

(No Model.)

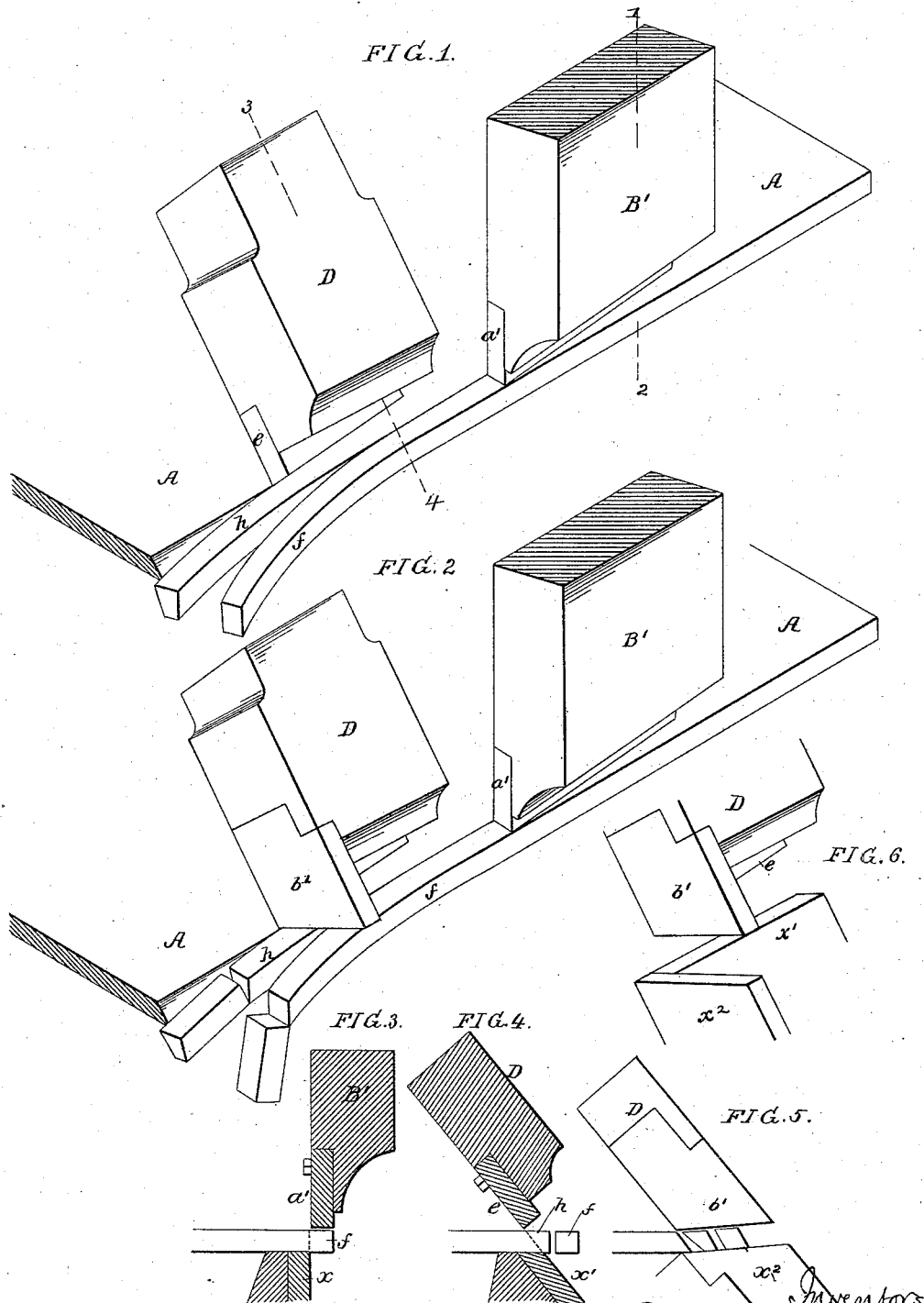
3 Sheets—Sheet 1.

C. T. PARRY & E. LONGSTRETH.

METAL SHEARING MACHINE.

No. 305,709.

Patented Sept. 23, 1884.



Witnesses Hubert Howson
Harry Smith

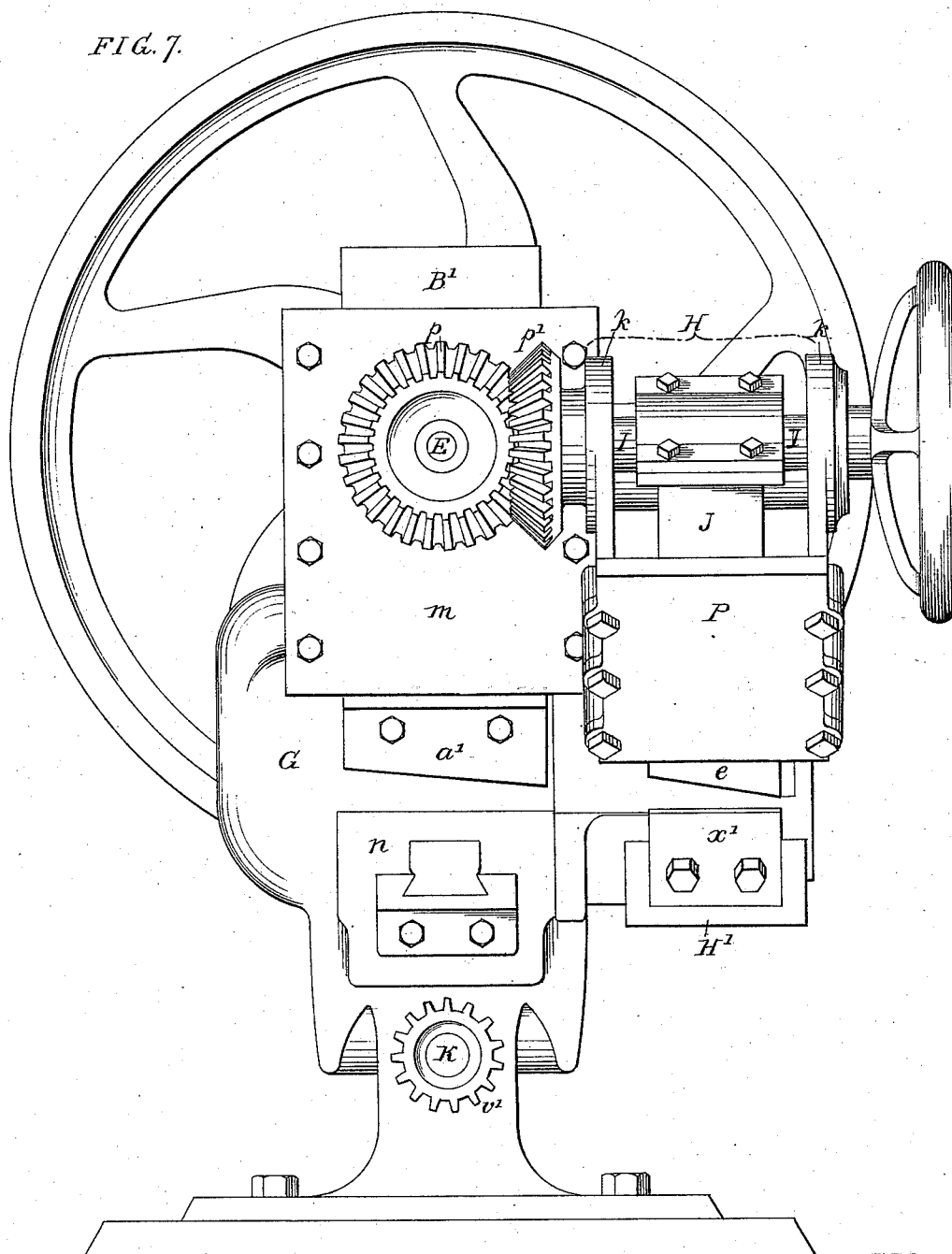
Inventors Charles T. Parry and Edw. Longstreth
By their Attorneys
Howson & Sons

3 Sheets—Sheet 2.

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FIG. 7.



INVENTORS:

Charles J. Parry
and
Edward Longstreth
by their Attys
Howson & Sons

(No Model.)

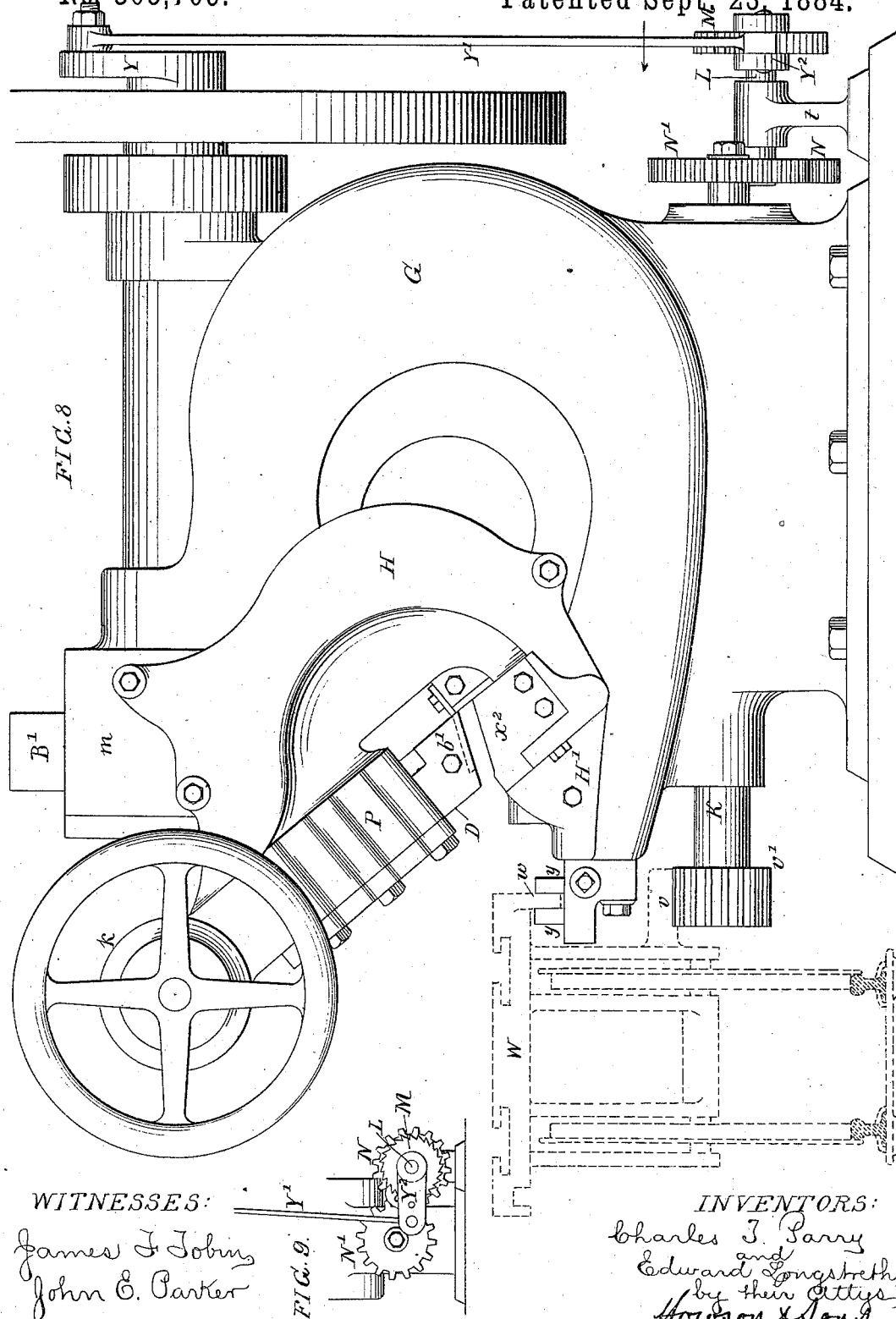
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WITNESSES:

James J. Tobin
John C. Parker

FIG. 9.

INVENTORS:

Charles J. Parry
and
Edward Longstreth
by their Attys
Howson & Bond

UNITED STATES PATENT OFFICE.

CHARLES T. PARRY AND EDWARD LONGSTRETH, OF PHILADELPHIA, PA.

METAL-SHEARING MACHINE.

SPECIFICATION forming part of Letters Patent No. 305,709, dated September 23, 1884.

Application filed December 3, 1883. (No model.)

To all whom it may concern:

Be it known that we, CHARLES T. PARRY and EDWARD LONGSTRETH, citizens of the United States, and residents of Philadelphia, Pennsylvania, have invented certain Improvements in Metal-Shearing Machines, of which the following is a specification.

Our invention consists, mainly, of a shearing-machine in which the usual vertically-reciprocated slide having a blade co-operating with a fixed blade and an inclined reciprocating slide and blade co-operating with a fixed inclined blade are combined with a carriage for holding the plate, and with mechanism for intermittently feeding the carriage, substantially as described hereinafter, the object of our invention being to trim the plate, and at the same time bevel or scarf the same and prepare it for being calked, when it becomes part of a boiler, tank, or other analogous structure.

In the accompanying drawings, Figure 1 is a perspective diagram illustrating the main feature of our invention; Fig. 2, a perspective diagram showing another feature; Fig. 3, a section on the line 1 2, Fig. 1; Fig. 4, a section on the line 3 4, Fig. 1; Fig. 5, an edge view of the inclined slide and its blade, and of the fixed blade co-operating therewith; Fig. 6, a perspective view of said slide and blade and fixed blades; Fig. 7, (Sheet 2,) a front view of a shearing-machine embodying our improvements; Fig. 8, (Sheet 3,) a side view of Fig. 7; and Fig. 9, a detached view, drawn to a reduced scale and looking in the direction of the arrow, Fig. 8, of the carriage-feeding mechanism.

Plates for steam-boilers, water-tanks, and analogous structures have to be scarfed or beveled at the edges, so as to facilitate calking. When the edges of the plates are comparatively true and but little material has to be removed, this scarfing may be done by an inclined shearing-tool; but the plates have generally to be trimmed before they can be cut to a bevel. In order to meet this requirement, we use two shearing-blades—namely, the trimming-blade *a'*, secured to the vertically-guided slide *B'*, and the blade *e*, secured to a slide, *D*, adapted to inclined guides, and shown in the diagram, Fig. 1, so that after the plate has been trimmed by shearing from it a strip,

f, it will be further sheared by the blade *e* of the inclined slide, which, by cutting off the strip *h*, imparts the desired bevel to the edge of the plate.

We prefer to combine with the slide *D* and its blade *e* a transverse blade, *b'*, so that both of the strips *f* and *h* may be cut into fragments, for long strips are apt to interfere with the proper working of the machine.

The sectional diagram, Fig. 3, shows the preliminary shearing operation by the blade *a'* of the vertical slide, in connection with a fixed blade, *x*, Fig. 4 showing the beveling or scarfing by the blade *e* of the inclined slide, in connection with a fixed blade, *x'*, and Fig. 5 showing the co-operation of the transverse blade *b'* with the fixed blade *x''*.

Referring to Sheets 2 and 3, *G* is the frame of our shearing-machine, in front of which is the guide *m* for the above-mentioned vertical slide *B'*, carrying the preliminary shearing-blade *a'*, a driving-shaft, *E*, having its bearings in the frame, and being provided with a cam or eccentric for operating the slide, and a projection, *n*, of the frame forming a bed on which the plate to be sheared rests, and to which the under blade, *x*, Fig. 4, is secured.

To one side of the frame *G* is secured another frame, *H*, on which is the inclined guide *P* for the slide *D*, which carries the beveling-blade *e*, and in the present instance the transverse blade *b'*, a projection, *H'*, on the frame *H* forming a bed on which part of the plate to be sheared rests, and to this projection is secured the under blade, *x'*, for co-operating with the inclined blade *e*, and the blade *x''*, for co-operating with the transverse blade *b'*.

On the supplementary frame *H* are bearings *k k* for a shaft, *I*, which is geared by miter-wheels *p p'* to the driving-shaft *E*, a portion of the shaft being made eccentric, or being cranked, and this portion being embraced by the upper end of the connecting-rod *J*, the lower end of which is hinged to the inclined slide *D*.

The operation of the several blades has been fully explained in referring to the diagrams on Sheet 1, and therefore needs no further description.

In front of the machine is a carriage, to the bed *W* of which is clamped the plate *A* to be

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sheared, the bed having suitable flanged wheels adapted to a track, as in other shearing-machines. The bed has at its front edge a flange, *w*, fitting snugly but so as to slide freely between guiding-lugs *y y* on the frame of the machine. (See dotted lines in Fig. 8.) On the bed of the carriage is a rack, *v*, into which gears a pinion, *v'*, on a shaft, *K*, the latter passing through and having its bearings in the frame of the machine.

On the driving-shaft *E*, at the rear end of the same, is a crank, *Y*, and the pin of this crank is connected by a rod, *Y'*, to an arm, *Y²*, which is loose on a shaft, *L*, the latter having its bearings on a stand, *t*, and carrying a ratchet-wheel, *M*, to the teeth of which is adapted a spring-pawl carried by the arm *Y²*, as best observed in the detached view, Fig. 9, the shaft *L* being geared by wheels *N N'* to the shaft *K*.

Other devices through the medium of which the driving-shaft may be intermittently operated will readily suggest themselves to expert mechanics; but whatever devices may be used for this purpose, they should be so operated that the feeding of the carriage will take place while the blades are elevated clear of the plate to be sheared, the shearing taking place while the carriage is stationary.

It will be seen that the frame *H*, and all that is carried thereby, is in the present instance an attachment to the main frame *G* of an ordinary shearing-machine; but a special frame

may be made in one casting for carrying all the operating mechanism above described.

We claim as our invention—

1. The combination, in a shearing-machine, of the following elements, namely: first, the slide *B'*, its blade *a'*, and the fixed blade *x*; second, the inclined slide *D*, its blade *e*, and the fixed blade *x'*; and, third, mechanism, substantially as described, for reciprocating both slides, as set forth.

2. The combination, in a shearing-machine, of the slide *B'*, its blade *a'*, and the fixed blade *x*, the inclined slide *D*, having blades *e* and *b'*, the fixed blades *x'* and *x²*, and mechanism; substantially as described, for reciprocating both slides, as set forth.

3. A shearing-machine in which are combined the following elements, namely: a fixed vertical blade, *x*, a vertical slide, *B'*, carrying a blade, *a'*, a fixed inclined blade, *x'*, an inclined slide, *D*, having a blade, *e*, a plate-holding carriage, and mechanism, substantially as described, for reciprocating the slides *B'* and *D* and intermittently feeding the carriage, as specified.

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

CHAS. T. PARRY.

EDWARD LONGSTRETH.

Witnesses:

JOHN M. CLAYTON,
HARRY SMITH.