Aug. 21, 1951 H. L. SCHWARTZ 2,564,818

STEAM SPOTTING GUN

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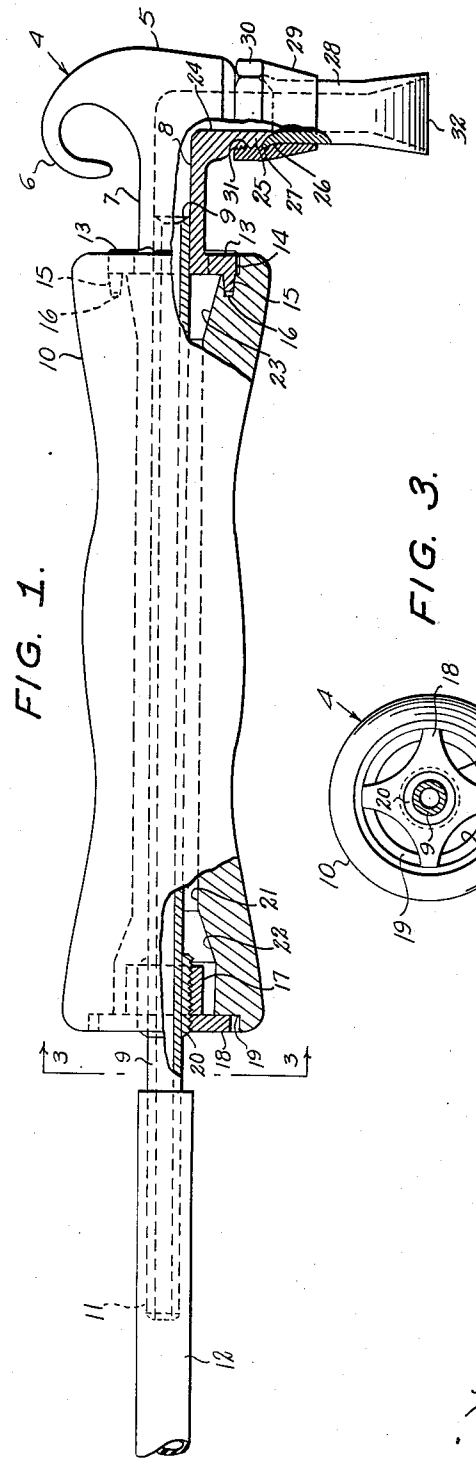

FIG. 1.

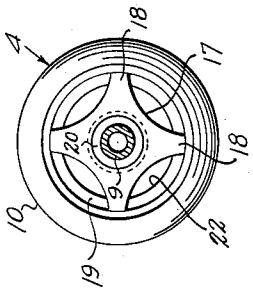

FIG. 3.

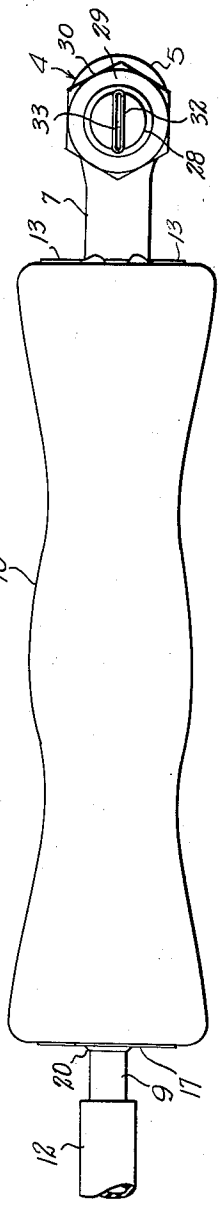

FIG. 2.

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## STEAM SPOTTING GUN

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2 Claims. (Cl. 299—107)

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This invention relates to manually-operated steam guns, and particularly to a spot-removing steam gun used in dry cleaning together with auxiliary control of the steam supplied thereto.

The main object of my invention is to provide a steam spotting gun of the character indicated with a special detachable spotting nozzle allowing convenient cleaning of the device at will.

Another object is to produce a simple and light construction for a steam-spotting gun which contributes to its convenience and effectiveness in use.

A further object is to have such a manually-operated steam-spotting gun which by virtue of its special construction is safe to use at all times.

It is also an object of the invention to produce a novel steam-spotting gun as indicated which requires no special instruction or practice with respect to the same on the part of those already familiar with the art in a practical way.

Other objects and advantages of the invention will appear in further detail as the specification proceeds.

In order to facilitate ready comprehension of this invention for a proper appreciation of the salient features thereof, the invention is illustrated on the accompanying drawing forming part hereof, and in which:

Figure 1 is a slide elevation of a steam-spotting gun made according to the invention and embodying the same in a practical form, certain portions being shown in section to disclose internal detail;

Figure 2 is a bottom plan view of the steam-spotting gun of Figure 1;

Figure 3 is a section taken on line 3—3 of Figure 1.

In the views, the same reference numerals indicate the same or like parts.

In dry cleaning, steam guns are frequently used for removing spots, such guns being usually connected to a source of steam supply by means of a rubber hose or the like and the flow of the steam controlled by a foot-operated pedal valve connected to the hose or steam-supply line. Inevitably, the rubber in the steam line begins to deteriorate and decay and particles of various sizes of rubber begin to become detached and carried along by the stream of steam traveling to the nozzle in which they become lodged, as well as in the gun immediately above the nozzle, and soon the latter is so clogged as to interrupt an even flow of the steam to the garment being cleaned. In fact, in a short time the nozzle involved becomes so seriously clogged as to be well

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nigh useless, and the whole steam gun must then be discarded and replaced by a new device.

Upon carefully considering this problem, it has occurred to me that the nozzle on such a steam gun should be detachable in a convenient manner so that the particles and fragments of decayed rubber and the like will be blown out of the gun by a blast of steam when the nozzle is removed and the latter may be independently cleared out from the inside. As a result, I have succeeded in evolving a manually-operated steam-spotting gun substantially free from the outlined disadvantages and which is so readily and conveniently cleaned that it immediately is restored to pristine condition, while incidentally I have also succeeded in simplifying and lightening the construction of the gun and providing for proper insulation by isolation of the handle thereof from direct contact with the live steam line therein, as will now be fully explained.

Hence, in the practice of my invention, and referring again to the drawing, a steam-spotting gun, generally indicated at 4, primarily includes a gun head 5 provided with a hook 6 by which to suspend the gun from a nail or hook when it is out of service, and a rearwardly-extending tubular portion 7, to the interior passage 8 of which is secured a copper or copper alloy steam tube 9 extending into the rear end of the passage 8. Preferably, the steam tube 9 is silver soldered within the tubular portion 7, this tube extending rearwardly through a wooden or plastic handle 10 and at the rear end 11 thereof being connected to a rubber steam hose 12 or the like. The rear end of the tubular portion 7 on the gun head 5 terminates in a plurality of radially-extending spacing fingers 13, 13 fitting into a counterbored recess 14 in the rear end of handle 10 and at least two of the fingers 13 being further provided with rearwardly-extending locating lugs 15, 15 extending into individual recesses 16 which serve to prevent rotation of the handle with respect to the head 5.

Within the rear end of the handle 10 is a star-shaped or cruciform nut 17 which at the rear end is provided with a plurality of radially-extending locating fingers 18, 18 fitting in a counterbored recess 19 in the end of the handle. The steam tube 9 at this point is provided with an externally-threaded collar 20 soldered or brazed in position upon the tube and upon this collar the nut 17 is screwed up tight so that the handle is virtually confined in position upon tube 9 by means of the locating fingers 13, 13 of the gun

head 5 and the rear fingers 18, 18 of nut 17 at the other end of the handle. The latter is bored at 21 to provide ample clearance between the handle body and the steam tube 9 in order to isolate the handle from contact with the steam tube and thereby prevent conduction of heat therefrom to the handle, the ends of the bore 21 being flared out at 22 and 23 to provide communication between the bore 21 and the spaces between the locating fingers 13, 13 at the one end and 18, 18 at the other end of the handle so that the bore 21 will be in direct communication with the atmosphere at both ends of the handle, and thus provide ventilation past the steam tube 9, throughout the length of the handle, which definitely contributes to the cooling of the handle so that it may be manipulated while the live steam is flowing through tube 9 to the head 5.

In the steam gun head 5 the passage 8 is abruptly turned downward at 24 and terminates in a downwardly-directed, open and externally-threaded nipple 25 which is beveled or chamfered at the end 26 and adapted to receive the inner flared end 27 of a steam nozzle 28 normally held against the chamfered end 26 by means of a tapered retaining nut 29. The upper hexagonal nut portion 30 of the tapered nut 29 is internally threaded at 31 and screwed on the threaded nipple 25 in such fashion as to secure the nozzle 28 firmly in place in a steam-tight connection with this nipple. At the lower end the nozzle 28 is widened and flattened to form a narrow steam-spotting tip 32 wherein the narrow slit 33 forms the entire port of issue for the steam when operating the gun. It is self-evident that small particles of dirt, rubber and other debris from decaying tubes if propelled forward by the steam toward this narrow orifice 33 will become clogged in the tip and in the upper portion of the head 5 due to the narrow caliber of the slit 33, so that sooner or later the particles must be removed. It is evident from the construction already described that it is but a simple matter to release the nut 29 by placing a key wrench on the hexagonal portion 30 thereof and unscrewing the nut from the threaded nipple 25 when the nut and nozzle 28 together will be released from the gun head 5. If the steam is then turned on by valve means, not shown, whatever particles or fragments of various materials, such as decayed rubber hose, may be lodged in the head 5, will then be blown out clear of the passages 8 and 24, while on the other hand, the nozzle 28 may be cleared out by merely placing the tip 32 thereof in the mouth and blowing the particles rearwardly out through the nozzle and through the nut 29, when the nozzle will again be clear and ready for service. Replacing the nut 29 on the threaded nipple 25 with the nozzle 28 again engaging against the beveled or chamfered end 26 of the nipple and the nut tightened will again restore the entire gun into pristine condition to operate as a new device.

While a manually-operated valve could readily be included in the construction of the gun, I have chosen to omit the same inasmuch as the hose 12 may well lead to a more or less conventional valve-controlled steam-spotting unit which has a pedal-operated valve controlling the flow of steam to the steam-spotting gun, and such valve control forms no immediate portion of this invention.

Manifestly, variations may be resorted to and parts and features may be modified or used without others within the scope of the appended claims.



Having now fully described my invention, I claim:

1. A steam spotting gun comprising a hollow open ended handle, a first supporting means arranged within and adjacent one end of said handle and fixedly secured to the latter, a second supporting means arranged within and adjacent the other end of said handle and fixedly secured to the latter, there being an opening extending through each of said first and second supporting means, a steam tube extending through said hollow handle in spaced relation with respect to the inner face of the latter and carried by said first and second named supporting means, one end of said tube projecting beyond said first supporting means for connection to a source of heated medium, a gun head on the other end of said tube, said gun head comprising a hollow body having an end rigidly connected to said other end of the steam tube and another end formed as an externally threaded nipple, a nozzle abutting and communicating with said nipple, and a tubular nut threaded on said nipple and circumposed on said nozzle and engaging a portion of said nozzle in a manner to removably assemble said nozzle on said nipple.

2. A steam spotting gun comprising a hollow open ended handle, a first supporting means arranged within and adjacent one end of said handle and fixedly secured to the latter, a second supporting means arranged within and adjacent the other end of said handle and fixedly secured to the latter, there being an opening extending through each of said first and second supporting means, a steam tube extending through said hollow handle in spaced relation with respect to the inner face of the latter and carried by said first and second named supporting means, one end of said tube projecting beyond said first supporting means for connection to a source of heated medium, a gun head on the other end of said tube, said gun head comprising a hollow body having an end rigidly connected to said other end of the steam tube and another end formed as an externally threaded nipple, a nozzle abutting and communicating with said nipple, and a tubular nut threaded on said nipple and circumposed on said nozzle and engaging a portion of said nozzle in a manner to removably assemble said nozzle on said nipple, said nozzle being tubular and comprising a cylindrical end portion on which said tubular nut is circumposed, and a flattened and laterally directed end portion terminating in a relatively narrow discharge slit.

HERMAN L. SCHWARTZ.


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