

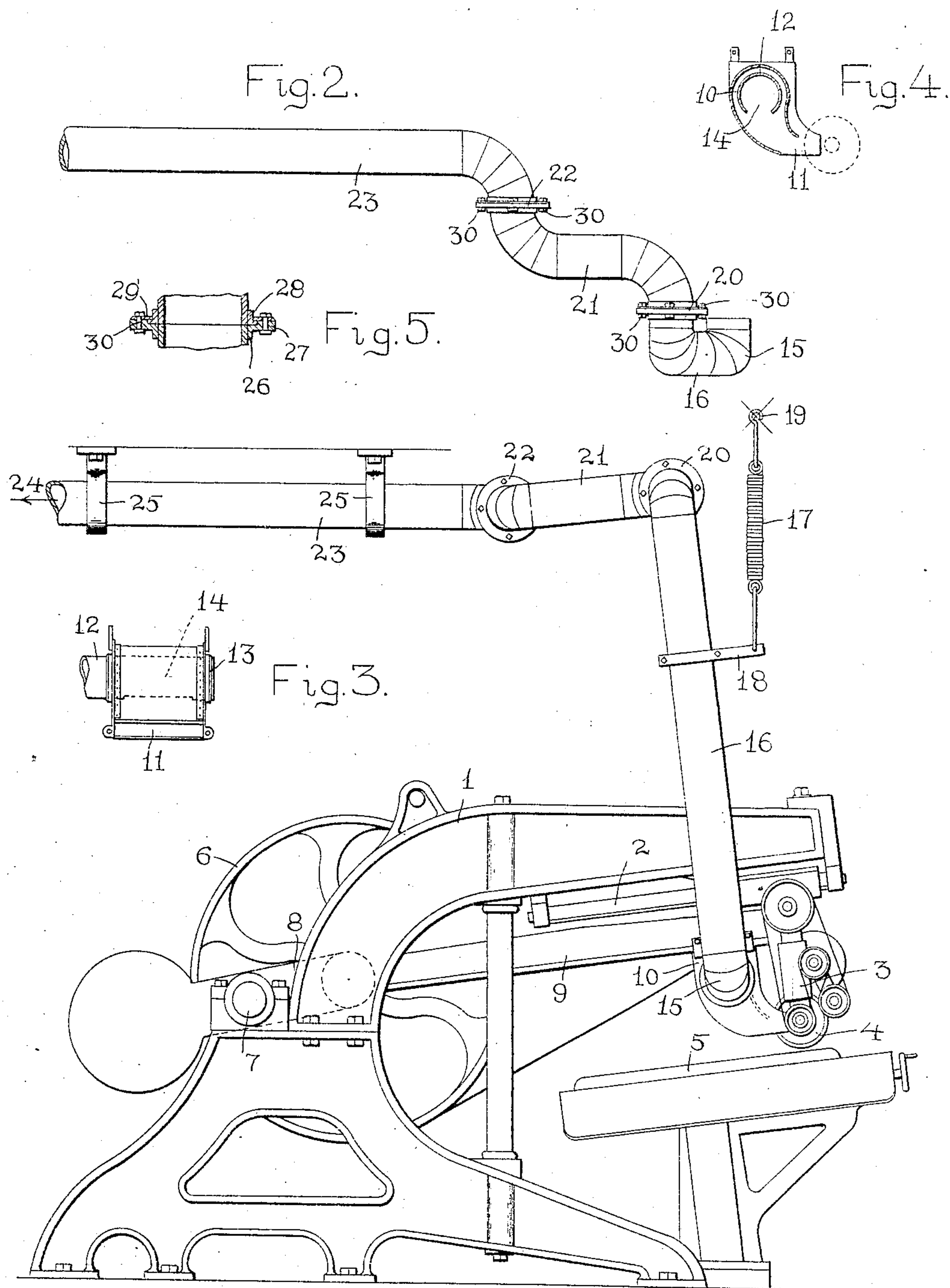
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F. A. NOBLE.

DUST COLLECTOR FOR RECIPROCATING CUTTER HEADS.

APPLICATION FILED JUNE 27, 1904.



Witnesses

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Penelope Lombard.

Fig. 1.

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DUST-COLLECTOR FOR RECIPROCATING CUTTER-HEADS.

SPECIFICATION forming part of Letters Patent No. 779,796, dated January 10, 1905.

Application filed June 27, 1904. Serial No. 214,284.

To all whom it may concern:

Be it known that I, FRANK A. NOBLE, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Dust-Collectors for Reciprocating Cutter-Heads, of which the following is a specification accompanied by drawings forming a part of the same, in
10 which—

Figure 1 represents a side view of a leather-whitening machine embodying my invention. Fig. 2 is a top view of the hinged dust-collecting pipe. Fig. 3 is a front view of the
15 hood applied to the cutter-head. Fig. 4 is a vertical central sectional view of the hood, and Fig. 5 is a sectional view of one of the hinged joints of the dust-collecting pipe.

Similar reference-figures refer to similar
20 parts in the different views.

The object of my invention is to provide a dust-collecting device for removing the dust from a rotating cutter carried in a cutter-head having a reciprocating motion, and I
25 have illustrated my invention in the accompanying drawings by showing its application to the reciprocating cutter-head of a leather-whitening machine.

Referring to the accompanying drawings,
30 1 denotes the framework of the machine, provided with ways 2 for a reciprocating cutter-head 3, carrying a rotating cutter 4, adapted to dress a side of leather resting upon the inclined table 5. The rotating cutter 4 is rapidly rotated by a belt connection with a driving-pulley 6 in the usual manner in machines
35 of this class.

7 denotes the main driving-shaft, provided with a crank 8, connected by a connecting-rod 9 with a reciprocating cutter-head, which is thereby caused to slide back and forth upon the ways 2 and across the table 5.

10 denotes a hood carried by a movable part of the machine, so as to be reciprocated
45 in correspondence with the movement of the cutter-head 3. The hood 10 is provided with an open mouth or nozzle 11, which is presented to the rear of the rotating cutter 4, and

the upper end of the hood is swiveled upon a horizontal pipe 12, which passes through the
50 hood, with its outer end 13 closed, and provided on its under side and within the hood with an opening 14. The horizontal pipe 12 is connected by an elbow 15 with a vertical pipe 16, whose weight is counterbalanced by
55 a tension-spring 17, attached to the pipe by an arm 18, and connected at its upper end 19 to a fixed point of the building. The pipe 16 is connected at its upper end by a rotating joint 20 with a horizontal pipe 21, which in
60 turn is connected by a similar rotating joint 22 with a pipe 23, leading to a suction-blower (not shown) by which a current of air is drawn from the pipe 23 in the direction of
65 the arrow 24, Fig. 1, thereby inducing an air-current through the nozzle 11 and withdrawing the leather dust and chips from the rotating cutter 4.

The hood 10 is capable of a swinging movement about the horizontal pipe 12. The vertical pipe 16 is capable of a swinging movement in a vertical plane at the joint 20, and the horizontal pipe 21 is capable of a swinging movement in a vertical plane about the axis of the joint 22, the pipe 23 remaining
75 fixed in the brackets 25. The swinging joints 20 and 22 are constructed, as shown in sectional view in Fig. 5, by attaching to the end of one of the pipes a collar 26, provided with a grooved flange 27, in which turns a flanged
80 collar 28, attached to the connecting-pipe and held in place by an annular washer 29 and bolts 30.

As the cutter-head 3 is reciprocated along the ways 2 in a straight line the hood 10 is simultaneously moved in a corresponding straight
85 line, and the vertical pipe 16 swings about the axis of the joint 20; but as the lower end of the pipe 16 is obliged to move in a straight line instead of the arc of a circle, as would
90 be the case if the axis of the joint 20 was fixed, the swinging movement of the pipe 16 will cause the connected end of the horizontal pipe 21 to rise and fall a distance equal to the versed sine of the arc which would be described by the end of the pipe 16, provided
95

the axis of the joint 20 was fixed, thereby causing the pipe 21 to swing slightly about the axis of the joint 22.

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

1. The combination with a reciprocating head and a rotating cutter carried by said head, of a hood arranged to receive the dust and chips from said cutter, and a suction-pipe having a swiveled connection with said hood, said suction-pipe being formed in sections capable of a swinging movement on each other.

2. The combination with a rotating cutter having a reciprocating movement, of a receiving-hood, a fixed suction-pipe and an intermediate pipe connecting said fixed suction-pipe with said hood, said intermediate pipe being made in two sections, one of which, approximately horizontal, is arranged to rise and fall with one end of said fixed pipe as a center, and the other, approximately vertical, is arranged to follow the reciprocating movement of said hood with the free end of said horizontal pipe as a center.

3. The combination with a rotating cutter, of a suction-pipe comprising a fixed section, a horizontal section connected with said fixed section by a rotating joint, a vertical section connected with said horizontal section by a rotating joint, and a hood having a swiveled connection with said vertical section and hav-

ing an opening adapted to receive dust from said rotating cutter.

4. In an apparatus of the class described, the combination with a rotating cutter of a suction-pipe comprising a fixed section and intermediate sections, said intermediate sections being connected to each other and to said fixed section by means of flanged joints comprising a grooved flange on the end of one section and a flanged collar on the end of another section arranged to turn in said grooved flange, and a hood having a swiveled connection with one of said intermediate sections and an opening adapted to receive dust from said rotating cutter.

5. In an apparatus of the class described, the combination with a rotating cutter of a suction-pipe comprising a fixed section and intermediate sections capable of a swinging movement on each other, and on said fixed section, and a hood swiveled upon one of said intermediate sections with an opening in said intermediate section communicating with said hood and an opening in said hood adapted to receive dust from said rotating cutter.

Dated this 24th day of June, 1904.

FRANK A. NOBLE.

Witnesses:

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