

No. 610,015.

Patented Aug. 30, 1898.

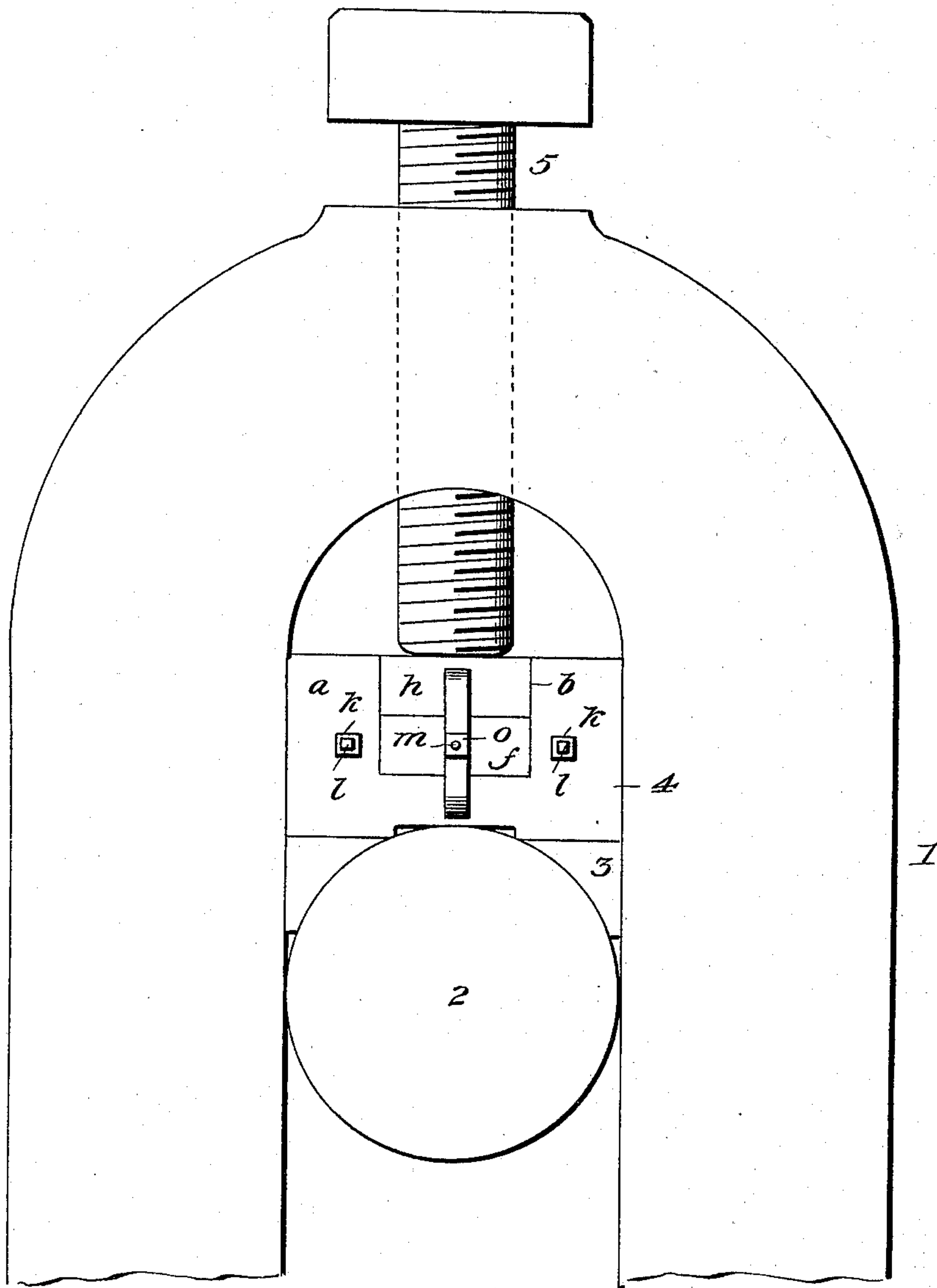
R. BAILEY.
RIDER OR CARRIAGE FOR METAL ROLLING MILLS.

(Application filed Feb. 16, 1898.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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3 Sheets—Sheet 3.

Fig. 4.

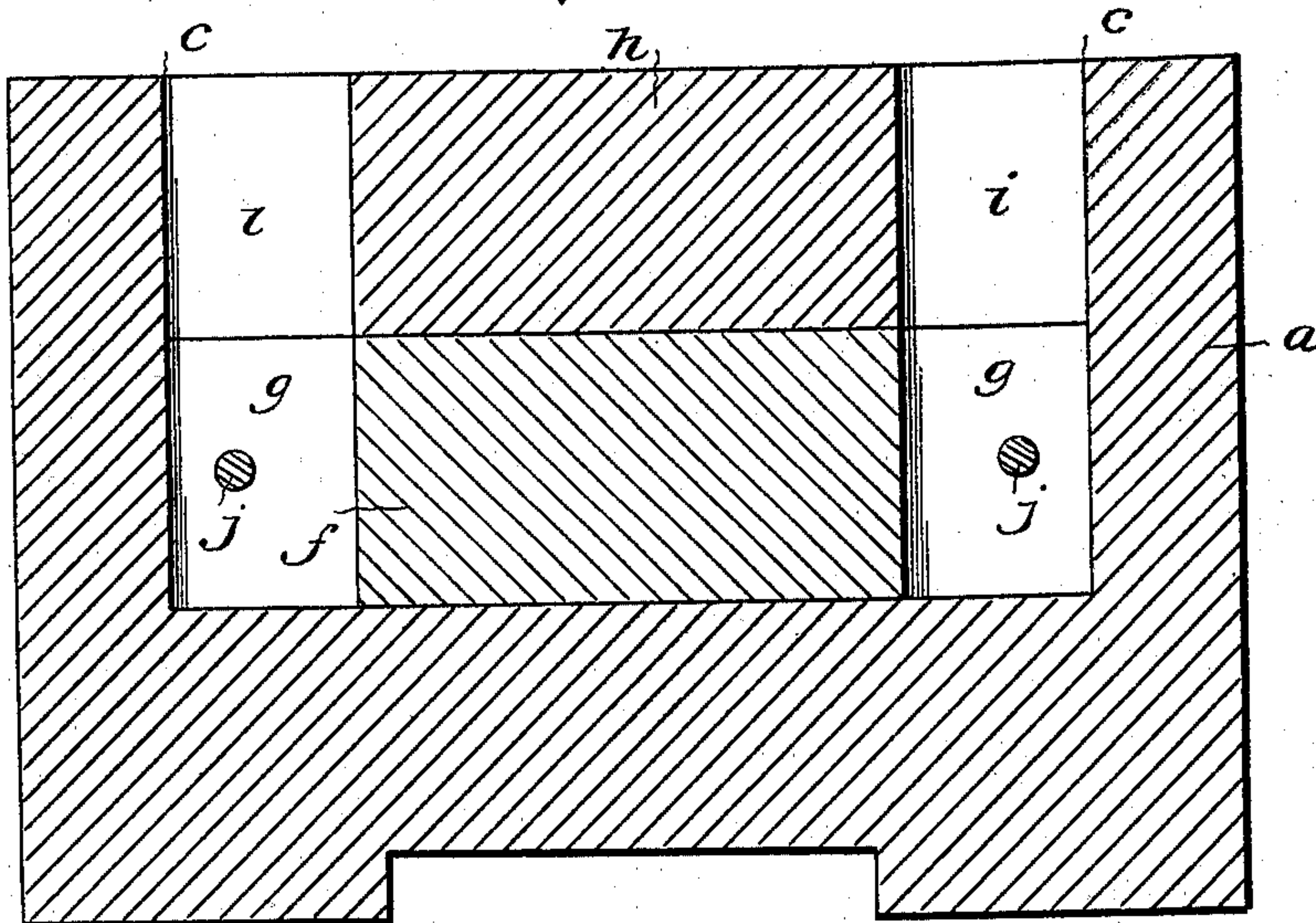
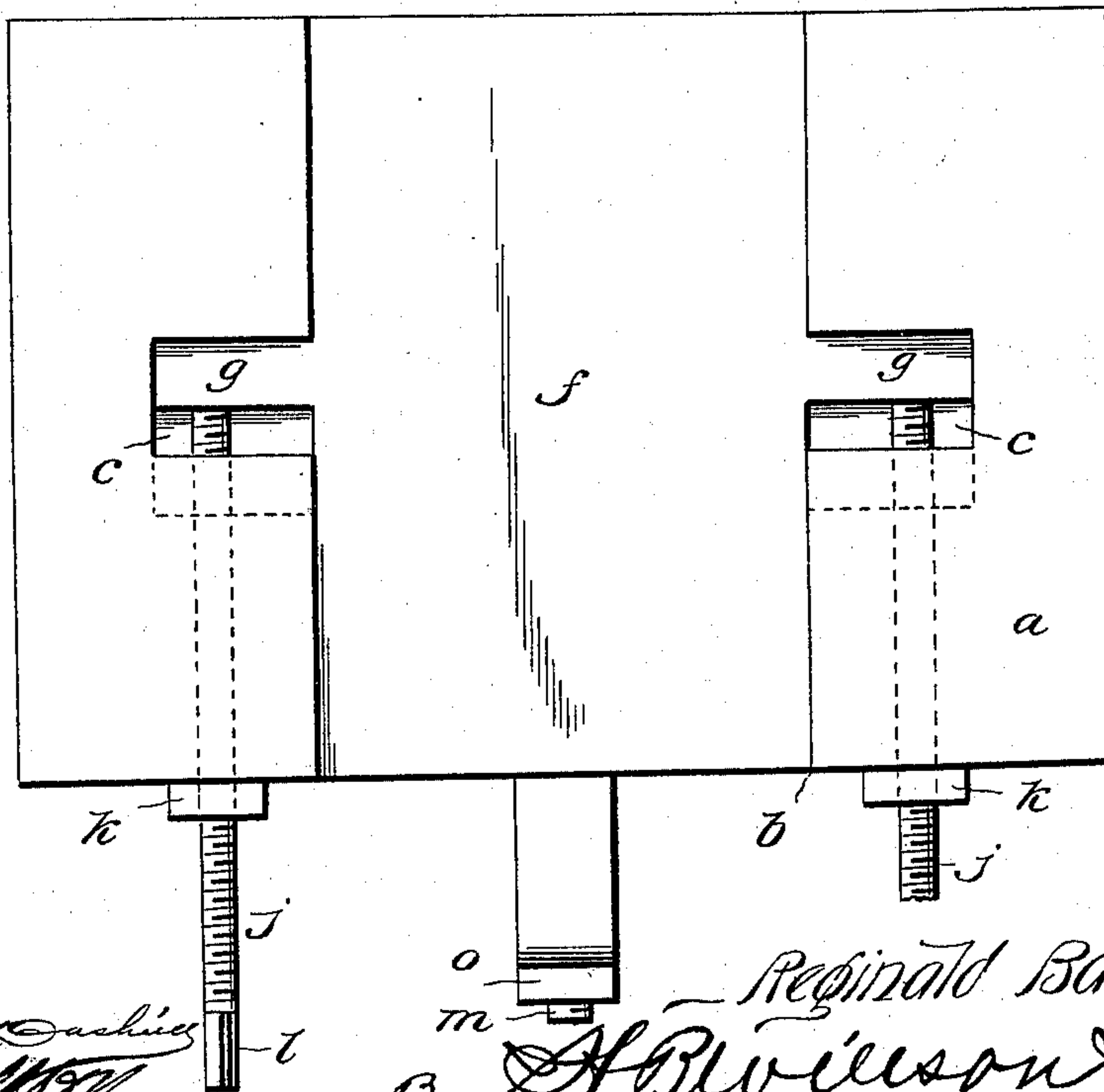


Fig. 5.



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UNITED STATES PATENT OFFICE.

REGINALD BAILEY, OF ELLWOOD CITY, PENNSYLVANIA.

RIDER OR CARRIAGE FOR METAL-ROLLING MILLS.

SPECIFICATION forming part of Letters Patent No. 610,015, dated August 30, 1898.

Application filed February 16, 1898. Serial No. 670,555. (No model.)

To all whom it may concern:

Be it known that I, REGINALD BAILEY, a citizen of the United States, residing at Ellwood City, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Riders or Carriages for Metal-Rolling Mills; and I do 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 appertains to make and use the same.

My invention has relation to metal-rolling mills; and the object is to provide means whereby a quick release of the clamping-screw may be effected should a breakdown occur while a piece of metal is between the rolls.

Heretofore great difficulty and loss of time have been encountered by various breakdowns and sudden stopping of the engine while a piece of metal is between the rolls, thereby making it necessary to either reverse the engine or release the main screws. The engineer loses control of the engine by reversing it and causes danger of the entire machinery being destroyed, as, in every instance known to me, whenever the engine is reversed under these circumstances some part of the machinery is certain to break. The difficulties attending the releasing of the main screws under the present system, when a piece of metal is left between the rolls on account of breakage or stopping of the engine, causes the loss of considerable time and the expenditure of much labor in that it is necessary to apply a wrench to the main screws and subject the wrench to sledge-hammer blows, which usually requires said hammering for from ten to sixteen hours. Again, in many instances it is necessary to burst open the rider or carriage, thereby incurring additional expense and loss of time in providing a new rider or carriage to replace the damaged one. My invention overcomes these difficulties; and it consists in certain features of construction and combination of parts, which will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a side elevation of the upper end of the roller-supporting standard of a rolling-mill, showing the end of the roller, one of its bearing-

brasses, and my improved rider or carriage in position. Fig. 2 is an enlarged detail perspective view of the rider or carriage. Fig. 3 is a longitudinal sectional view. Fig. 4 is a view taken at right angles to Fig. 2 through the vertical slots and the lugs of the blocks, and Fig. 5 is a top plan view of the rider or carriage with the upper block removed.

In said drawings, 1 denotes one of the standards or sides of a metal-rolling mill; 2, the trunnion of the upper roll; 3, one of the bearing-brasses; 4, the carriage, and 5 one of the main screws used for clamping or setting the roller to its work.

The invention resides in the rider or carriage 4, which is mounted upon the brass 3 and has a movement in the standard in the usual manner. This rider or carriage consists of a main portion *a*, having a transverse recess *b*, the side walls of which are provided with vertical slots *c* and the bottom *d* of which is preferably inclined.

f denotes the lower block of the carriage, which is provided with an oppositely-inclined lower face and with side lugs *g*, the width or thickness of which is less than the width of the slots *c*, so as to permit of a longitudinal movement of the block in the recess, whereby it is raised and lowered and its upper face caused at all times to remain in a true horizontal position owing to the reversely-inclined bottom of the recess and the lower side of the block.

h denotes the upper block, which is provided with side lugs *i*, which fill the vertical slots. This block receives the lower end of the main screw and has no longitudinal movement.

j denotes two set-screws that extend through the face of the main portion of the carriage and engage with their inner ends the lugs *g*. The screws are provided with set-nuts *k* and with square ends *l*, by means of which they are operated. The block *f* is provided at one end with a screw-threaded stud *m*, having a stop-nut *n*. A clamp, preferably in the shape of a yoke-bar, is placed loosely upon the screw-threaded stud and has its lower end engaging the face of the body portion of the rider and its upper end engaging the upper block.

A nut *o* is placed upon the end of the screw-

threaded stud and serves to draw the block outwardly, as hereinafter explained.

In operation, should the engine or any part of the machinery break while a piece of metal is between the rolls and it is desired to release the metal in order to make the repair, the nuts on the screws are loosened and the screws freed from the lugs *g* of the block *f*. A wrench is now applied to the nut *o*, which being rotated will draw the screw and the block to which it is secured outwardly a sufficient distance to cause the upper block to loosen itself from the lower end of the main screw 5 and allow of the full release of the main screw. After the release of the main screw has been accomplished and the breakage repaired which led to the binding of the metal between the rolls the engine may then be started in the same direction without any danger of further breakage, which invariably occurs should it be attempted to reverse the engine.

Although I have specifically described the construction and relative arrangement of the several elements of my invention, I do not desire to be confined to the same, as such changes or modifications may be made as clearly fall within the scope of my invention without departing from the spirit thereof.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a rider or carriage for metal-rolling mills, the combination with the main or body portion having a recess, the sides of which

are provided with vertical slots, blocks seated in said recess one above the other, and having laterally-extending lugs to engage said slots, the lugs on the lower block being of less width than the recesses, said lower block having an inclined face, and means for moving the lower block longitudinally, whereby the upper block is moved vertically, substantially as set forth.

2. In a rider or carriage for metal-rolling mills, the combination with the main or body portion having a recess and vertical slots in its sides, blocks seated in said recess one above the other, the lower block having an inclined under face, and each block having laterally-projecting lugs that project into the slots, the lugs on the lower block being of less width than the slots, set-screws projecting through the main or body portion and engaging the lugs on the lower block, a screw-threaded stud projecting from the lower block, a clamp loosely mounted upon said stud and having its ends engaging the upper block and the face of the main or body portion of the rider or carriage, and a nut on the outer end of the screw-threaded stud for shifting the position of the lower block, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

REGINALD BAILEY.

Witnesses:

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