R. C. WILSON.

MACHINE FOR BENDING REINFORCING RODS.

APPLICATION FILED JULY 16, 1910.

1,010,470. Patented Dec. 5, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

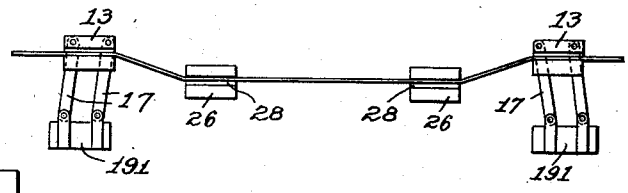

Fig. 2.

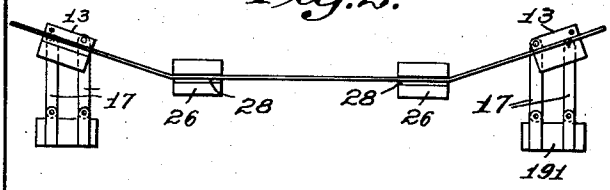

Fig. 3.

Attest:

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by William R. Baird

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Fig. 4.

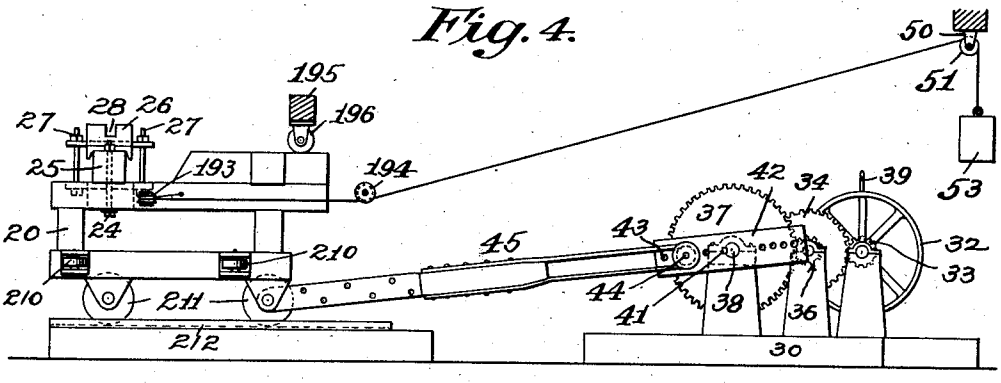


Fig. 5.

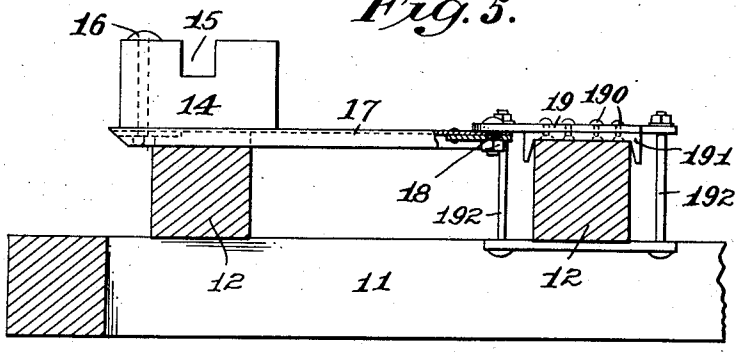


Fig. 6.

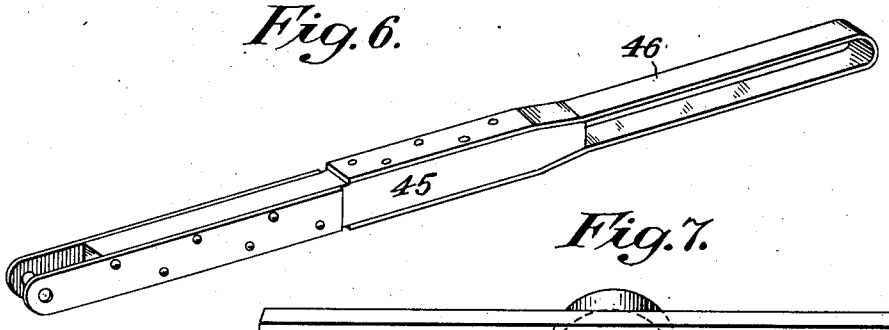
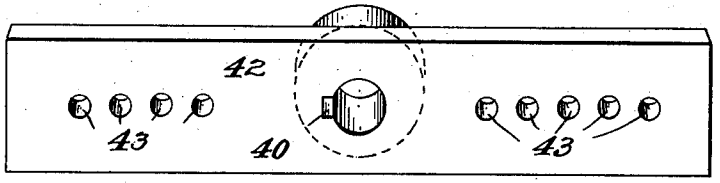


Fig. 7.



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COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ROBERT C. WILSON, OF NEWARK, NEW JERSEY.

MACHINE FOR BENDING REINFORCING-RODS.

1,010,470. Specification of Letters Patent. Patented Dec. 5, 1911.

Application filed July 16, 1910. Serial No. 572,310.

To all whom it may concern:

Be it known that I, ROBERT C. WILSON, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Machines for Bending Reinforcing-Rods, of which the following is a specification.

This invention relates to a machine for bending reinforcing rods to be used in reinforced concrete constructions and its novelty consists in the construction and adaptation of the parts as will be more fully hereinafter pointed out.

In the drawings Figures 1 and 2 are diagrammatic plan views of the chucks showing usual shapes into which the reinforcing bars are bent, the chucks being shown in the positions assumed at the end of the bending movement. Fig. 3 is a top plan view of the machine. Fig. 4 is a side elevation of the parts back of the plane on the line 4—4 in Fig. 3. Fig. 5 is an enlarged section on the plane of the line 5—5 in Fig. 3 and a side elevation of the parts back of such plane. Fig. 6 is an enlarged detail of the connecting rod and Fig. 7 is an enlarged detail of the crank showing the means for adjusting its efficient length.

In the drawings 10 indicates one stationary platform and 11 another made of any suitable size and material, preferably identical in size and construction, facing each other and adapted to receive between them a movable carriage indicated at 20. Each platform comprises a stationary framework suitably anchored and provided with transverse supports 12 on which is adjustably secured a chuck 13 made up of a block 14 provided with a slot 15, and secured by hinges 16 shown as bolts to two parallel side members 17 secured in turn by hinges 18 shown as bolts to hinge plates 19 secured in turn by bolts 190 to a transversely adjustable plate 191 adapted to be fastened to one of the supports 12 by bolts 192. Each platform is provided with an inwardly extending bracket 197 carrying a pulley 193, and a second bracket carrying an idler pulley 194. Arranged in the space between the two platforms is a cross piece 195 carrying guide rollers 196.

The movable carriage 20 comprises a framework 21 having transverse members 22 each with a slot 23 adapted to receive a bolt 24 by means of which there is secured across such members a support 25 adapted to carry adjustable chucks 26 each secured in place by bolts 27 or in any other suitable manner and each provided with a slot 28. The framework 21 of carriage 20 is provided with laterally projecting guide rollers 210 adapted to engage the sides of the platforms 10 and 11. It is also provided with rolling supports 211 adapted to move on short rails indicated at 212 placed to receive them.

A power transmitting mechanism is provided whereby the carriage 20 is moved. It consists of a suitable framework 30 providing bearings for the shafts of suitable gearing which in the form shown comprises a shaft 31 driven from a pulley 32 actuated from a source of power (not shown) and which shaft carries a pinion 33 meshing with a gear 34 mounted on an idler shaft 35 on which is secured a pinion 36 which in turn meshes with a spur wheel 37 which drives a shaft 38. A suitable clutch mechanism indicated at 39 is adapted to move the pulley to secure its rotation.

Mounted on each end of the shaft 38 and secured in place in any usual manner for instance by a key way 40 and key 41 are adjustable cranks 42, each one of which is provided with a series of apertures 43 adapted to receive a pivot 44 to form a hinged connection with a connecting rod 45 which in turn is hinged to the axle of the front wheels 211 of the carriage 20. The end of the rod 45 is formed into a yoke 46 which allows of a slipping connection with the pivot 44.

Secured at suitable fixed points in front of the device for instance to brackets 50 depending from the ceiling are pulleys 51 over each of which runs a cord 52 having a weight 53 at one end and secured at the other end to the carriage 20 and passing over the pulley 193 and guide pulley 194.

The manner of using the device is as follows: A rod to be bent is placed in the slots 15, 15 of the chucks 13 of the stationary platforms 10 and 11 and also in the slots 28, 28 of the chucks 26 of the carriage 20. These slots are all in line as shown in Fig. 3. The clutch 39 is then thrown in and the power mechanism is thus started. The rotation of the shaft 38 turns the cranks 42 and moves the connecting rods 45 and slowly pulls the carriage 20 forward bending the rod as indicated in Fig. 1. During the movement of the car-

riage the chucks 13 of the platforms are drawn inward moving bodily in the arcs of two circles having the pivots 18 as centers and when the parallel members 17 are of equal length, as in Fig. 1, the chucks 13 will retain positions parallel with chucks 26 of the carriage. The bent rod being then removed the power is shut off and the carriage is retracted to position by the weights 53, the yoke 46 of the rod 45 permitting this reverse movement.

More than one rod may be bent at a time and by reason of the adjustable features of the machine as above described they may also be bent at different angles, at different points and to divers shapes. The number of rods to be bent at one time will depend upon the thickness of the rod, and the angles of the bends may be varied either by changing the extent of movement of the carriage by lengthening or shortening the crank, or by changing the relative lengths of the parallel bars to which the chucks of the platforms are attached.

What I claim as new is:—

1. A rod bending machine comprising two platforms provided with rod holding means, an intermediate carriage also provided with rod holding means, means for longitudinally moving the carriage with relation to the platforms, and means for permitting rod holding means on the platforms to yield slightly during the bending movements of the carriage in the direction of said movement.

2. A rod bending machine comprising two platforms, a pair of parallel bars hinged to each platform, a rod holding chuck pivoted to each pair of parallel bars, an intermediate carriage carrying rod holding means, and means for relatively moving the carriage and platforms.

3. A rod bending machine comprising two stationary platforms, an intermediate carriage, means for operatively moving the carriage, rod holding means on the carriage, bars pivoted to the platforms and extending in substantially the direction opposite to the direction of movement of the carriage, during the bending operation, and rod holding means secured to the outer ends of the pivoted bars.

4. A rod bending machine comprising two stationary platforms, an intermediate carriage, means for operatively moving the carriage, rod holding means on the carriage, parallel bars pivoted to the platforms and extending in substantially the direction opposite to the direction of movement of the carriage during the bending operation, and rod holding means secured to the outer ends of the parallel pivoted bars.

5. A rod bending machine comprising two stationary platforms each provided with rod holding chucks and an intermediate carriage also provided with rod holding chucks and means for moving the carriage consisting of a power transmitting mechanism suitably connected to the carriage in combination with means independent of the power transmitting mechanism for retracting it to position after such movement.

6. A rod bending machine comprising two stationary platforms each provided with rod holding chucks and an intermediate carriage also provided with rod holding chucks and means for moving the carriage consisting of a power transmitting mechanism suitably connected to the carriage in combination with other and independent means for retracting it to position after such movement including a weight and a slippable connection between the carriage and the power transmitting mechanism.

7. A rod bending machine comprising two stationary platforms each provided with rod holding means, an intermediate carriage provided with rod holding means, and means for moving the carriage, in combination with means for adjusting the positions of each rod holding means transversely on the carriage and platforms.

8. In a device of the character described, the combination with a movable carriage and rod holding means carried thereby, of a pair of stationary platforms each comprising transverse supports, a transversely adjustable plate on each platform secured to one of the said supports, a hinge plate secured to each transversely adjustable plate, a pair of parallel bars hinged to each hinge plate, and a rod holding chuck pivotally connected to the outer ends of each pair of parallel bars.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT C. WILSON.

Witnesses:
S. J. Cox,
E. W. Scherr, Jr.