

(No Model.)

O. KLATTE.

MEANS FOR ADJUSTING ROLLS FOR ROLLING MILLS.

No. 530,949.

Patented Dec. 18, 1894.

Fig. 1.

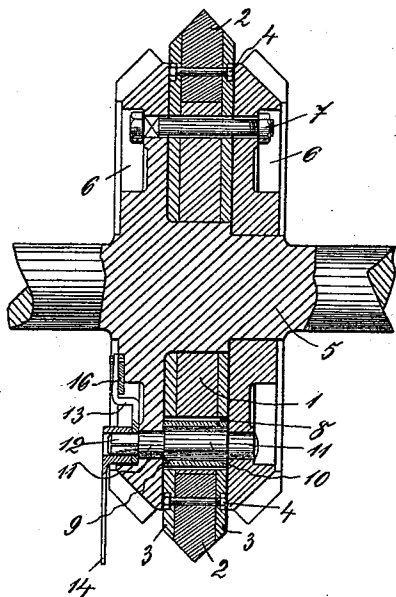


Fig. 2.

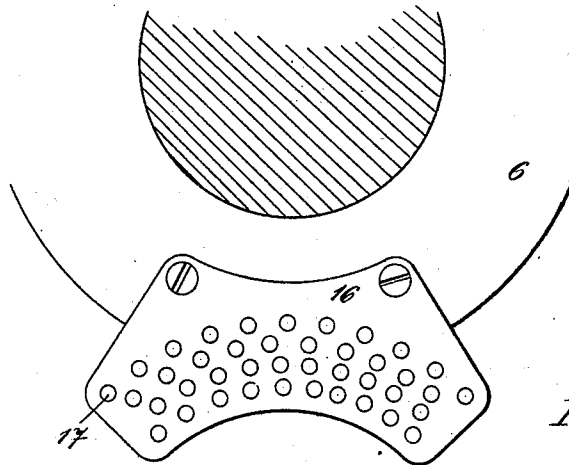
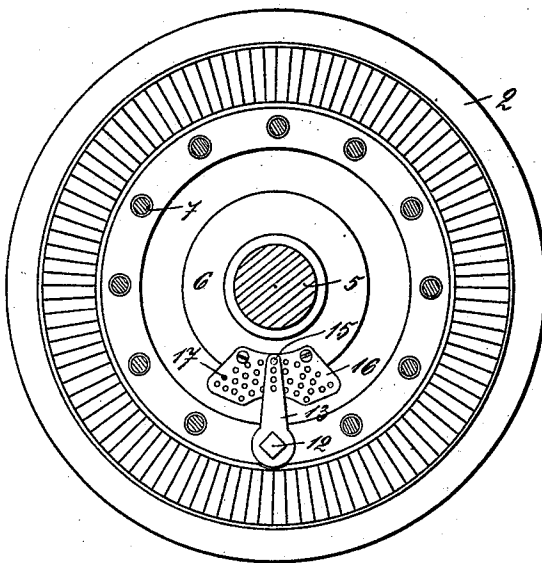
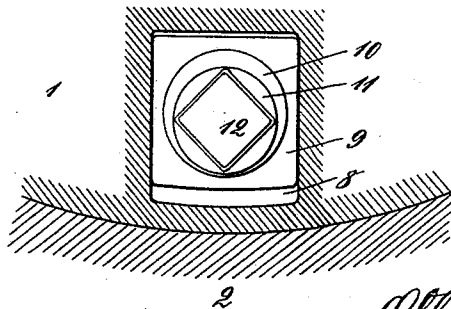


Fig. 3.



Witnesses:

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OTTO KLATTE, OF NEUWIED-ON-THE-RHINE, GERMANY.

MEANS FOR ADJUSTING ROLLS FOR ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 530,949, dated December 18, 1894.

Application filed April 12, 1894. Serial No. 507,268. (No model.)

To all whom it may concern:

Be it known that I, OTTO KLATTE, a subject of the King of Prussia, residing at Neu-wied-on-the-Rhine, Prussia, have invented certain new and useful Improvements in Means for Accurately Adjusting the Rolls for Rolling-Mills, of which the following is a specification.

My invention relates to those rolls which are used in the manufacture of chains or of bars with impressions of any kind. Such rolls are described in my application filed March 8, 1892, Serial No. 424,127, and in my application filed September 14, 1893, Serial No. 485,487. (Separated application is entitled "rolls for chain rolling mills.") These rolls consist of a central part, which is pushed loosely on the roll shaft, and of two disks, which clamp this central part between them and which are fixed to the shaft. The central part may consist of a single disk or of several such disks arranged in close proximity or of a core disk on which a ring is pushed. It is provided with a row of holes arranged in a circle, which pass transversely through it, are oval in form and afford a passage for the bolts, which serve to bolt the central part between the said disks. When these bolts are loosened the central part can be rotated to a certain extent on the roll shaft on account of the oval form of the bolt holes. Four rolls of this description are arranged as described in my application of March 8, 1892, Serial No. 424,127, and in my application of September, 14, 1893, Serial No. 485,487. (Separated application is entitled "rolling mill for the manufacture or shaping of chains.") The four rolls must be accurately adjusted in relation to one another so that the depressions formed in the peripheries of the rolls take up the correct position in respect of one another.

The subject of this invention is a contrivance for effecting this object, and consists of an eccentric, which passes transversely through the central part of the roll and is journaled at each end in the clamping disks by means of pivots. A lever is fitted on one of these pivots outside the clamping disk by means of which the eccentric can be fixed in position. When the eccentric is turned the central part

of the roll revolves to a slight extent on the roll axle. The contrivance is represented in the accompanying drawings in combination with a roll such as is described in my application of September 14, 1893, Serial No. 485,487. (Separated application is entitled "roll for chain rolling mills.")

Figure 1 is a vertical section. Fig. 2 shows a front view. Fig. 3 shows a vertical section through that part of the roll, in which the eccentric is situated, to a larger scale.

The central part of the roll here consists of a core disk 1, of a ring disk 2 pushed on the same and of two lateral strengthening disks 3, 3, which are bolted to the ring disk by means of bolts 4. This central part is pushed on the roll axle 5 and by means of bolts 7 is bolted to the disks 6, 6, which are constructed as bevel wheels. A square hole 8 is made through the core disk 1 and the strengthening disks 3, Fig. 3, and a square block 9 is placed in the same. In the direction of a radius of the core disk passing through the center of the block, the latter is shorter than the height of the square hole 8, but in the other direction it fits accurately in the hole. The block can therefore be displaced in the hole only in the direction of this radius. A circular hole is bored through the center of the block 9 and in this hole is fitted accurately but movably a cylinder 10, which is provided at each end eccentrically with a pivot 11. The two pivots lie in the same center line, so that the cylinder forms an eccentric relatively to the pivots. The pivots 11 pass through holes in the disks 6, 6. The portion 12 of the one pivot, in Fig. 1 the left, which projects from the disk is made square, and an indicator lever 13 and a spanner 14 in front of the lever are fitted on the same. If the spanner be turned in either direction the eccentric 10 is correspondingly turned, and consequently by means of the block 9 the central part 1, 2, 3, 4 of the roll, between the disks 6, 6, is moved through a certain angle on the axle 5. Before the spanner 14 is turned the bolts 7 must be loosened.

After the central part 1, 2, 3, 4 of the roll has been correctly adjusted relatively to the other three rolls, the eccentric is fixed in place

with the help of the indicator lever 13 as follows: The indicator is provided at its free end in the direction of its length with a row of four smooth holes 15 Fig. 2, and this end
5 moves over a sector plate 16, which is fastened to one of the disks 6 and is provided with four rows of holes 17. The holes 17, which are provided with a screw thread, and are arranged on four concentric arcs of a circle
10 the center of which is the center of the pivot 11. The distance of the concentric arcs from one another is equal to the distance between the holes 15 of the indicator 13.

A displacement of the indicator lever a distance equal to the distance between two holes on the outer arc corresponds to a displacement of one millimeter on the outer periphery of the roll. The holes on the other three concentric arcs permit of displacements of a
20 quarter of a millimeter.

The fixing of the eccentric with the help of the indicator lever is effected by passing a screw through that hole in the indicator which, after the adjustment of the roll, is situated exactly over a hole in the sector plate 16
25 and screwing the same into the said hole in the sector plate. The central part of the roll is then secured in this position to the disks or wheels 6, which inclose it. The bolts 7 are then again screwed up and in consequence of
30 the resulting friction the eccentric adjusting contrivance is freed from strain.

The above described adjusting contrivance permits of the accurate adjustment of the rolls without the necessity of taking the latter
35 apart, so that alterations, which are a result of the rolling operation, can at any time be compensated for. These alterations in the relative position of the peripheries of the rolls are mainly due to the fact that at each
40 rolling the jumping of the rolls, which cannot be absolutely avoided, causes the spur wheels of the gearing to engage in one another differently from the way they engage when the

machine is running without load, that is the
45 teeth which engage are forced farther apart, even if only to a slight extent, so that the driven wheel remains somewhat behind in comparison with the same wheel when the machine is running without load. 50

Having fully described my invention, what I desire to claim and secure by Letters Patent is—

1. The combination with the roll axle, and a roll comprising a central part movable on the
55 roll axle and two outer disks or wheels between which such central part is arranged, of an eccentric resting in a hole of such central part and provided with pivots resting in holes in the aforesaid outer disks, substantially as
60 set forth.

2. The combination with the roll axle, and a roll comprising a central part movable on the
roll axle and two outer disks or wheels between which such central part is arranged, of
65 a radially adjustable block and an eccentric located in a hole in the aforesaid central part and provided with two pivots resting in holes in such outer disks, substantially as set forth.

3. The combination with the roll axle, and a roll comprising a central part movable on the
roll axle and two outer disks or wheels between which such central part is arranged, of
70 an eccentric resting in a hole in such central part and having two pivots resting in holes in said outer disks, an indicator lever carried by one of such pivots and provided with holes as explained and a plate over which the indicator lever is adapted to move and which is
75 secured to one of the aforesaid outer disks, substantially as set forth. 80

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

OTTO KLATTE.

Witnesses:

FRITZ SCHRÖDER,
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