(Model.)

S. R. SMITH & E. MYERS.

GANG EDGER.

No. 343,405. Patented June 8, 1886.

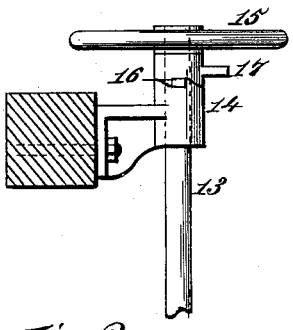


Fig. 2.

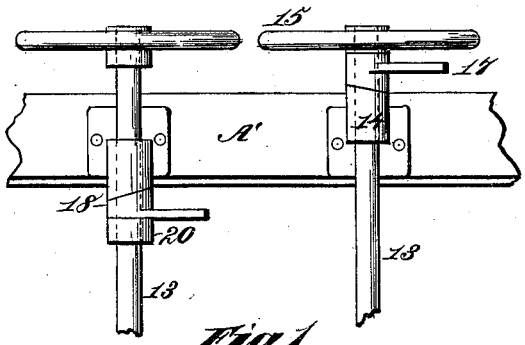
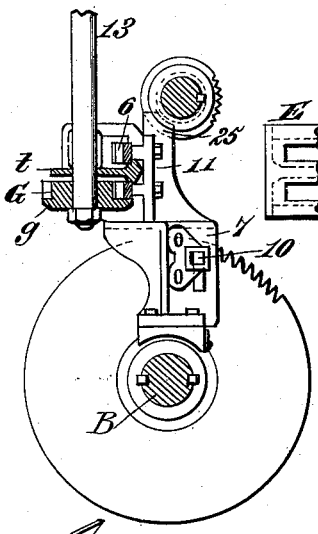


Fig. 1.



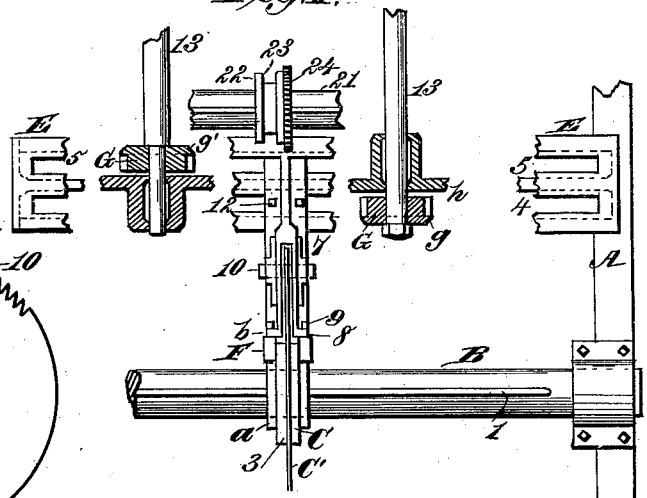


Fig. 4.

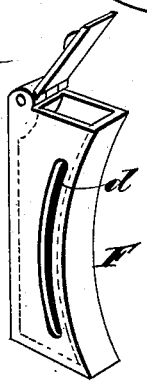


Fig. 5.

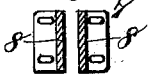


Fig. 3.

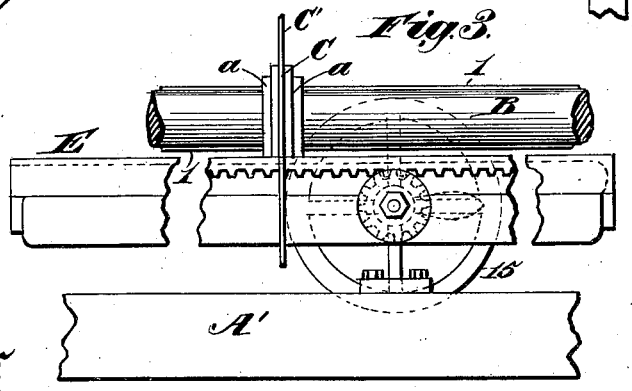
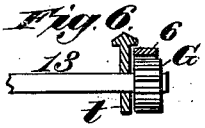


Fig. 6.



Witnesses.
J. Watson Sims
Simpson Rockwell Jr.

Inventors.
Samuel R. Smith
Edward Myers.
By Wood & Boyd
Attys.

UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH AND EDWARD MYERS, OF CINCINNATI, OHIO.

GANG-EDGER.

SPECIFICATION forming part of Letters Patent No. 343,405, dated June 8, 1886.

Application filed August 3, 1885. Serial No. 173,409. (Model.)

To all whom it may concern:

Be it known that we, SAMUEL R. SMITH and EDWARD MYERS, residents of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gang-Edgers, of which the following is a specification.

Our invention relates to an improvement in gang-edgers.

One of the objects of our invention is to apply adjusting-jaws to the collars of the adjustable saws, which hold the saw in a fixed position for work.

Another object of our invention is to combine with these jaws an adjustable carriage, which can be moved laterally to and fro for changing the adjustment of the saws, either when running or stationary.

Another object of our invention is to provide clamping devices operated at the rear of the machine, whereby the operator can clamp the adjusting-shafts at their front ends near the saws and prevent accidental displacement of the saws.

Another object of our invention is to provide suitable means for lubricating the collar-jaws, all of which will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which Figure 1 is a top plan view with sections broken off to show the details of construction; Fig. 2, a side elevation of one of the adjusting-saws and connections; Fig. 3, a detached sectional front elevation; Fig. 4, a perspective view of one of the collar-guides. Fig. 5 is a rear sectional elevation of the guide-bracket. Fig. 6 is a modification of the clamping device.

A A represent the frame-work of the machine; B, a saw-arbor journaled on the frame. It is provided with feathers 1, which engage with similar grooves in the collars C, between which the saw is secured to hold it in position on the shaft. These collars C are preferably screw-collars, having flanges 3 extending up the side of the saw, and the thimble portion *a*, extending laterally along the shaft. This class of edgers usually employs one stationary saw rigidly secured to shaft B, the construction of which is not shown, as it is common and well known.

We have shown two adjustable saws, but any desired number may be employed according to the principles of our invention.

E represents a cross-head, rigidly attached to the frame of the machine. It is provided with two channels, 4 and 5, which serve as ways for racks. They are open upon the top side, so as to form convenient means for attaching the saw-carriage, and they are provided with flanges each side of the slots or openings, as shown in dotted lines, Figs. 1 and 3.

7 represents a sliding truck or carriage, which is slotted, forming two jaws, *b*, to the forward ends of which are attached the adjusting-jaws F, by flanges 8 and screw-bolts 9.

c represents ribs for strengthening the jaws 7.

10 represents blade-guides.

11 represents a shank, which is provided with lugs *e i*, that project down into the jaws 4 and 5. Screw-bolts 12 pass through the shank 11 and tap into the rack 6, which is driven by a gear to move it laterally for adjusting the saw C'.

13 represents adjusting-shafts, journaled upon the frame A' at one end, and in the cross-head E at the forward end.

14 represents the journal-bracket at the rear end of one of the shafts 13. Its rear face or edge is cam-shaped. 15 represents an adjusting-wheel keyed to this shaft.

16 represents a cam engaging with the face of sleeve or journal bracket 14. It is operated by means of a handle, 17. The rear face of the cam-shaped collar 16 is plane, and bears against the plane face of the hub of hand-wheel 15, so that as the cam-collar 16 is moved by the handle to or fro the shaft 13 is moved longitudinally in its journals.

G represents pinions mounted on shaft 13; *g*, a flange formed on the face of the pinion, and projecting up one side of the teeth of rack 6, with which the pinion engages. The shaft 13 is moved in its bearings by the cam 16.

When the shaft shown in Fig. 2 is in the position there shown, the cam 16 has drawn the shaft 13 backward, drawing the flange *g* of the pinion firmly against the front face of the rack 6, clamping the rack between the flange *g* and the rear edge, *h*, of way 4, so as to make a friction-clutch to hold rack 6 firmly in position.

This holds the saw-carriage 7 firmly in position, and prevents liability of a lateral movement of the saw. It also relieves the shaft 13 from torsional strain. Now, when it is desired to adjust the saw C', (shown in Fig. 2,) cam 16 is turned back by its handle 17, so as to release the frictional grip of flange *g*, when shaft 13 may be easily revolved in either direction by hand-wheel 15. This will move rack 6 in the gain or ways 4, carrying with it the jaws on carriage 7, and the saw C' is slid laterally on the feathered shaft by the grip of the jaws F on the collars of the saw. As soon as the saw is moved the desired distance, cam 16 is set to grip the flange *g* of the pinion against the rack, which holds the saw firmly in position for work. The other saw is operated by a similar rack moving in gain 5; but in this case the pinion is provided with a flange, *g'*, on its rear face, and the cam 18 is placed on the front of sleeve 19, and bears against collar 20, to make a frictional grip of the pinion, by moving the shaft and pinion forward, forcing flange *g'* against the rear edge of the rack. The clutch is therefore operated in the reverse manner from the formerly-described device shown in Fig. 2.

An inferior modification of the clutch is shown in Fig. 6, in which the flange is omitted from the pinion, and the grip is obtained by forcing the face of the pinion up firmly against the front face of the journal-box *t*, so the clamp is obtained by the disk of the pinion, instead of the flange, as in the former case; but this is an inferior modification.

In order to prevent the jaws F from wearing or heating by reason of their contact with the saw, we make them hollow, so as to form a box, and provide a groove, *d*, pierced through the inner face of these guides, as shown in Fig. 4. The box of jaw F is filled with waste and oil, or other lubricant, so that the inner faces of the jaw F, which bear against the collars, are thoroughly lubricated.

Hitherto it has been difficult to employ suitable collar-guides to hold the saw in position, on account of the heating and wearing away of the guides and grooves; but when jaws F are made in the form here shown they are easily kept well lubricated, and this trouble is avoided.

21 represents a shaft on which is keyed a series of collars, 22, which are provided with grooves 23, carrying a feed-roller, 24, one feed-roller being employed for each saw.

The rear end of the bracket 7 is provided with a lug, 25, which fits into the groove 23. The collars 22 are feathered on the shaft 21, so that the feed-rollers 24 are each adjusted simultaneously with the saw to which it is set opposite.

Various modes have hitherto been employed for adjusting edger-saws on the shaft. Grooved collars have been employed similar to the form here shown for adjusting the feed-rollers; but these are objectionable. As the saws move with such rapidity, and as they are subject to lateral thrusts from the lumber, these grooved collars wear and produce lost motion in the saw. Again, attempts have been made to move the saw by means of the blade-guides, leaving the center of the saw free; but this has been found objectionable, first, because you cannot adjust the saw when it is not in motion, but have to depend on the motion of the saw to adjust it readily; second, the blade-guides have to be set so close together to hold the saw in position that they wear rapidly; and, again, the blade-guides are liable to be displaced, owing to the severe strain which they receive, having to be often adjusted, fitted, or replaced, whereas by the method here shown metallic jaws can be employed to hold the center of the saw in fixed position, that can be set by a frictional grip, so that all danger of lateral displacement of the saw or wearing away of the blade-guides is avoided. By the use of these jaws F, engaging in the collars, the blade-guides can be set some distance away from the saw, about one thirty-second of an inch, on each side, and serve simply the old purpose of preventing undue leading of the saw, while the jaws receive the heavier strain or thrusts, being set to bear against the collars, can be made of metal, and wear longer; but in case of the wearing of the face of the jaw it can be readily taken up by means of the slotted screw-holes pierced through flange 8, as shown in Fig. 5.

By our improvement the operator can, at the rear of the machine, readily control the adjustment of the saws, either when standing or in motion, and can clamp them rigidly in position, so as to avoid all danger of their accidental displacement.

We claim—

1. In combination with the saw of an edging-machine, an adjusting-carriage slotted to receive the blade of the saw, the collar-jaws rigidly secured to each fork, the inner face of said jaws bearing against the vertical faces of collar C, and a rearward extension of the carriage with one or more lugs moving in ways in cross-head E, substantially as specified.

2. In combination with the adjusting-carriage provided with the jaws F, bearing against the opposite faces of collar C, and provided with a rack sliding in a groove or way formed in cross-head E, the driving-pinion meshing with the rack-teeth and mounted on the adjusting-shaft, which has a longitudinal movement for clamping the adjusting-rack and carriage to firmly hold them in any desired adjustment, substantially as specified.

3. In combination with the adjusting-carriage and rack, the pinion mounted on the adjusting-shaft, and a cam mounted on the rear of the shaft adapted to move it longitudinally for clamping and releasing the adjusting mechanism, substantially as specified.

4. In combination with a gang-edger, two or more adjustable saws, each provided with an adjusting-carriage, each being connected to

an individual rack moving in ways in cross-head E, and having pinions, adjusting-shafts, and mechanism for clamping the racks by a longitudinal movement of the adjusting-shaft at the rear of the machine, whereby one or more of the saws may be adjusted to each other and clamped in varying positions, substantially as specified.

5. In combination with the adjusting-block provided with the blade-guides 10 adjacent to the saw-disk, the collar-jaws F, rigidly secured to the end of the forks of the adjusting-carriage engaging with the face of the saw-collars to adjust and hold the saw by the bearing of the jaws against the opposite faces of the collars, substantially as specified.

6. The collar-jaw F, provided with a cavity for holding lubricating material, and with a groove, *d*, pierced in the inner face of the guide, whereby the collars and guides are kept constantly lubricated, substantially as specified.

In testimony whereof we have hereunto set our hands.

SAMUEL R. SMITH.
EDWARD MYERS.

Witnesses:
ROBERT ZAHNER,
M. E. MILLIKAN.