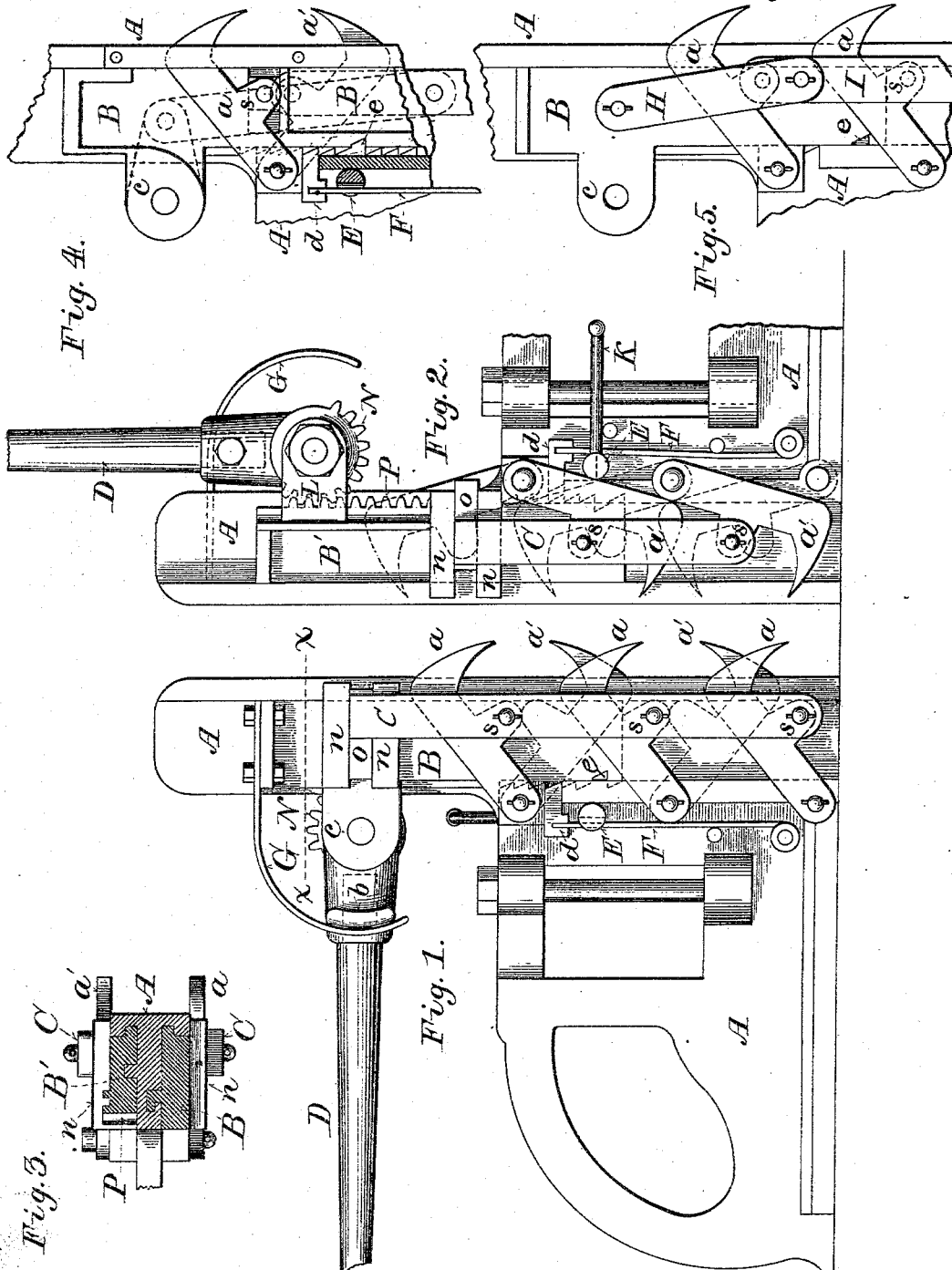


(No Model.)

W. GOWEN.
SAW MILL DOG.

No. 301,715.

Patented July 8, 1884.



Witnesses:
Chas. R. Coe.
Leopold Haunmel.

Inventor,
William Gowen,
per C. H. Rottum
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM GOWEN, OF WAUSAU, WISCONSIN.

SAW-MILL DOG.

SPECIFICATION forming part of Letters Patent No. 301,715, dated July 8, 1884.

Application filed March 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GOWEN, of Wausau, in the county of Marathon and State of Wisconsin, have invented certain new and useful Improvements in Saw-Mill Dogs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to saw-mill dogs. It consists, essentially, of two sets of dogs pivoted to the standard and connected with two sliding bars operated by a sector-lever, one set of dogs working up and the other down. Its objects are, first, a dog which will effectually grasp a log, cant, or board and hold the same firmly against the face of the standard; and, second, economy of power in its operation.

In the accompanying drawings, like letters refer to the same parts in each figure.

Figure 1 is a side elevation of a knee, showing the downward-working set of dogs. Fig. 2 is an elevation of the reverse side of the knee, showing the upward-working set of dogs. Fig. 3 is a horizontal section of the knee and sliding bars on the line *x x*, Fig. 1. Figs. 4 and 5 show modifications in the method of connecting the dogs with the sliding bars.

A is a saw-mill standard or knee, of any suitable construction for use with dogs of this class. It is formed with channels on each side to receive the vertically-sliding bars B B', which are tongued and grooved, as shown in Fig. 3, to guide and hold them in place.

a a a are caliper-shaped dogs pivoted to the standard A, just to the rear of the sliding bar B, so as to work downward, as shown in Fig. 1. *a' a'* are like dogs pivoted to the opposite side of the standard A, just to the rear of the sliding bar B', in such manner as to work upward.

D is a sector-lever, pivoted at the center of its pinion N to the ear *c*, projecting rearwardly from the upper end of sliding bar B, which operates the downwardly-working dogs, while the cog-toothed sector-pinion N meshes with the

rack P, formed at the upper rear edge of the sliding bar B', which operates the upwardly-working dogs. Just in front of rack P, I form a vertical groove in the bar B', to receive an inwardly-turned flange or lip on plate L, which is perforated at the rear to receive the axis of the lever D and pinion N, and serves as a support for said lever and pinion, and as an additional guide for the sliding bar B'.

To the top of bar B is secured the spring G, so curved as to press against a lug, *b*, formed on the shank of lever D, and by means of friction hold said lever in any desired position.

The dogs *a a' a'* are formed with ears *s s*, to which are pivoted the vertical dog-bars C C on straight lines connecting the points and pivots of said dogs.

The sliding bars B B' are provided near the top (sufficiently high to be cleared by the upper dog on each side) with the transverse lugs *n n*, between which are inserted the transverse lugs *o o*, formed at the top of dog-bars C C.

d d are stops or catches set into grooves formed in the sides of standard A and notched to receive the ends of the vertical actuating-springs F F, by which they are caused to engage with notches cut in the rear edges of the sliding bars B B', and thereby lock the dogs in any desired position for logs and cants, while deeper notches *e*, as shown in Figs. 1 and 4, are cut for locking the dogs in the proper position for the last board.

A round trip-bar, E, passes through the standard A, just in front of the springs F, and is cut away on one side of each of its projecting ends to receive said springs and permit the advance of the catches *d d*, to engage with the notches cut in sliding bars B B', as shown in Figs. 1 and 4. A crank, K, serves to turn the trip-bar E and withdraw the catches *d d* from contact with the notched bars B B'.

I do not wish to confine myself to the exact means shown in Figs. 1 and 2 of connecting the dogs with the sliding bars B and B', although I prefer the construction there shown. I may extend the bars B B' below, and form transverse slots or channels therein to receive small sliding blocks *g*, to which each of the dogs *a a'* is directly pivoted, as shown in Fig.

4; or I may connect each set of dogs by bars I, which are in turn connected with sliding bars B B' by the pivoted bars H, as shown in Fig. 5. In place of the sliding bar B', operated by a rack and pinion, I may connect the upward-working dogs a' a' by a dog-bar, which is in turn connected by a bar pivoted thereto with an elbow formed on lever D, as shown by dotted lines in Fig. 4.

I have briefly described the various modifications above enumerated to illustrate more fully the scope of my invention. I do not, however, wish to make claim thereto in connection herewith, but reserve them for separate applications for Letters Patent.

I may also, without departure from the principle of my invention, mount the dogs a a', with sliding bars B B', upon dog-plates, to be attached to any form of standard or knee capable of use with attachment-dogs.

In dogs of this class as heretofore constructed the actuating-lever is pivoted to the standard, so that both sets of dogs are operated simultaneously, and each pair caused to meet and pass each other at a certain fixed point in front of the standard, whereas in my improved dog the lever D, being pivoted to one sliding bar B, and its cog-toothed sector N engaging with a rack, P, upon the other sliding bar B', has a traveling pivotal connection with the standard, whereby each set of dogs is operated independently of the other, until one set meets with an obstruction, when the power exerted upon that set will react upon and assist the operation of the other set. No obstruction being presented to the dogs, the downwardly-working set will descend when the lever D is depressed until they reach the lower limit of their travel, with their points in the same horizontal line with their pivots. The upwardly-working set will then be raised by said lever till they, in like manner, reach the upper limit of their travel. When the lever D is raised, the upwardly-working set of dogs a' a' will first be drawn behind the face of the standard, when said lever will operate upon the downwardly-working set of dogs a a, retracting them also in like manner. By this arrangement also each pair of dogs working together are caused to meet and pass each other in front of the face of the standard at some variable point determined by the resistance which they meet.

In practical operation, when the lever is depressed, the downwardly-working set of dogs a a is carried down by gravitation till they meet the log, cant, or board to be grasped, when the power exerted upon lever D to force them into the log or cant will react through the sliding bars B B' and their connections with said lever upon the upwardly-working dogs a a and cause them to engage also with the log or cant, the stops d d preventing either set from being withdrawn from engagement therewith. To withdraw the logs and release the log or cant, the stops d d are retracted by

means of the crank K and trip-bar E and the lever D raised to its upright position. To dog the last board, the lever D is brought to its upright position, and the dogs thereby drawn back of the face of the standard. The stops d d are then released and the lever depressed till said stops engage with the notches e, thereby locking both sets of dogs in the proper position—that is, with their points protruding a short distance in advance of the standard.

I claim—

1. The combination, in a saw-mill dog, of two sets of dogs pivoted to the standard or dog-plate, one set working up and the other set working down, the vertically-sliding bars B B', connected with said dogs, and the sector-lever D, pivoted to one of said sliding bars, and engaging with a rack on the other, substantially as and for the purposes set forth.

2. In a saw-mill dog, the combination, with a standard, A, of the downwardly-working dogs a a, the upwardly-working dogs a' a', sliding bars B B', lever D, pivoted to one of said sliding bars, and provided with the cog-toothed sector N, which engages with a rack on the other sliding bar, and dog-bars C C, connecting said dogs, and provided with lugs o o, which slide in transverse slots or grooves in said sliding bars B B', substantially as and for the purposes set forth.

3. The combination, in a saw-mill dog, of a standard, A, the vertically-sliding bars B B', the downwardly-working dogs a a, pivoted to the standard, and connected with the sliding bar B, the upwardly-working set of dogs a' a', also pivoted to the standard, and connected with the sliding bar B', and lever D, pivoted to one of said sliding bars and traveling therewith, and connected with the other sliding bar, substantially as and for the purposes set forth.

4. In a saw-mill dog, the combination of the sliding bars B B', provided with racks or notches in their rear edges, the two sets of dogs a a and a' a', pivoted to the standard, one set connected with one of said sliding bars and working down, and the other set connected with the other sliding bar and working up, lever D, connected with each of said sliding bars, and the spring-catches d d, which engage with the racks or notches in said sliding bars, substantially as and for the purposes set forth.

5. The combination, in a saw-mill dog, of the dogs a a a', sliding bars B B', connected therewith, and provided with a series of notches in their rear edges, lever D, pivoted to one sliding bar, and provided with cog-toothed sector N, which engages with rack P on the other sliding bar, stops d d, springs F F, and the trip-bar E, substantially as and for the purposes set forth.

6. The combination, in a saw-mill dog, of two sets of dogs, a a and a' a', pivoted to the standard, and working in opposite directions,

sliding bars B B', each provided at its rear
edge with a notch, *e*, lever D, pivoted to one
of said sliding bars and connected with the
other, and spring-catches *d d*, which engage
5 with said notches and lock both sets of dogs,
with their points projecting a short distance
in advance of the face of the standard, substan-
tially as and for the purposes set forth.

In testimony that I claim the foregoing as
my own I affix my signature in presence of two 10
witnesses.

WILLIAM GOWEN.

Witnesses:

CHAS. L. GOSS,
LEOPOLD HAMMEL.