(No Model.) 2 Sheets—Sheet 1.

F. WEGMANN.

WHEEL GEARING FOR ROLLERS OF ROLLING MILLS.

No. 319,648. Patented June 9, 1885.

Fig. 1.

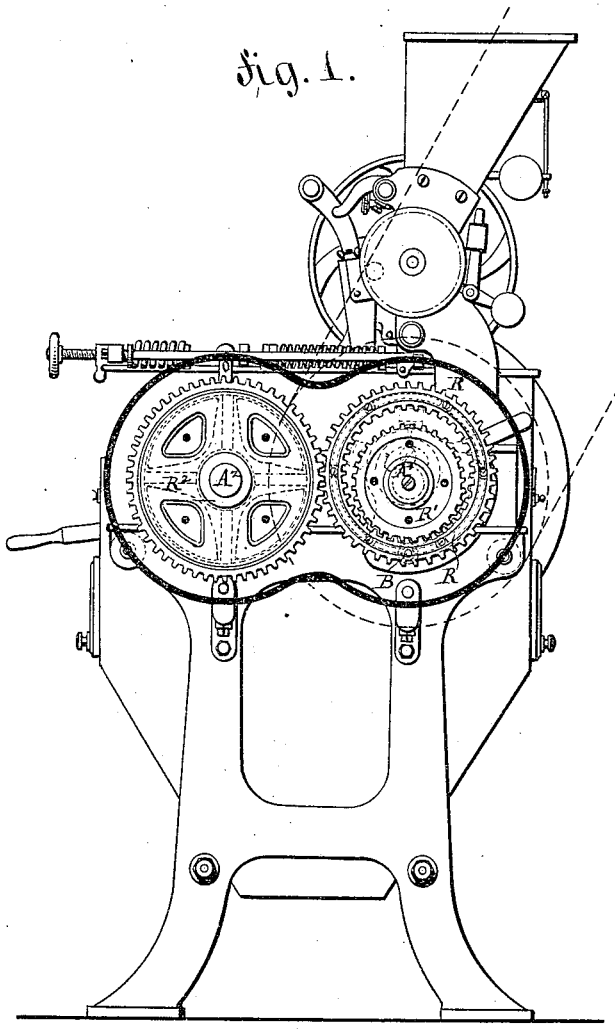


Fig. 3.

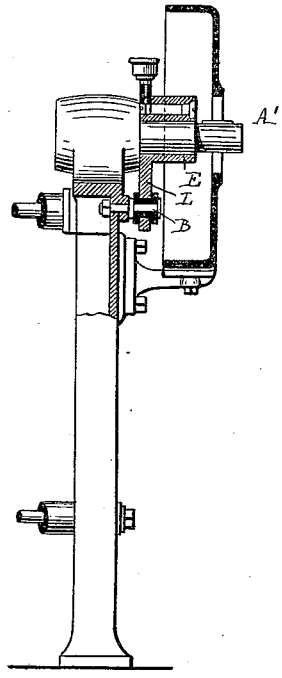


Fig. 2.

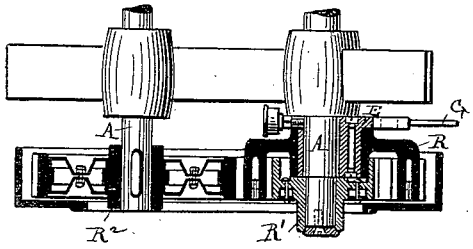
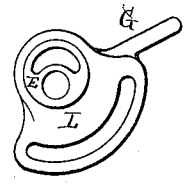


Fig. 3a.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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WHEEL GEARING FOR ROLLERS OF ROLLING MILLS.

No. 319,648. Patented June 9, 1885.

Fig. 4.

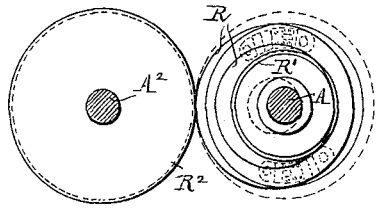


Fig. 6.

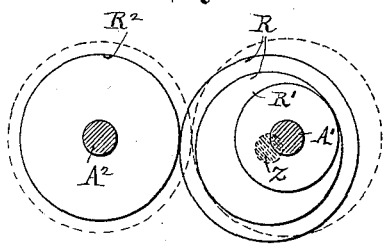


Fig. 5.

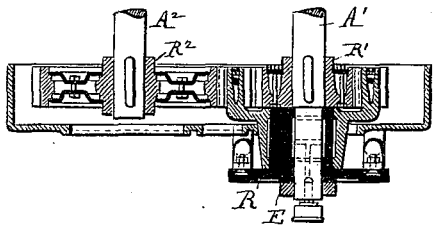


Fig. 7.

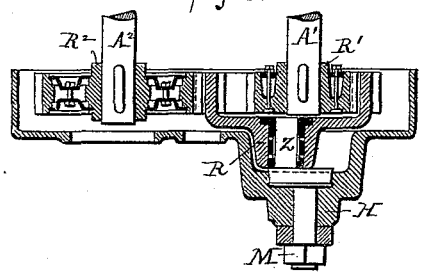


Fig. 8.

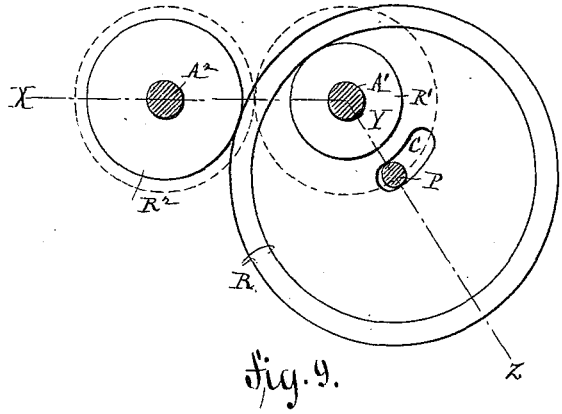
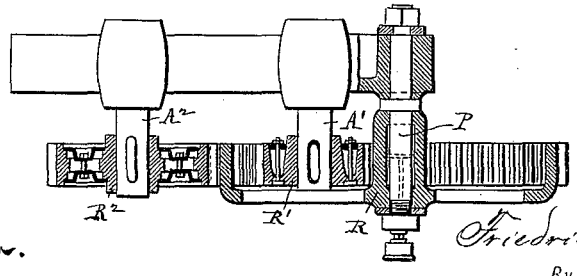


Fig. 9.



WITNESSES

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UNITED STATES PATENT OFFICE.

FRIEDRICH WEGMANN, OF ZÜRICH, SWITZERLAND.

WHEEL-GEARING FOR ROLLERS OF ROLLING-MILLS.

SPECIFICATION forming part of Letters Patent No. 319,648, dated June 9, 1885.

Application filed March 24, 1885. (No model.) Patented in England February 5, 1885, No. 1,618; in Belgium February 5, 1885, No. 67,765, and in Italy February 5, 1885, No. 17,888/309.

To all whom it may concern:

Be it known that I, FRIEDRICH WEGMANN, a citizen of the Republic of Switzerland, residing at Zürich, in the Republic of Switzerland, engineer and machine-manufacturer, have invented new and useful Adjustable Wheel-Gearing for the Rollers of Roller-Mills, (for which Letters Patent have been granted heretofore to me by the governments of Belgium, No. 67,765, dated February 5, 1885; Great Britain, No. 1,618, dated February 5, 1885, and Italy, No. 17,888/309, dated February 5, 1885,) and generally for spindles with varying distance, of which the following is a specification.

The tooth-wheel gear in roller-mills has the defect that as the rollers wear by abrasion or by being turned up in the lathe the distance between their centers is varied, and thus the teeth of the wheels do not gear properly with each other, and by increased wear have to be replaced by new ones. There are also many other cases where it is desirable to adjust the gearing in such manner as to insure proper gearing on the pitch-lines of the tooth-wheels at all times. I have invented an arrangement of wheel-gearing which can be adjusted with ease, according to the varied diameter of the rollers or varied distance between centers generally, so that the wheels may always gear exactly on their pitch-lines. Instead of gearing the two rollers by means of two tooth-wheels fixed on their spindles and gearing directly with each other, I employ two wheels between which a third wheel having an inner and outer toothed rim is interposed, such wheel being mounted eccentrically to the roller-spindle carrying the inner driving-wheel, and adapted to keep in unchangeable gear therewith, but so that the outer tooth-rim, according to the distance from the driven tooth-wheel on the other roller-spindle, can be adjusted as required.

In the accompanying drawings I have illustrated the invention with special reference to roller-mills; but it is obviously applicable to any other purpose where it is needful or useful to adjust the gearing according to varying distances between spindle-centers.

Figure 1 is a sectional side view of a roller-mill constructed with this gearing; Fig. 2, a plan section; Fig. 3, a part-sectional end view, and Fig. 3ª a detail side view. Fig. 4 is a side view, and Fig. 5 a plan section, of a modified form of gearing. Fig. 6 is a side view; Fig. 7, a plan section of another modification; and Figs. 8 and 9, respectively, a side view and plan section on line X Y Z, Fig. 8, of yet another modification.

Referring to Figs. 1, 2, 3, and 3ª, the double wheel R is mounted loosely on an eccentric hub, E, in which the roller-spindle A′ turns. The said hub E can be adjusted and fixed in position by means of the bolt B, fixed to the framing, as shown at Fig. 2, and passing through a slot in the sector-shaped part L, formed on the hub E, and shown separately in Fig. 3ª, which part L can be shifted round its spindle A′ by taking hold of the handle G. Around this eccentric hub E the double wheel R turns, and in it turns the spindle A′ with the tooth-wheel R′. This latter wheel will in any position of the eccentric E gear constantly with the inner tooth-rim of the wheel R, while the outer tooth-rim of the wheel R, through the variable eccentric position of the eccentric E, according to the distance between the roller-spindles A′ and A², is adjustable for gearing with the wheel R², or, as required in some case, may be thrown entirely out of gear.

In the modification, Figs. 4 and 5, the eccentric E is mounted on the prolonged outer end of spindle A′, and is held by two screws, in combination with helical springs, which are applied in the cover over the wheels.

In Figs. 6 and 7 the double wheel is not mounted by means of an eccentric hub placed on the spindle A′, but by a gudgeon, Z, which, independently of the spindle A′, is guided in the bell-shaped cap H of the wheel-cover, and is held fast by the nut M.

In Figs. 8 and 9 the double wheel R is shown as being mounted on a gudgeon, P, which is fixed on the framing of the machine outside the periphery of the wheel R′, but adjustable in the slot C in the wheel R.

I claim—

A tooth-wheel gearing for connecting two spindles which are to turn in opposite direc-

tions, consisting of a tooth-wheel, R′, fixed on its spindle A′, and a tooth-wheel, R^2, fixed on its spindle A^2, and an intermediate tooth-wheel, R, having an inner tooth-rim gearing with the tooth-wheel R′, and an outer tooth-rim gearing with the tooth-wheel R^2, such intermediate wheel, R, being mounted loosely, and its center being adjustable eccentrically relatively to the spindle A′, for the purpose of keeping its outer tooth-rim in proper pitch-line gear with the wheel R^2, substantially as set forth.

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

FRIEDRICH WEGMANN.

Witnesses:
WILLIAM SCHNEIDER,
ED. EGLI.