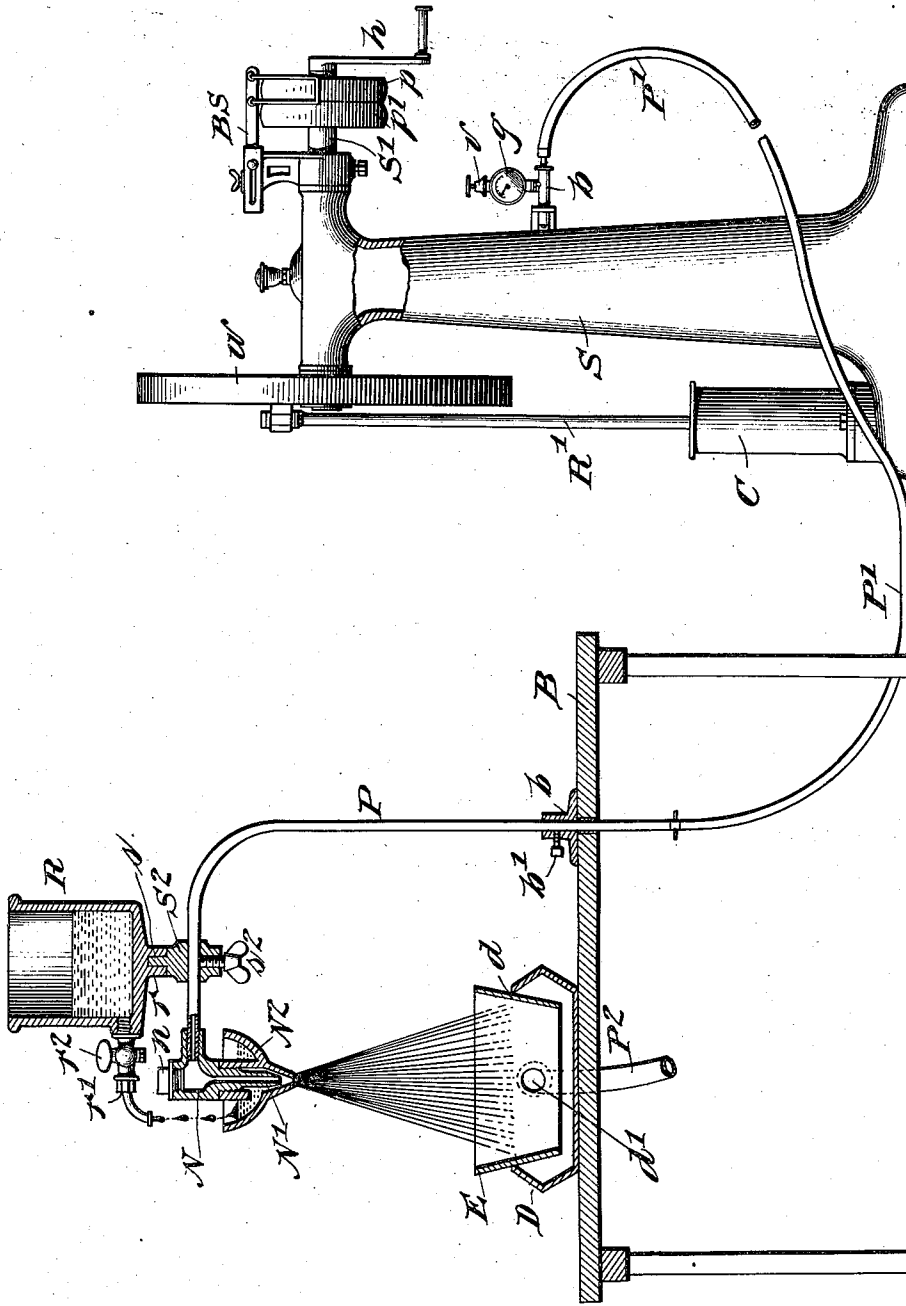


(No Model.)

R. WALLWORK & A. C. WELLS.
PNEUMATIC PAINTING APPARATUS.

No. 577,496.

Patented Feb. 23, 1897.



Witnesses:
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UNITED STATES PATENT OFFICE.

ROUGHSEGE WALLWORK AND ARTHUR COLLINGS WELLS, OF
MANCHESTER, ENGLAND.

PNEUMATIC PAINTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 577,496, dated February 23, 1897.

Application filed March 20, 1896. Serial No. 584,164. (No model.)

To all whom it may concern:

Be it known that we, ROUGHSEGE WALL-
WORK and ARTHUR COLLINGS WELLS, sub-
jects of the Queen of England, residing at
5 Manchester, in the county of Lancaster, Eng-
land, have invented certain new and useful
Improvements in Pneumatic Painting Appa-
ratus; and we do hereby declare the follow-
ing to be a full, clear, and exact description
10 of the invention, such as will enable others
skilled in the art to which it appertains to
make and use the same, reference being had
to the accompanying drawing, and to letters
of reference marked thereon, which forms a
15 part of this specification.

Our invention has relation to apparatus for
coating the surfaces of small articles mecha-
nically with paint and other like more or less
fluid or viscous protecting agents; and it has
20 for its object an apparatus of simple construc-
tion, easily manipulated, and of great effi-
ciency and practical utility.

In the accompanying drawing we have
shown our improved apparatus partly in ele-
25 vation and partly in section.

Broadly speaking, our said apparatus com-
prises an ejector spraying-nozzle provided
with a passage for air and with a passage for
paint, a source of compressed-air supply and
30 a source of paint-supply respectively con-
nected with said passages for air and paint,
a receiver for the surplus paint, and means
for exhausting noxious vapors from said re-
ceiver.

In the drawing we have shown as an ex-
ample a storage-chamber for compressed air
from which the air-compressor and its driv-
ing-shaft are supported, and we have also
shown a paint-receptacle supported from the
40 pipe that supplies air under pressure to the
passage for such in the ejector spraying-noz-
zle, but we do not desire to limit our inven-
tion thereto, as any other suitable source of
compressed-air supply may be made use of
45 and the paint-receptacle may be located at
any suitable point, so as to supply paint to

the passage for such in the ejector spraying-
nozzle.

In the drawing, S indicates a standard which
is hollow or chambered and serves as a stor-
age-chamber for the air forced into the same. 50

C indicates the compressor-cylinder on the
base of the standard S and in communica-
tion therewith by a suitable passage, any
usual and well-known means being provided, 55
as a check-valve, to prevent air from flowing
from the standard back to the cylinder, the
air-forcing devices being, as usual, of such a
nature as to allow free passage of air into the
cylinder below its piston or ram on the up- 60
stroke and prevent such air from passing out
of the cylinder on the downstroke, whereby
such air as is contained in the cylinder below
its piston is forced into the standard S.

Inasmuch as the appliances for supplying 65
air under pressure to the ejector spraying-
nozzle do not form a part of this invention
we have deemed it unnecessary to illustrate
the same in detail, especially as this omis-
sion can in no manner interfere with such a 70
thorough understanding of our invention as
will enable others to make and use the same.

At its upper end the standard S is provided
with a bearing for a driving-shaft S', that
may be set in motion from any suitable prime 75
motor or by hand. To these ends the shaft
carries the usual fast and loose belt-pulleys
p p' and a crank-handle h. Said shaft also
carries a fly-wheel w, to the wrist-pin of which
is journaled the piston-rod R' of the air-com- 80
pressor, and said standard has a suitable coup-
ling branch b, provided with a pressure-gage
g, and said branch is or may be provided with
a blow-off cock.

B indicates a bench, to which is secured a 85
bearing b² for the passage of a rigid air-pipe
P, that is connected with the coupling branch
b of standard S, preferably by means of a flexi-
ble pipe or hose P', the said pipe P being ad-
justable vertically in its bearing by means of 90
a set-screw b'.

The rigid air-pipe P is bent at right angles

at its upper or outlet end above the bench B and carries a supporting-sleeve S^2 , adjustable on the horizontal portion of the pipe by means of a set-screw s^2 and provided with a stud or pin s , that fits a socket r in the bottom of a paint-receptacle R, that is provided with a discharge-spout r' , in which is fitted a suitable controlling valve or cock r^2 .

To the outlet end of the air-pipe P is secured an ejector-nozzle N, consisting of a hollow open-ended casting terminating in an air-nozzle N' , to which is screwed a cup-shaped paint-nozzle N^2 , into which the air-nozzle N' projects.

Upon the bench B is arranged a collecting vessel D, the mouth d of which is contracted and serves as a seat for a conical or tapering open-ended collecting-funnel E, that gathers such paint as may run off the article being coated and held in the spray of paint between said funnel E and the ejector spraying-nozzle N, said funnel extending near to the bottom of the vessel D, whereby a space is left around the funnel below its seat.

The vessel D is provided with a port d' above its bottom and above the lower open end of funnel E, said port being connected, preferably by means of a flexible pipe P^2 , with any suitable exhaust apparatus, as an exhaust-fan, (not shown,) whereby noxious gases may be drawn from the vessel into the atmosphere outside of the room or shop in which the bench is located.

As shown in the drawing, the upper open end of the spraying-nozzle N is normally closed by a screw-plug n , so that access can be had to the interior of the nozzle N' as well as to the interior of the nozzle N^2 when this is required.

From the description of the apparatus its operation will be readily understood, and does, therefore, not need to be specifically described.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters Patent, is—

1. An apparatus such as described, comprising a spraying device consisting of an air-nozzle, means for supplying air under pressure to said nozzle, a cup-shaped paint-nozzle surrounding said air-nozzle, and a receptacle for paint adapted to supply paint to said cup-shaped nozzle, for the purpose set forth.

2. An apparatus such as described, comprising a spraying device consisting of an air-nozzle and an air-supply pipe connected therewith, a cup-shaped paint-nozzle surrounding said air-nozzle, and a receptacle for paint on the air-pipe and adapted to supply paint to said cup-shaped nozzle, for the purpose set forth.

3. In an apparatus such as described, the combination with a paint-spraying device,

and a bench to which said device is secured; of a collector for the surplus paint comprising a vessel D contracted at its upper end d and provided with an outlet-port above its bottom, and an open-ended tapering vessel E seated in said contracted end, said collector arranged on the bench in line with the spraying device, substantially as and for the purpose set forth.

4. An apparatus such as described, comprising a support as a bench, a rigid air-supply pipe adjustable vertically in said support, a downwardly-turned ejector spraying-nozzle provided with a passage for air rigidly connected with the air-supply pipe, said nozzle provided with a passage for paint, a paint-receptacle adapted to supply paint to said passage, and a collecting vessel below and on a line with the outlet of the ejector spraying-nozzle, for the purposes set forth.

5. An apparatus such as described, comprising a support as a bench, a rigid air-supply pipe rising therefrom, a downwardly-turned ejector spraying-nozzle provided with a passage for air rigidly connected with the pipe and with a passage for paint, a paint-receptacle adapted to supply paint to said passage, an open collecting vessel on the aforesaid bench below and on a line with the ejector spraying-nozzle, said collecting vessel having a contracted neck, and an outlet-port above its bottom, an open-ended tapering collector or funnel seated in the aforesaid contracted neck of the collecting vessel and extending below the outlet-port thereof, for the purpose set forth.

6. An apparatus such as described, comprising a support as a bench, a rigid air-supply pipe adjustable vertically thereon and having its upper outlet end bent at right angles, an ejector spraying-nozzle supported from the outlet end of said pipe and provided with an air-passage at right angles to such pipe, an air-nozzle connected with such passage, a cup-shaped paint-nozzle into which said air-nozzle projects, and a paint-receptacle adapted to supply paint to said cup-shaped nozzle, for the purposes set forth.

7. An apparatus such as described, comprising a support, as a bench, a rigid air-supply pipe adjustable vertically thereon and having its upper outlet end bent at right angles, an ejector spraying-nozzle supported from the outlet end of said pipe and provided with an air-passage at right angles to such pipe, an air-nozzle connected with said passage, a cup-shaped paint-nozzle into which said air-nozzle projects, and a paint-receptacle supported from the air-supply pipe and adapted to supply paint to such cup-shaped nozzle, for the purposes set forth.

8. An apparatus such as described, comprising a support, as a bench, a rigid air-supply

pipe adjustable vertically thereon and having
its upper outlet end bent at right angles, an
ejector spraying-nozzle supported from the
outlet end of said pipe and provided with an
5 air-passage at right angles to such pipe, an
air-nozzle connected with said passage, a cup-
shaped paint-nozzle into which said air-noz-
zle projects, and a paint-receptacle supported
from and adjustable on the horizontal portion
10 of the air-supply pipe, and adapted to supply
paint to said cup-shaped nozzle, for the pur-
poses set forth.

In testimony that we claim the foregoing as

our invention we have signed our names in
presence of two subscribing witnesses.

ROUGHSEGE WALLWORK.
ARTHUR COLLINGS WELLS.

Witnesses as to signature of Roughsedge
Wallwork:

HERBERT ROTHWELL,
FRANK PARKINSON.

Witnesses as to signature of Arthur Col-
lings Wells:

ARTHUR E. HALL,
JOHN W. THOMAS.