

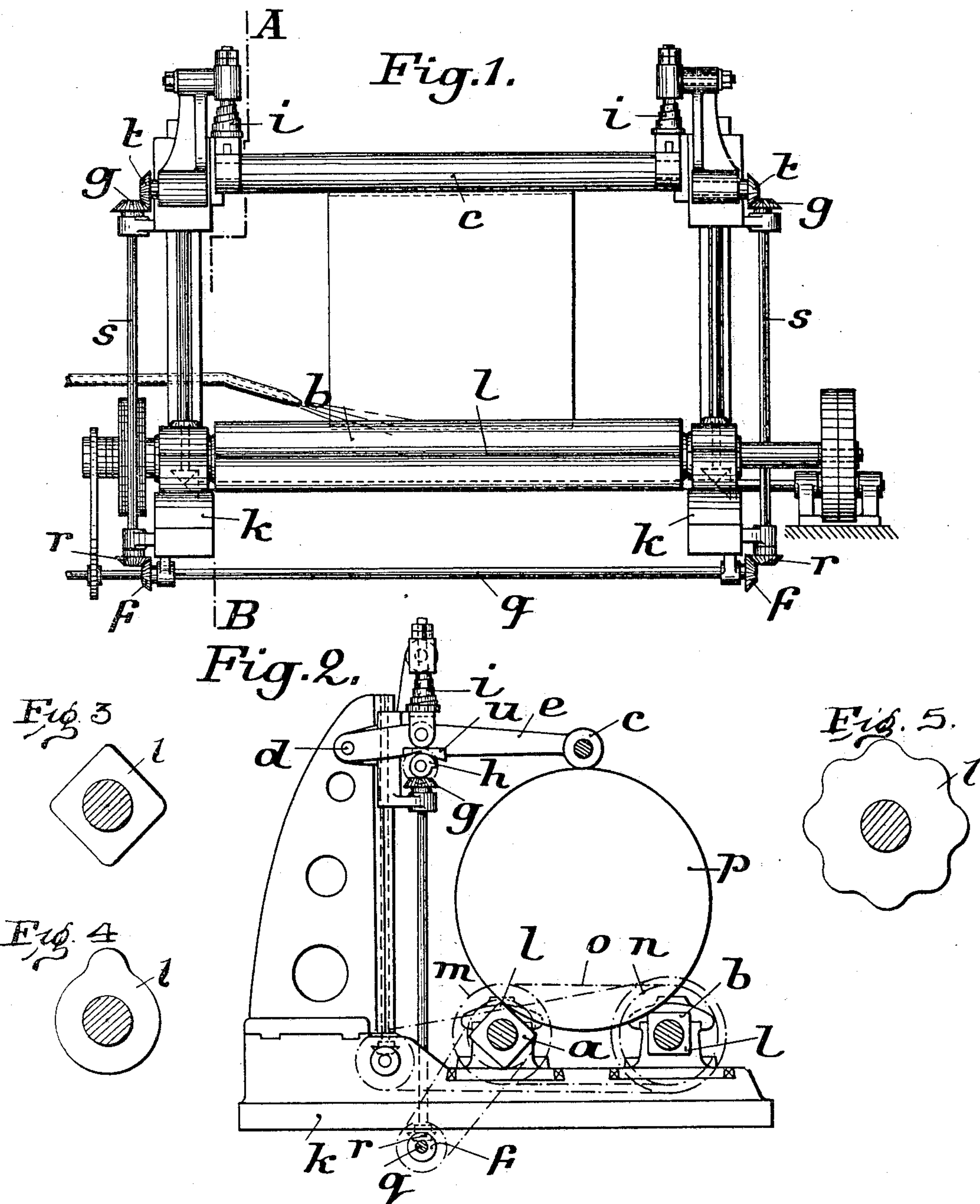
No. 801,515.

PATENTED OCT. 10, 1905.

H. EHRHARDT.

MACHINE FOR REMOVING ADHERING SLAG OR CINDERS FROM HOLLOW
OR SOLID BLANKS.

APPLICATION FILED JAN. 24, 1903.



WITNESSES

Arthur L. Bryant.
Lydia J. Jones.

INVENTOR

Heinrich Ehrhardt

J. Watson

ATTORNEY.

UNITED STATES PATENT OFFICE.

HEINRICH EHRHARDT, OF DÜSSELDORF, GERMANY.

MACHINE FOR REMOVING ADHERING SLAG OR CINDERS FROM HOLLOW OR SOLID BLANKS.

No. 801,515.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed January 24, 1903. Serial No. 140,416.

To all whom it may concern:

Be it known that I, HEINRICH EHRHARDT, engineer, a subject of the German Emperor, residing at 20 Reichstrasse, Düsseldorf, Germany, have invented certain new and useful Improvements in Machines for Removing Adhering Slag or Cinders from Hollow or Solid Blanks, of which the following is a specification.

My invention relates to a machine for removing adhering slag or cinders from hollow or solid blanks which have been heated in preparation for the rolling-mill, and thus preventing defects produced by such adherent matter in the rolling process.

In the accompanying drawings, Figure 1 is a front elevation. Fig. 2 is a vertical transverse section of the machine on the line A B, the latter figure showing a blank in position. Figs. 3, 4, and 5 are cross-sectional views of modified forms of the supporting-rollers.

a and *b* are two rollers supported in suitable bearings in two standards *k*. One or both of these rollers has a cross-section having one or more angles or projecting parts *l*, as shown in Figs. 1 and 2, or is provided with a longitudinal rib or ribs. These rollers are revolved in the same direction by pulleys *m* and *n*, connected by a belt *o*, so that a blank *p*, laid upon the two rollers *a* and *b*, is rotated and at the same time caused to rise and fall by the angular edge wedges *l* or the rib or ribs, so that it is shaken and the slag and cinders detached.

q is an axle supported with both ends in the standards *k* and receiving a rotary motion from any rotating part of the machine—for instance, from the axis of the roller *a* by means of a belt or chain, Fig. 2. On both ends of the axle *q* are fixed crown-wheels *f*, engaging with crown-wheels *r*, fixed on vertical axles *s*, supported in each standard and having upper crown-wheels *g* engaged by crown-wheels *t*, on the axle of which are fastened cams *h*. Above these cams at *d* are pivoted arms *e*, in which is journaled a smooth or ribbed roller *c*, so as to bear upon the blank. The arms *e* have on their lower sides projections *u*, Fig. 2, against which the cams *h* work, so as to give the roller *c* a hammering action, whereby the blank *p* is shaken and slightly dented, so as to facilitate removal of the slag and cinders. The strength of the blow of roller *c* on the blank is regulated by the springs *i*. The loosened slag and

cinder is removed from the blank by a blast of steam or air or by a stream of water and is then ready for the rolls.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a machine for removing slag, &c., from metal blanks, the combination of a support for the blank to be cleaned, means for rotating the blank on said support, and means for vibrating the rotating blank bodily vertically relative to said support to impart a jar or blow thereto.

2. In a machine for removing slag, &c., from metal blanks, the combination of a support for the blank to be cleaned, means for rotating the blank on said support, and a vibrating hammer arranged to act on the blank while rotating.

3. In a machine for removing slag, &c., from metal blanks, the combination of a support for the blank to be cleaned, means for rotating the blank on said support, a vibrating hammer arranged to act on the blank while rotating, and means for vibrating the rotating blank relative to its support and toward and from the hammer.

4. In a machine for removing slag, &c., from metal blanks, the combination of a plurality of rolls adapted to support the blank to be cleaned and rotate such blank, and means for moving the rotating blank relatively to said supporting-rolls to impart a jar or blow to the blank.

5. In a machine for removing slag, &c., from metal blanks, the combination of a plurality of elongated rolls adapted to extend longitudinally of and support the blank to be cleaned, means for rotating said rolls to rotate the blank, and means connected with the supporting-rolls for vibrating the rotating blank relative to its support, to impart a jar or blow thereto.

6. In a machine for removing slag, &c., from metal blanks, the combination of a plurality of rolls to support a blank to be cleaned, and means for rotating said rolls to rotate the blank supported thereon, said rolls being of such cross-sectional form as to intermittently raise the rotating blank from its support and impart a jar or blow to the blank.

7. In a machine for removing slag, &c., from metal blanks, the combination of a plurality of rolls adapted to support a blank to be

cleaned, and means for rotating said rolls to rotate the blank supported thereon, said rolls, beneath the blank, being of polygonal form in cross-section, whereby the blank will be bodily
5 vibrated vertically as it is rotated.

8. In a machine for the purpose described, the combination of a support for a blank to be cleaned, means for rotating the blank on said support, means for vibrating the rotating
10 blank relative to said support, and a vibrating hammer arranged to act on the blank on the opposite side thereof from said support.

9. In a machine for the purpose described, the combination of a support for a blank to
15 be cleaned, means for rotating the blank on said support, means for vibrating the rotating blank relative to the support, and a vibrating

roller mounted to act on the blank on the opposite side thereof from said support.

10. In a machine for the purpose described, 20 the combination of a plurality of rolls adapted to support a blank to be cleaned, means for rotating said rolls to rotate the blank, means for vibrating the rotating blank vertically, and a vibrating roller geared to said supporting- 25 rolls and adapted to engage the rotating blank opposite said supporting-rolls.

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

HEINRICH EHRHARDT.

Witnesses:

WILLIAM ESSENWEIN,
PETER LIEBER.