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PNEUMATIC GUN.

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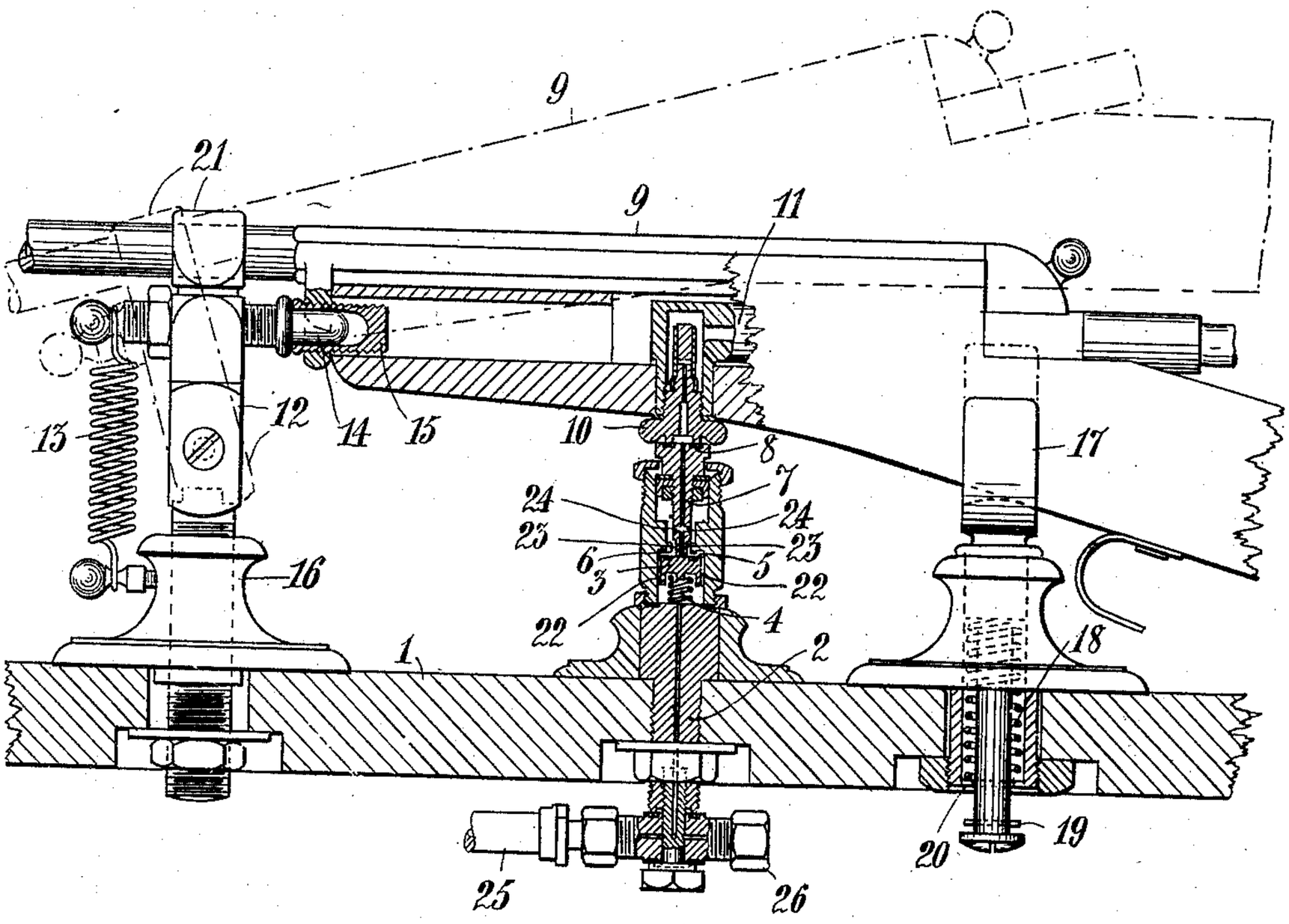
Patented Nov. 22, 1910.



Witnesses

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PNEUMATIC GUN.

976,429. Specification of Letters Patent. **Patented Nov. 22, 1910.**

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To all whom it may concern:

Be it known that I, AXEL LINUS BLOMÉN, a subject of the King of Sweden, residing at Sundbyberg, near Stockholm, in the Kingdom of Sweden, have invented new and useful Improvements in or Relating to Pneumatic Guns, of which the following is a specification, reference being had to the drawing accompanying and forming a part hereof.

This invention relates to improvements in pneumatic guns and the like and means for charging same.

In order to fill the pressure chamber of pneumatic guns with compressed air or gas it has been usual to use either an air pump placed in the gun by means of which compressed air is pumped into the pressure chamber for each shot, or the gun has been provided with a main receiver for the pressure medium, for instance liquid carbonic acid, or, finally, according to a third construction, the gun has been connected by a conduit, such as a flexible hose or the like, to an outer reservoir for pressure fluid. All the said devices entail certain drawbacks. Thus for instance by the two devices first mentioned the weight of the gun is considerably increased, whereas the last device is inappropriate on account of the gun being movable only within a certain limited range from the pressure fluid reservoir dependent on the length of the pressure conduit.

The object of the invention is to provide a charging device in which all the said drawbacks are entirely dispensed with.

The invention comprises the combination, in a pneumatic gun, of a pressure chamber, and an inlet valve for the said chamber adapted to be connected to a valve-controlled pressure conduit.

The invention further comprises a certain charging apparatus having a pressure conduit and an escape-valve placed in the said conduit and adapted to be operated from without by a part of the gun leading to the valve-controlled pressure chamber thereof.

According to the invention, the gun is thus provided with a valve-controlled pressure chamber adapted to receive a quantity of pressure fluid sufficient for at least one shot. The valve is accessible at the outer side of the gun and is preferably arranged so that when the same is pressed against an escape-valve placed in a pressure conduit, the compressed air or gas flows from the conduit into the pressure chamber of the gun whereupon the two valves are again closed, when separated from each other. The gun thus charged may be removed from the pressure conduit and is not connected during shooting to the said conduit.

The invention also comprises a support in which the gun may be placed and guided for charging.

The invention further comprises the construction and combination of parts hereinafter more particularly described.

In the drawing, a device embodying the invention is shown in side elevation and partial section.

Referring to the drawing, 1 is a bed-plate, or the like, preferably the top of a table. A conduit 2 extends through the said table from a reservoir for liquid dioxid of carbon, compressed air, or the like, placed below the said table or at any other suitable place. Usually, *i. e.* when charging does not take place, the conduit is closed outwardly by a valve 3. This valve is movable in the conduit and is pressed outward by a spring 4 and particularly by the pressure in the conduit. This pressure keeps the valve 3 pressed with its packing 5 tightly against the valve seat 6. Placed tightly in the conduit outside the valve 3 is a movable hollow spindle 7 bearing with its inner end on the valve 3. Placed around the outer mouth of the spindle 7 is a packing 8 against which a valve 10 accessible at the outer side of the gun 9 and leading into the pressure chamber 11 of the gun may be tightly pressed. The valve 10 is preferably an ordinary inlet valve, such as a Dunlop valve of the kind usually used in tires for bicycles and the like.

Pivotally attached to the table, at one side of the device hereinbefore described, is a standard 12 actuated by a spring 13 tending to turn the standard in one direction. Placed in the standard 12 is a bolt 14 fitting in a forwardly open sleeve 15 in the gun. The bolt 14 is screw-threaded and screwed through the standard 12 so as to be adjustable therein. The standard is suitably screwed into a foot 16 so that it may be

raised and lowered therein. Placed on the table, at the other side of the pressure supplying device, is a fork 17 adapted to be raised and lowered in a suitable guide, said fork being kept by a spring 18 in a raised position. The fork serves to engage the lower side of the stock of the gun. When the folk is in its raised position, it is kept by a pin 19 or the like entering a recess 20 in such a position as to be always ready to engage the gun when placed above the parts hereinbefore described.

The charging of the gun is performed in the following manner: The gun is held in an oblique direction corresponding to the oblique position of the standard 12 due to the action of the spring 13 and placed with the barrel or some other part in the fork 21 at the upper end of the standard 12, whereupon the gun guided in the fork is moved forward so that the bolt 14 enters the sleeve 15. When the gun has been thus fixed to the standard 12 it is swung downward so that the stock of the gun enters into the fork 17. The gun is thus guided not only longitudinally but also laterally and held in such a position that, in pressing the gun farther downward, the valve 10 is pressed tightly against the packing 8 at the upper end of the spindle 7, whereby the latter is pressed down and opens the valve 3 so that the different parts will take up the positions shown in the drawing. The pressure fluid then flows from the conduit 2 through the side openings 22 of the valve 3 past the said valve, thereupon through narrow passages 23 at the outer side of the spindle 7, farther through openings 24 into the hollow spindle, through the latter into the valve 10 and through the said valve into the pressure chamber 11. When the gun is thereupon raised, the valve 10 prevents the pressure fluid from escaping from the pressure chamber 11 and the fluid supplying device on the table is automatically closed. The gun is thereupon retracted from the pin 14 and may be freely moved to any desired place for shooting.

It is obvious that the pressure fluid supplying means and the two supports hereinbefore described may be varied in many particulars without departing from the spirit and scope of my invention.

The pressure conduit 25 may suitably be connected to the table in the manner shown in the drawing. The connection suitably forms a branch tube with for instance a threaded sleeve 26 for connecting the pressure conduit to a second apparatus at the side of the former. In this manner a number of apparatus may be placed one after the other and connected together.

I claim:

1. In a device for charging a valve-controlled pressure chamber of a pneumatic gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, and means adapted to engage the gun to be charged and guide it in such a manner as to cause a part of the gun leading to the valve-controlled pressure chamber thereof to engage and press on the escape-valve of the pressure conduit.

2. In a device for charging a valve-controlled pressure chamber of a pneumatic gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, and a swingable support adapted to engage the gun to be charged and guide it in such a manner as to cause a part of the gun leading to the valve-controlled pressure chamber thereof to engage and press on the escape-valve of the pressure conduit.

3. In a device for charging a valve-controlled pressure chamber of a pneumatic gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, and a swingable support having a fork for the barrel of the gun and an adjustable bolt adapted to engage the gun, said support being so arranged in respect to the escape-valve of the pressure conduit as to cause a part of the gun leading to the valve-controlled pressure chamber thereof to engage and press on the said escape-valve.

4. In a device for charging a valve-controlled pressure chamber of a pneumatic gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, a swingable support adapted to engage the gun to be charged and guide it in such a manner as to cause a part of the gun leading to the valve-controlled pressure chamber thereof to engage and press on the escape-valve of the pressure conduit, and a guide adapted to engage the stock of the gun during the last part of the said movement.

5. In a device for charging a valve-controlled pressure chamber of a pneumatic gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, a swingable support adapted to engage the gun to be charged and guide it in such a manner as to cause a part of the gun leading to the valve-controlled pressure chamber thereof to engage and press on the escape-valve of the pressure conduit, and a spring-supported fork adapted to engage the stock of the gun during the last part of the said movement.

6. In a device for charging a valve-controlled pressure chamber of a pneumatic

gun, the combination of a pressure conduit, an escape-valve placed in the said pressure conduit and adapted to be operated by pressure from without, a hollow spindle movably placed in the said pressure conduit, outside the said escape-valve, and bearing with its inner end on the said valve, and a packing at the outer end of the said hollow spindle against which a part of the gun leading to the valve-controlled pressure chamber may be airtightly pressed.

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Witnesses:
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