(No Model.)

J. B. PHILLIPS.

FORK ROLLING MACHINE.

No. 449,058. Patented Mar. 24, 1891.

Fig. 1.

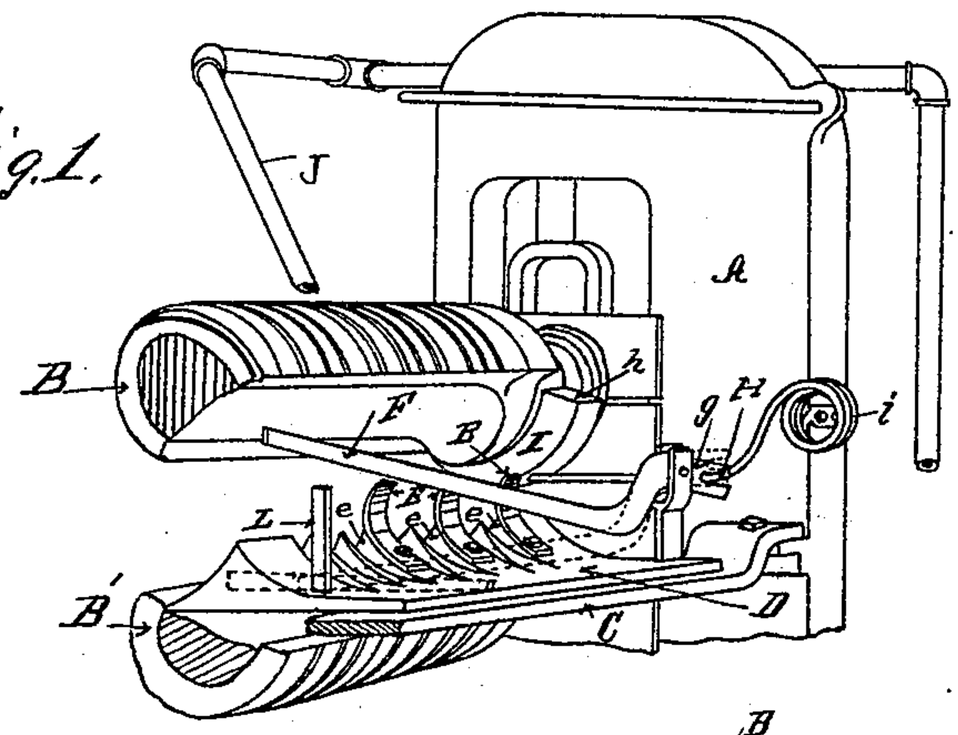


Fig. 2.

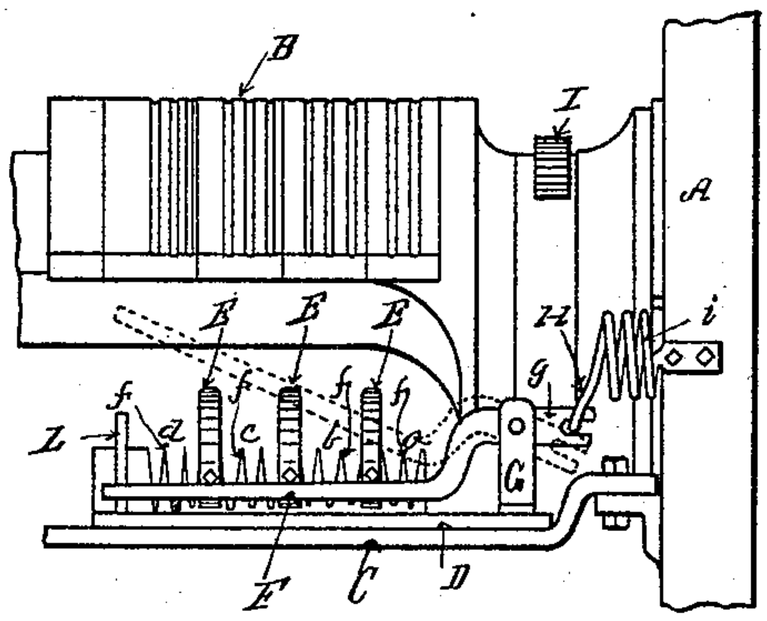
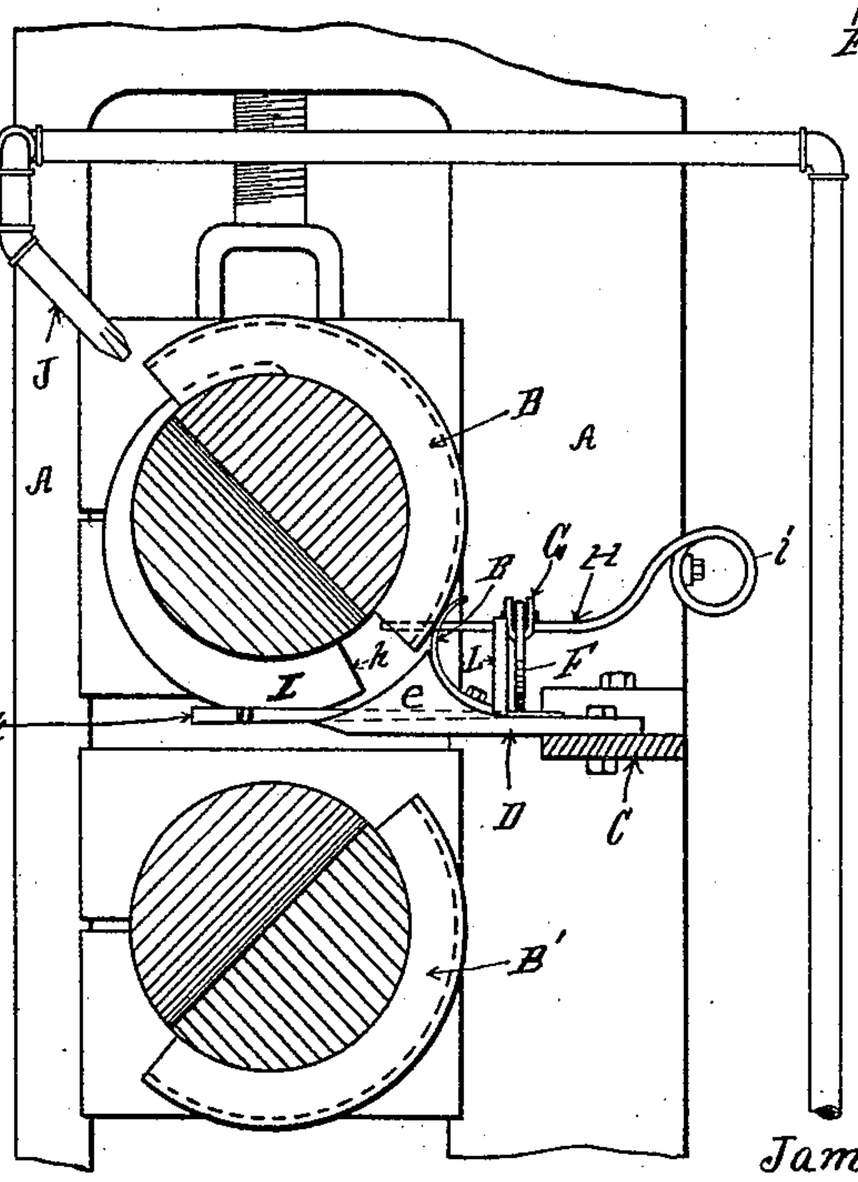


Fig. 3.



Witnesses
F. J. Barrett
A. L. Jackson

Inventor
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By Dodge & Sturgeon
Atty.

UNITED STATES PATENT OFFICE.

JAMES B. PHILLIPS, OF MILES GROVE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO WILLIAM J. DOUGHERTY, OF SAME PLACE.

FORK-ROLLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 449,058, dated March 24, 1891.

Application filed November 28, 1890. Serial No. 372,926. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. PHILLIPS, a citizen of the United States, residing at Miles Grove, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Fork-Rolling Machines; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention consists in the improvements in fork-rolling machines hereinafter set forth and explained, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a section of a fork-rolling machine, showing my improvements thereon. Fig. 2 is a side elevation of a portion of a fork-rolling machine, showing my improvements thereon. Fig. 3 is a vertical cross-section of same.

Like letters refer to like parts in all the figures.

The objects of my invention are, first, to construct a fork-rolling machine with spring-scraper mechanism for striking down upon a fork-tine blank and removing the scale therefrom each time it is passed between the rolls; second, to secure to the division-blocks of the finger-board of a fork-rolling machine curved springs for throwing the blank being rolled off of said division-blocks and prevent it from being caught between the rolls while thereon.

Other features of my invention will appear hereinafter in the specification and claims.

In the construction of my invention shown in the drawings, A is the frame, B B′ the semicircular rolls, and C the plate upon which the finger-board D is secured, which are of ordinary construction.

The finger-board D is divided into sections *a b c d* by means of division-blocks *e*, in the usual manner, and to the rear end of each of the blocks *e* is secured a curved spring E, which projects above the top of the block, so that in case the operator by mistake inserts the blank between the rolls on the top of one of the division-blocks *e* it strikes the spring E and is sprung back so as to be withdrawn by the operator before it is caught by the rolls, thus preventing the blank from being caught between the rolls in such a position as to be spoiled.

At the rear of and adjacent to the fingers *f* and springs E on the finger-board D is a spring-actuated vibrating scraper F, which I preferably pivot in a bearing or fulcrum G at one end of the finger-board D, the short end *g* thereof projecting a short distance beyond the fulcrum G, where it is coupled to a spring-lever H, extending under a cam I, secured, preferably, to the axis of the upper roll B, so that as the roll rotates the cam I operates to depress the spring-lever H and raise the scraper F in time to permit the blank to be inserted, and just before the rolls catch the blank between them the lever H passes off of the square end *h* of the cam I, allowing the lever H to be thrown up by the spring portion *i* thereof, so as to bring the scraper F down upon the blank with a sharp vibratory blow. At the opposite end of the finger-board D from the bearing G, I preferably place a post L, behind which the free end of the scraper F operates to prevent its being drawn toward the fingers *f* by catching on a lump or obstruction on the blank which is being drawn from under it.

In front of and directed between the rolls B and B′ is an air-blast pipe J, through which a blast of air is driven between the rolls B and B′ and between the fingers *f* on the finger-board D. This blast operates to chill to some extent the scale upon the blank being rolled, so that when the vibratory scraper F strikes down upon it the greater part of the scale is removed by the vibration caused by the blow from the scraper F thereon, and the remainder of the scale, if any is removed, by the drawing of the blank from under the scraper. If preferred, however, small jets of water may be used upon the blank in lieu of or in addition to the air-blast, hereinbefore described, for chilling the scale on the blank being rolled, so that the vibratory scraper will readily remove it.

It is not essential to the successful operation of my invention that the scraper mechanism be constructed in the form shown and described, this being but one of the many con-

venient forms of construction which will readily suggest themselves to those skilled in the construction and operation of fork-rolling machines.

Having thus fully described my invention, so as to enable others to construct and operate the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, with the rolls and finger-board of a fork-rolling machine, of a cam and spring-actuated scraper at the rear of the fingers on the finger-board, substantially as and for the purpose set forth.

2. The combination, in a fork-rolling machine, of a vibrating scraper at the rear of the fingers on the finger-board, with cam mechanism for raising said scraper at each revolution of the rolls, and spring mechanism for actuating said scraper in its downward movement, substantially as and for the purpose set forth.

3. The combination, in a fork-rolling machine, of an air-blast forcing a current of air between the rolls, and a vibrating scraper striking down upon the blank and finger-board behind the fingers on said finger-board, with cam mechanism for raising said scraper at each revolution of the rolls, and spring mechanism for actuating said scraper in its downward movement, substantially as and for the purpose set forth.

4. The combination, in a fork-rolling machine, of the semicircular rolls B and B′, a cam I, secured to the axle of the roll B, a vibrating scraper F, mounted in a bearing G at one end of the finger-board D, with the spring-actuated arm H, coupled to the end *g* of said scraper F and engaging with the cam I on the roll B, and the air-blast pipe J, substantially as and for the purpose set forth.

5. The combination, with the division-blocks *e* of the finger-board of a fork-rolling machine, of curved springs E, secured thereto, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. PHILLIPS.

Witnesses:
A. DENIO,
WM. P. HAYES.