Air Pressure Chip Collector Unit

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This invention relates to improvements in air pressure chip collector units.

An object of the invention is to provide an improved air pressure chip collector unit for removing metal chips from drilling, reaming or tapping holes.

Another object of the invention is to provide a portable chip collecting unit operatively connected with a source of air under pressure for inserting in a hole which has been drilled, reamed or tapped, and by admitting the air under pressure to the unit, will blow the metal chips from the hole into the collecting unit.

A further object of the invention is to provide an improved air pressure chip collector unit which will be highly efficient in operation and relatively inexpensive to manufacture and produce.

Other objects will appear as the description proceeds.

In the accompanying drawings which form a part of this application,

Figure 1 is a perspective view of the improved air pressure chip collecting unit;

Figure 2 is a sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 2; and

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out the invention, there is provided an improved air pressure chip collecting unit for removing metal chips from drilled, reamed or tapped holes including a cylindrical body 1 having a rounded bottom 2, and is open at the top 3.

A centrally disposed opening 4 is formed in the bottom 2 of the body 1 and is threaded to support the threaded lower end 5 of the upwardly extending chip discharge pipe 6 which terminates a short distance below the top of the body 1.

Securing nuts 7 and 8 are threaded upon the threaded end 5 of the pipe or tube 6 above and below the bottom 2 of the bottom 1 for locking the tube or pipe in fixed position.

A bayonet slot 9 will be formed in the upper edge or top of the body 1 and will cooperate with and receive the locking pin 10 extending inwardly from the inner wall of the dome-shaped body cover 11 which is also formed with an off-set depending flange 25 for fitting over the top 3 of the body 1. The pin 10 will lock in the seat 9 when the cover 11 is placed on the body 1 and rotated.

A series of air vent ports 12 will be formed through the cover 11 to permit the escape of the air under pressure when said unit is operated.

An inverted cone-shaped deflector 13 is supported at the inside top of the cover 11, and a long small air discharge or inlet tube or pipe 14 will be disposed axially therethrough extending through the top of the cover 11 and axially through the chip discharge pipe or tube 6.

The upper end of the air inlet pipe 14 is headed as at 15 and is supported in the threaded bushing 16 extending through the top or cover 11, and is secured by the threaded nut 17 disposed on its lower end, and by the internally threaded collar 18 disposed on its upper end.

A supply pipe 19 for the air under pressure is connected to the upper end of the air inlet pipe 14 by means of the externally threaded packing nut 20 which is disposed about the pipe 19 and screwed into the threaded collar 18.

In operation, after a hole 21 in the metal work 22 has been drilled, reamed or tapped, the unit is placed to cover the top of the hole and air under pressure is admitted through the pipes 19 and 14 to blow the metal chips which have accumulated in the lower portion 23 of said hole upwardly through the chip discharge pipe or tube 6 to hit against the cone-shaped baffle or deflector 13 to drop down into the bottom of the body 1. When the body is nearly filled with chips, it will be emptied by removing the cover 11.

From the foregoing description, it will be apparent that there has been devised and provided a highly efficient form of air pressure chip collecting unit.

While the preferred embodiment of the instant invention has been illustrated and described, it will be understood that it is not intended to limit the scope of the invention thereto, as many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having described the invention, what is claimed as new is:

An air pressure chip collector unit comprising a cylindrical body having a rounded bottom, a dome-shaped cover removable secured thereto by means of a bayonet slot on said body and cooperating pin on said dome-shaped cover, a chip discharge tube mounted vertically and axially through said body and attached at its lower
end to the rounded bottom portion of said cylindrical body and terminating short of said cover, an air tube supported by said cover disposed axially and centrally within said chip discharge tube, said air tube being attached at its upper end to said cover and arranged to depend downwardly and centrally through said chip discharge tube, means for supplying air under pressure to said air tube, an inverted cone-shaped deflector supported on the underside of said cover, and said cover being provided with air vents positioned adjacent the base of said cone-shaped deflector and out of the path of discharge of said chip discharge tube.

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