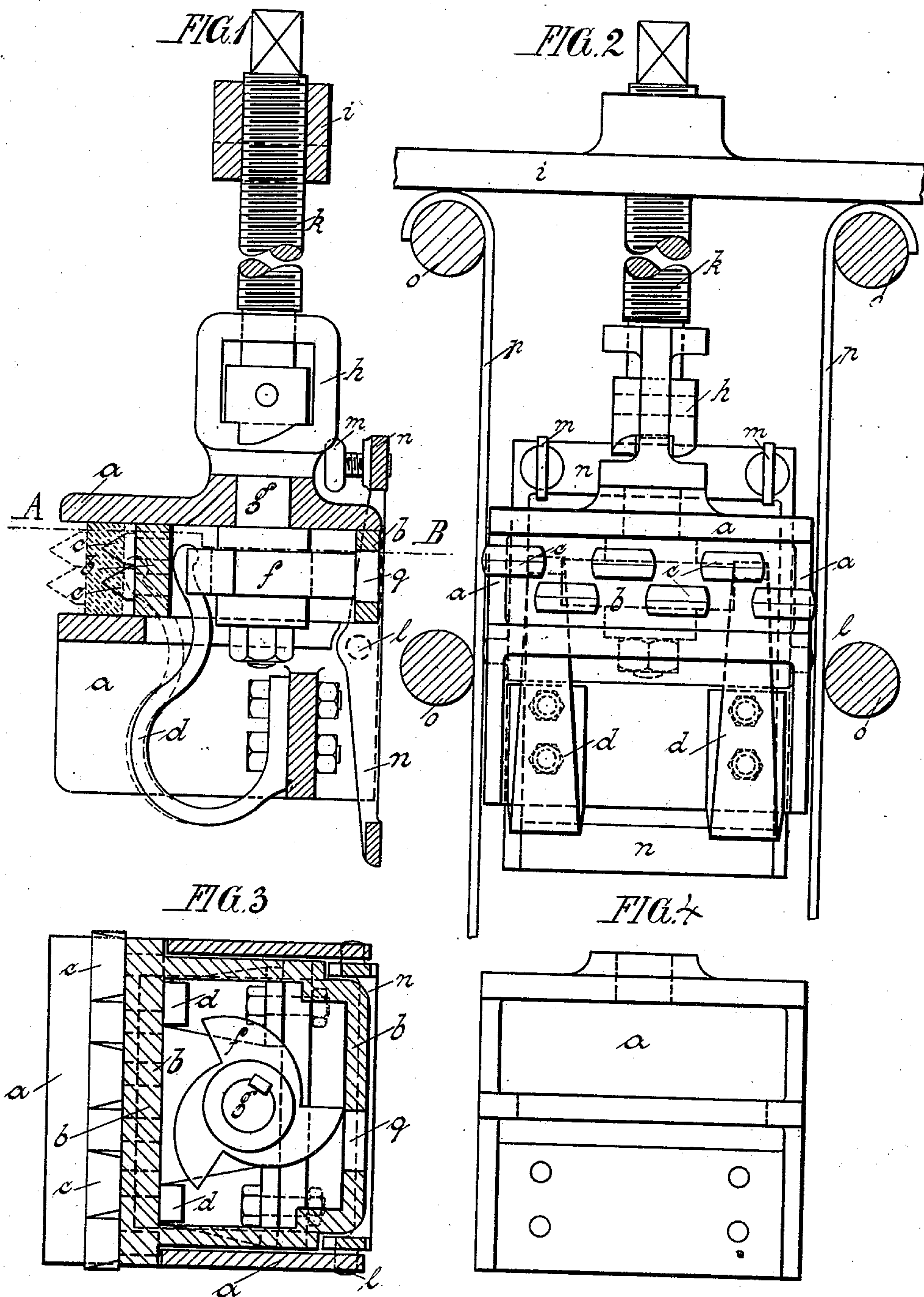


(No Model.)

H. BASCHY.
APPARATUS FOR REMOVING BOILER SCALE.
No. 507,203.
Patented Oct. 24, 1893.



Witnesses:
Wm. Schulz.
J. Goughmans.

Inventor:
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UNITED STATES PATENT OFFICE.

HENRI BASCHY, OF HAMBURG, GERMANY.

APPARATUS FOR REMOVING BOILER-SCALE.

SPECIFICATION forming part of Letters Patent No. 507,203, dated October 24, 1893.

Application filed August 11, 1893. Serial No. 482,915. (No model.) Patented in Germany October 13, 1892, No. 68,341.

To all whom it may concern:

Be it known that I, HENRI BASCHY, a citizen of the Republic of France, residing at Hamburg, Germany, have invented new and useful Improvements in Apparatus for Removing Boiler-Scale, (for which I have obtained a patent in Germany, No. 68,341, dated October 13, 1892,) of which the following is a specification.

Notwithstanding the various means that have been employed for the prevention of the formation of boiler scale, entire success has been seldom attained and it is therefore still always necessary to chip off the scale by mechanical means various apparatus for the purpose having been proposed. Such apparatus however have only been suitable for cleaning boiler tubes or other curved surfaces, and it has been necessary up to the present time to treat plane surfaces by hand with chisel and hammer.

Now this invention relates to apparatus for removing boiler scale from plane surfaces, and in particular from those surfaces which are accessible only with difficulty. Such are, more particularly, the surfaces which inclose the space between the firebox and the shell of the boiler in marine and locomotive boilers, the accessibility of which is rendered still more difficult by the stay-bolts which serve to stiffen the plates.

An arrangement of apparatus according to my invention is shown in Figures 1, 2, 3 and 4 of the accompanying drawings.

Fig. 1 is an end elevation. Fig. 2 is a front elevation. Fig. 3 is a section on the line A—B (Fig. 1). Fig. 4 is a front elevation of the frame.

A stirrup-shaped tool carrier *b* is mounted in a frame *a* with the tools *c*, preferably chisels, fixed therein, said carrier being constantly pressed forward by means of one or more springs *d* fixed to the frame. Within the carrier is arranged a cam *f* whose axle *g* is provided at its upper end with one part of a suitable clutch *h*, the other part of said clutch being fixed to a spindle *k* which is provided with a screw thread working in a cross piece *i*. The frame is guided by means of a pivoted sliding plate *n*, provided at one end with adjusting set screws *m* and suspended from suitable stay-bolts or other convenient part of the boiler by means of two sheet metal strips *p*.

The operation of this apparatus is as follows:

The two sheet metal strips *p* having been attached, say to two adjacent stay-bolts *o*, the apparatus after having been adjusted to the proper width by means of the aforesaid set screws *m*, is inserted into the space to be cleaned until the cross piece *i* bears against the stay-bolts. Then the spindle is screwed down by means of a key or spanner; whereupon the teeth of the upper part of the clutch *h* engage with the teeth of the lower part, whereby the cam *f* is caused to rotate, simultaneously with the advance of the apparatus, and acts against the rear side of the carrier drawing back the latter with the chisels *c* attached thereto and at the same time compressing the springs *d*. In the continued movement the cam comes opposite a slot *g* in the carrier and the springs throw the carrier forward so causing the chisels to strike against the boiler scale and break away the latter. Then the next cam comes into operation, moves the carrier back again and then allows it to make a forward impulse. In this manner the surface is gradually freed from boiler scale, as each blow of the chisels falls slightly in advance of the preceding blow. The distance between the several blows depends directly on the pitch of the spindle and the number of the cams and can be arranged to suit various conditions. When the apparatus has completed its travel over the surface to be cleaned it is withdrawn by backward rotation of the key or spanner and, as in this movement the parts of the clutch separate, that part of the clutch which is fixed to the spindle, does not drive the lower part mounted on the cam-wheel and the chisels are not actuated in this movement.

What I claim is—

In an apparatus for removing boiler scale, the combination of frame *a*, with tool carrier *b*, an actuating cam *f*, spring *d*, screw spindle *k* and a clutch *h* that connects such spindle to the cam shaft in such a manner that the cam is revolved during the descent, but not during the ascent, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRI BASCHY.

Witnesses:

MAX FOUGUET,
NICOLAS FABRY.