F. A. Wolff,

Circular Saw,

No. 12,843. Patented May 8, 1855.

Fig. 1

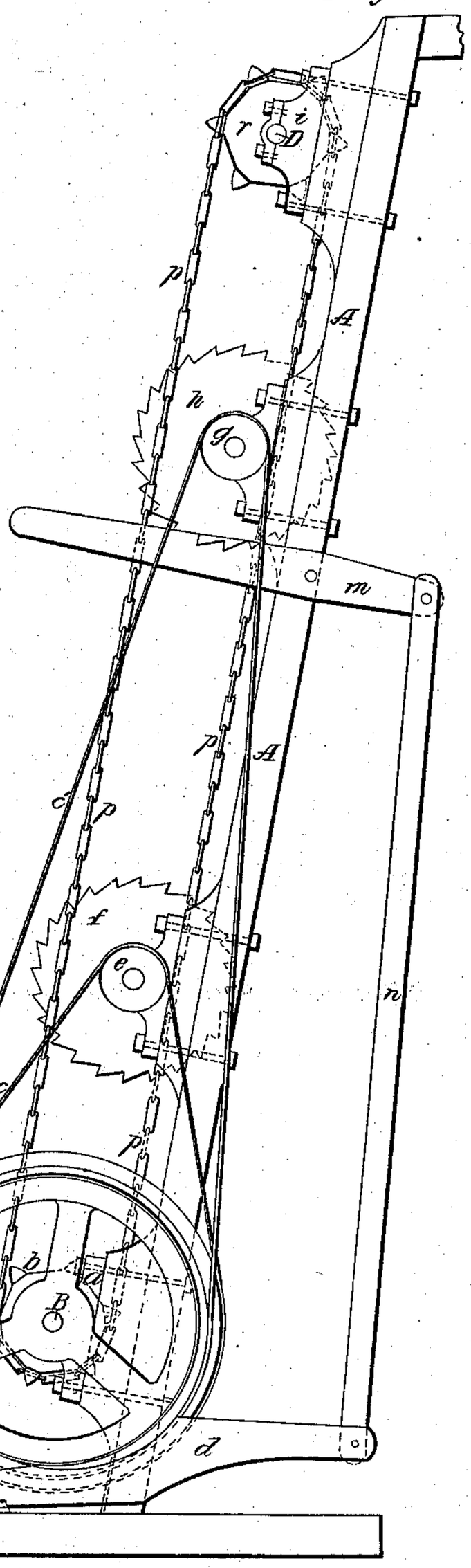
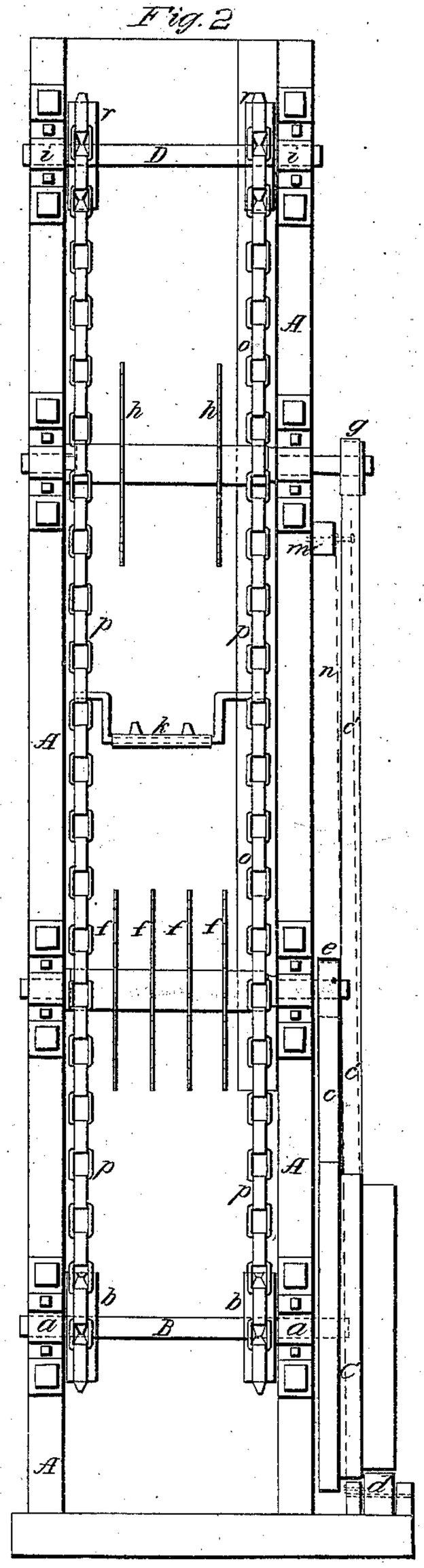


Fig. 2



UNITED STATES PATENT OFFICE.

FRANCIS A. WOLFF, OF RIPLEY, MISSISSIPPI.

METHOD OF SAWING A LOG BY ITS OWN WEIGHT.

Specification of Letters Patent No. 12,843, dated May 8, 1855.

To all whom it may concern:

Be it known that I, FRANCIS A. WOLFF, of Ripley, in the county of Tippah and State of Mississippi, have invented a new and useful Improvement in Sawmills; and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, which forms part of this specification, and in which—

Figure 1, represents a side elevation of the mill, and Fig. 2, a front elevation.

The same letters of reference occurring on both figures indicate corresponding parts.

My invention consists in an arrangement of machinery, whereby the weight of one or more logs of timber, when attached to an endless chain or chains, is made to propel a gang of circular saws, which saw the logs thus attached, whilst descending a bluff from the highlands, to the lowlands, and is particularly adapted to sections of country where these bluffs are common.

In the accompanying drawing (A) represents a framing, erected on the side of the bluff, and leaning against it at an angle of elevation of about 75 or 80 degrees, at a convenient distance from the bottom of this framing, is a horizontal shaft (B), supported in journal boxes (*a*, *a*,) secured to the frame (A); fast on this shaft are two chain wheels (*b*, *b*,) between the journals, one near each, they are made with teeth or prongs, which enter every alternate link of the chain, the intermediate links being flat, rest upon the part of the periphery of the wheel between the prongs; at one end of this shaft, outside of the journal, is a large band wheel, sufficiently wide on the face for the two bands (*c*, *c'*,) to run on it, side by side, and a further breadth of the same or smaller diameter, for the friction brake (*d*) to bear against, for the purpose of stopping the saws at pleasure; the band (*c*) passes over a pulley (*e*) on the axis of a gang of saws (*f f*), fixed at suitable distances apart, to saw the log into boards of the desired thickness; the band (*c'*) extends over the pulley (*g*), on the axis of a pair of saws (*h*, *h*), set at about the same distance apart as the two outer ones in the gang before alluded to; above these saws at the upper end of the framing (A), is another horizontal shaft (D), also supported in journal boxes (*i*, *i*). Secured to the frame, and likewise having two chain wheels (*r*, *r*,) fast on it, corresponding, and in line, with those on the shaft (B), around these chain wheels on the two shafts (B, D,) are two endless chains (*p*), to which the logs are attached by suitable dogs (*k*), suspended in the links thereof.

(*m*) is a lever and (*n*), a connecting rod, for operating the brake (*d*) when it is desired to stop the saws.

The back of the framing (A) between the bluff and the saws, is planked up to form a bearing for the logs to slide against in their descent; between the frame and the saws at one side, is a guide or gage (*o*) to guide the log in a direct line to the saws, and against which the logs incline, by a slight inclination of the chains toward that side, or they may be borne against it by a spring and friction rollers, on the opposite side. If found in practice that a single driving wheel would have to be inconveniently large, to give sufficient speed to the saws, a countershaft may be used, with a pulley and wheel on it of such size as may be found necessary, to give the required speed.

In operating this mill the log must be first slightly slabbed on one side to prevent its rolling on the ways, it is then lowered down in any convenient manner, till the top end of it is about level with the upper chain wheels, it is then secured to the endless chains by the dog (*k*), near the top, its weight now being borne by the endless chains (*p*, *p*,) puts the saws in motion, in descending, the upper saws (*h*, *h*,) take a slab off each side; when the dog by which it is held comes nearly down to the saws, another dog is attached below, and the weight taken off the upper one, so that it may be removed; as soon as the log is clear of the upper saws the mill is stopped by the friction brake (*d*) applied to the wheel; the log is then turned on its side, and secured at its upper end to the chains as before, and another log attached above as at first, and the saws again put in motion; the lower log is then ripped into boards by the gang of saws (*f*, *f*,) while the upper log is being slabbed on two sides, as in the first case. When the saws are about halfway through the log, it may be supported by running a straight bar of iron through the links of the chains, beneath the log, and the dog above the saws removed, so that the weight of the boards remains on the chains, to assist in driving the saws until they reach the lower chain wheels, when the carrying bar is drawn

from under them, in passing around the chain wheels.

Having thus described my invention, I do not claim the principle of sawing the timber by machinery driven by the weight of the log in itself, but

What I claim as new and desire to secure by Letters Patent, is:

The method herein described of making the weight of a log or logs of timber propel the saws which saw them, by suspending them on endless chains, working around chain wheels, which drive the saws, substantially as set forth.

In testimony whereof, I have hereunto subscribed my name this 15th day of January 1855.

FRANCIS A. WOLFF.

Witnesses:
M. Edw. Gourand,
Wm. M. Smith.