July 17, 1923.

1,461,824

F. M. HILGERINK

CLEANING PROCESS GUN

Filed Nov. 10, 1919

2 Sheets-Sheet 1

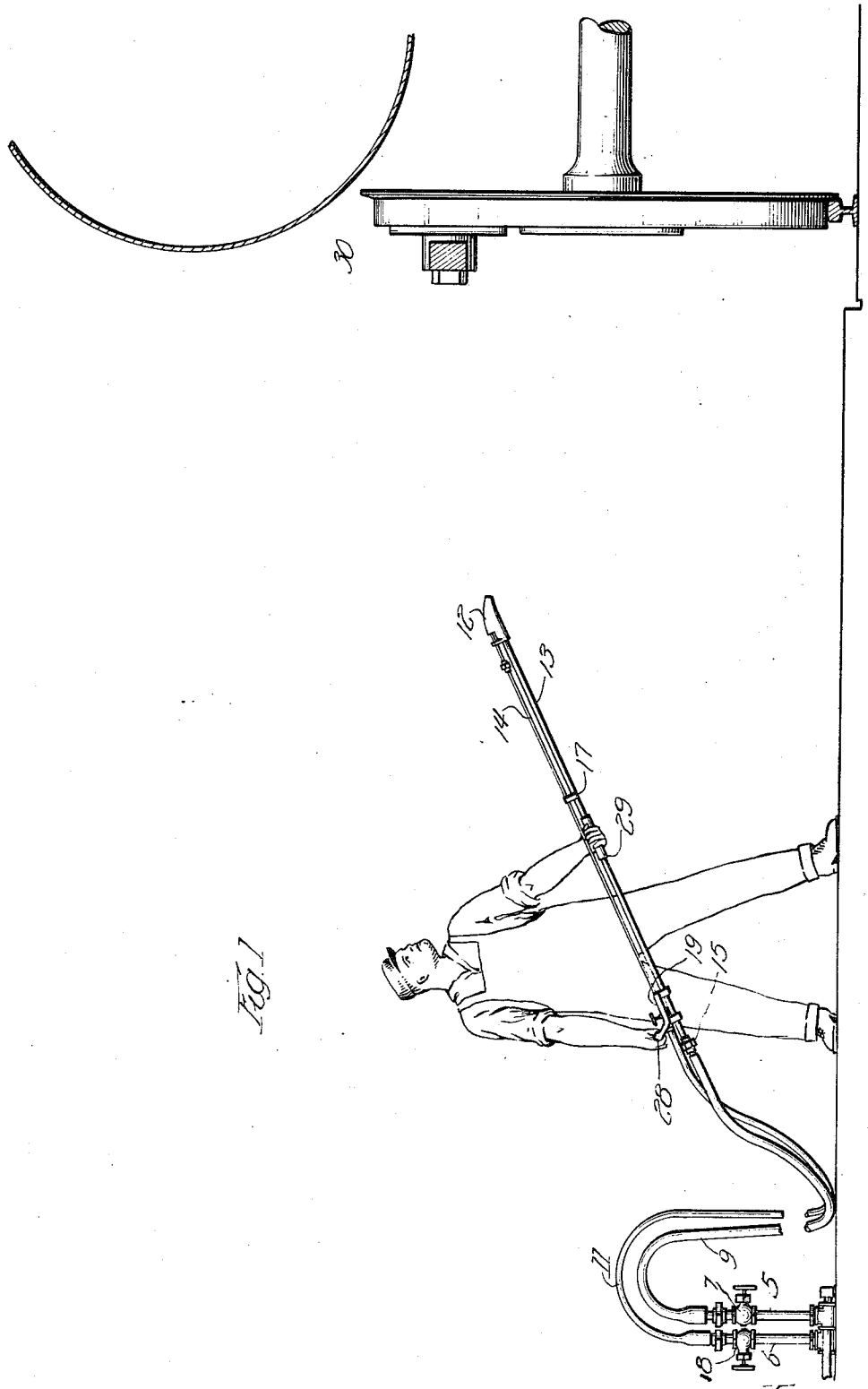


Fig. 1

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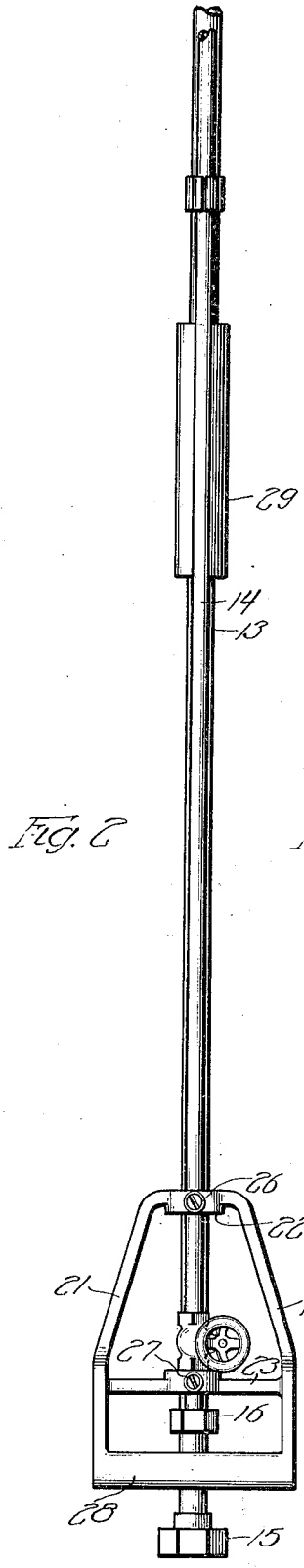


Fig. 2

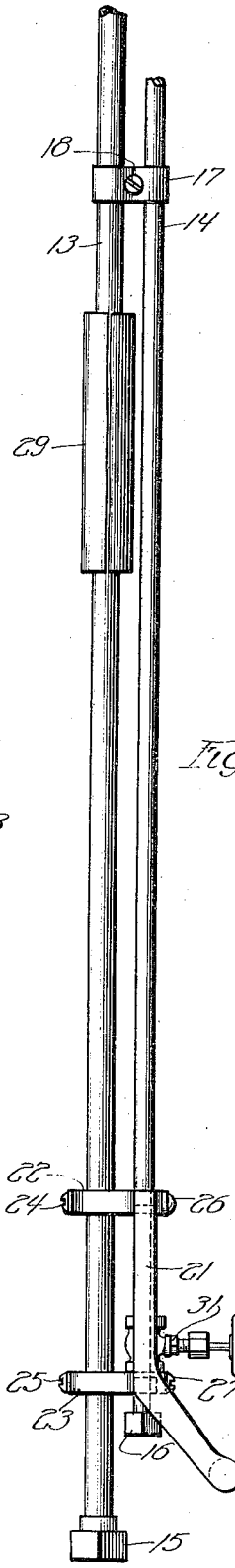


Fig. 3

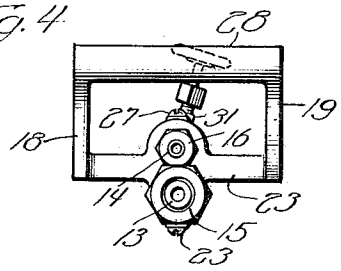


Fig. 4

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UNITED STATES PATENT OFFICE.

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CLEANING-PROCESS GUN.

Application filed November 10, 1919. Serial No. 336,836.

To all whom it may concern:

Be it known that I, FRANK M. HILGERINK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cleaning-Process Guns, of which the following is a specification.

This invention relates in general to the art of cleaning and more particularly, to the art of cleaning locomotives or other articles or surfaces, an apparatus, for this general purpose being disclosed in U. S. Patent 1,135,001 granted to Durham and McGuirk, April 13, 1915.

An apparatus of this general character necessarily includes a nozzle to which fluids are delivered under pressure thru suitable conduits and pipes. My present invention is designed to provide a so called "gun" to be attached to the flexible conduits of the system, and by which the cleaning fluids may be projected against the various surfaces and parts to be cleaned.

One of the primary objects of my invention is to provide a gun of this character which can be easily carried and readily manipulated, so as to deliver the cleaning fluid against the more or less inaccessible surfaces which must be subjected to the cleaning process.

Another object of my invention is to provide a cleaning gun which can be handled for extended periods of time by an operator without unduly tiring him, and with this end in view the gun is so designed that it will be substantially balanced in the operator's hands and consequently with a minimum of effort he may support the weight of the gun with one hand and with the other hand swing the nozzle about the supporting hand as a pivot so as to direct the issuing cleaning fluids in any desired direction.

A further object of the invention is to protect the hands of the operator against burns which result from contact of the hands with the pipe thru which hot water is delivered to the nozzle, and with this desideratum in mind I have located the carrying handle at a point remote from the hot water pipe, and furthermore, have equipped the gun with a hand grip which is also a heat insulator and which is adjustably mounted so that it may be moved to the most convenient location to be comfortably grasped by the operator for the purpose of manipulating the gun.

Still another object is to provide a gun of this character which shall be simple in construction, but sturdy and durable, one which will be light and easy to manipulate, and one in which all of the parts are securely connected together so that they will not become displaced or injured when the gun is accidentally dropped or subjected to other abuse incident to its daily use.

Other objects and many of the inherent advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following description when considered in connection with the accompanying drawings.

Referring to the drawings:—

Fig. 1 is a view illustrating the manner of use of my invention.

Fig. 2 is a plan view of a cleaning gun embodying my invention, the nozzle being removed.

Fig. 3 is a side view looking toward the right at Fig. 2; and

Fig. 4 is an end view looking upwardly toward Fig. 2.

Referring now to the drawings more in detail, reference characters 5 and 6 indicate pipes comprising parts of a fluid mixing apparatus of any approved form, the details of which are not illustrated herein as they are immaterial to my present invention. Generally speaking, however, the pipe 5 is adapted to deliver oil and water in predetermined proportions and thoroughly mixed, and pipe 6 is adapted to deliver air under pressure. The pipes are equipped with shut-off valves 7 and 8 respectively, and at their extremities are connected with flexible conduits 9 and 11 in the form of armored hose or standard hose as preferred. These hose are of substantial length and are adapted to lead from the machine or mixer, which is customarily stationary, to the cleaning

gun which is adapted to be carried about so that all parts of a locomotive or the like may be subjected to the cleaning process.

The cleaning gun proper with which my invention is concerned, comprises, in the form shown for purposes of illustration, a nozzle 12 to which is connected the outer ends of pipes 13 and 14. The opposite end of pipe 13 is equipped with a coupling 15 for attachment to the hose 9 and similarly the pipe 14 is equipped with a coupling 16 for attachment to the hose 11. Intermediate their ends, these pipes are clamped together by clamp 17 consisting of two suitably shaped plates embracing the pipes and clamped together by a bolt 18.

Near their ends, remote from the nozzle, these pipes are securely connected by a bracket. This bracket which is preferably made of malleable iron, comprises a pair of side members 19 and 21 connected at one end by a depending web 22, and also connected intermediate their ends by a similar depending web 23. These webs are each provided with a pair of apertures of sufficient size to loosely receive the pipes 13 and 14, the larger apertures for the reception of the pipe 13 being disposed below the others, and the corresponding apertures in the two webs being in longitudinal alinement so that the pipes may extend thru both webs as clearly shown in Fig. 3. For the purpose of securely fastening these pipes in their bracket apertures, I employ set screws 24 and 25 for clamping the pipe 13 and similar set screws 26 and 27 for clamping the pipe 14. It will be manifest that by this construction I have made provision for securely connecting the pipes and for holding them in predetermined position so as to provide a strong and durable, but light gun.

In order that the gun may be easily carried and readily manipulated into any desired position, I have provided it with a handle which consists of a cross-bar 28 formed integrally with and connecting the rear ends of the bracket side members 19 and 21 and to protect the hands of the operator from coming in contact with the pipe 13 which is usually very hot because of the hot water flowing therethru, the handle 28 is substantially elevated by turning the rear ends of the side members upwardly as will be apparent from Figs. 1 and 2. The handle 28 is positioned longitudinally of the gun so that the weight of the projecting portions of the pipes 13 and 14 together with the nozzle carried thereby, substantially balances the weight of the rear ends of the pipes and the hose suspended therefrom, so that when one hand of the operator grasps the handle 28 the gun substantially balances, with the nozzle slightly elevated in about the position shown in Fig. 1. The operator may therefore, carry the weight of the apparatus with one hand with his arm fully extended and in the most comfortable position.

The gun is swung vertically and laterally about the handle as a pivot by the other hand of the operator, and to protect this hand against injury from the hot pipe 13, I have equipped this pipe with a hand grip 29 constructed of heat insulating material, and snugly but slidably embracing pipe 13 so that it can be adjusted longitudinally thereon to that position which is most convenient and comfortable for any particular operator. Thus it will be manifest that both hands of the operator are protected from burns and the gun is supported in balanced position so that it can be readily manipulated and swung into any desired position with a minimum of effort on the part of the operator.

In use the gun is connected up to the hose as previously described, and the controlling valves 7 and 8 are opened, whereupon as the operator grasps the handle 28 with one hand, lifting the device from the floor, and with his other hand grasps the grip 29, the gun assumes a comfortable position for manipulation. The locomotive indicated generally by reference character 30, or other article to be cleaned, may then be subjected to the cleaning action of the fluids delivered by the nozzle 12 and if it be desirable to change the proportion of the fluids delivered, this may be done by adjusting the regulating valve 31 with which the pipe 14 is equipped. The fluids are delivered under considerable pressure from the nozzle against the surfaces to be cleaned, and by moving about and swinging the gun so as to deliver the fluids against all of the surfaces and parts, a thorough cleaning is effected with a minimum of exertion on the part of the operator.

It is believed that my invention and many of its attendant advantages will be understood and appreciated from the foregoing without further description, but it should be obvious that the various details of construction illustrated and described, are capable of considerable modification and variation without departure from the essence of the invention as defined in the appended claims.

I claim—

1. A cleaning process gun, comprising a nozzle, a plurality of pipes connected to said nozzle, a bracket comprising longitudinally extending side members, transversely disposed webs connected to said pipes and members and a handle secured to said members and extending transversely of said pipes above the same, and a grip adjustably mounted upon one of said pipes between said bracket and said nozzle whereby said gun may be swung about said handle as a fulcrum.

2. A cleaning process gun, comprising a bracket including a transversely disposed handle, a pair of pipes disposed in parallel-

ism longitudinally of said bracket and connected to the bracket at a plurality of spaced points, a nozzle connected with the ends of said pipes, and a hand grip mounted upon one of said pipes between said nozzle and said bracket.

3. A cleaning process gun comprising a nozzle, a plurality of pipes connected thereto, a bracket consisting of side members connected by a plurality of depending webs each provided with pipe receiving apertures and a handle connecting said side members above said webs, and means for securing said pipes in said apertures.

FRANK M. HILGERINK.