

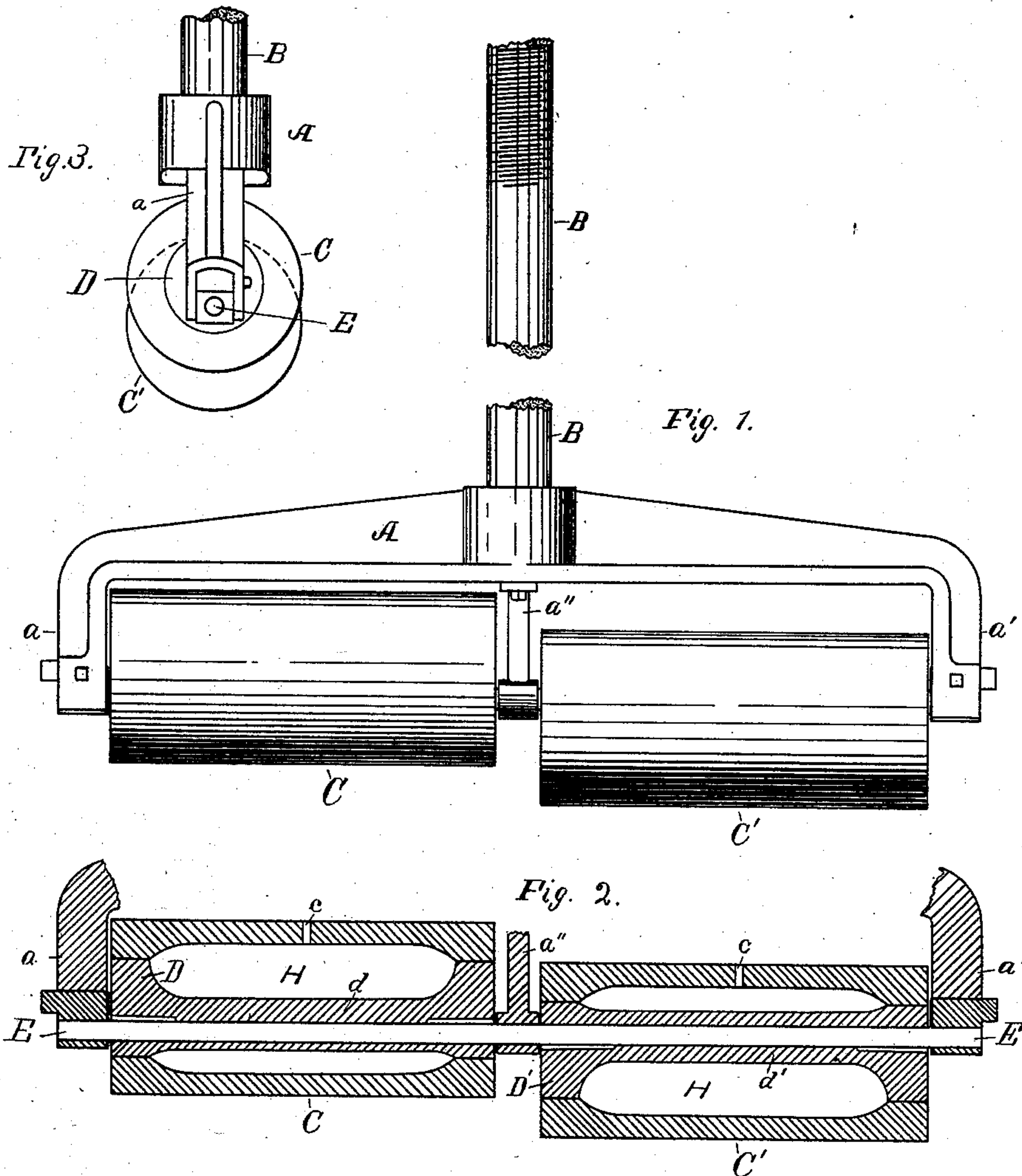
(No Model.)

F. O. KILGORE.

AUTOMATICALLY ADJUSTABLE PRESS ROLL FOR GANG SAW MILLS.

No. 389,816.

Patented Sept. 18, 1888.



Witnesses

John Morris.
Emma F. Elmore.

Inventor

Frederick O. Kilgore

By his Attorney

Jas. F. Williamson

UNITED STATES PATENT OFFICE.

FREDERICK O. KILGORE, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO JAMES F. WILLIAMSON, OF SAME PLACE.

AUTOMATICALLY-ADJUSTABLE PRESS-ROLL FOR GANG-SAW MILLS.

SPECIFICATION forming part of Letters Patent No. 389,816, dated September 18, 1888.

Application filed August 30, 1887. Serial No. 248,244. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK O. KILGORE, a citizen of the United States, and a resident of the city of Minneapolis, county of Hennepin, State of Minnesota, have invented a certain new and useful Automatically-Adjustable Press-Roll for Gang-Saw Mills, of which the following is a specification, reference being had to the accompanying drawings.

In gang-saw mills there are used what are known as "pressure-rolls" or "binders" to hold the logs firmly in position while they are being sawed. Hitherto a single straight roll, one on each side of the gang of saws, has generally been used for the purpose. This answers well enough for a single tier of small logs, but no more. The prevailing class of logs are of such a size that two tiers could be held on the feed-rolls and sawed by the gang as easily as one if any means were at hand to properly bind the logs. This cannot be done with the single straight roll. Two logs lying side by side, or two tiers of logs, will rarely, if ever, be of exactly the same size. Their top surfaces will invariably be in different horizontal planes; hence a single roll cannot possibly bind them. The capacity of the gang saw has, therefore, been limited to one log or one tier of logs at a time.

The object of my invention is to overcome this defect and double the work done in any given unit of time by providing an automatically-adjustable binder which will hold two or more tiers of logs on the feed-rolls at one time.

My invention consists of the construction hereinafter fully described and particularly claimed.

In the drawings, like letters referring to like parts, Figure 1 is a front elevation of the roll-yoke, such as is in common use for holding the pressure-roll, showing my invention in working position. Fig. 2 is a longitudinal vertical section of the same, the upper part of the yoke being broken away. Fig. 3 is an end view of the rolls and yoke.

A is the roll-yoke, provided with the end and central bearing-arms, a a' a'' .

B is the screw-headed connecting rod or stem, rigidly attached below to the center of said yoke, and adapted, with the addition of

mechanism not shown, to effect the vertical adjustment of the yoke and its pressure-rolls.

C C' are my pressure-rolls or binders, which are formed hollow and are loosely mounted upon the eccentrics D D'. These eccentrics are in turn mounted upon and rigidly secured to the common shaft E, which rests in suitable bearings in the extremities of the arms a a' a'' , two eccentrics being separated by the central bearing. These eccentrics are keyed to the shaft E one hundred and eighty degrees apart, or directly opposite each other. They are cut away between their opposite extremities, leaving the reduced central cores, d and d' , connecting the same; or they may be regarded as enlarged eccentric-heads on the opposite ends of hollow spindles which are mounted on a common shaft and keyed to the same in such relative positions as to bring the pairs of eccentric-heads one hundred and eighty degrees apart. The rolls C C' are thickened up at their ends, where they have their bearings on the eccentrics D D'. The thickness of the shell of the rolls C C' at their ends will vary with and be determined by the degree of eccentricity or throw given to the eccentrics D D'. Through the periphery of the rollers extend oil-holes e , provided with suitable plugs. The space H between the cores of the eccentrics and the shells of the rollers is adapted to serve as a suitable reservoir of oil, supplying oil as it is required to the various bearings. This feature of the construction is of material importance. A large quantity of oil can be placed in this reservoir, and thereafter, until the supply is exhausted, the bearing between the eccentrics and the end of the press-rolls is automatically supplied just as required. A single filling of oil will last for six months or more. These are a very difficult class of bearings to oil—two revolving bodies, one mounted on the other—and require a great deal of oil. My construction does the work and renders the supply automatic.

The operation is as follows: Two tiers of logs are placed on the feed-rolls, with a small space between them. As the yoke A is let down, the lowest roll will strike its tier of logs first and will turn, carrying with it its eccentric and shaft, until the other roll is brought

down tightly onto its tier of logs. Thereafter both rollers will turn on their eccentrics. In other words, the rolls of necessity take the different levels demanded to bring equality of pressure on both tiers of logs. If these be on the same level or a single large log be run through on the center of the feed-rolls, the press-rollers will be exactly on the same level. Within the limit of the degree of eccentricity or eccentric throw the rolls will adjust themselves to the different levels of the logs, no difference how great that may be. The range of adjustment may be varied at will by varying the size of the rollers and eccentrics.

By actual and continuous usage in a large mill I have demonstrated the practical character and high efficiency of this invention. It simply doubles the capacity of the gang saw mill.

The construction whereby the device is made self-oiling is also an important feature.

What I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. The combination, with a suitable yoke, of a shaft mounted in bearings on said yoke, two independent pairs of eccentrics rigidly secured to said shaft one hundred and eighty degrees apart, and a pair of press-rolls loosely mounted, one on each pair of eccentrics, substantially as described.

2. The combination, with a suitable yoke, of a shaft mounted in bearings on said yoke, a pair of hollow spindles provided each with enlarged eccentric-heads on its opposite ex-

tremities mounted on said shaft and rigidly secured to the same in such position as to bring the pairs of eccentrics one hundred and eighty degrees apart, and a pair of hollow press-rolls loosely mounted one on each pair of said eccentrics, substantially as described.

3. The combination, with a suitable yoke, of a shaft mounted in bearings on said yoke, a hollow spindle mounted on said shaft and provided with enlarged eccentric-heads on its opposite ends, a hollow press-roll loosely mounted on said eccentric-heads, the space therefor used between the periphery of the roll, the spindle, and the eccentric-heads being adapted to constitute an oil-reservoir, and means for introducing oil into said reservoir, substantially as described.

4. In combination, the yoke A, provided with the bearing-arms a a' a'' , the shaft E, journaled in said bearings, the double-headed eccentrics D D' on the ends of reduced cores d d' , mounted upon and keyed to the opposite sides of said shaft and separated by the central bearing, a'' , rolls C C', loosely mounted on said eccentrics and reduced or cut away on their interior, except at their extremities, and means for introducing oil into the space or reservoir thus formed between said eccentric-cores and rolls, substantially as and for the purpose set forth.

FREDERICK O. KILGORE.

In presence of—

JAS. F. WILLIAMSON,
EMMA F. ELMORE.