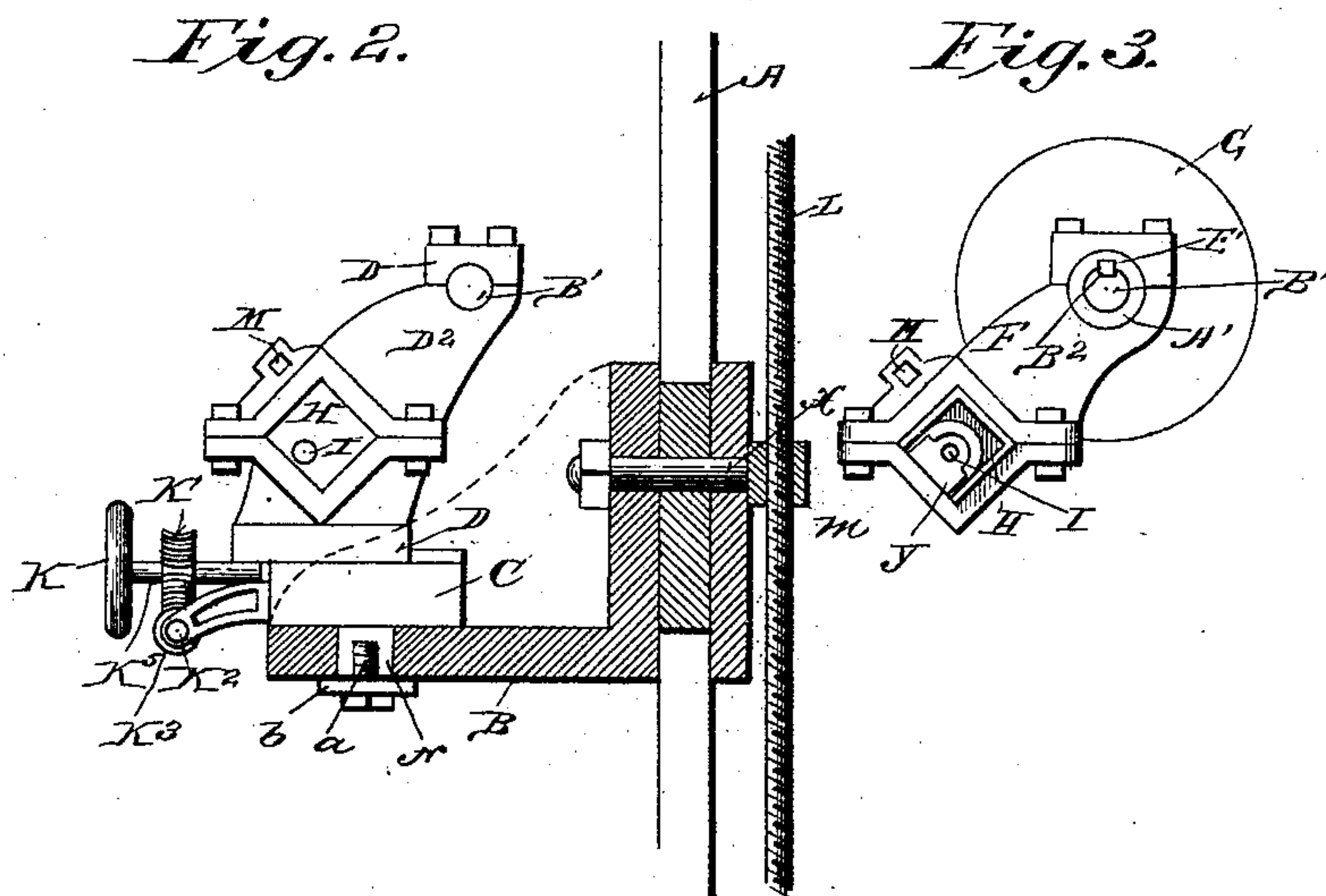
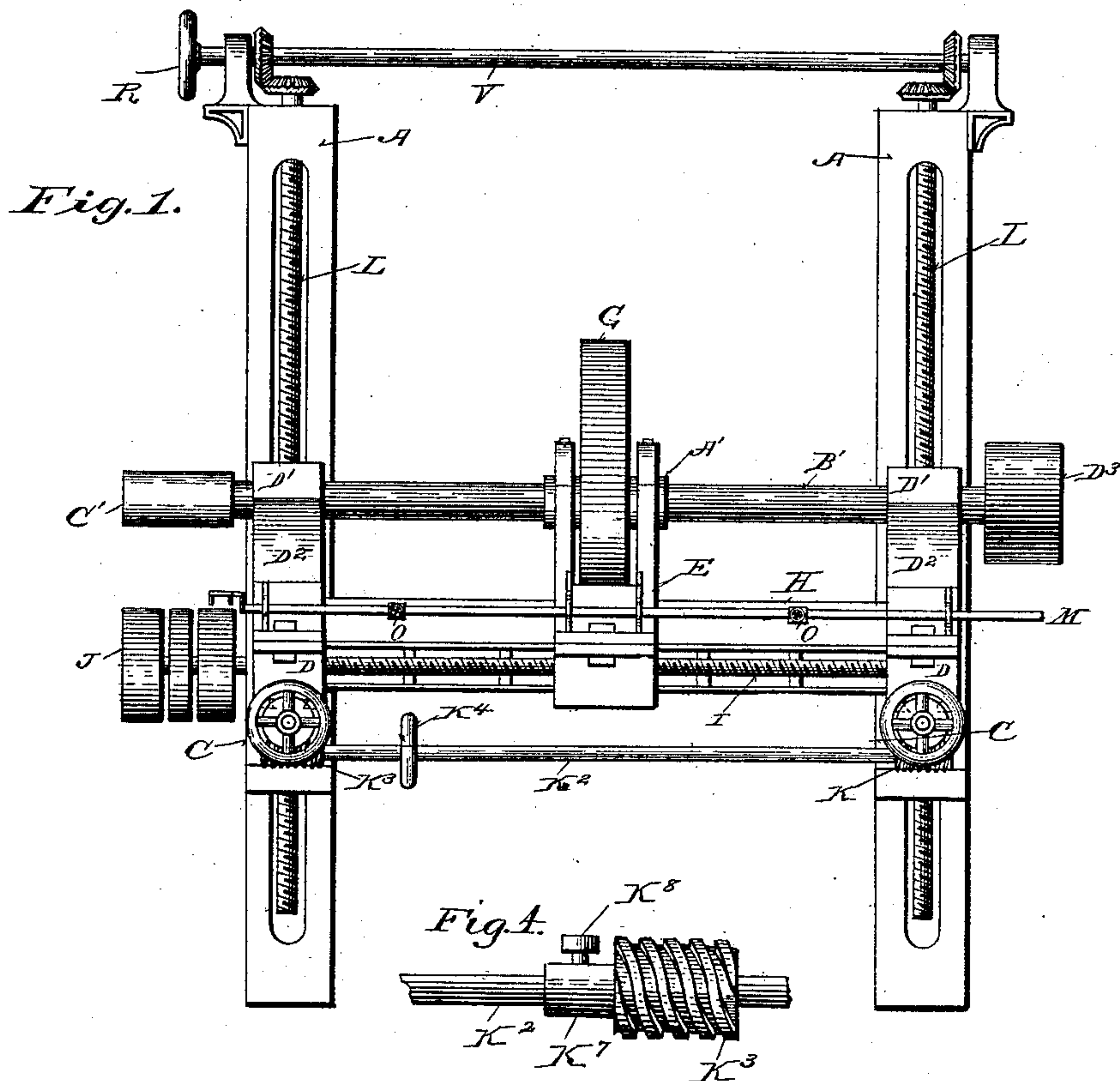


(No Model.)

P. F. DOOLEY.
ROLL GRINDER.

No. 411,095.

Patented Sept. 17, 1889.



Witnesses

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UNITED STATES PATENT OFFICE.

PATRICK F. DOOLEY, OF MALONE, NEW YORK.

ROLL-GRINDER.

SPECIFICATION forming part of Letters Patent No. 411,095, dated September 17, 1889.

Application filed December 7, 1888. Serial No. 292,941. (No model.)

To all whom it may concern:

Be it known that I, PATRICK F. DOOLEY, a resident of Malone, in the county of Franklin and State of New York, have invented certain new and useful Improvements in Roll-Grinders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention is an improvement in machines for grinding rolls; and it consists in certain improvements in the construction of such machines, as hereinafter described and claimed.

This invention is an improvement on the roll-grinder described in the Letters Patent of the United States No. 391,127, granted to me October 16, 1888; and the object of my present improvement is to provide improved devices for driving the grinding-wheel shaft and screw-shaft.

In the accompanying drawings, Figure 1 is a front elevation of a roll-grinding machine embodying my improvements. Fig. 2 is a vertical sectional view of one of the brackets and connecting-plates. Fig. 3 is a detailed side elevation of the carriage and grinding-wheel. Fig. 4 is a detailed perspective view of the shaft K², showing one of the worm-wheels thereon, with its sleeve and set-screw, whereby the said worm may be caused to slip idly on the shaft, and thereby cause either of the worm-gears which operate the stands to remain idle while the other is in operation.

A represents the standards which support the mechanism, each standard having a vertical longitudinal slot, as shown. The vertically-movable brackets B are secured to the standards by bolts X, working in the slots and engaged by elevating-screws L, geared to a shaft V in bearings on the upper ends of the standards, and provided with a hand-wheel R, by which it may be rotated, so as to raise or lower the brackets.

On each bracket B is placed a base-plate C of a stand D, the base-plate having a swivel-connection with the bracket by means of a stud or neck N, fitting in a hole in the bracket, and held in place by a screw *a* and washer *b*, as shown. The stand D may be moved backward and forward on the base C, the latter

being provided with guides for the purpose, this movement being effected by an adjusting-screw K⁵, having a hand-wheel K, and a nut connected with the stand.

Each stand D has an upward and inward extending arm D² bolted to its upper side, and between the meeting ends of the stands and their arms are formed rectangular openings to receive the hollow planed bar H and support the same in a horizontal position, the said bar extending through the stands and being adjustably secured by set-screws. The bar H being made of any desired length, the machine may be adjusted laterally, and thereby adapted for grinding rolls of any length.

On the upper ends of the arms D² are bolted bearing-blocks D'.

On the bar H is placed a sliding carriage E, the lower part of which is constructed with an opening for the bar, said opening forming a bearing and the carriage being held steadily in position on the bar. The carriage is actuated by a screw-shaft I, having bearings in the stands D and passing through a nut Y in the lower part of the carriage.

On the extended end of the screw-shaft are pulleys J, the central pulley being fast and the others loose.

B' represents a driving-shaft, which is arranged parallel with the bar H, and is journaled in the bearings D'. The end of the shaft adjacent to the pulleys J has a pulley C', connected to said pulleys J by straight and crossed belts controlled by a shipper-rod M and collars O of the usual well-known construction, so that the screw-shaft I may be rotated in either direction when the shaft B' is in motion, and thereby regulate the distance traversed by the carriage, and cause the latter to move back and forth on the bar H. The said shaft B' has at the opposite end a driving-pulley D³.

Journaled in bearings F in the carriage E is a hollow shaft or sleeve A', which has a feather-key E' fitted in a key way or groove B² of the shaft B' and adapted to slide therein. The emery or grinding wheel G is secured to the said sleeve or hollow shaft, and is thereby rotated therewith, and is adapted to operate on the faces of the rolls, as will be readily understood.

By causing the carriage to travel back and

forth on the bar II in the manner before described the revolving grinding-wheel may be caused to grind the rolls from end to end, as is evident, no matter how near the ends of the rolls may be to the frames carrying them.

The depth of the dressing by the grinding-wheel may be regulated by turning the screws K^5 , and thereby moving the stands D, carrying the bar II and shaft B' toward or from the roll. In order to enable the screws K^5 to be turned simultaneously and move the stands D in unison, said screws K^5 are provided with worm-wheels K^7 , and a shaft K^2 is journaled in bearings in the bases C, is provided with worms K^3 , that engage the worm-wheels, and has a hand-wheel K^4 . The worm-wheels K^3 are formed integrally with sleeves K^7 , which are held rigidly in their proper position on the shaft K^2 , and caused to rotate therewith, by set-screws K^8 . By loosening one of said screws one of the worms K^3 will remain idle and slip on the shaft, and consequently cause the worm K^7 , with which it engages, to remain idle, and thereby adapt either end of the bar II to be adjusted toward or from the roll to the ground.

Having thus described my invention, I claim—

1. The combination, in a roll-grinding machine, of the laterally-movable brackets carrying the shaft and the grinding-wheel, the screws K^5 , engaging and adapted to move the brackets, the shaft K^2 , and the worm-gears connecting the latter to the screws K^5 , whereby the brackets may be operated simultaneously, substantially as described.

2. The roll-grinding machine comprising the vertical standards, the brackets movable vertically thereon, the non-revoluble bar II, connecting the brackets, the traversing car-

riage mounted on said bar, the screw-shaft to operate the carriage, the driving-shaft journaled in the brackets and connected to the screw-shaft to rotate the latter, and the grinding-wheel having its bearings in the carriage and feathered on the driving-shaft, substantially as described.

3. In a roll-grinding machine, the combination of the standards, the brackets movable vertically thereon, the driving-shaft B' , mounted on said brackets and having the pulley C' , the bar II, connecting the brackets, the carriage traveling on said bar, the sleeve journaled in the carriage and feathered on the driving-shaft, the grinding-wheel secured to the said sleeve, the screw-shaft to operate the carriage, and connections, substantially as specified, between the driving-shaft and screw-shaft, whereby they are operated simultaneously, substantially as described.

4. The combination, in a roll-grinding machine, of the laterally-movable brackets carrying the shaft and the grinding-wheel, the screws K^5 , engaging and adapted to move the brackets, the shaft K^2 , and the worm-gears connecting the latter to the screws K^5 , one of said worm-gears having a set-screw K^8 , so that it may be rigidly secured to the shaft or rendered loose thereon, whereby the brackets may be moved simultaneously or independently of each other, substantially as described.

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

PATRICK F. DOOLEY.

Witnesses:

LESLIE C. WEAD,
FREDK. G. PADDOCK.