

C. H. MORGAN.  
Rolling-Mill.

No. 199,459.

Patented Jan. 22, 1878.

Fig. 1.

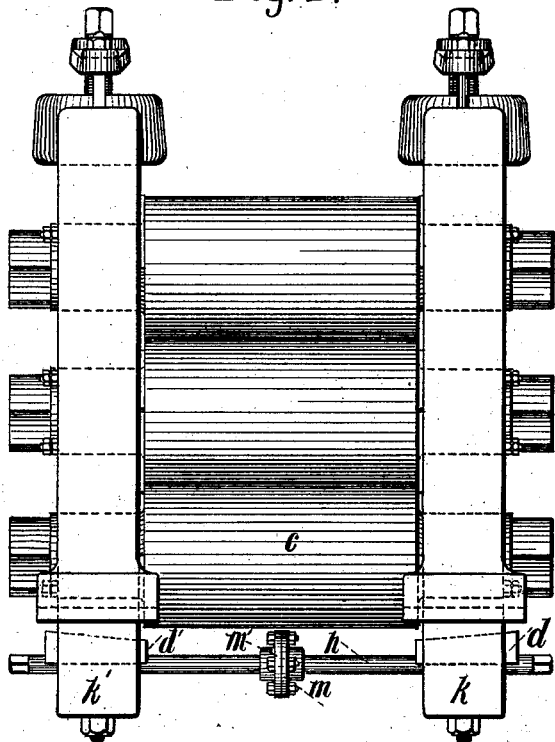


Fig. 2.

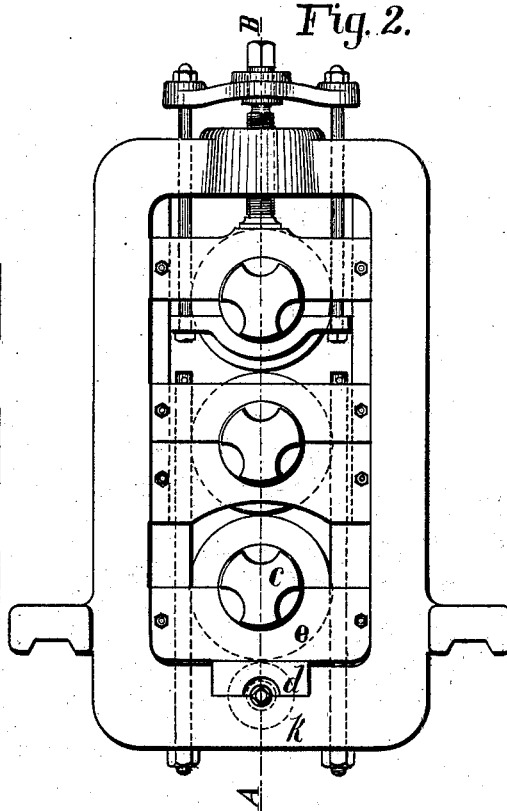
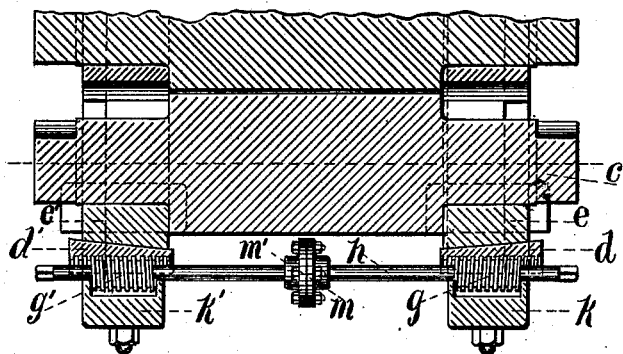


Fig. 3.



WITNESSES

*Charles B. ...*  
*Fred H. Daniels.*

INVENTOR

*Chas. H. Morgan*

# UNITED STATES PATENT OFFICE.

CHARLES H. MORGAN, OF WORCESTER, MASSACHUSETTS.

## IMPROVEMENT IN ROLLING-MILLS.

Specification forming part of Letters Patent No. **199,459**, dated January 22, 1878; application filed February 1, 1877.

*To all whom it may concern:*

Be it known that I, CHARLES H. MORGAN, of the city of Worcester, in the county of Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Machines for Rolling Metals and other materials; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of the specification, in which—

Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is a partial vertical cross-section on the line A B.

The nature of my invention consists in raising the lowest roll *c* by means of wedges *d d'*, placed under the roll-boxes *e e'*, and moved back and forth in a direction parallel to the axis of the roll *c* by means of worms *g g'* fixed on a shaft, *h*. The threads of the worms *g g'* mesh into corresponding threads in the wedges *d d'*, which partially inclose the worms. The worms being fixed against lateral motion by their shoulders fitting against the sides of the cavity in the housing *k k'*, when the worm-shaft *h* is turned to the right or left the wedges are forced to move simultaneously

forward or backward, and the roll *c* is correspondingly raised or lowered.

Adjustment of the relative position of the wedges may be secured by means of slotted holes for the clamping-bolts of the couplings *m m'*, whereby one coupling may be advanced upon the other.

It will be noticed that the wedges *d d'* are made in cap form, thereby leaving the lower portions of the worms open and free, with a space or opening below them; consequently the wedges can be easily adjusted independently of each other by raising them up, while all clogging from dirt and other matter falling to the bottom or lower sides of the worms is avoided.

Having thus fully described the nature and operation of my invention, I claim as new and wish to secure by Letters Patent—

The combination, with the worms *g g'*, of the open or cap wedges *d d'*, arranged in relation to the worm-shaft *h* and roll-shafts or journals, as shown and described.

CHAS. H. MORGAN.

Witnesses:

CHAS. H. BURLEIGH,  
FRED. H. DANIELS.