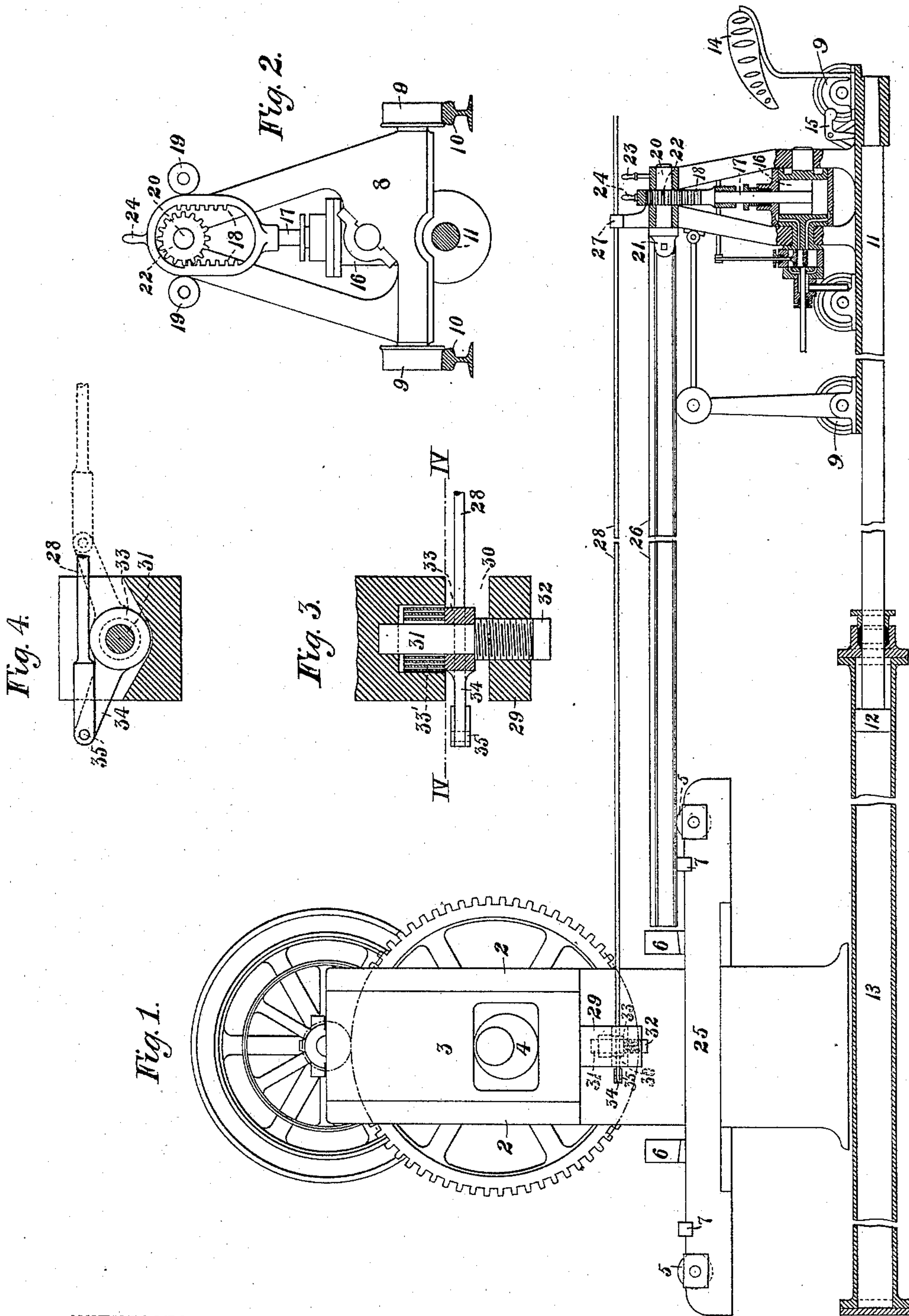


(No Model.)

H. B. A. KEISER.
STRAIGHTENING MACHINE.

No. 489,816.

Patented Jan. 10, 1893.



WITNESSES

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UNITED STATES PATENT OFFICE.

HENRY B. A. KEISER, OF BRADDOCK, PENNSYLVANIA.

STRAIGHTENING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 489,816, dated January 10, 1893.

Application filed April 15, 1892. Serial No. 429,295. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. A. KEISER, of Braddock, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Straightening-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation partly in section of my improved straightening machine. Fig. 2 is an end elevation of a portion of the carriage. Fig. 3 is a vertical section of the press plunger; and Fig. 4 is a horizontal section on the line IV—IV of Fig. 3.

My invention relates to that class of machines wherein rails and bars are aligned and straightened throughout their length. In these machines as heretofore constructed the rail is commonly passed between a series of opposing rolls, but such machines have uniformly been found unsuccessful, as portions of the rail, more especially toward the ends, require a final examination and straightening by hand. Such machines have therefore been discarded, and the method now in use is that of hand straightening, by the use of a press, the force of the blow, and the portion of the rail acted upon being determined entirely by the sight of the operator.

My invention is designed to quicken and cheapen this operation, and to that end it consists in a traveling carriage to one end of which the rail is secured, the carriage being provided with means for turning the rail.

It also consists in a carriage having the above attachments, a seat placed upon the same, and a rod passing from the carriage and connected to the plunger in such a way that the force of the blow may be regulated by the operator sitting upon the carriage.

In the drawings, 2 represents the press-frame, having the usual vertically reciprocating face-plate 3 operated by a cam 4. The bed of the press supports the usual rollers 5, 5, guides 6, 6, and rests 7, 7. Supported in line with the bed is a carriage 8, having wheels 9 moving upon a track 10. Rigidly secured to the lower portion of the carriage-frame is the outer end of a piston-rod 11, which is operated by a piston-head 12 moving in the cylinder 13. Beneath a seat 14 upon the rear

end of the carriage are treadles 15, which connect with the operating valves of the motive cylinder 13 and enable the operator to move the carriage in either direction. A small motive cylinder 16 is supported upon the carriage, at the upper end of whose piston-rod 17 is carried the double rack 18, which is guided in its motion by rollers 19. A shaft 20 carried in stationary bearings upon the frame carries at its front end a forked projection 21, to which the rail is secured, and at its rear end a pinion 22 arranged to engage the double rack 18. A handle 23 operates the valve controlling the cylinder 16, and by the handle 24 the rack may be moved laterally sufficiently to allow the pinion to engage either portion of the rack desired. A roller-stand 25 is carried at the front end of the carriage upon which the rail 26 rests, and in a suitable guide 27 above the rack moves an actuating rod 28.

The plunger 29 of the press has a deep side recess 30 in its lower portion, and through this recess passes the vertical spindle 31 of the gag 32, the lower portion being screw-threaded and engaging corresponding screw-threads in the aperture therefor in the end of the plunger. To the spindle is rigidly secured a collar 33, from which extends the lever 34 pivoted at 35 to the actuating rod 28. It is evident that by moving the rod 28, the gag may be rotated and lowered any desired amount by the screw portion thereof; it being returned to its original position by a spiral spring 33'.

The operation is obvious. The rail being secured to the forked end of the short shaft 20, the operator sits upon the carriage and by the treadles 15 moves the carriage and thereby brings any desired part of the rail beneath the press plunger. The rail is rotated and held in any desired position by the handles 23 and 24, and the stroke of the plunger is nicely regulated to any desired degree by the rod 28, the plunger of the press being actuated continuously. By the use of this device a boy may perform the work which previously required several men, the high parts of the rail or bar as they appear to the eye of the operator being brought under the press and bent down as in hand-straightening. As it is difficult to see the bends in that portion of the rail next to the carriage, I prefer to straighten

the outer half of the rail, it then being removed and the straightening of the remainder done from the other end by a similar machine.

The advantages of the device will be apparent to those skilled in the art. The operation is quickened, cheapened, and as perfect work turned out as in the present slow method, while all parts of the apparatus are under the control of the operator sitting upon the carriage.

Divers variations may be made in the form and arrangements of the parts without departure from my invention, since

What I claim is:—

1. A straightening machine comprising a stationary press, having a reciprocating plunger a traveling carriage to which the rail may be attached, means for moving the same to and from the press and means located upon the carriage for turning the rail or bar to be straightened; substantially as described.

2. A straightening machine comprising a press having a reciprocating plunger, a traveling carriage to which the rail may be attached, a motive cylinder arranged to move the same to and from the press, means upon the carriage for controlling the motive cylinder valves, and means also upon the carriage for turning the rail; substantially as and for the purposes described.

3. A straightening machine, consisting of a press, a carriage to which the rail or bar may be attached, and means located upon the carriage for turning the rail and for regulating the stroke of the press; substantially as described.

4. A straightening machine comprising a press, having an adjustable plunger, a traveling carriage, a connection between the plunger and carriage for regulating the plunger stroke, a motive cylinder located upon the carriage, and connections for turning the bar or rail by said motive cylinder; substantially as described.

5. In a straightening-machine, a press having a plunger, a rotary screw-threaded shaft carrying a gag, a traveling carriage, and a connection between the rotary shaft and the carriage; substantially as described.

6. In a straightening machine, a press, a traveling carriage, a shaft carried thereon having one end arranged for attachment of the rail or bar, and a pinion carried at the other end, a motive cylinder whose piston-rod carries a double rack engaging the pinion, and means for reciprocating the carriage; substantially as and for the purposes described.

7. In a straightening-machine, a press, a traveling carriage having a seat for the operator, a motive cylinder arranged to reciprocate the carriage, treadles upon the carriage for manipulating the cylinder-valves, and means located on the carriage for turning the rail attached thereto; substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 8th day of April, A. D. 1892.

HENRY B. A. KEISER.

Witnesses:

W. B. CORWIN,
H. M. CORWIN.