossed, to rotate shaft 4 in opposite directions or to give it a reciprocating rotary motion.

The planer is started in the usual way by a counter-shaft, on which the belts 8 and 9 run, which is located over the planer, but not shown in the drawings, and when so started one of the belts 8 or 9 is on the fixed pulley 7, according to the direction in which the bed 3 is to be moved, and the other belt runs on one of said loose pulleys. To quickly ship either of said belts from the loose pulleys onto the tight pulley 7, to set the planer-bed in motion and to ship either of said belts from the tight pulley to a loose one, thereby bringing the other belt onto the tight pulley to reverse the

motion of the planer-bed, the below described shipping devices are provided.

Heretofore it has been difficult, with the shipping devices generally in use on planers, to obviate a considerable drag or friction between the two belts 8 and 9, as they are shipped simultaneously onto and off from the tight pulley 7, for the reason that the shipping devices for both belts have had a coinciding movement, and hence before one belt was moved entirely off the tight pulley the other belt, running in the opposite direction, would be shipped more or less onto said pulley. To remedy the above-named inconveniences, and to give each of the belts 8 and 9 an independent shipping movement whereby one is shipped nearly or quite off from the tight pulley before the other is brought onto the latter, the below-described improved belt-shipping devices are provided. Two shipper-rods, 10 and 11, extend from over the pulleys 5, 6, and 7, through the side of the machine, and their rear ends are supported in the bearing-block 12. On each of said rods is secured a shipper-arm, 13, a portion of one thereof detached from the machine, being shown in side elevation in Fig. 4, each of said shipper-arms having a belt-ring on the end thereof through which the belt passes, and having a circular hole in it through which the end of one of the shipper-rods passes freely, as shown in Fig. 1, to provide for bolting said arms to said rods in the positions shown over the pulleys.

On each of the shipper-rods 10 and 11 is fixed a short arm, 14, (shown in end elevation in Fig. 3,) on which is a stud having thereon a friction-roller, 15. A plate, 16, having a cam-slot, 17, therein, in which the two arms 14 on rods 10 and 11 engage, is supported under the latter in the position shown in Fig. 1 by two guide-rods, 18 and 19, which have bearings in the body of the machine. Said rod 19 extends along opposite the outer side of the planer, (see Fig. 2,) and has two nuts thereon between which a sliding shipper-block, 20, moves, sliding on a rib, 21, on the side of the planer, and having an upwardly-projecting stud thereon, with which the usual adjustable blocks, 22, on the edge of the planer-bed, engage as the latter slides to and fro.

By the movement of the planer-bed 3 in the

direction of the arrow in Fig. 1 the cam-plate 16 is moved in like direction, causing the slot 17 to engage with the arms 14 on the rods 10 and 11, and slide the latter endwise. The
5 plate 16 and the shipper-rods 10 and 11, together with the arms 13, are shown in the positions which they occupy when the belts are running on pulleys 6 and 7. The next movement of the bed 3 will carry one of the blocks
10 22 against said stud on the shipper-block 20, and slide the latter in the direction indicated by the arrow, causing said shipper-block to move against one of the nuts on the rod 19 and draw the cam-plate 16 in the same direc-
15 tion. It is seen that the stud 15 on the arm 14 on the shipper-rod 11 is in engagement with the inclined portion of the cam-slot 17, and therefore said shipper-rod 11 and its shipper-arm 13 will be the first to move in the direc-
20 tion of the arrow (shown by its side) and carry the belt from pulley 7 onto pulley 5, and then the stud 15 on arm 14 on the shipper-rod 10 becomes engaged in said inclined part of said cam-slot, and the latter-named shipper-rod and
25 its shipper-arm 13 then follow the movement of rod 11 and ship the belt from pulley 6 onto pulley 13, thus reversing the rotary movement of the latter and consequently that of the planer-bed 3.

30 In the above-described operation of the

shipping devices it is seen that while the inclined portion of the cam-slot 17 is acting to slide one shipper-rod the slot-engaging stud on the other rod is in one of the two ends of said slot, both of which, at each end of said
35 inclined portion of the slot, are in a line with the movement of the cam-plate, and hence one shipper-rod rests while the other is moving, and consequently one belt is shipped before the other one moves, and the above-referred-
40 to drag or friction of the belts on the fixed pulley 7 is prevented.

What I claim as my invention is—

The plate 16, having the cam-slot 17 therein, and having guide rods attached to the ends
45 thereof, whereby it is supported in the body 2 of the machine, combined with the planer-bed 3, having a longitudinal reciprocating movement on said body 2, and an engagement with one of said guide-rods, whereby the plate 16 is
50 given a longitudinal reciprocating motion, and two shipper-rods having a direct engagement with the cam-slot in said plate, whereby they are given an endwise-reciprocating motion at
55 right angles to the movement of the plate 16, substantially as set forth.

ELWIN R. HYDE.

Witnesses:

H. A. CHAPIN,

G. M. CHAMBERLAIN.