

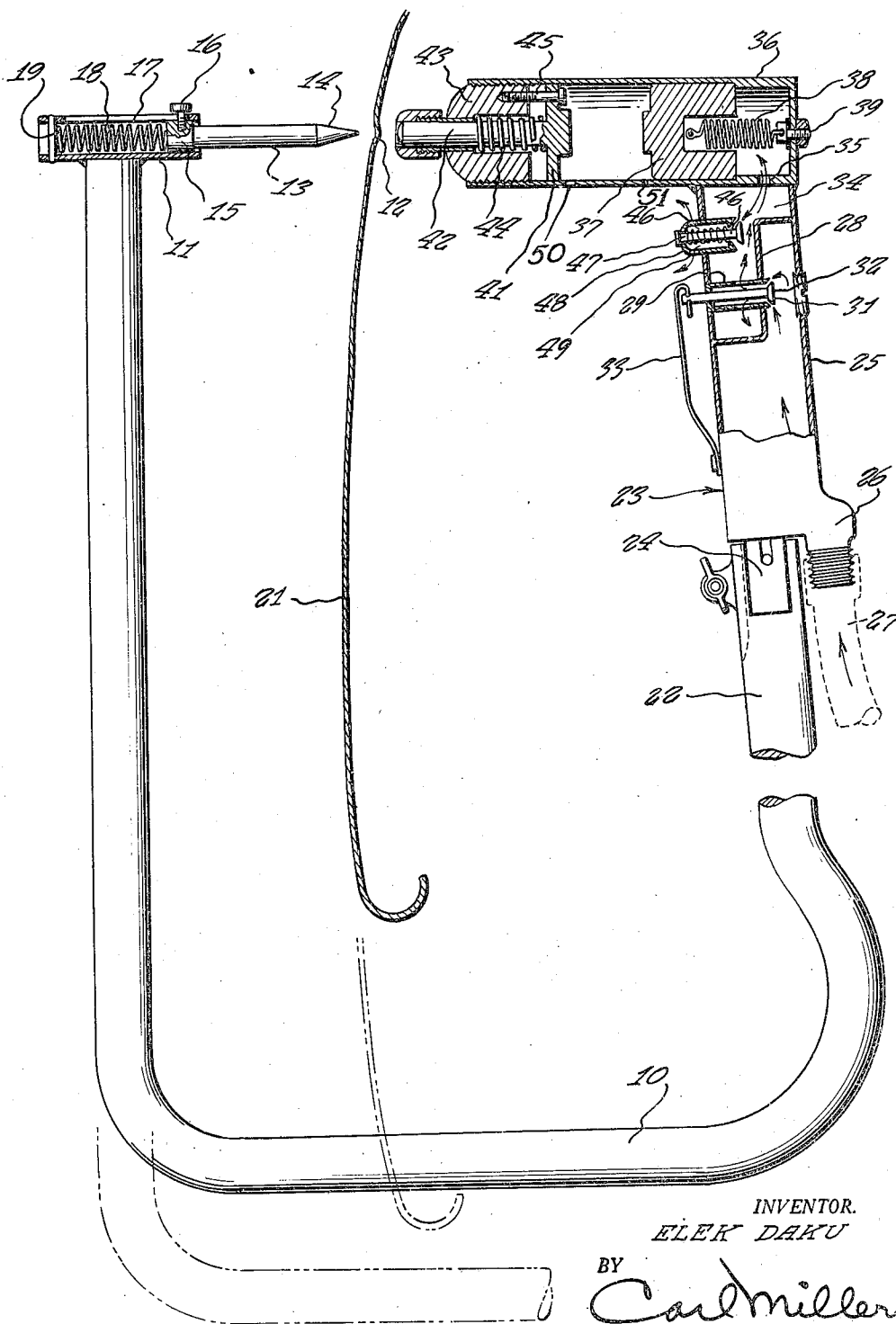
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AIR TAP HAMMER

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1 Claim. (Cl. 153—32)

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This invention relates to an air hammer device. It is an object of the present invention to provide an air hammer device particularly adapted for removing dents in metal by effecting upon the metal light taps with a hammer while resiliently supporting the member being straightened and including an automatic release valve for effecting the return of the hammer upon the release of the air pressure.

Other objects of the present invention are to provide an air tap hammer adapted for taking out dents from sheet metal which is of simple construction, easy to operate, inexpensive to manufacture and efficient in operation.

The single figure is an elevational view of the air hammer with a metal extended into the same to be operated upon and with portions of the device broken away to show the interior construction of the parts.

Referring now to the figure, 10 represents an arbor of U-shape and adapted to serve as a handle for supporting the working parts of the tool. The lower arm of the arbor has a sleeve 11 welded thereto and extending inwardly and upwardly. Within the sleeve there is slidably connected a pointer adapted to be extended to the outer side of a fender and into the depression of the dent indicated at 12. The pointer is indicated at 13 and has a pointed end 14 and an enlargement 15 having a screw 16 extending through an elongated slot 17 of the sleeve 11 and adapted to limit the movement of the pointer through the sleeve. Within the sleeve is a spring 18 for supporting the pointer and urging the same outwardly at all times. A stop member 19 is disposed in the upper end of the sleeve 11 against which the spring 18 may react. The fender or metal sheet is indicated at 21 and may be extended into the arbor at a substantial distance. On the lower arm of the arbor, as indicated at 22, there is releasably secured an air hammer device 23. The air hammer device has a projection 24 adapted to be clamped to the end of the arbor.

The air hammer device 23 includes a horizontally extending housing 25 having an inlet projection 26 to which a hose 27 may be connected to supply air under pressure. Within the housing 25 is a partition 28 through which extends a sleeve 29 having a valve seat 31 on its upper end with which a valve element 32 extending through the sleeve 29 cooperates and which is normally held upon the seat by a spring 33 serving as an operating handle on the exterior of the housing 25. When the spring 33 is depressed, the valve 32 is lifted from its seat 31 and air under pressure will

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pass into the sleeve 29 and into chamber 34 from which it enters through opening 35; into a hammer cylinder 36 having a hammer 37 therein. The hammer 37 is suspended or connected to a spring 38 anchored as indicated at 39 to the closed end of the cylinder 36.

The hammer will be extended through the cylinder for engagement with a flange 41 of a tool 42 slidable through a screw fitted head 43 on the end of the sleeve 36. The rounded end of the tool will engage with the indentation of the fender 21. A spring 44 will return the tool 42 to a retracted position and against a stop bolt 45 in the head 43.

After the blow has been struck, the valve 32 will be closed and outlet valve 46 due to spring 47 will be lifted from its seat so that air from the cylinder 36 can pass into chamber 34 and out of the same. The valve 46 is mounted in a receptacle 48. The receptacle 48 has an outlet opening 49.

The hammer cylinder 36 has two holes 50 and 51. The hole 50 will discharge the air between the hammer 37 and the flange 41 of the tool 42. This hole 50 will relieve the pressure in front of the piston or hammer 37. The hole 51 will permit the release of the air in back of the hammer 37 after it has moved forwardly. The air pressure in back of the piston escapes partly through the hole 51 and the remainder of the pressure is relieved by the valve 46. The spring 47 having elevated the valve from the seat upon the valve 32 becoming seated on the seat 31. The spring 47 is not as strong as the spring 38, but is strong enough to open the valve 46 when the inlet pressure has been cut off and when the hammer 37 has been advanced beyond the hole 51. Upon the initial movement of the hammer 37, the valve 46 is closed under the pressure of the air entering the space surrounding the valve.

When the blow is struck, the fender will be brought against the pointer 13 and the fender will be straightened a slight amount each time. The pointer will serve to support the arbor upon the fender in the proper location to permit the tool 42 to engage the fender.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

An air hammer tool comprising a U-shaped arbor having spaced legs, a supporting pointer biasingly mounted for adjustment on one leg of the arbor, an air hammer device releasably con-

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nected to the other leg of the arbor and having a hammer tool adapted to be extended therefrom for engagement with the metal sheet being straightened, said air hammer device comprising a housing adapted to receive air, a manually operated valve extending from the housing, a partition within the housing separating the same into separate chambers, said valve controlling the flow of air through the partition, a hammer cylinder connected to the end of the housing and extending at an angle therefrom, said cylinder having spaced air discharge openings, a hammer within the cylinder adapted for engagement with the tool, one of the openings allowing for the air to be discharged ahead of the hammer and the other opening allowing for the air which operates the hammer to be discharged when the hammer has been advanced to the blow position, a head for receiving the tool, said head being secured to the hammer cylinder, automatic release valve means extending through the housing and operable automatically when the blow has been effected to permit the exit of air from the hammer cylinder

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and from the housing and the return of the hammer to a position to again be used, and spring tension means secured to the hammer and the hammer cylinder to effect its return away from the hammer tool, said release valve means having a spring tending to lift the valve to an open position and operable upon the discharge of air through the other opening and after the advancement of the hammer to permit the return of the hammer.

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