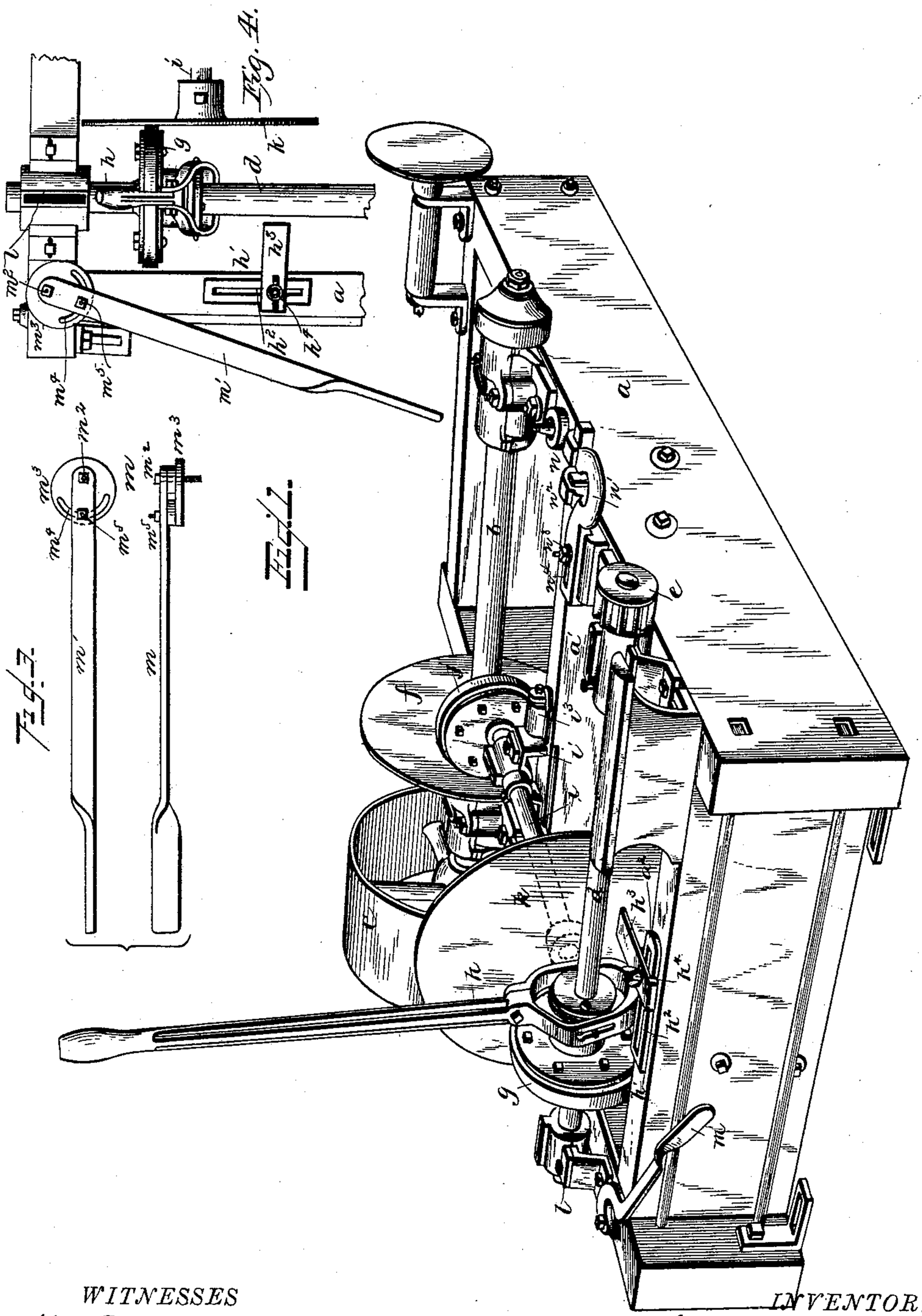
(No Model.) 2 Sheets—Sheet 1.

# A. A. DE LOACH.

## SAW MILL FEED.

No. 434,626. Patented Aug. 19, 1890.



WITNESSES
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(No Model.) 2 Sheets—Sheet 2.

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## SAW MILL FEED.

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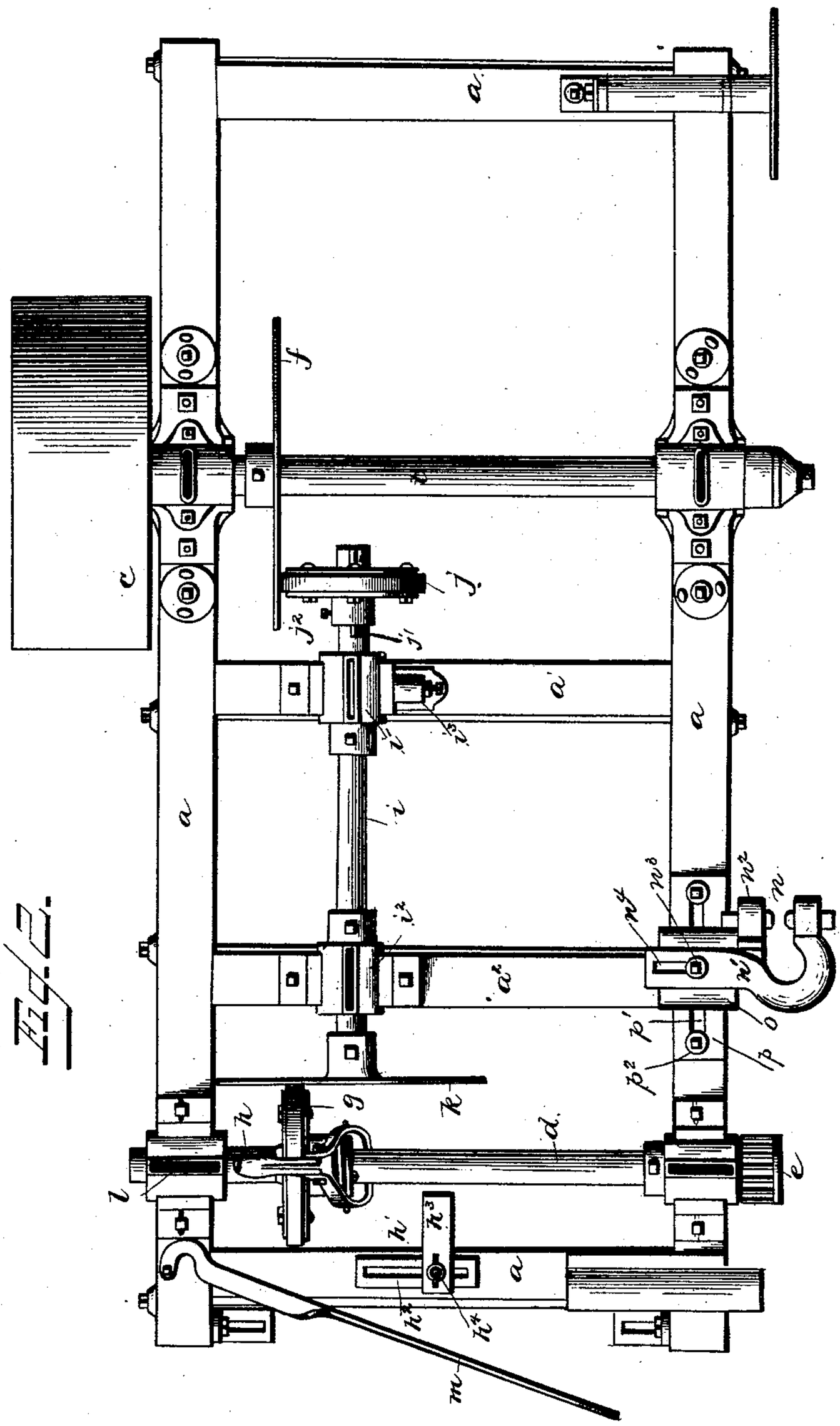
Fig. 2.




WITNESSES

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# UNITED STATES PATENT OFFICE.

ALONZO A. DE LOACH, OF ATLANTA, GEORGIA.

## SAW-MILL FEED.

SPECIFICATION forming part of Letters Patent No. 434,626, dated August 19, 1890.

Application filed July 30, 1888. Serial No. 281,380. (No model.)

*To all whom it may concern:*

Be it known that I, ALONZO A. DE LOACH, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a certain new and useful Improvement in Saw-Mill Feeds, of which the following is a full, clear, and exact description.

This invention relates to means for feeding back and forth relatively to the saw the log-carriage of a saw-mill.

The object of the invention is to simplify and render more readily operable that class of saw-mill feeds which rely upon friction-gearing for transmitting the power from the saw mandrel or shaft to the log-carriage.

The part, improvement, or combination constituting my invention will be particularly pointed out and distinctly claimed hereinafter.

In the accompanying drawings, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view, and Fig. 2 a top view, of the feed. Fig. 3 shows in top view and side elevation a preferred form of cam-lever. Fig. 4 is a plan view of one corner of the feed, showing the cam-lever of Fig. 3 in position.

The details of the frame *a*, saw mandrel or shaft *b*, driving-pulley *c*, feed-shaft *d*, and carriage-pinion *e* may be as usual; so, also, of other parts shown and not shown. The saw mandrel or shaft *b* is provided with a disk *f*, made fast thereon in any suitable manner and requiring only one active or dressed face. The feed-shaft *d* is provided with a friction-drum *g*, which is secured to the shaft by a feather or other mechanical expedient, rendering it capable of being shifted along said shaft while rotating it. This shifting of the drum *g* is shown as accomplished by a clutch and clutch-lever *h*. The range of movement of lever *h* is governed by an adjustable stop *h'*, herein shown as composed of a slotted plate $h^2$, secured to the frame *a* and having a bolt and nut $h^3$ engaging an arm $h^4$, squared to the plate $h^2$ and projecting into the path of movement of the lever and adapted to be adjusted crosswise of the frame *a* and along the slotted plate $h^2$ by means of the said bolt and nut. The arm $h^4$ is squared to the plate $h^2$, or otherwise so fitted to it as to assist the bolt and nut in holding it rigidly in adjusted position.

Between the shafts *b* and *d* is arranged a counter-shaft *i* at right angles to these said shafts, and on the end next the saw-shaft *b* this counter-shaft is provided with a friction-drum *j*, the rim or periphery of which bears against or is in frictional contact with the face of the disk *f* and derives rotary motion therefrom.

The drum *j* is secured to the shaft *i* by a feather *j'* and set-screw $j^2$, or by the set-screw alone, so as to be adjustable longitudinally thereof to vary its distance from the center of the disk *f*, and hence vary its speed; but resort to adjustment at this point, in order to vary speed, will not be necessary ordinarily. It is only changed to suit the power to be used when the mill is first started. To illustrate, a person wanting a saw-mill and having fifteen-horse power might use the smallest size mill, and one who had four or six horse power might use the same size mill. The first person would fix this drum on the small diameter of the disk and the other on the largest diameter, while another owning eight or ten horse power would place the drum between the positions just mentioned, and so on with larger-sized mills.

At the feed-shaft end the counter-shaft is provided with a fixed disk *k*, arranged thereon at right angles to the friction-drum *g*, and having its single dressed face in contact with the periphery of said drum.

I have shown the counter-shaft *i* as arranged in boxes $i'$ $i^2$, which are supported on cross-timbers $a'$ $a^2$ of the frame *a*, the box $i'$ being movable and being provided with a temper-screw or other adjusting device $i^3$ to vary the intimacy of contact between the friction-drum *j* and disk *f*.

The feed-shaft *d* has one end arranged in an adjustable bearing *l*, whereby by means of a cam-lever *m* acting against said bearing, the drum *g* may be forced into and held in more or less intimate frictional contact with the disk *k*, as the requirements of the load may be—that is to say, the tension may be varied thereby. Instead of the cam-lever *m*, (shown in Figs. 1 and 2,) wherein the cam and its handle are integral, I may use the device shown in Fig. 3, which is the preferred

form. This cam-lever consists of a handle $m'$, having the pivot-bolt $m^2$, which may not only serve to secure the handle pivotally to the frame of the machine, but which also serves as a center of motion of a disk $m^3$, said bolt being passed eccentrically through the said disk. This disk $m^3$ is provided with a slot $m^4$ concentric with the pivot-bolt, and a bolt $m^5$ is used to connect the disk and handle, being passed through the slot $m^4$. Obviously by loosening the bolt $m^5$ and revolving the disk $m^8$ a cam of greater or less diameter or projection from the lever may be obtained, in order to take up wear and for other purposes.

By means of the shifting capability of the drum $g$ the speed of the shaft $d$ may be governed with the utmost nicety by simply varying the proximity of the drum $g$ to the center of the disk $k$. So, also, the feed may be instantly reversed by shifting the drum $g$ from one side of the center of disk $k$ to the other; and in this connection I desire to note that the carriage may be run back with great speed, and hence with comparatively no loss of time by the means here provided. So, also, by giving this bearing sufficient play the drum $g$ may be moved out of contact with disk $k$, and thus the feed-shaft may be stopped irrespective of the saw-shaft.

Instead of having the disks $f$ and $k$ on the saw-shaft and counter-shaft, respectively, and their drums on the counter-shaft and feed-shaft, respectively, they might be reversed; or these parts might be arranged in any of their possible combinations without departing from the spirit of my invention. So, also, a beveled friction-wheel and drum or gearing might be substituted for parts $f$ and $j$.

The saw-guide $n$ (shown in Figs. 1 and 2) comprises the member $n'$, made adjustable toward and from the member $n^2$ for more or less intimate contact with the saw by means of a bolt $n^3$ and slot $n^4$, and these parts $n'$ $n^2$ rest in a base-piece $o$, which is borne by a bracket $p$, the latter being adjustable toward and from the saw by the slots $p'$ and bolts $p^2$.

What I claim is—

1. In a saw-mill feed, the combination of the saw-mandrel and the disk thereon, the feed-shaft and the friction-drum thereon, the counter-shaft arranged substantially at right angles to the saw-mandrel and feed-shaft and having a drum in engagement with the disk on the saw-mandrel and adjustable longitudinally upon the counter-shaft toward and from the center of the disk on the saw-mandrel to vary the speed of the counter-shaft, and having a disk at its other end engaged by the friction-drum on the feed-shaft, and a shifting-lever engaging the drum on the feed-shaft to move it toward and from the center of the friction-disk on the counter-shaft to vary the speed of the feed-shaft independently of the speed of the counter-shaft by which it is driven and also to shift the said drum from one side to the other of the center of the disk to reverse the feed-shaft, all constructed and arranged substantially as set forth.

2. In a saw-mill feed, the combination of the feed-shaft, its movable bearing, and a friction-drum on said shaft, and a counter-shaft driven from the saw-mandrel and having a friction-disk in engagement with the drum on the feed-shaft, with the cam-lever having an adjustable cam whose center of motion is the pivot of the lever, substantially as shown and described.

In testimony whereof I have hereunto set my hand this 28th day of July, A. D. 1888.

ALONZO A. DE LOACH.

Witnesses:
GEO. W. WELCH,
F. G. MINLIMNETT.