

(No Model.)

J. HOENIG.

MACHINE FOR REDUCING PILES PREPARATORY TO ROLLING.

No. 490,021.

Patented Jan. 17, 1893.

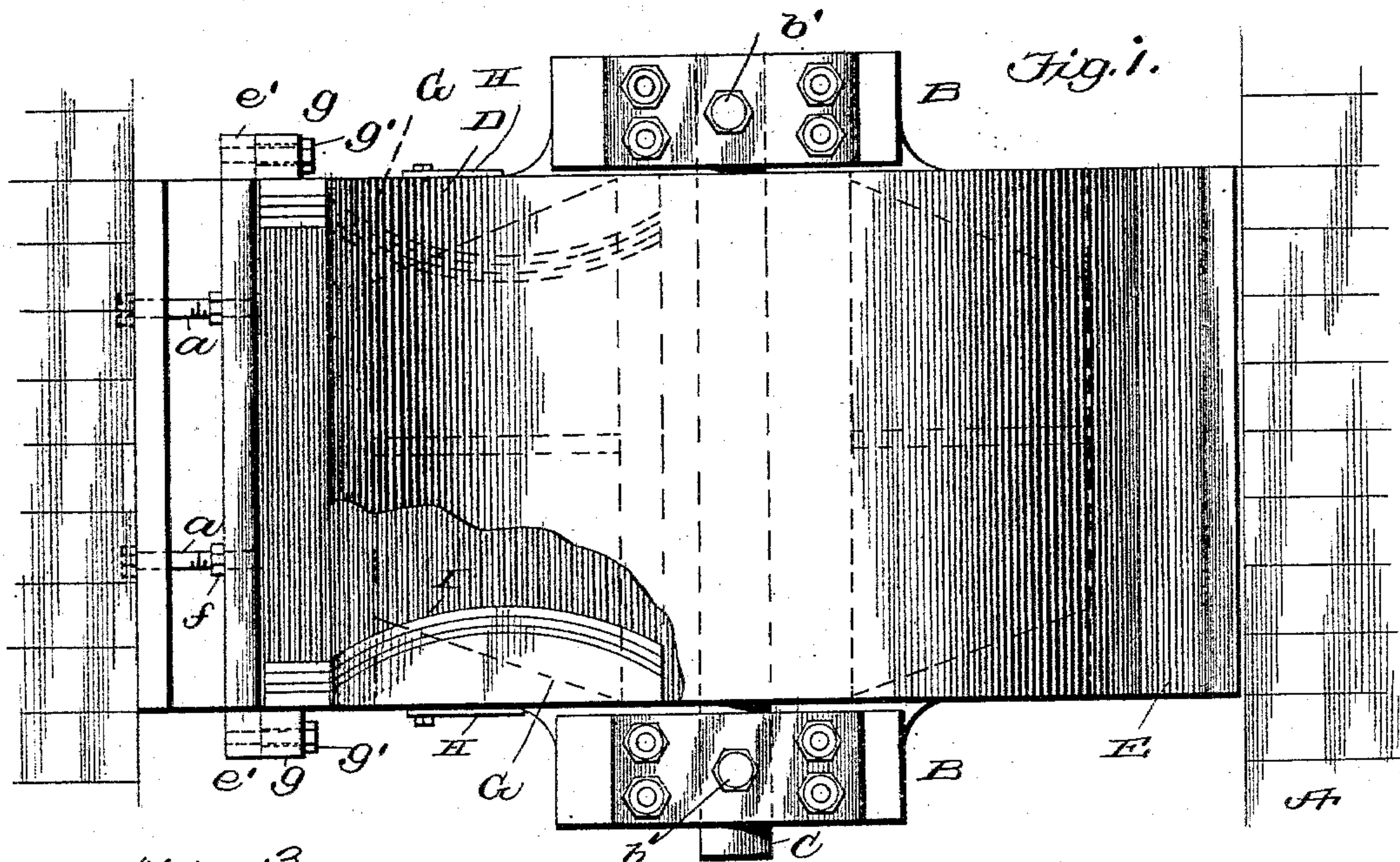


Fig. 3.

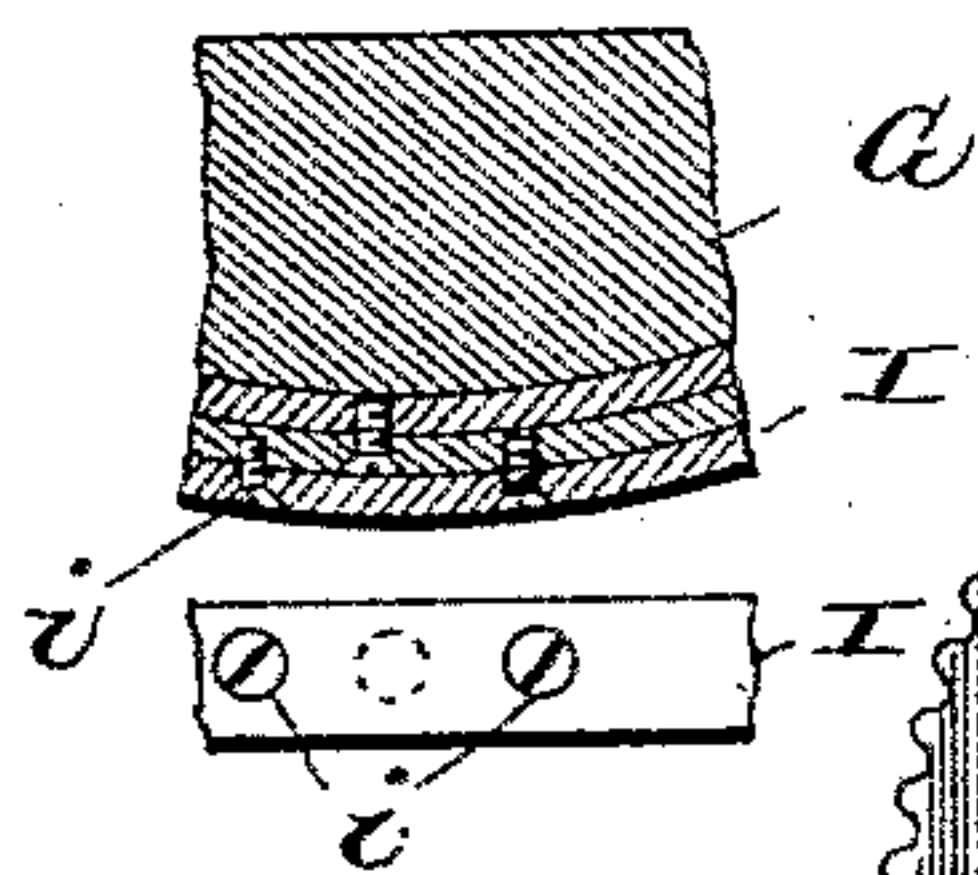
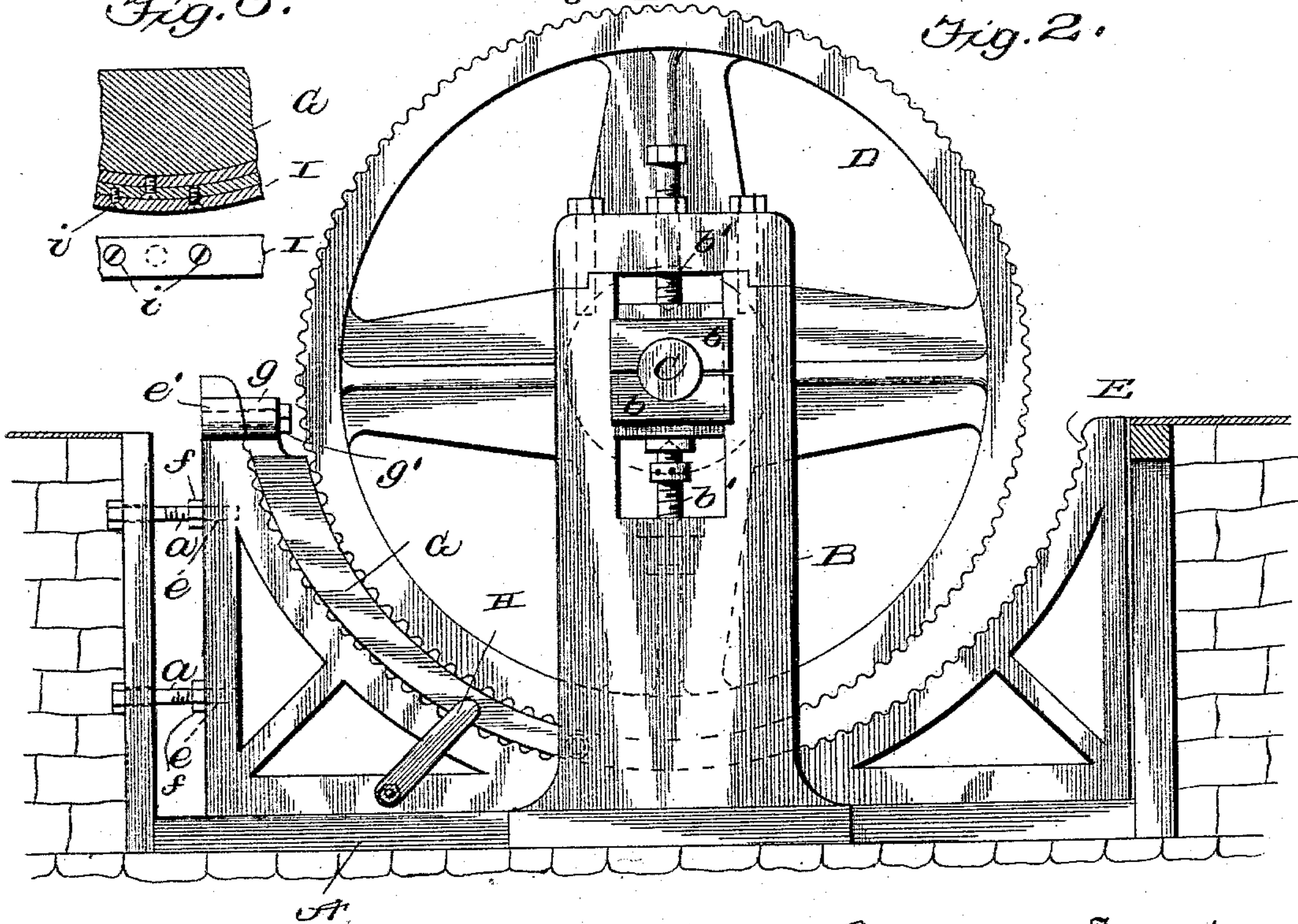


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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MACHINE FOR REDUCING PILES PREPARATORY TO ROLLING.

SPECIFICATION forming part of Letters Patent No. 490,021, dated January 17, 1893.

Application filed March 2, 1892. Serial No. 423,475. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH HOENIG, a citizen of the United States, residing at Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Machines for Reducing Piles Preparatory to Rolling; 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.

My invention relates to certain new and useful improvements in machines for reducing piles preparatory to rolling the same and has for its object to produce a machine whereby the heated piles of varying sizes may be rapidly reduced to bars or plates of the proportions required preparatory to passing the same through the rolling mill, and it consists in the novel construction and arrangement of parts hereinafter fully described and afterward definitely pointed out in the claims, due reference being had to the accompanying drawings forming a part of this specification, wherein

Figure 1 is a top plan view of my improved machine; Fig. 2 a side elevation thereof, and Fig. 3 a detail view showing a portion of one of the jaws.

Referring to said drawings the letter A indicates the bed of the machine which may be constructed in any suitable manner. Rising from each side of said bed are slotted uprights B, B, in which are mounted bearing blocks b, b, made vertically adjustable by means of the adjusting screw b', b'. Within said bearing blocks is mounted a shaft C on which is rigidly fixed a roll D.

E indicates a concave the inner concave face of which is formed on the arc of a circle of greater diameter than the diameter of the roll D. Said concave E rests upon the bed A beneath the roll D and is longitudinally adjusted thereon being held up to its work by means of threaded bolts a, which are rigidly secured in the bed and enter sockets e formed in one end of the frame of the concave E and nuts f which engage said screw-threaded bolts and bear against the end of the said concave frame and prevent the concave from being

forced back by the pressure of the metal as it passes between the roll and concave.

G, G, indicate jaws each provided at its upper end with a laterally projecting perforated lug g, through which passes a bolt g' by means of which the jaw is pivotally secured to a lug e' projecting from the upper side of the front end of the concave E, and against the lower end of the jaw bears one end of a stiff spring H, the other end of which is secured to the frame of the concave.

It will be understood that there are two jaws G, one being located upon either side of the concave, said jaws being curved and tapering from top to bottom to correspond to the space between the roll and concave. The inner edges of said jaws are curved as shown in Fig. 1 and for the purpose hereinafter made apparent and are provided with removable face-plates I curved and tapered to correspond to the shape of the jaws and secured one to another and to the jaws by machine screws i. By adding or removing one or more of said plates I the space between the jaws may be contracted or enlarged. Both the roll D and concave E are corrugated or ribbed transversely for the purpose of insuring the proper feeding of the piles between the concave and roll, but one or both may be made plane if so desired.

In operating my machine the roll D is first vertically adjusted by means of the adjusting screws b', b', to the proper height to afford the desired space between the roll and the center of the concave. The concave is next adjusted longitudinally upon its bed to bring the concave and roll in their proper relative positions to suit the size of the piles designed to be fed in the machine and to properly effect the reduction of said piles to the desired size. The proper adjustments having been obtained and power applied to the shaft carrying the roll the heated piles are fed in the front end of the machine between the roll and concave, the metal being carried around with the roll and gradually compressed or reduced in thickness as the space between the roll and concave becomes contracted. At the same time, owing to the curved inner edges of the jaws G, G, the space

between said jaws is gradually decreased, thus compressing the metal in a lateral direction which issues from the rear end of the machine in the shape of an elongated bar or plate, the space between the rear end of the concave and roll gradually increasing from the center of the roll to the rear end of the concave, thus relieving the pressure upon the metal and facilitating its delivery from the machine.

Should a pile containing too great a mass of metal be fed to the machine, which would tend to choke the same or break some of parts, the jaws G will swing outward upon the pivots *g'* against the action of the springs H and relieve the pressure upon the metal, while normally said springs will exert sufficient force upon the jaws to compress the metal in a lateral direction to reduce the same to the proper width. If, in feeding piles of comparatively small size, it be found that the space between the jaws be too great to properly shape the metal, one or more plates I, corresponding in shape to the inner edges of the jaws, may be bolted to said jaws, as before described, thus contracting the space between said jaws.

By means of the machine above described the piles may be taken directly from the furnace, reduced to plates or bars of the desired size, and with out re-heating, passed directly through the train of the rolling mill, saving much time and labor and the necessity of re-heating, and producing from piles of varying sizes bars or plates of a size and shape suited to the train of rolls employed in the mill, whereby but one such train is needed.

Having described my invention what I claim is:

1. In a machine for reducing piles, the combination with a roll and concave, of pivoted, spring actuated jaws having curved inner edges disposed between said roll and concave

and on each side of the latter, and plates curved to correspond to the curved inner edges of said jaws and detachably secured thereto, substantially as shown and described.

2. In a machine for reducing piles, the combination with a bed and a roll mounted in bearings thereon, of a concave longitudinally adjustable on said bed, said concave being formed on the arc of a circle of greater diameter than the diameter of the roll, and spring actuated jaws pivoted to said concave and disposed between said roll and concave and on each side of the latter, substantially as described.

3. In a machine for reducing piles, the combination with the bed and a roll mounted in bearings vertically adjustable thereon, of a concave longitudinally adjustable on said bed, said concave being formed on the arc of a circle of greater diameter than the diameter of the roll, and curved spring actuated jaws tapering from top to bottom pivoted to said concave and disposed between the roll and concave and on each side of the latter, substantially as described.

4. In combination with the bed A and roll D mounted in bearings vertically adjustable thereon, of the concave E longitudinally adjustable on said bed, the threaded bolts *a* rigidly fixed in one end of said bed and provided with adjusting nuts *f*, the curved, tapering jaws G pivoted at their upper ends to each side of the concave and disposed between said concave and roll, and the springs H secured to the concave and bearing against the jaws substantially as shown and described.

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

JOSEPH HOENIG.

Witnesses:

LAWRENCE J. MCPARLIN,
LEWIS C. WILLIAMSON.