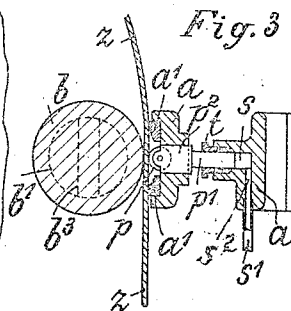
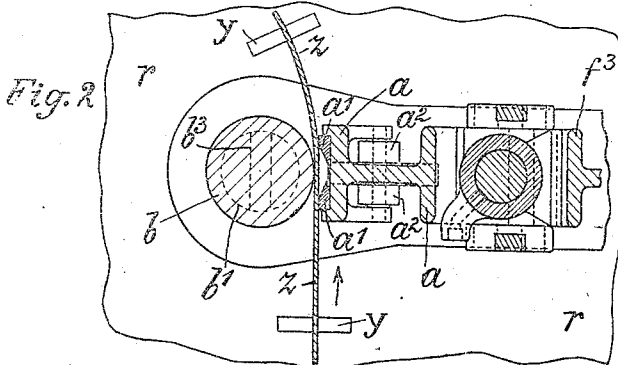
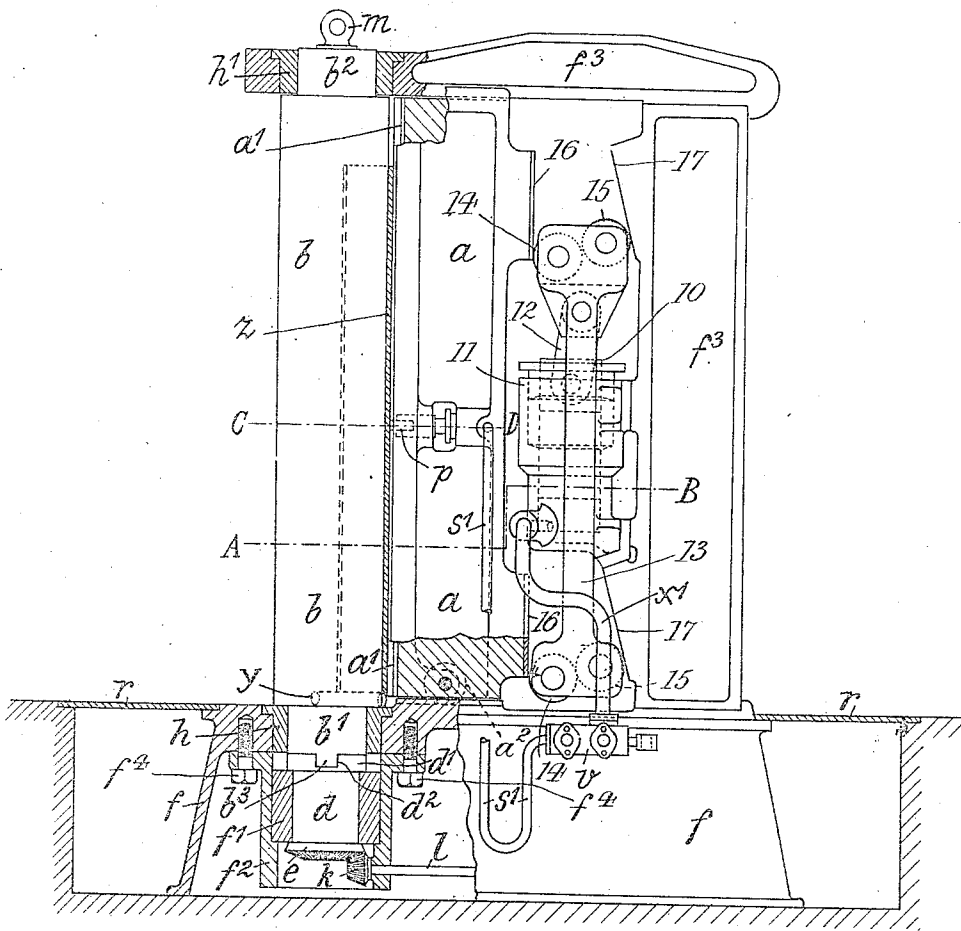


T. C. SCHELD.
MACHINE FOR BENDING METAL PLATES.
APPLICATION FILED MAR. 23, 1909.

936,481.

Patented Oct. 12, 1909

Fig. 1



Witnesses.
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UNITED STATES PATENT OFFICE.

THEODOR CHRISTIAN SCHELD, OF HAMBURG, GERMANY.

MACHINE FOR BENDING METAL PLATES.

936,481.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 23, 1909. Serial No. 485,325.

To all whom it may concern:

Be it known that I, THEODOR CHRISTIAN SCHELD, a subject of the German Emperor, residing at Hamburg, Germany, have invented new and useful Improvements in Machines for Bending Metal Plates, of which the following is a specification.

This invention relates to a machine of novel construction for bending metal sheets or plates, the machine being more particularly adapted for shaping heavy boiler plates and similar articles.

In the accompanying drawing: Figure 1 is a side elevation, partly in section, of my improved sheet metal bending machine; Fig. 2 a horizontal section on line A—B, Fig. 1, and Fig. 3 a similar section on line C—D, Fig. 1.

The machine comprises essentially a reciprocal press beam *a*, and a rotary press roll *b*. Press beam *a*, carries suitable dies *a'*, and is supported by rollers *a''*, upon the lower section *f*, of the machine frame. Press beam *a*, may be advanced toward roll *b*, by means of a hydraulic plunger 10 movable in a cylinder 11 to which a suitable pressure medium may be admitted through pipe *x'*, communicating with a valve box *v*. Plunger 10 is by link 12 connected to a slide 13 carrying rollers 14 and 15. Rollers 14 engage a pair of rear projections 16 formed on beam *a*, while rollers 15 engage inclined guide ways 17 of upper frame-section *f''*. It will be seen, that when plunger 10 is raised, slide 13 will also be raised through link 12, to advance beam *a*, toward roll *b*, owing to the engagement of rollers 15 with guide ways 17.

Roll *b*, is provided with a lower trunnion *b'*, and an upper trunnion *b''*, rotatable in bushings *h*, *h'*, which are fitted into lower frame-section *f*, and upper frame-section *f''*, respectively. Trunnion *b''*, has an eye *m*, adapted to be engaged by a suitable hoisting device, (not shown), so that roll *b*, together with bushing *h'*, may be lifted out of frame *f*, *f''*. Trunnion *b'*, is provided at its bottom with a key *b''*, adapted to be received within a corresponding groove *d''*, of a collar *d'*, integral with a shaft *d*. The latter is rotatably mounted in a bushing *f'*, fitted into a stepped cylinder *f''*, which is secured

to frame *f*, by screws *f''*. At its lower end, shaft *d*, carries a beveled gear wheel *e*, meshing into a similar wheel *k*, fast on power shaft *l*.

The metal sheet *z*, to be bent, is introduced between beam *a*, and roll *b*, and rests upon a series of rollers *y*, freely movable upon bed plate *r*. The rotation imparted to roll *b*, by shaft *d*, wheels *e*, *k*, and power shaft *l*, will cause the sheet *z*, to be fed in the direction of the arrow, (Fig. 2). During this movement, sheet *z*, is forced against roll *b*, by suitable pressure rollers *p*, one of such rollers being shown in the drawing. Roller *p*, is journaled within the squared head *p''*, of a hydraulic plunger *p'*, which is slidably mounted within a corresponding bore *s*, of beam *a*, a stuffing box *t*, preventing the escape of the pressure medium. Bore *s*, is by duct *s''*, and pipe *s'*, connected to valve box *v*, hereinabove referred to. It will be seen that by properly operating suitable valves controlling pipes *x'*, *s'*, and contained within box *v*, beam *a*, and pressure roller *p*, may be independently advanced toward roll *b*.

In use, the sheet *z*, to be bent, is first introduced between roll *b*, and pressure roller *p*, whereupon the latter is advanced toward roll *b*, to press the sheet *z*, against the same. Roll *b*, is then slightly rotated to feed the sheet forward and is again arrested. Press beam *a*, is now advanced to force the sheet against roll *b*, and bend part of the same into the curvature desired. Beam *a* is then retracted and roll *b*, is again partly rotated to interpose an unbent sheet-section between beam *a*, and roll *b*, whereupon beam *a*, is again advanced, which operation is repeated until the entire sheet has been properly shaped. Roll *b*, and bushing *h'*, are finally lifted out of the frame by a suitable hoisting device engaging eye *m*, to permit the ready removal of the sheet.

I claim:

1. A machine of the character described, comprising a roll, a press beam, means for advancing the press beam toward the roll, a pressure roller carried by the press beam, and means for advancing said pressure roller toward the roll independent of said beam.

2. In a machine of the character described, a roll having upper and lower trun-

nions, a key formed on the lower trunnion,
a shaft having a groove which is adapted to
receive the key, and means for rotating the
shaft, combined with a press beam, a pres-
5 sure roller carried thereby, and independ-
ent means for advancing said beam and
roller toward the roll.

Signed by me at Hamburg, Germany this
ninth day of March 1909.

THEODOR CHRISTIAN SCHELD.

Witnesses:

AUGUST WENK,

ERNEST H. L. MUMMENHOFF.