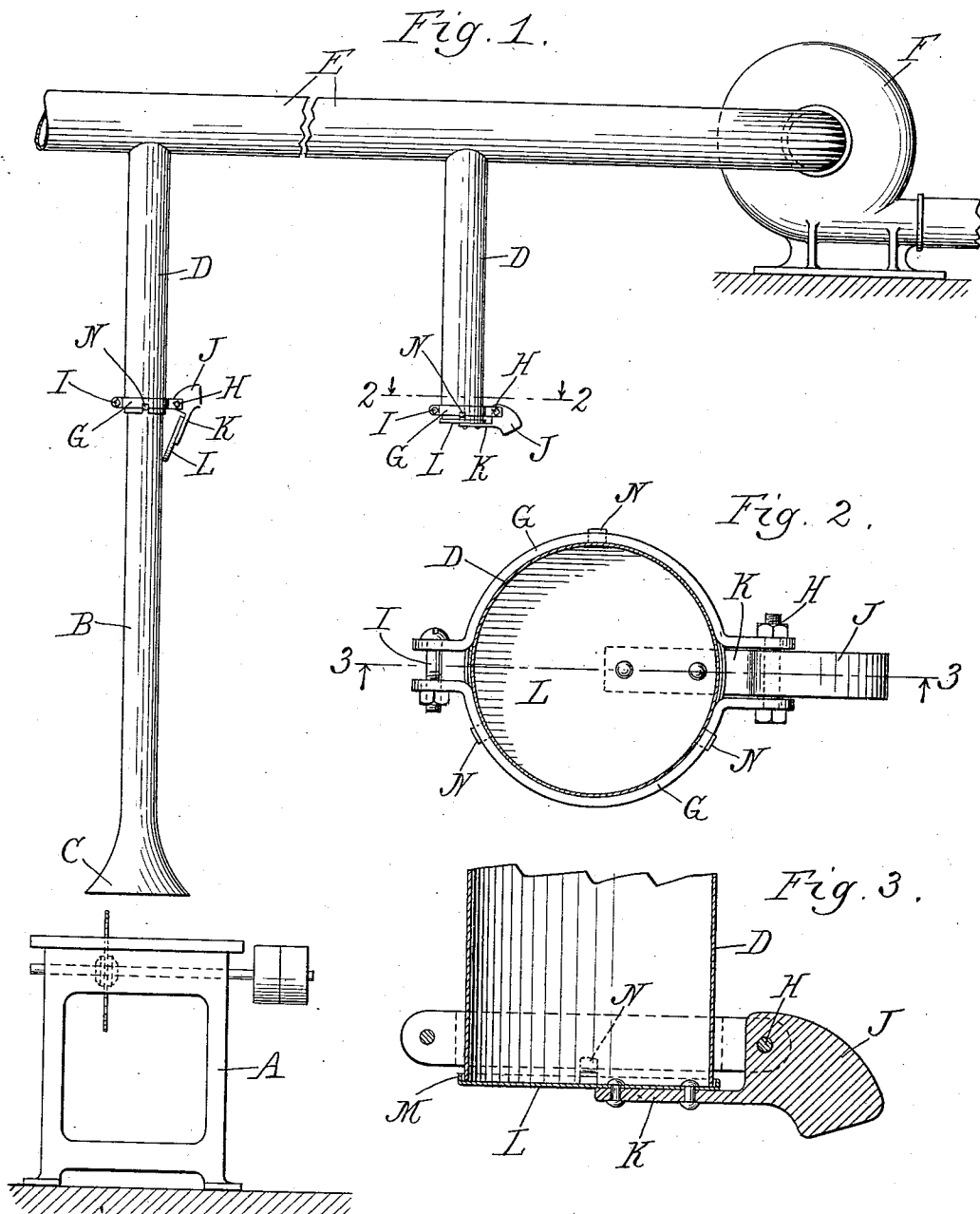


H. G. CONRAD.
VALVE FOR EXHAUST PIPES.
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1,064,291.

Patented June 10, 1913.



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UNITED STATES PATENT OFFICE.

HENRY G. CONRAD, OF CHICAGO, ILLINOIS.

VALVE FOR EXHAUST-PIPES.

1,064,291.

Specification of Letters Patent.

Patented June 10, 1913.

Application filed August 5, 1912. Serial No. 713,365.

To all whom it may concern:

Be it known that I, HENRY G. CONRAD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Valves for Exhaust-Pipes, of which the following is a specification.

It is a well known fact that a vacuum or suction cleaning system when used in connection with wood working and other tools which have a tendency to produce a great amount of chips, shavings and other refuse, effect a great saving and convenience, and it is customary to equip such shop where such tools are used, with a suction system for drawing air in through the pipes, the air carrying with it the shavings, chips and the like. Owing to the fact that the position of the machines is frequently changed and to the further fact that only a few of the machines are generally in operation at one time and that during different operations only different portions of the machines need be cleaned, it is customary to place the fixed and permanent system in position for a certain number of tools and to connect these tools with the machine or tool to be cleaned by a removable pipe. The system is then designed to suck air in through only a few of the outlets and it is necessary to always close the outlets which are not actively in use. In the past, workmen have been in the habit of after withdrawing the removable pipe placing a block of wood over the outlet and allowing the suction of air to hold the block in position, but if for any reason the vacuum in the system should drop or the fan slow down, the suction will not be sufficient to hold the blocks in position and they will all drop off, and thus when the pressure in the vacuum again arises, there will not be sufficient suction at the working points to carry the load, owing to the fact that the workmen can never be relied upon to replace the blocks which have dropped off. My invention therefore takes the place of this haphazard method of using blocks of wood, and automatically closing the outlets whenever they are not being used. I do this by substituting for the blocks of wood an automatic valve flap which swings over the valve opening the minute the workman withdraws the removable pipe and which may conveniently be

swung to one side to permit the positioning of another pipe.

My invention therefore relates to improvements in valves for exhaust pipes and has for its object more particularly to supply a new and improved intake valve for pipes in a suction exhaust system for removing the shavings, chips and debris from the wood-working tool, and has for one object to provide a new and improved valve which shall be automatically operable when the suction pipe leading to the tool is disconnected, which shall be conveniently attached to the system, and which shall not interfere with the connections of the pipes leading to the machines.

It is illustrated diagrammatically in one form in the accompanying drawing, wherein

Figure 1 is a side elevation with parts broken away of a wood-working tool showing the suction system in operation connected to the tool by an exhaust pipe; Fig. 2 is a section along the line 2—2 of Fig. 1; Fig. 3 is a section along the line 3—3 of Fig. 2.

Like parts are indicated by like letters throughout the several figures.

The tool A which I have here shown for the purpose of convenience as a rotary saw, has leading from the table a removable exhaust pipe B having an exhaust head C thereon. The upper end of the pipe B fits into the pipe D which in turn communicates with the main E in connection with the exhaust fan F. The two-part ring G which surrounds the end of the pipe D is held together by the bolts and nuts H and I. The bolt H also acts as a pivot for the counterbalance weight J, which weight is provided with the forwardly extending arm K to which is riveted the valve flap L, which flap is provided with the upwardly bent flange M which surrounds the end of the pipe D. The tongues N bent upwardly from the pipe D engage the lower edge of the ring G to hold it more securely in position.

The operation of my device will be clear from the drawing and specification, and as long as the removable suction pipe is connected with the system, air will pass through it, when the pipe is withdrawn, the weight of the counterbalance will cause the valve leaf or flap to swing over and close the end of the pipe. When it is desired to replace the removable pipe, the end of the pipe can easily be caught against the edge of the

valve leaf and the valve thus swung upwardly and out of the way, permitting the entrance of the pipe.

It will be evident that while I have shown
5 in my drawings an operative device, still
many changes might be made in the size,
shape and arrangement of parts without
departing materially from the spirit of my
invention, and I wish therefore that my
10 drawings be regarded as in a sense diagrammatic.

I claim:

1. A suction cleaning system for wood
working tools and the like having a plurality
15 of fixed conduits and intake ports
therefor, removable suction pipes and automatic
means for closing said ports when
said pipes are withdrawn.

2. A suction cleaning system for wood
working tools and the like, having a plurality
20 of fixed conduits and intake ports
therefor, removable suction pipes and automatic
means for closing said ports when
said pipes are withdrawn, said means comprising
a valve disk held in the inoperative
25 position by the removable pipe, but free to
swing into register with the port when the
pipe is withdrawn.

In testimony whereof, I affix my signature
in the presence of two witnesses this second
30 day of August 1912.

HENRY G. CONRAD.

Witnesses:

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MINNIE M. LINDENAU.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."