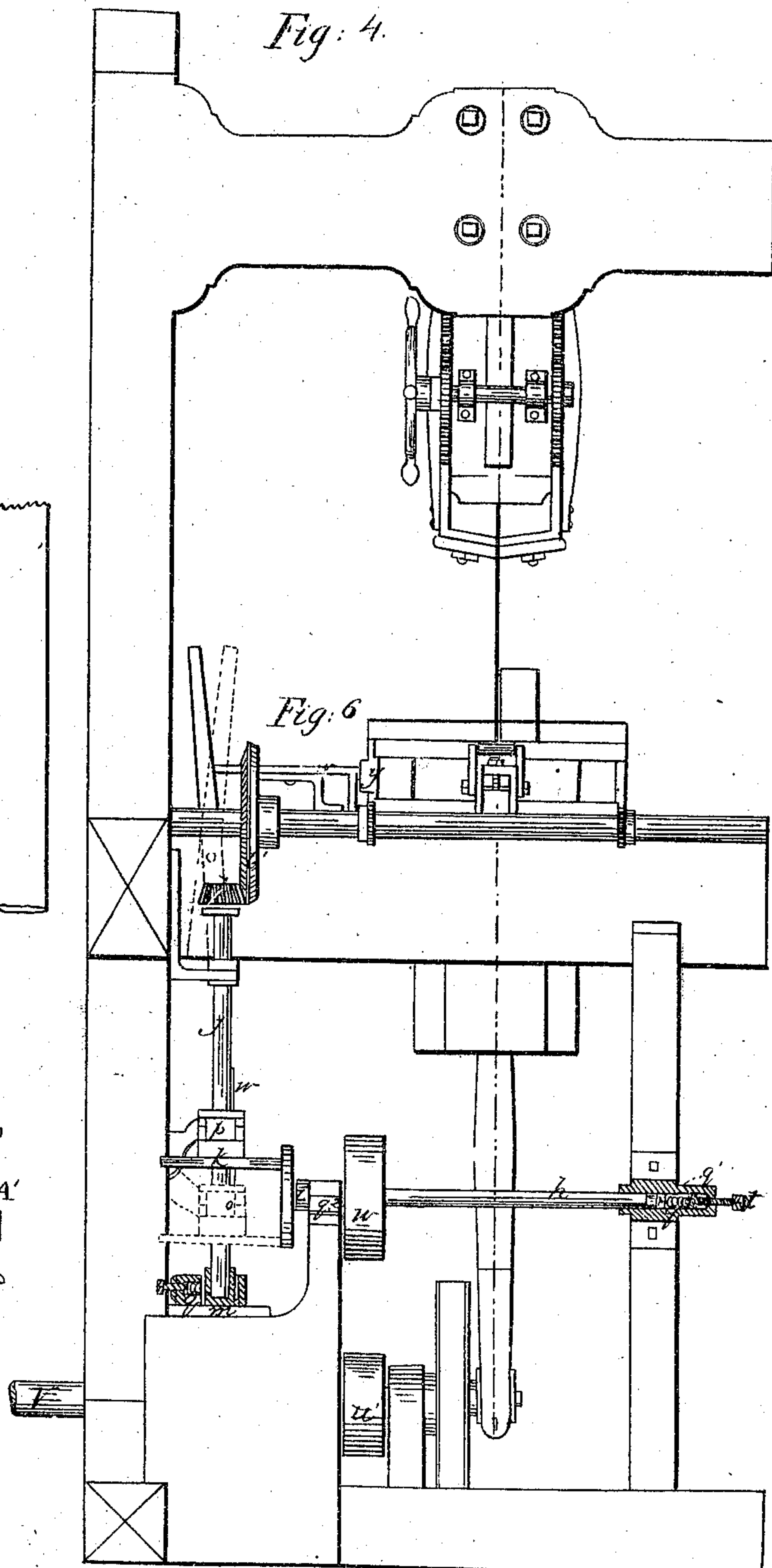
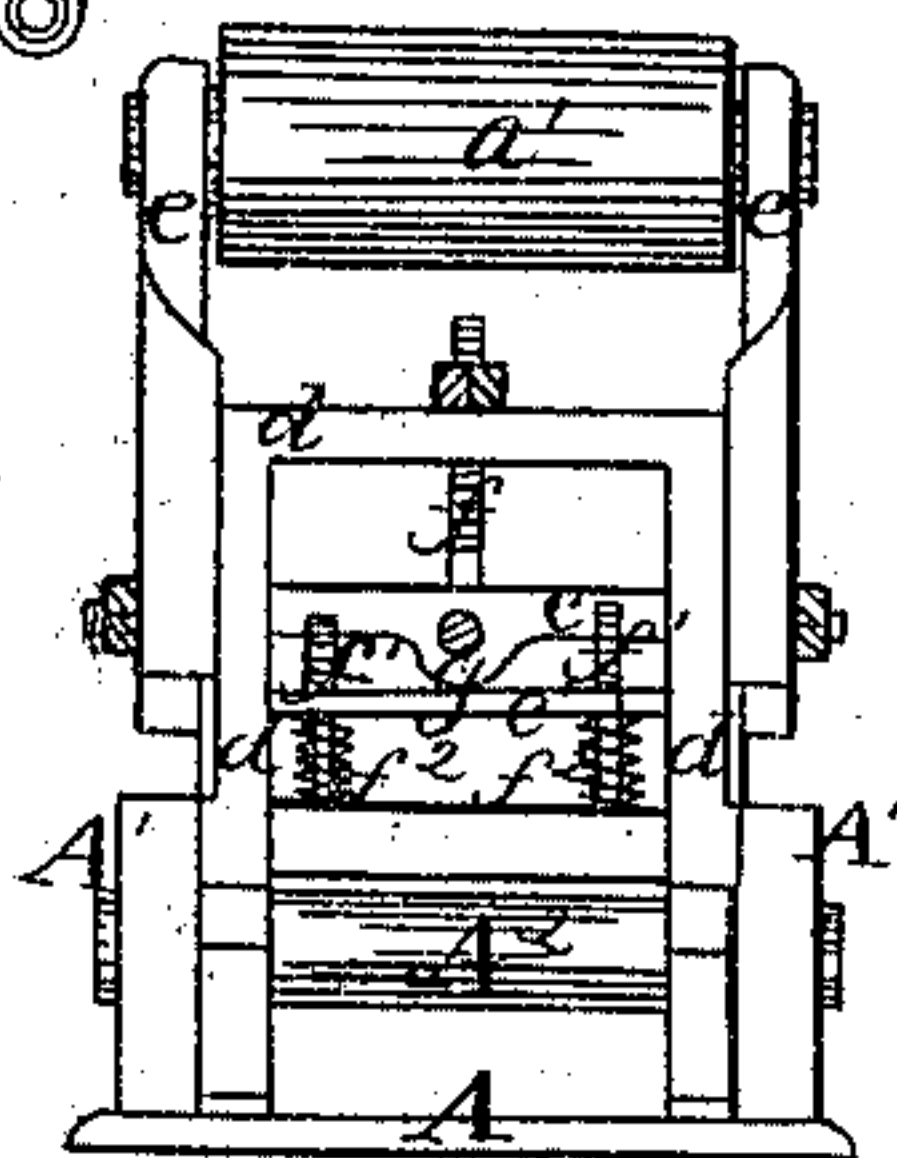
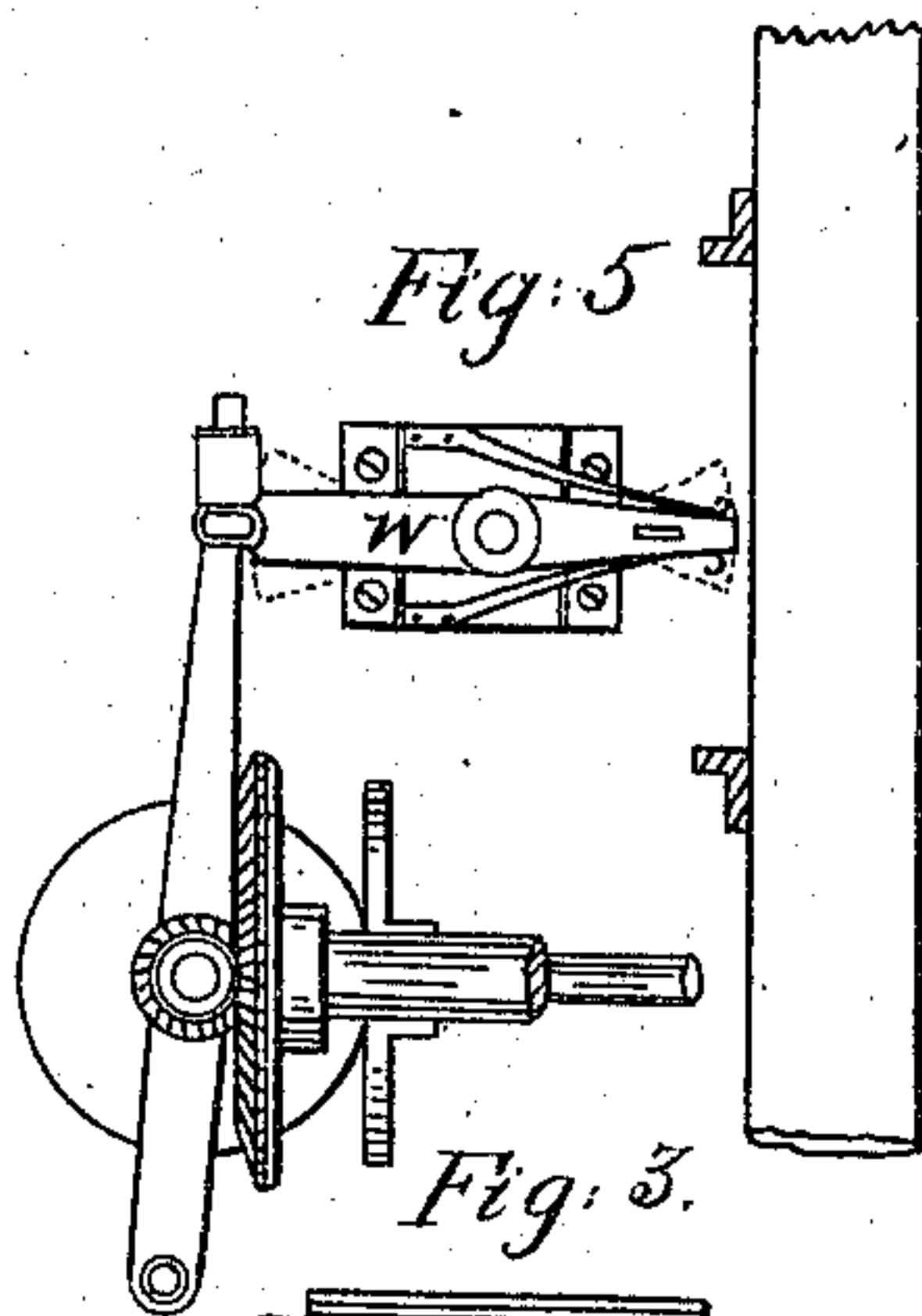
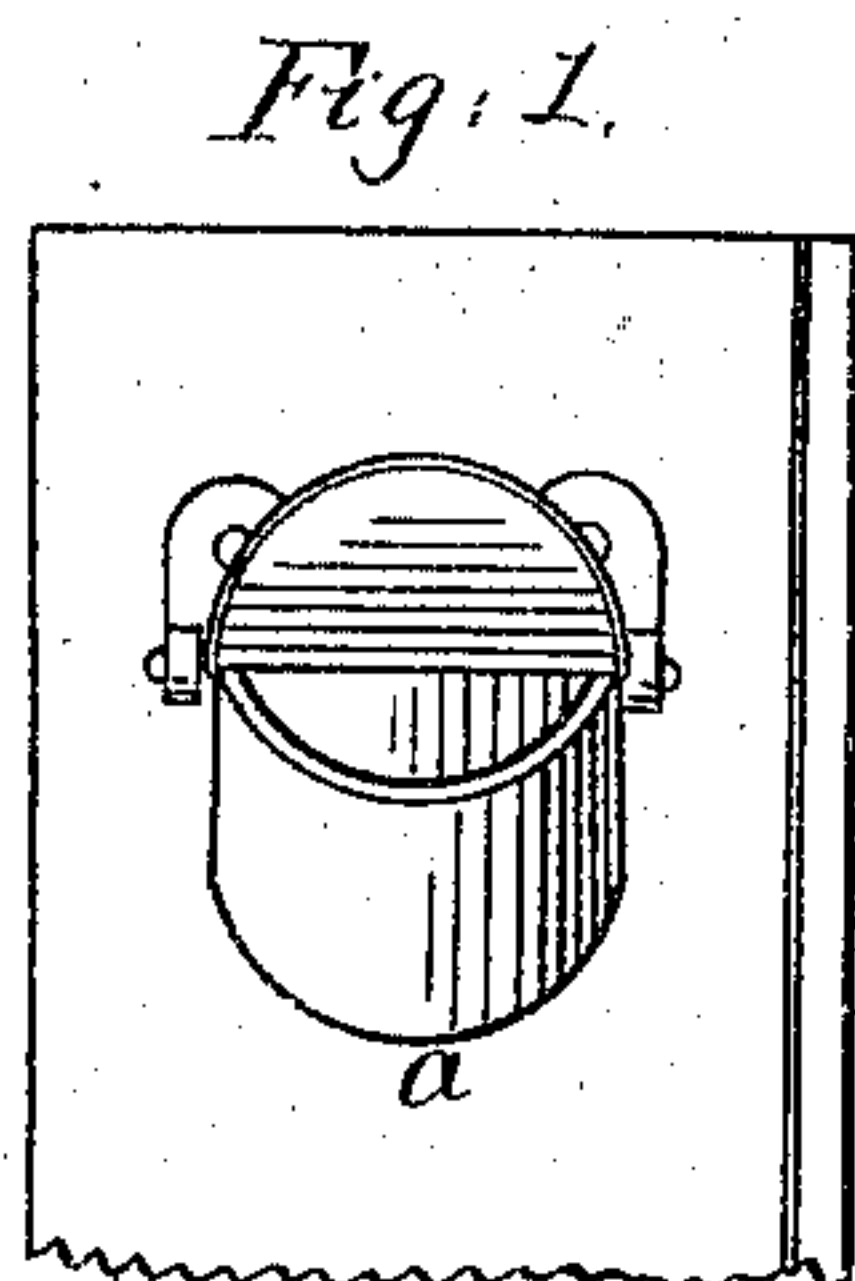


*A. P. Barlow,
Saw-Mill.*

Nº 75,834.

Patented Mar. 24. 1868.



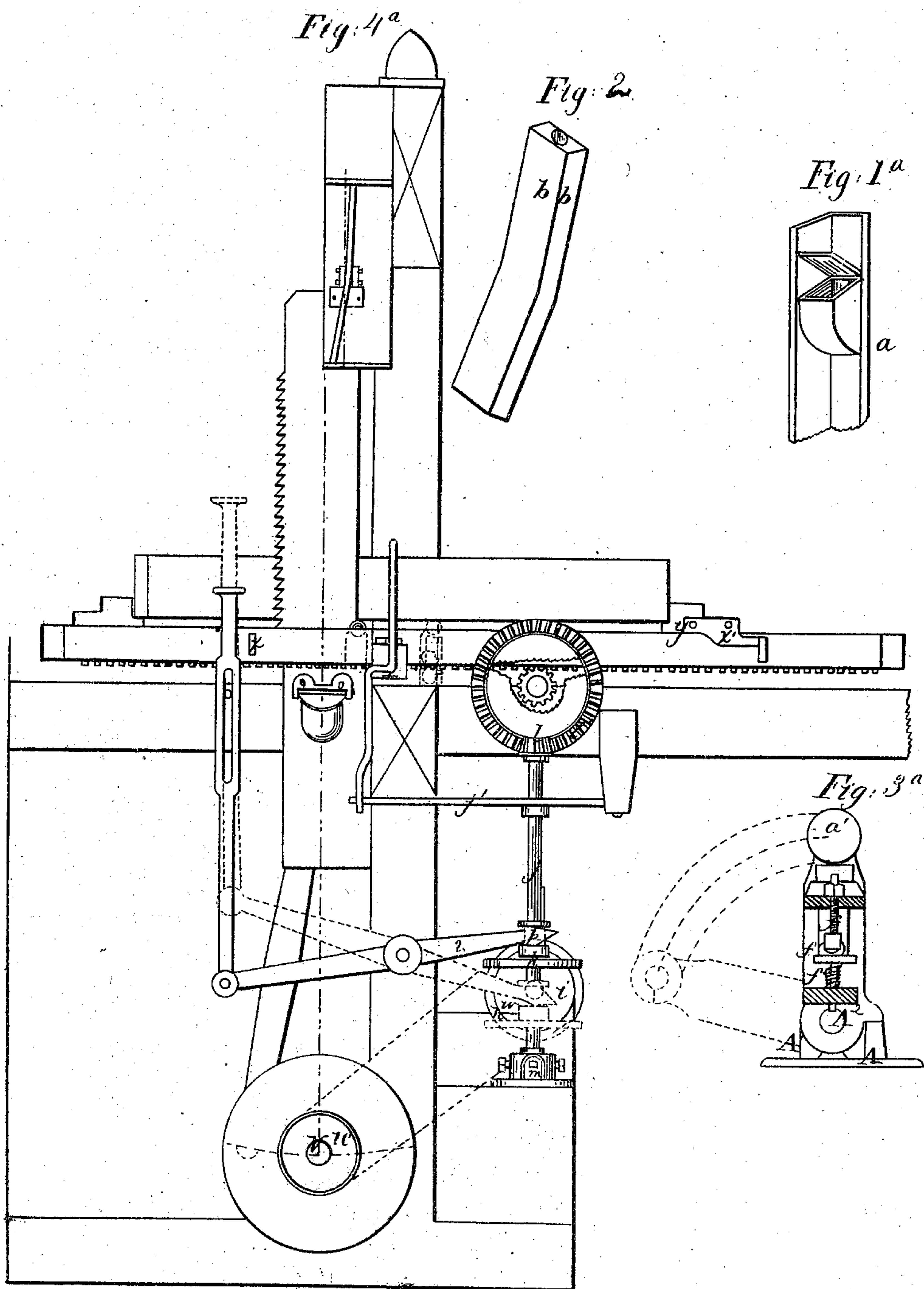
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ASHBEL P. BARLOW, OF CLAREMONT, NEW HAMPSHIRE.

Letters Patent No. 75,834, dated March 24, 1868.

IMPROVEMENT IN SAW-MILLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ASHBEL P. BARLOW, of the town of Claremont, in the county of Sullivan, and State of New Hampshire, have invented a new and useful Improvement in Saw-Mills, also an improved feed-works, called a reversible rotary feed, and a supporting-roll; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figures 1 1^a are detached views, showing an arrangement of boxes for holding lubricating-materials.

Figure 2 is a similar view of one of the perforated double inclined slides.

Figures 3 3^a represent a rear elevation and a vertical sectional view of my improved supporting-roller.

Figures 4 4^a show a rear elevation and a vertical longitudinal section of the mill, representing the arrangement of my improved feed-works; and

Figure 5 is a plan view of some of the parts hereinafter referred to.

My invention consists in a novel construction of adjustable supporting-roll, and in the construction and arrangement of parts of the feed-works, as hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The arrangement of lubricating-boxes, shown in figs. 1, 1^a, and 2, is described in another application of even date herewith, and need not be further described here than by reference to the drawings.

A, figs. 3 3^a, represents a base-plate or frame, provided with lugs or uprights A¹, which afford bearings for a horizontal pivot, A², on which a slotted frame, d, is mounted, in such manner as to permit it to be turned in one direction from its vertical position to the horizontal position represented in dotted lines, fig. 3^a. A lip or shoulder, d', in connection with a shoulder or lug on the base-plate, prevents said frame from being turned beyond a vertical position in the opposite direction. e e represent adjustable uprights, or an adjustable frame, the lower ends of which embrace the slotted pivoted frame d, and are united by a horizontal bar or clamping-bolt, c, while the upper ends afford bearings for a horizontal roller, a'. The bar, c, connecting the lower ends of the uprights e passes through the slots in frame d, and is adjustable therein, for varying the height of the roller a', the adjustment being effected by means of an upright adjusting-screw, f, connected at its lower end to bar c, and at its upper end passing through the top bar of frame, and adjusted or set in the desired relation thereto, by means of one or more adjusting-nuts, in a manner that will be readily understood, and as represented in the drawings, figs. 3 3^a. f¹ f¹ are sliding bolts, arranged underneath bar c, and resting their enlarged upper ends against said bar, and upon a horizontal follower, c', the lower ends of said bolts passing through a lower bar of frame d, and being guided and steadied in their movements thereby. Spiral springs f², surrounding the bolts f¹, are arranged between the follower c' and the lower frame-bar, and serve to keep the supporting-roller up to its work, while at the same time they allow it to yield under a greater pressure or weight than that to which the roller is adjusted or adapted.

The function and the operation of this adjustable supporting-roller will be readily understood. It is designed to be located (as shown in dotted red lines, fig. 4^a) near the saw, and to afford an intermediate support to the log during the operation of sawing, of such construction as to be readily adjusted thereto, and at the same time adapted to turn down and out of the way during the operation of gigging back.

h, fig. 4, represents a horizontal shaft, provided with a pulley, through which motion is communicated to the shaft, by means of a belt passing over said pulley, and over a corresponding pulley on the pit or driving-shaft V. Shaft j is mounted in suitable bearings or boxes q q², and is provided at one end with a friction-plate or disk, i, which rotates in contact with a similar friction-wheel or disk, k, on the vertical shaft j, the upper end of which is armed with a bevel-pinion, l, which gears into bevel-wheel l', the horizontal shaft of the said wheel l' being provided with a pinion or spur-wheel or wheels, which engage with racks on the saw-carriage, and impart the necessary forward and backward movements thereto, as hereinafter described. The shaft h' is adapted to receive end play in its bearings, and the box or bearing q, at the end opposite the friction-plate or wheel i, is elongated beyond the end of the shaft to receive a spring, of any suitable kind or construction, such as rubber or coiled

wire, arranged between plates or washers *p*, the tension or pressure of said spring being adjusted by means of a set or temper-screw, *t*, as shown in fig. 4. By this arrangement the friction-plate *i* is held at all times in contact with the plate or wheel *k*, and with any required force.

m is a pivoted step or box, in which the end of the upright shaft *j* is placed or stepped, by means of the vibration of which the necessary movement of the upper end of said shaft *j*, for throwing the pinion *l* out of and into gear with bevel-wheel *l'*, is provided for. The friction-wheel *k* is placed loosely on the shaft *j*, or in such manner as to be capable of sliding freely thereon, while at the same time it is prevented from turning on said shaft by means of an elongated spline, shown at *n*, fig. 4. In the hub of wheel *k* is a groove, in which one end of a lever, *r*, works, and by means of which wheel *k* is adjusted up or down on its shaft and over the face of disk *i*, in the manner represented in figs. 4 & 4^a, for the purpose of giving a faster or slower or a reversed motion to the friction-wheel *k*, its shaft *j*, and through them, and the arrangement of gearing above described, to the carriage and its load.

The arrangement of spring and temper-screw, instead of being at the end of the horizontal shaft *h*, as above described, may be made at the foot of the vertical shaft, so as to act on pivot-box *m*, as shown by the drawing; and if preferred, weights may be employed instead of the springs, so arranged as to give an equal pressure and still yielding and allowing the friction-wheel to pass over the surface of the friction-plate unimpeded, and keep the surface smooth and free from hollows, or, if it becomes so, that the pressure may be equal at all times, so that the friction-wheel would keep moving. A wooden or iron spring could be used in the same way and produce the same effect.

I am aware that feeding the log to the saw simply by friction is old, but I believe the act of passing the centre on the friction-plate with the friction-wheel, whereby a reversed motion is given, so that I can gig the carriage back as well as forward, and as fast as I may wish, by keeping the friction-wheel near the upper or lower edge of the friction-plate, is new. Attaching a spring or weight to the end of the horizontal shaft *h*, or to the box of the upright shaft *j*, by which I am enabled to change the centres, is also new; otherwise I should not be enabled to do so, as the friction-plate has to be so large that I could not get an equal bearing from top to bottom; consequently the friction-wheel *k* would slip on friction-plate *i* and stop the motion of the carriage.

The advantages gained by this invention are as follows: First, I am enabled to build a rotary feed-works for about one half the expense of any other way that I have yet seen, and it is so simple that it is not easy to get out of repair. Second, by using my adjustment or springs at the end of the horizontal or upright shaft, I am enabled to avoid all breakages of any of the feed-works, for should the carriage become fast by any means, the spring allows the friction-wheels to separate and stop the carriage. I use but one belt, which is attached to the pulley *u* on the horizontal shaft *h*, and to the pulley on the pitman-shaft, as shown at *u'*, which saves power as well as expense.

I will now describe my reversible safety-trip, as shown at figs. 5 and 6, by which all accidents are guarded against while gigging back the log, as is often the case when gigging back fast, by throwing the log off the carriage or head-block, causing much trouble, as well as endangering the saw or muley-heads. By this simple device all danger is avoided, and is one of the essential parts of this feed-works.

Its construction is as follows: A straight bar of iron or wood is used, with the end next the meshing-lever a little concaved or hollowed out, so as to prevent the lever from slipping off before the hook or catch catches it to throw it out of mesh. This lever *w* is pivoted to the floor of the mill, near the carriage, as shown at fig. 6. It is kept in a straight line, the end toward the carriage, by means of a spring or springs, as shown at figs. 5 and 6, either by having one spring pass directly through the lever and fastened to the floor, or by means of two springs, one on either side, so arranged as to keep the lever in position, or bring it back in position when it is knocked out by the hooks or catches as they pass back and forward in the gigging and feeding operation.

x x' show catches or hooks, one fastened to the carriage, as shown at fig. 4, the other is fastened to the head-block, as shown at *y* in the same figure. The reason for fastening it to the head-block is that it may always be adjusted to any length of log, or, rather, that it may adjust itself, which will be readily seen to be the case.

I do not claim the trip as a safeguard in feeding the log up, as it is an old device; but

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

1. The pivoted frame *d*, in combination with the adjustable uprights *e*, roller *a'*, and clamp-screw or bar *f*, constructed and operating substantially as described.
2. In combination with the above device, I claim the adjusting-screw with its controlling nuts, follower *e'*, and slide bolts *f'*, surrounded by coiled springs, all constructed and arranged to operate as described.
3. The upright shaft *j*, friction-plate *k*, pivoted box *m*, revolving plate *i*, shaft *h*, and its box, with plates, spring, and temper-screw, in combination with pivoted lever *r* and slotted lever *r'*, all arranged to operate in the manner substantially as described.
4. The catches or trips *x x'* on the carriage, in combination with the lever *w* and springs, levers, and shaft *j*, all operating in the manner as described.

ASHBEL P. BARLOW.

Witnesses:

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