J. S. SCHOFIELD & J. SWIFT.

PNEUMATIC REAMER.

APPLICATION FILED JAN. 21, 1910.

997,096.

Patented July 4, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

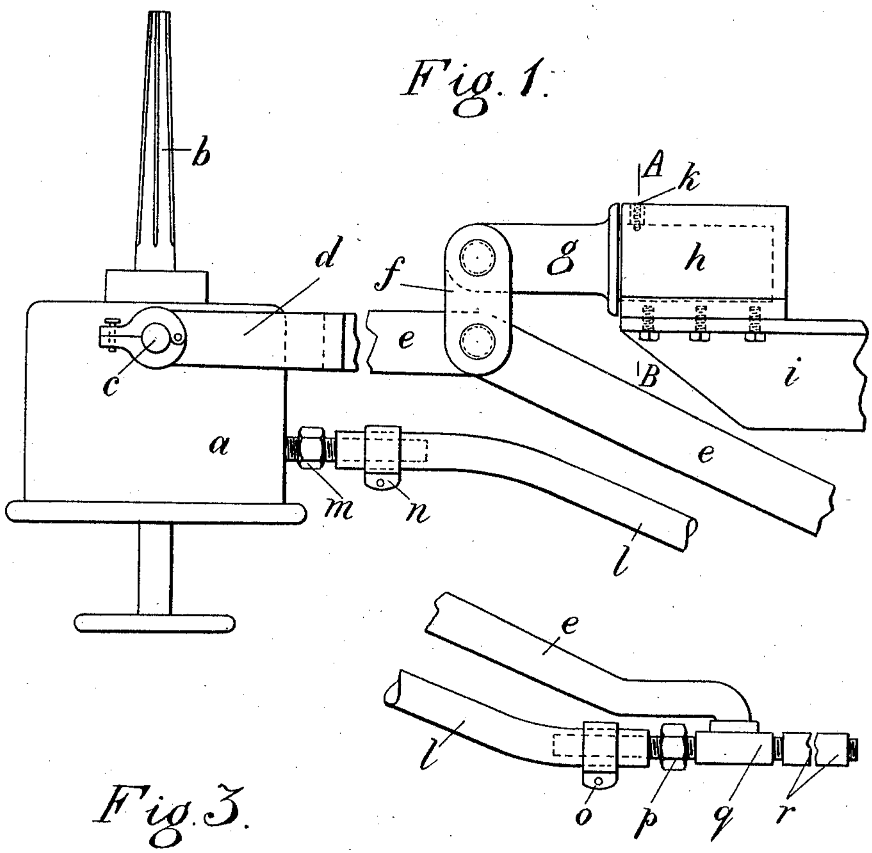


Fig. 3.

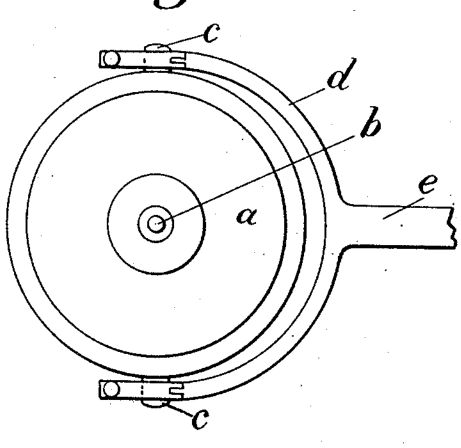
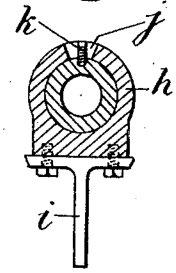


Fig. 2.



Witnesses
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2 SHEETS—SHEET 2.

Fig. 4.

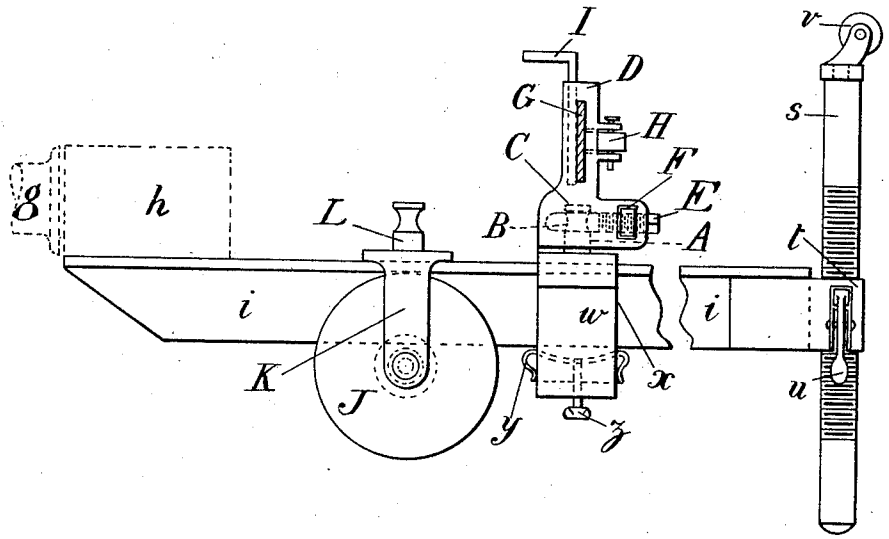
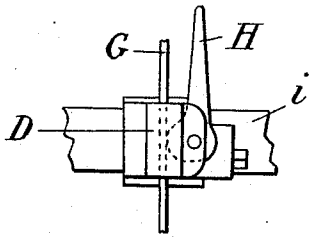


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN S. SCHOFIELD, OF GERSHOM, FOREST HALL, AND JOHN SWIFT, OF HULL, ENGLAND.

PNEUMATIC REAMER.

997,096. Specification of Letters Patent. Patented July 4, 1911.

Application filed January 21, 1910. Serial No. 539,240.

To all whom it may concern:

Be it known that we, JOHN SHAW SCHOFIELD and JOHN SWIFT, subjects of the King of the United Kingdom of Great Britain and Ireland, residing, respectively, at Gershom, Forest Hall, in the county of Northumberland, and 149 De la Pole avenue, Anlaby Road, Hull, in the county of York, both in that part of the United Kingdom called England, have invented new and useful Improvements in Pneumatic Reamers, of which the following is a specification.

Our invention consists in improvements in pneumatic reamers which permit the tool to be taken to the store room to prevent it from being exposed to the weather, enable it to be used perpendicularly or horizontally on the bottom, bilge, sides and like parts of ships, as economically as on any other parts of the shell, whereas at present this work has to be performed by hand.

In carrying our invention into effect we proceed substantially as follows making reference to the accompanying drawings wherein—

Figure 1 is a side view, Fig. 2 a section through A—B, Fig. 1, Fig. 3 a sectional plan of a detail, Fig. 4 being a side view of another detail and Fig. 5 a plan of a portion of Fig. 4.

We provide the casing *a* which contains the mechanism for operating the reamer *b*, with diametrically opposite outstanding pins *c*, pivotally carried in divided or hinged bearings at the ends of the arms of a fork *d* attached to, or formed integrally with, a bent lever *e* the bend of which is pivotally carried by two hanging links *f* which are themselves pivoted to one end of a pintle *g* one half, or thereabout of which is free to turn in a sleeve *h* attached to a bar *i*, the extent to which *g* can turn being limited by the length of a slot *j* provided in the said sleeve to receive a pin or stud *k* which upstands therein from that part of the pintle which is within the sleeve.

The compressed air is conveyed to the drill by a flexible tube *l* one end of which is detachably attached to the casing *a* by a nipple *m* and clamp *n*, the other end of the flexible tube being attached by a clamp *o* and nipple *p* to a tee-piece *q*, to which is attached the adjacent end of the bent lever *e*, the said tee-piece being in turn attached to the rotary throttle valve *r*. The bar *i* may conveniently be of T cross-section and have at its free end an adjustable distance screw *s* to form a support for this end of the bar against the side or bottom of the ship. The screw *s* passes through a clamp *t* having spring catches *u*, and the said screw has at one end a roller or wheel *v* to rest against the shell of the vessel when in use.

For side shell riveting we provide a holder *w*, slotted at *x* so as to permit it to be run along the bar *i*, and a spring *y* and tightening screw *z* at the bottom of the said holder, enable it to be held at any required position on the bar *i*. Upstanding from the holder *w* is a pintle A having a circumferential groove B, to receive which pintle, a socket C is provided in the under side of an adjustable support D, and the point of a screw-threaded pin E, passes through a nut F, enters the said groove B and enables the support D to be adjusted at any required angle to the bar *i*. The support D is slotted so that it can be moved along a bar G which can be held in position by a cam-lever H, the bar G being provided with angle lugs I, can be fastened for the time being to the side or bottom of the ship by said angle lugs I.

For bottom shell riveting we substitute for the holder *w*, a double flanged wheel J, the flanges of which run on the under faces of the flanges of the tee-bar *i*, the said wheel J being carried by a fork K furnished with a grooved pintle L corresponding with the pintle A of the holder *w*.

What we claim as our invention and desire to secure by Letters Patent is:—

1. In a pneumatic reamer, the combination of a reamer, the casing for the mechanism of which is provided with diametrically opposite outstanding pins; a fork pivotally and detachably holding the casing by the said pins; a bent lever carrying the said fork at one end; a pintle links for suspending the bent lever from said pintle; a sleeve in which the pintle has a limited circumferential movement; a bar carrying at one end the said sleeve and at the other end a screw-threaded rod having a wheel at one end; means for adjustably holding the said bar relatively to the said sleeve-carrying bar; means for attaching the said bar to the shell of a ship; a rotary throttle valve; a tee-piece attached to the said throttle valve and to one end of the bent lever; a nipple and clamp attached to the said tee-piece; a flexible air

tube one end of which is attached to the said nipple and clamp and the other end to the casing of the reamer mechanism by a second nipple and clamp, substantially as herein-before described.

2. The combination of a reamer, a casing for said reamer provided with diametrically opposite outstanding pins, a fork adapted to engage said pins, a bent lever, a pintle, links for suspending the bent lever from said pintle, a sleeve in which said pintle has a limited movement, a bar attached to said sleeve, means on said bar for attaching it to a ship, a rotary throttle valve, a flexible air tube, and means for connecting said tube to said casing and said rotary valve, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

JOHN S. SCHOFIELD.
JOHN SWIFT.

Witnesses:
H. NIXON,
FRED A. DUKE.