

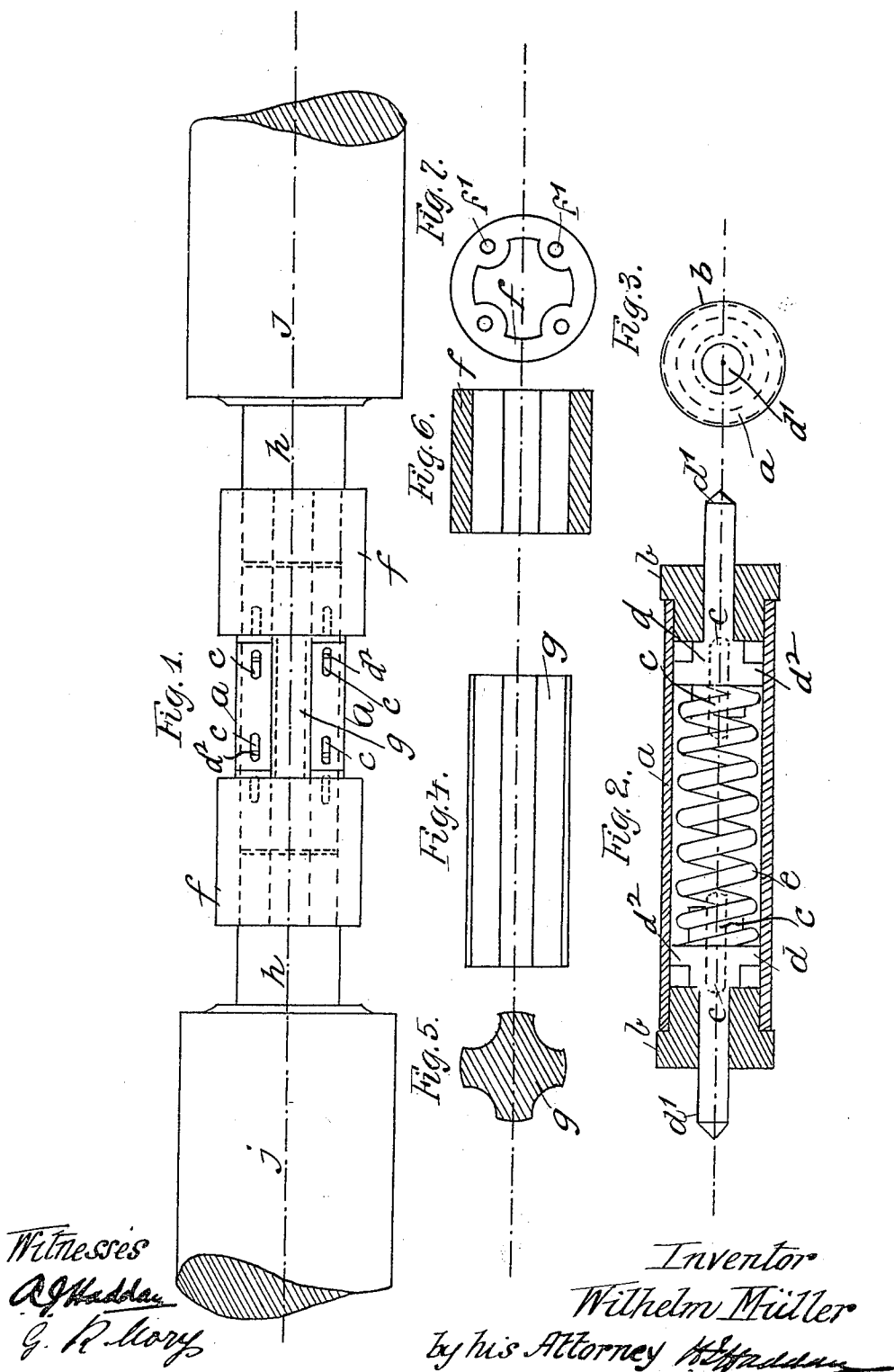
No. 819,909.

PATENTED MAY 8, 1906.

W. MÜLLER.

COUPLING SLEEVE HOLDER FOR THE ROLLERS OF ROLLING MILLS.

APPLICATION FILED SEPT. 7, 1905.



UNITED STATES PATENT OFFICE.

WILHELM MÜLLER, OF PEINE, GERMANY.

COUPLING-SLEEVE HOLDER FOR THE ROLLERS OF ROLLING-MILLS.

No. 819,909.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed September 7, 1905. Serial No. 277,412.

To all whom it may concern:

Be it known that I, WILHELM MÜLLER, a subject of the German Emperor, residing at Peine, Hanover, German Empire, have invented a certain new and useful Coupling-Sleeve Holder for the Rollers of Rolling-Mills, of which the following is a specification.

The present invention relates to a novel construction of coupling-sleeve holder for roller-trains in rolling-mills.

Each roller of a train is provided with a trunnion terminating in a so-called "rosette." In order to connect the various rollers of the train, a spindle is used having its exterior shaped to exactly correspond with the rosette, and the sleeve is passed over the ends of the spindle in such a manner that one half of said sleeve covers or incloses the spindle and the other half the rosette—that is, the extensions of the trunnion. By means of this connection all the rollers of a train can be operated at once. In order that the couplings remain in their proper position and do not slide from the rosettes, half of which only are inclosed by them, this sliding being attributable to the working of the rollers and to the rotation of the sleeve, whereby the corresponding roller and rollers situated behind would be put out of action, it is necessary to effect a rigid and durable connection. Hitherto wooden rods were used, which were tied fast on the spindle between the two coupling-sleeves. The connection thus obtained did not, however, meet the requirements, and, in addition to much time being wasted and large cost entailed, wetting and bursting of the ropes holding the wooden rods frequently occurred, owing to the continuous cooling of the rollers and roller-supports. The fixing with the wooden rods acts most unfavorably on the metal trunnions or bearings, since the inequalities of said rods cause uneven working and increase the wear and tear of the bearings.

The present invention relates to a coupling which completely dispenses with the use of wooden rods and ropes in rolling-mills and produces a durable connection of the rollers.

The new or improved coupling-sleeve holder is shown in the accompanying drawings, wherein—

Figure 1 is an elevation illustrating the coupling applied to two rollers of a train. Fig. 2 is a longitudinal section of the coupling-sleeve holder detached. Fig. 3 is an end view of Fig. 2. Figs. 4 and 5 are respectively

a side elevation and end view of the spindle. Figs. 6 and 7 are respectively a longitudinal section and end view of the coupling-sleeve.

In a tube *a*, closed at its ends by plugs or caps *b*, is situated a helical spring *e*, and a slide *d*, situated at each end of the closed tube and provided with pointed ends or center points *d'*, is pressed outward by said spring *e*. (See Fig. 2.) In the wall of the tube are two longitudinal apertures *c*, adjacent the parts at which the collars *d²* of the slides *d* are situated, through which apertures a pair of tongs or other suitable implement may be passed to seize said slide-collars and bring them toward one another to compress the spring *e*, so that the coupling-sleeve holder can be easily passed between the coupling-sleeves *f*. In the ends of said sleeves holes *f'* are provided, into which the pointed ends *d'* of the slides *d* engage. After releasing the tongs the said ends *d'* are pressed into the holes *f'* by the action of the spring *e*, and the sleeves *f* are held rigidly in position. In the drawings four of said holders *a* are arranged about the spindle *g*, inserted between the trunnions *h* of the pair of rollers *j*. The sleeve-holder *a* can also be so made that only a single spring-actuated slide provided with a center point is necessary, the other center being rigidly connected to the holder-tube *a*. The tongs for manipulating the slides *d* may be similar to the known caliper-compasses.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a tubular sleeve-holder located between said sleeve and center points in said tube adapted to engage the apertures in the sleeves substantially as described.

2. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a closed tube located between said sleeves, displaceable center points extending through the ends of said tube, and a spring adapted to force said center points outward to engage

the apertures in the sleeves, substantially as described.

3. In a rolling-mill the combination with a pair of rollers having trunnions, and a spindle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a closed tube located between said sleeves, displaceable center points extending through the ends of said tube, and a spring adapted to force said center points outward to engage the apertures in the sleeves, the tube aforesaid having apertures in its wall for insertion of a tool to bring the center points within the tube against the action of the spring substantially as described.

4. In a rolling-mill the combination with a pair of rollers having trunnions, and a spin-

dle located between said trunnions, of a pair of coupling-sleeves surrounding the abutting ends of the trunnions and spindle and provided with apertures on their adjacent faces, a plurality of closed tubes located between the sleeves and surrounding the spindle, displaceable spring-pressed center points extending through the ends of each of said tubes and adapted to engage the apertures in the sleeves, and means for affording access to said center points to bring them within the respective tubes substantially as described.

In witness whereof I have signed this specification in the presence of two witnesses.

WILHELM MÜLLER.

Witnesses:

LEONORE RASCH.

ANNA DIPPEL.