

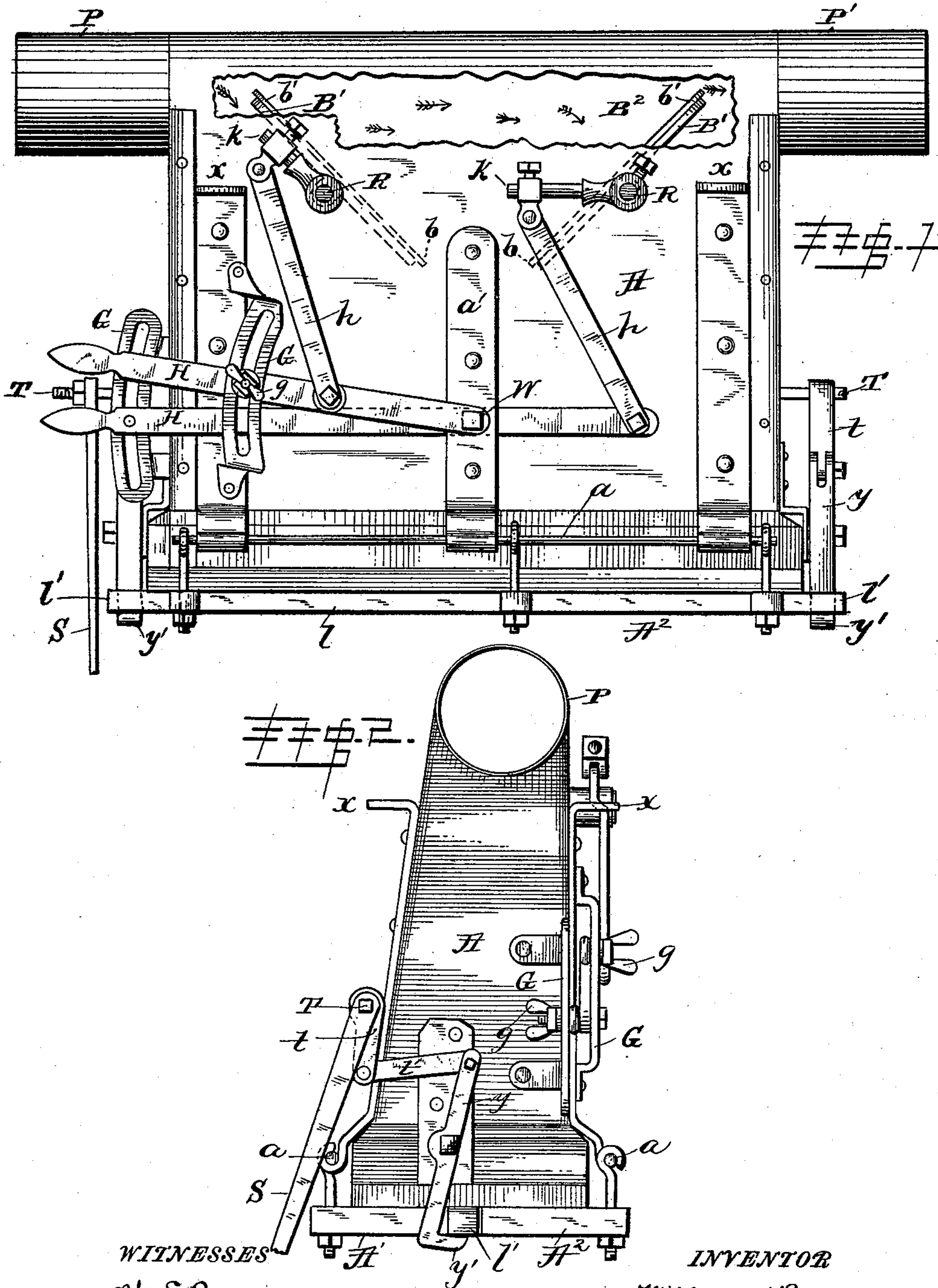
(No Model.)

2 Sheets—Sheet 1.

W. ROSS.
SHAVING AND SAWDUST CONVEYER.

No. 464,186.

Patented Dec. 1, 1891.



WITNESSES
W. E. Borneu
W. A. Redmond

INVENTOR
William Ross
by
J. F. Beale, Attorney

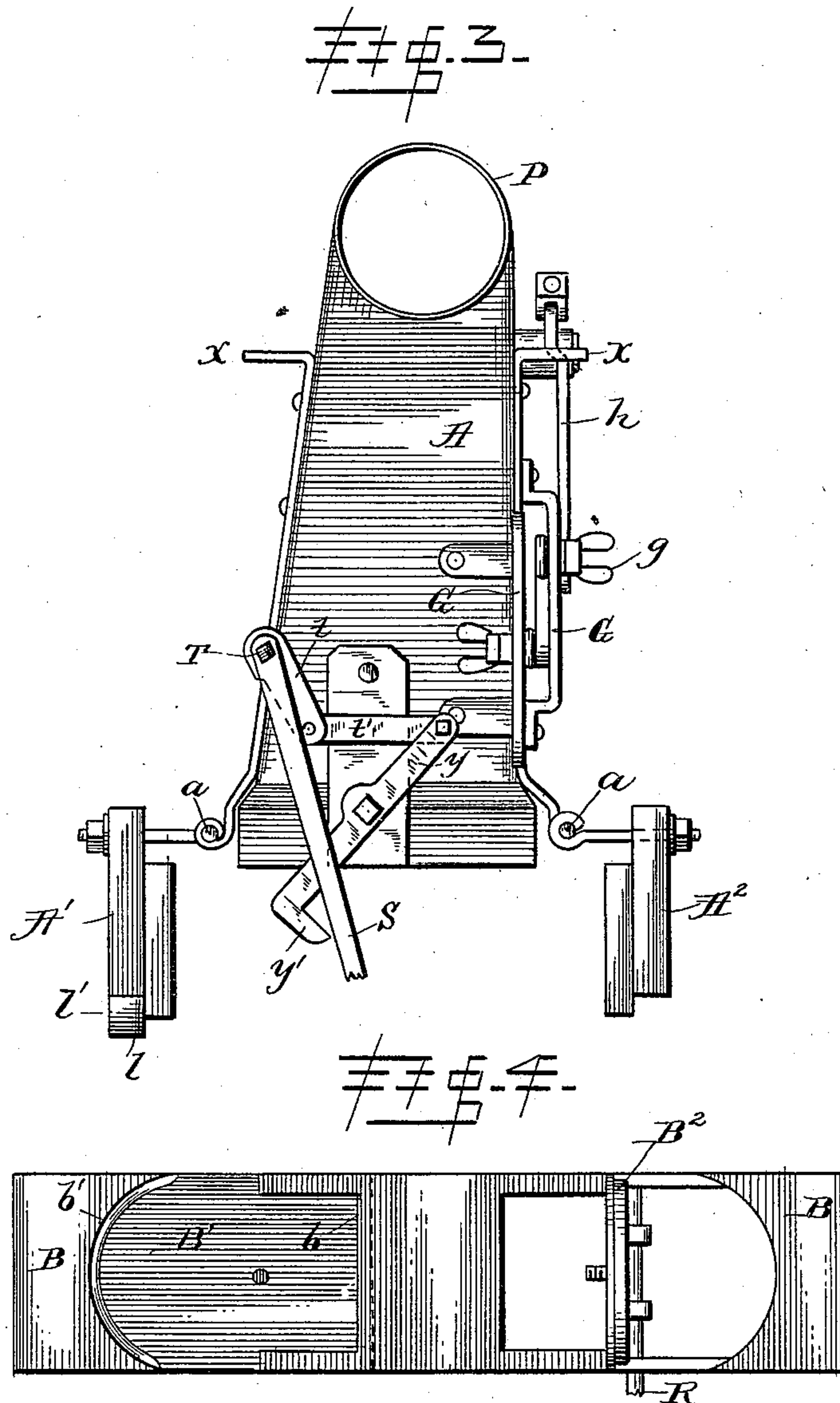
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UNITED STATES PATENT OFFICE.

WILLIAM ROSS, OF WILLARD, TEXAS.

SHAVING AND SAWDUST CONVEYER.

SPECIFICATION forming part of Letters Patent No. 464,186, dated December 1, 1891.

Application filed June 19, 1891. Serial No. 396,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROSS, a citizen of the United States, residing at Willard, in the county of Trinity and State of Texas, have invented certain new and useful Improvements in Shaving and Sawdust Conveyers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to apparatus for conveying the shavings and sawdust of saw or planing mills to the furnace or fire-box or to a storage-room.

The sawdust and shavings from wood-working in mills is generally conveyed through pipes or tubes by blowers or exhaust-fans and deposited in a fire-pit or storage or dust room remote from danger by fire. This refuse is afterward burned for fuel or for purposes of convenience to prevent accumulation, and involves the necessity of removing it from such place of deposit to the furnace. Again there are devices provided for conveying said refuse and feeding it directly and continuously to the furnace; but these devices are often found in practice to increase the fire-risk from the possibility of ignition of the very fine dust which is thus brought to the furnace, giving direct communication through the conveyer-pipes to the mills.

The principal object of my invention is to provide means for saving of labor in the first instance and of avoiding danger in the second, and to this end I have devised means for separating and deflecting from the conveyer-pipe, while *in transitu*, from time to time, as desired, the shavings and sawdust and deposit them in a closed receptacle convenient to the furnace-doors, and allow the impalpable or finer dust—the most dangerous—and the surplus shavings or sawdust to be conveyed to a dust-room or through a dust-collector or to the outer air or fire-pit.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of my apparatus placed in position in front of a steam-boiler furnace attached to a conveyer-pipe, the upper front wall being

broken away. Figs. 2 and 3 are end views, and Fig. 4 is a detail view.

A denotes a chamber having a bottom composed of two wings $A' A^2$, swung or hinged by eye-bolts to rods $a a$, the wing A' having a lip l formed on its under side, and projecting ends $l' l'$. $a' a' a'$ denote braces or stays riveted to said chamber, the lower ends of which are bent to form supports for said rods $a a$, and the upper ends being bent outward at right angles to form lugs $x x$ and provided with bolt-holes for securing said chamber to suitable supports to be arranged in front of a steam-boiler furnace.

$B B$ denote valve-seats, and $B' B^2$ valves, which when closed come flush with the lower walls of the pipes or tubes $P P'$. These tubes form with the top or crown of the chamber A , when the valves $B' B^2$ are closed in their seats, a continuous passage-way from the mill to the storage or dust room or fire-pit or outer air, the pipe P serving as an inlet to the chamber A , and the pipe P' serving as an escape for the fine dust, or for the surplus shavings and sawdust not used for fuel. The valves have their inner ends $b b$ of rectangular shape, and when closed bear upwardly in the valve-seats, while the opposite ends $b' b'$ are curvilinear in shape to conform to the inner crown wall of the chamber A when open. The valves are operated independently by levers $H H$, pivoted by a single bolt W , passing through each and secured through the middle stay a' and front wall of the chamber A . Said levers have upright arms $h h$ pivoted thereto, connecting the same with cranks $k k$, secured to rocker-shafts $R R$, by which the valves are operated. $G G$ are clampways, and $g g$ are set-screws secured to said levers and serve to clamp the same to the clampways.

The wings $A' A^2$ are shown in Fig. 3 as open and are operated by a crank-handle S , rigidly secured to a rocker-shaft T , mounted in journals secured to the lower part of the rear wall of the chamber A . Said rocker-shaft has rigidly secured thereto at both ends depending arms tt , to the lower ends of which are pivoted two horizontal arms $t' t'$, and these arms are pivoted to vertical arms $y y$, which

are pivoted at their centers to wear-plates secured to a suitable frame-work forming the base of the chamber A. Said arms $y\ y$ are provided with projecting catches $y' y'$, which

5 fit under the projecting ends $l' l'$ of the lip l .
The apparatus is designed to be placed in front of the furnace of a steam-boiler, and the conveyer-pipe for the shavings or sawdust should be conducted through the upper
10 per part of the boiler-room and made to enter the crown of the chamber at one end and be continuous at the opposite end. The apparatus is suitably supported about the height
15 of a man's head in a position to have the handles of the levers $H\ H$ and the handle S accessible, and the bottom of the chamber A above and in front of the furnace-doors. In Fig. 1 of the drawings I have shown the valves as partly opened and part of the shavings and sawdust fed into the chamber A and
20 the excess passing through the exit-pipe P' . The wings $A' A^2$ are shown closed and locked by the catches $y' y'$. When the valves are thrown wide open, they check the passage of
25 the excess shavings and sawdust to the storage or dust room and deflect them into the chamber A . When the valves are opened, or partly opened, the wings $A' A^2$ should be closed tight to prevent a current of air being
30 forced or drawn through the chamber A . Where a dust-collector or dust-room is used, or when the fine dust is conducted to the outer air, it is advisable to regulate the opening of the valves so that a space be always
35 left for the escape of the fine dust, and this may be accomplished either by throwing the inlet-valve B' wide open and partly closing the escape-valve B^2 , or by partly closing both valves. In the first instance the fine dust is
40 carried down into the chamber A and is then driven or exhausted upwardly through the escape-valve B^2 . Said valves may have their curvilinear ends $b' b'$ perforated or otherwise
45 constructed to provide for the continuous escape of the fine dust. It is evident that the shavings and heavier sawdust will be carried with less velocity than the finer and impalpable dust, and will naturally by gravity seek the lower part of the conveyer-pipe and
50 strike the intercepting-valves lower down and be precipitated into the chamber A , while the finer dust will escape over or at the top of the valves and pass on through the exit-pipe to the dust-room or other depository.

55 As shown in Figs. 2 and 3, the chamber A is wider at the bottom than at the top, the front and back walls flaring outwardly. This allows the shavings to pack or store better and allows a ready and easy fall. The size
60 of said chamber is governed by the capacity of the mill, and it may be made of wood or iron and have a suitable base or sills to receive the wings $A' A^2$ when closed. To feed the shavings or sawdust into said chamber,

the wings $A' A^2$ are first closed by hand, the 65 lip l of the wing A' lapping the edge of the wing A^2 . The catches $y' y'$ are then caught under the projecting ends $l' l'$ of said lip by operating the handle S . This secures or locks
70 the wings closed. Then the levers $H\ H$ —one or both, as need be—are raised by their handle ends, thus opening the valve or valves and deflecting the shavings or sawdust into said chamber, where they are collected for immediate or future use. To empty said chamber
75 the handle S is pulled inwardly.

It is evident that my apparatus can safely be made to throw the shavings or sawdust directly to the furnace-room floor, through the chamber A , by opening the wings $A' A^2$ and
80 opening the valves $B' B^2$ sufficiently to intercept the sawdust and shavings from the conveyer-pipe, while the fine dust will be drawn through the upper part of the chamber A and pass through the escape pipe or tube P' . 85

My apparatus will work equally well in saw-mills, where sawdust is conveyed, as in planing-mills where shavings are conveyed, and I have shown and described my invention as adapted to either. As a labor-saving device, 90 it avoids the necessity of removing the sawdust or shavings from a storage-room or depository remote from the furnace. As a device for reducing the fire risk, it shuts off communication of the fine dust from the fire and
95 conducts it by a different channel to a place of safety.

Having shown and described my invention, what I claim, and desire to secure by Letters Patent, is— 100

1. In a shaving or sawdust conveyer, the combination of the conveyer-pipe, the fuel-receptacle having the flaring side walls, the valves for regulating the supply of fuel, and means for operating said valves, substantially 105 as shown and described.

2. In a shaving or sawdust conveyer, the combination of the conveyer-pipe, the fuel-receptacle, the valves for regulating the supply of the same, and the doors or wings in the 110 bottom of the receptacle, and means for opening and closing the same.

3. A shaving or sawdust conveyer having the conveyer-pipe conducted through the upper part of the fuel-receptacle, said receptacle 115 being arranged over and in front of the fire-box or furnace-doors and provided with valves to regulate the supply of fuel and to allow the escape of the fine dust, and doors or wings in the bottom which may be operated to deposit 120 by gravity the fuel in front of the furnace-doors or fire-box.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM ROSS.

Witnesses:

JOHN ST. ORES,
J. T. BEALL.