

No. 825,511.

PATENTED JULY 10, 1906.

P. BLONDELL.
MACHINE FOR TWISTING METAL BARS.
APPLICATION FILED OCT. 20, 1904.

2 SHEETS—SHEET 1.

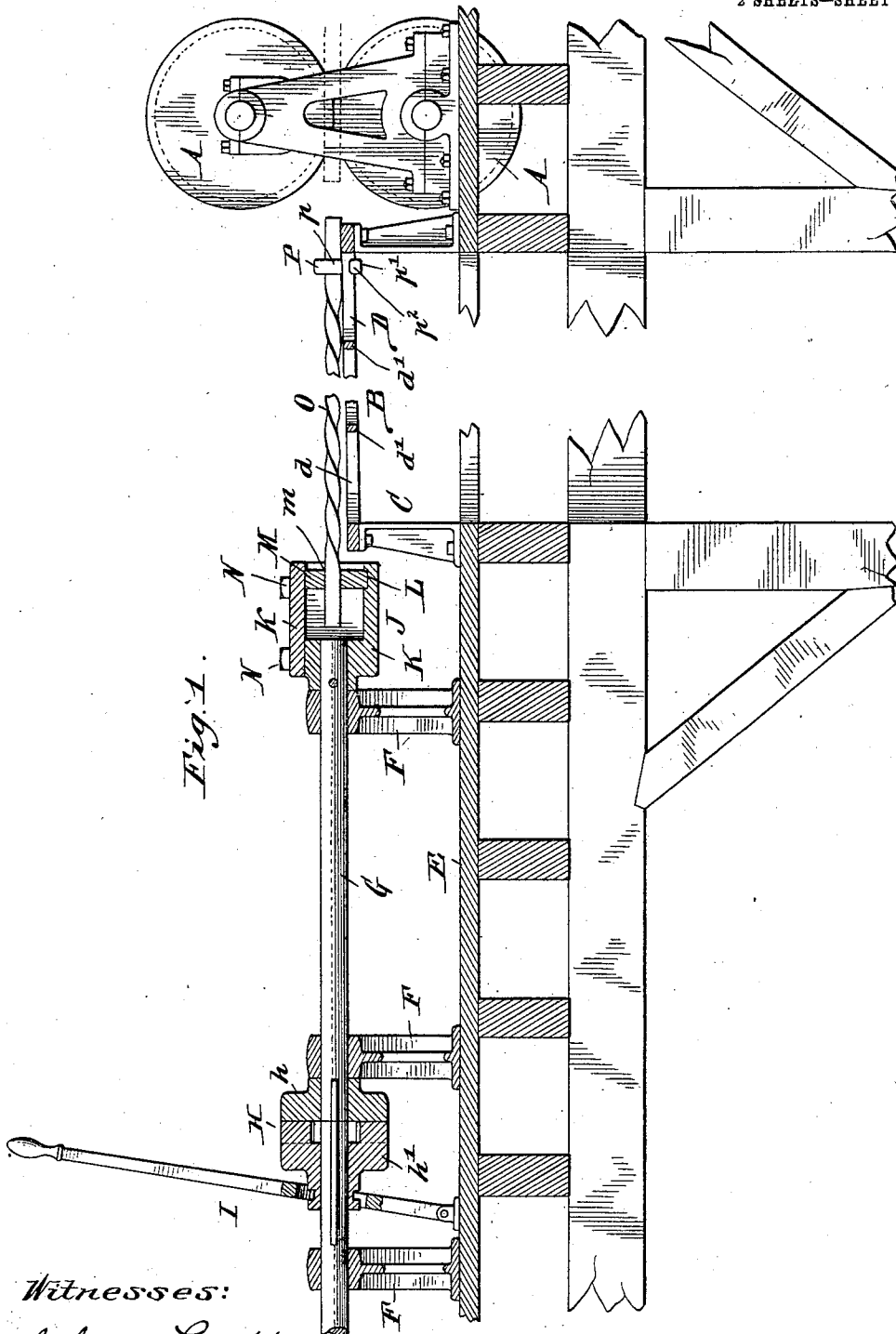


Fig. 1.

Witnesses:

Julius Lankes
W. Seewert.

Peter Blondell, Inventor.
By Kauhart & Burkhardt,
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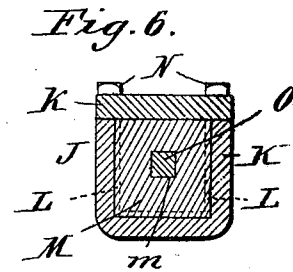
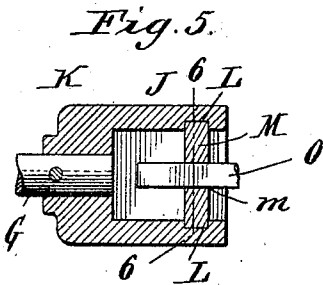
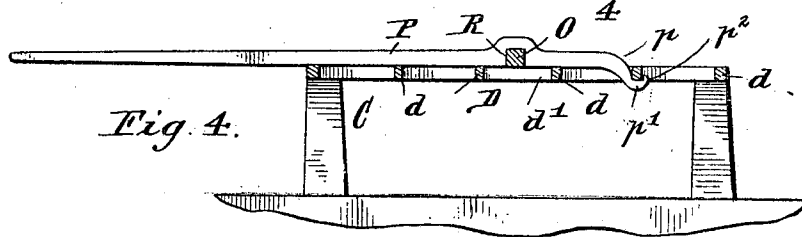
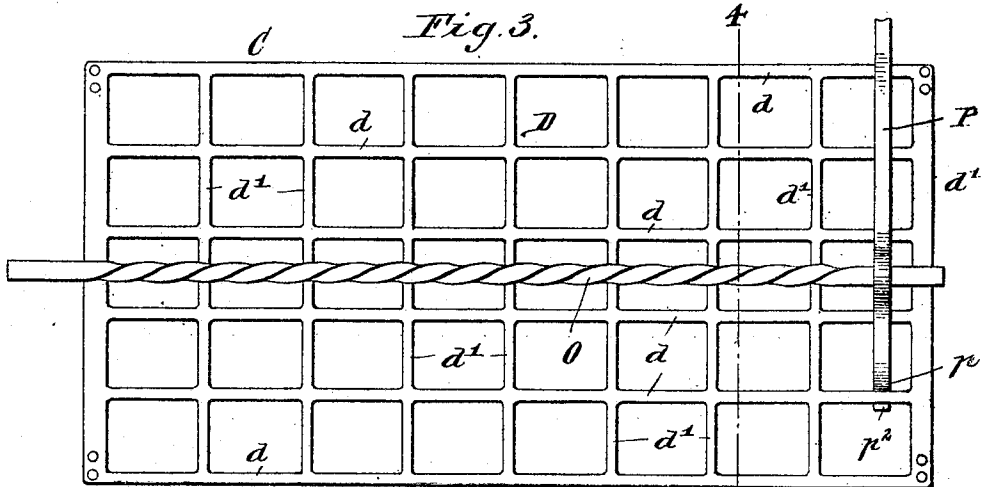
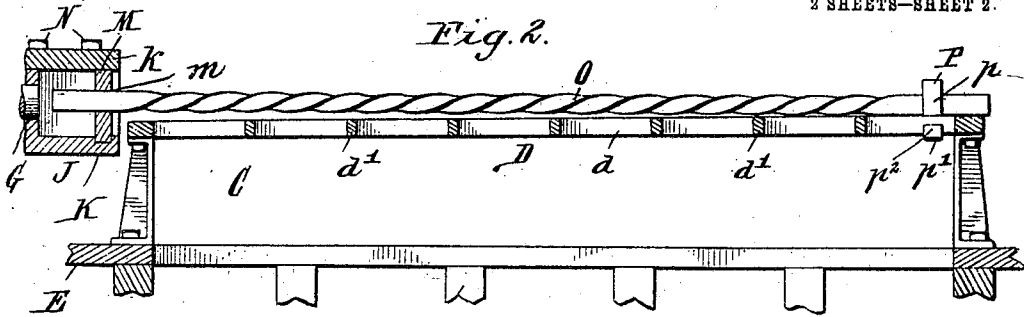
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2 SHEETS—SHEET 2.



Witnesses:

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W. Dewert.

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UNITED STATES PATENT OFFICE.

PETER BLONDELL, OF TONAWANDA, NEW YORK.

MACHINE FOR TWISTING METAL BARS.

No. 825,511.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed October 20, 1904. Serial No. 229,332.

To all whom it may concern:

Be it known that I, PETER BLONDELL, a citizen of the United States, residing at Tonawanda, in the county of Erie and State of New York, have invented certain new and useful Improvements in Machines for Twisting Metal Bars, of which the following is a specification.

This invention relates to machines for twisting metal bars for use in concrete and similar construction work. Heretofore in the manufacture of these bars they were rolled in a metal-rolling machine, then cooled and straightened, and next taken to a shearing-machine and cut to the desired lengths, after which the bars were twisted when in a cold state. By this method the twist is made very irregular and the bar is bulged out of a true line, requiring further treatment to straighten the same after being twisted.

I am aware that efforts have been made to heat a bar by electric heat and then twisted, and also that an effort has been made to pass the hot bar through a spiral die as it leaves the rolling-machine, but without success.

The object of my invention is to provide a machine in which the metal bars are delivered from the metal-rolling machines onto the hotbed and there twisted before being cooled, and also in providing improved means for holding the ends of the bars and for twisting the latter.

To this end the invention consists in the construction, arrangement, and combination of parts to be hereinafter described, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a broken sectional elevation of my improved machine. Fig. 2 is a central longitudinal section through the hotbed, showing one end of the twisted bar clamped thereon and the revolvable chuck in which the other end of the bar is held. Fig. 3 is a top plan view of the hotbed, showing the bar and the lever for locking the same to the hotbed. Fig. 4 is a transverse section through the hotbed, taken on line 4 4, Fig. 3. Fig. 5 is a central longitudinal section through the chuck. Fig. 6 is a section on line 6 6, Fig. 5.

Referring to the drawings in detail, like letters of reference refer to like parts in the several figures.

The letter A designates the rolls of a roll-

ing-machine by which the metal is rolled into the desired form of bar.

B designates the hotbed, usually provided to cool the bars as they lie thereon after leaving the rolling-machine. This hotbed comprises a suitable frame C and a grate or open-work bed D, herein shown as consisting of longitudinal bars *d* and transverse bars *d'*, formed in one integral piece and being of rectangular formation.

Adjoining the hotbed is a suitable support E, carrying bearings F, in which a divided shaft G is journaled. Said shaft has a suitable clutch H, by means of which the two parts thereof are connected, one part, *h*, of the clutch being fixed to the end of one part of the shaft and the other part, *h'*, of the clutch being held slidably on the other part of the shaft. A suitable lever I is provided, whereby the clutch may be coupled, as is common, to cause the two parts of the shaft to revolve together. The shaft may be revolved in any practicable manner.

To the end of the shaft adjacent the hotbed a chuck J is affixed, consisting of a rectangular casing K, having a removable side *k* and grooves L in the inner faces of the three rigid sides. In these grooves a rectangular plate M is seated and held in the chuck by the removable side, which is bolted to the rigid sides by bolts N. The chuck-plate M is provided centrally with a square aperture *m*, into which one end of the bar O to be twisted is inserted. It is of course understood that bars of different cross-sections may be twisted, and in such cases the opening in the chuck-plate conforms to the section of the bars. The opposite end of the bar O is locked to the hotbed against turning by a lock-lever P. This lever has its locking end curved downward, as at *p*, to pass between two longitudinal bars *d* of the hotbed and terminates in a toe *p'*, which lies underneath one of said longitudinal bars. The extremity of said toe is provided with a lip *p''*, which lies against the side of the last-mentioned bar, and thus the lock-lever is locked on the hotbed. This lever lies on the hotbed and has its under side provided with a square socket R, into which the end of the bar to be twisted is held. The free end of the lever projects beyond the side edge of the hotbed and is manually held against upward movement, but, if desired, may be otherwise held in this position. Said lever may be engaged with

the hotbed at any point in the length thereof, depending on the length of the bar to be twisted. It is therefore apparent that with one end of the bar locked on the hotbed against revolving and the other end secured in the revolving chuck the bar is twisted on the hotbed while hot and directly after passing through the forming-rolls, thus saving time and labor.

During the twisting of the bar that end thereof which is held in the clutch is free to move lengthwise in the opening in the chuck-plate. This permits said end to be drawn out during the act of twisting the bar, which assures twisting of the bar without the possibility of flexing the same, thus rendering the product of the machine perfect and dispensing with the work heretofore required to straighten the bars after being twisted.

Having thus described my invention, what I claim is—

1. The combination of the hotbed, means for locking one end of the bar to be twisted to the hotbed a revoluble shaft, and a chuck comprising a rectangular casing having a removable side and a chuck-plate having an aperture therein for the reception of the opposite end of the bar.

2. The combination of the hotbed, means for locking one end of the bar to be twisted to the hotbed, a revoluble shaft, and a chuck comprising a rectangular casing having a removable side and a chuck-plate having an aperture therein for the reception of the opposite end of the bar, said aperture being of a shape to prevent turning of the bar while permitting lengthwise movement of the same therein.

3. The combination of the hotbed formed of open-work material, a revoluble shaft, a chuck secured to said shaft in which one end of the bar to be twisted is held, and a lock-lever having one end thereof held to the bars forming the open-work hotbed and serving to hold the opposite end of the bar against turning on the hotbed.

4. The combination of the hotbed consisting of bars disposed in different directions to form openings, a revoluble shaft, a chuck on said shaft into which one end of a bar to be twisted is inserted, a lock-lever having a downwardly-bent end passing through one of said openings and terminating in a toe adapted to lie underneath one of said bars, said lever having also a socket on its under side in which the opposite end of the bar to be twisted is held.

5. The combination of the hotbed consisting of bars disposed in different directions to form openings, a revoluble shaft, a chuck on said shaft into which one end of a bar to be twisted is inserted, a lock-lever having a downwardly-bent end passing through one of said openings and terminating in a toe with an upturned lip adapted to embrace one of said bars, said lever having also a socket on its under side in which the opposite end of the bar to be twisted is held.

In testimony whereof I have affixed my signature in the presence of two subscribing witnesses.

PETER BLONDELL.

Witnesses:

R. E. ERDMAN,
EMIL NEUHART.