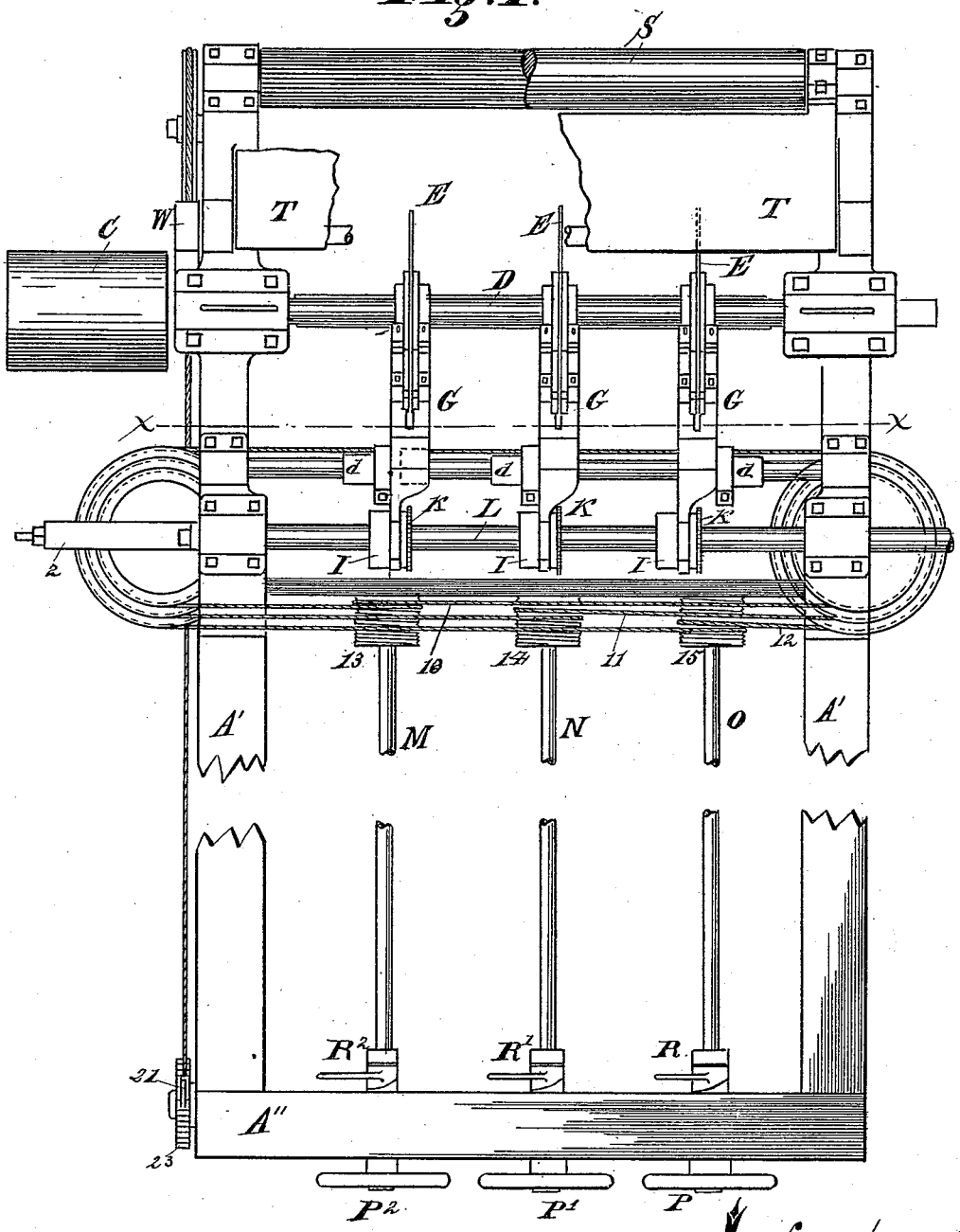
(No Model.) 3 Sheets—Sheet 1.

S. R. SMITH & E. MYERS.

GANG EDGER.

No. 348,065. Patented Aug. 24, 1886.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

S. R. SMITH & E. MYERS.

GANG EDGER.

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Fig. 3.

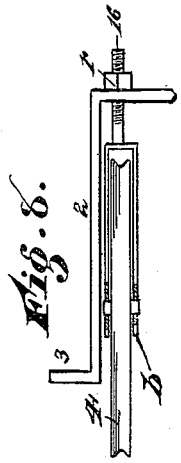
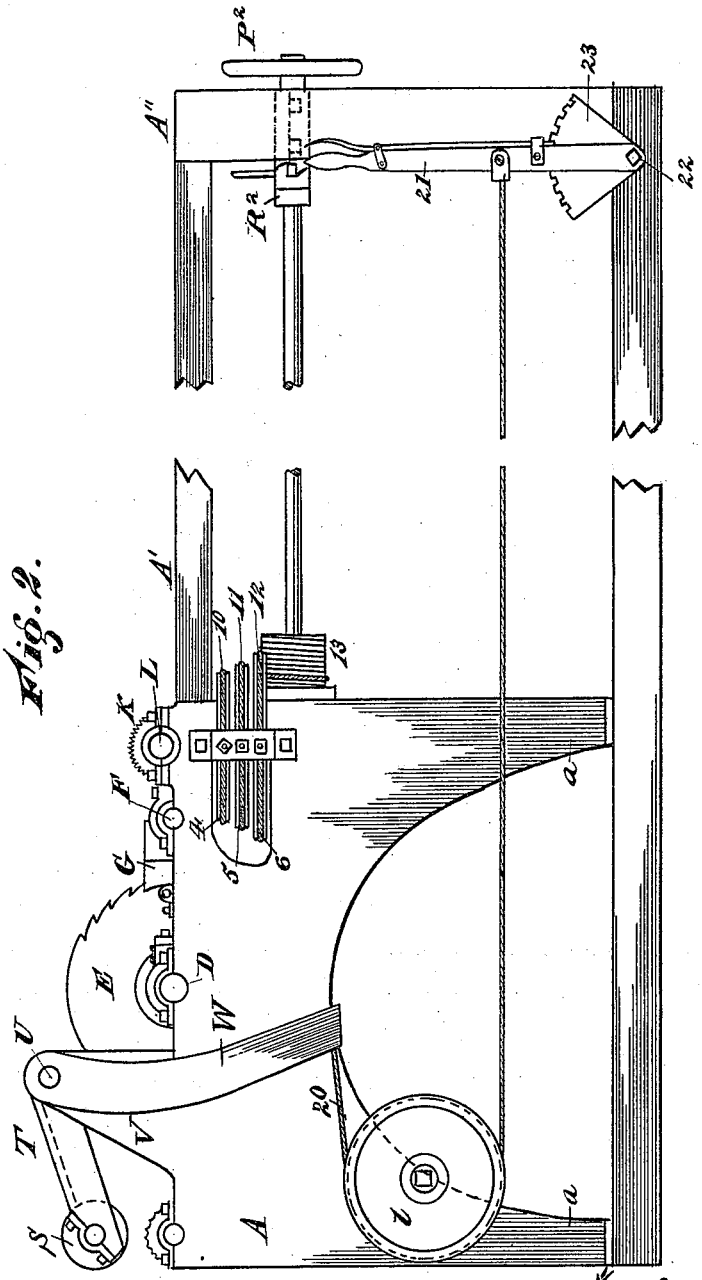


Fig. 2.



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(No Model.) 3 Sheets—Sheet 3.

S. R. SMITH & E. MYERS.

GANG EDGER.

No. 348,065. Patented Aug. 24, 1886.

Fig. 3.

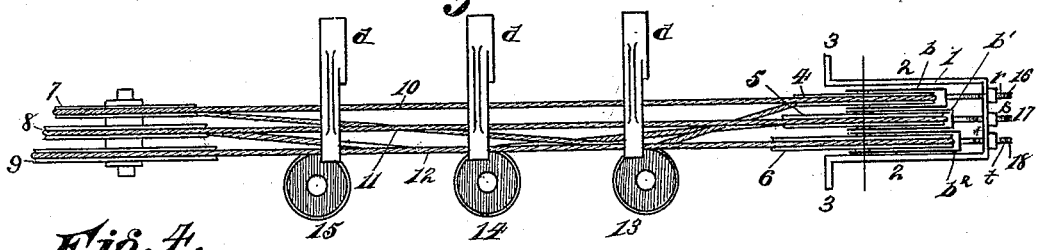


Fig. 4.

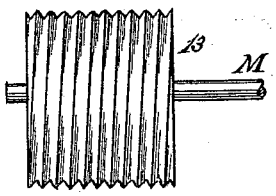


Fig. 5.

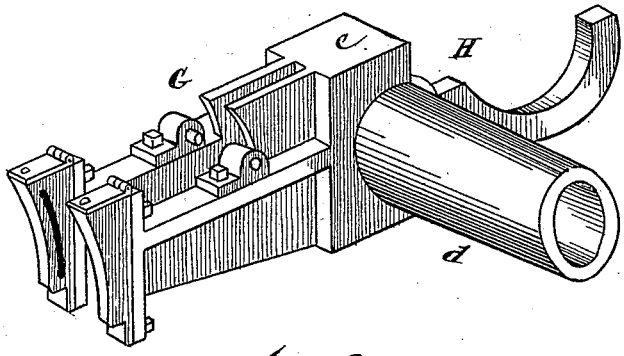


Fig. 6.

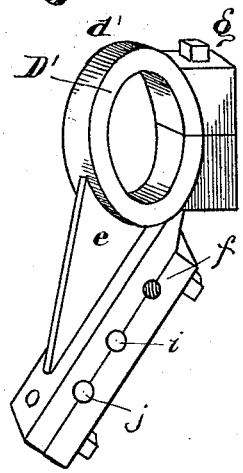
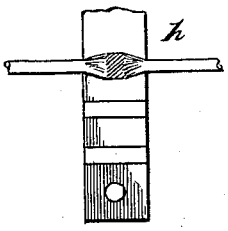


Fig. 7.



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UNITED STATES PATENT OFFICE.

SAMUEL R. SMITH AND EDWARD MYERS, OF CINCINNATI, OHIO, ASSIGNORS TO SMITH, MYERS & SCHNIER, OF SAME PLACE.

GANG-EDGER.

SPECIFICATION forming part of Letters Patent No. 348,065, dated August 24, 1886.

Application filed September 14, 1885. Renewed May 19, 1886. Serial No. 202,697. (No 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 gang-edgers, and particularly to that class which employs mechanism for adjusting the saws while in motion.

One of the objects of our invention is to employ a cheap and ready means for moving either one of the saws upon its common arbor independent of the movement of the other saw.

Another object of our invention is to provide a detachable adjusting-carriage carrying collar-jaws for moving and guiding the saw.

Other features of our invention relate to the details of construction, 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 of our improved gang-edger machine. Fig. 2 is a side elevation of the same. Fig. 3 is a section on line *x x*, Fig. 1, looking toward the front of the machine. Fig. 4 is a detail view of one of the adjusting-pulleys; Fig. 5, a perspective view of the sliding carriage; Fig. 6, a detail view of the collar and rope attachment and guide. Fig. 7 is a cross-section showing the manner of connecting the cord or rope to the guide. Fig. 8 is a detail elevation showing the manner of adjusting the sheaves.

A represents one of the side frame-pieces of the saw-machine.

a represents the posts.

A' A^2 represent a forward extension on the main frame, which is preferably made of separate pieces and attached to the rear frame, A. This extension supports the feeding and adjusting mechanism. Any other well-known form of frame may be employed for supporting the saws and adjusting devices.

C represents the main driving-pulley mounted on a mandrel, D, upon which the saws E are splined in the ordinary manner employed for gang-edgers.

F represents a secondary shaft or rod, upon which are journaled the sliding carriages G. One of the carriages is shown in detail, Fig. 5. It is provided with a sleeve, *d*, which is made of considerable length, so as to prevent lateral motion of the carriage-bearing on its shaft. This sleeve *d* fits the shaft F and serves as a journal, so that the carriage G may oscillate thereon and be slid laterally for adjusting the saws E on the shaft D. We prefer to have the two outside sleeves, *d*, project outwardly, and the middle one cored out or bored sufficiently large in the main block *c* to allow the adjacent sleeve to enter the bore far enough to bring the saws within two or three inches of each other in their adjustment. This carriage resembles, in its general feature of collars and guides, the device shown in our application, Serial No. 173,409, filed August 3, 1885, but has the following features of improvement: it is journaled upon the shaft or rod F by a sleeve-bearing, so that the carriage may have two journal motions. It may oscillate or lift up so as to clear the saws E, to allow them to be readily removed from the shaft; and, second, a sliding motion upon its rod for adjusting its saws E in any desired position for edging. Sleeves *d* of the carriages also serve as journals for the rope or belt attaching device which moves the carriage. This device is shown in Fig. 6. It consists of a bearing, *d'*, a bracket, *e*, and a rope-attaching device, *f*.

The collar D' is made of two sections, which are connected together by the clamping-bolt *g*. It is drawn together around the sleeve *d*, so as to clamp and rigidly connect the guide to the sleeve.

H represents a segmental extension rigidly connected to carriage G, engaging in the groove of collar I, which collar is rigidly connected to the feed-roller K, mounted upon the shaft L.

Shaft L, collar I, and feed-roller K are constructed as shown in our said former application.

In order to cheapen the construction of the devices hitherto employed for adjusting the saws on gang-edgers and at the same time provide for an easy and reliable adjustment of said mechanism, we have provided the following instrumentalities:

1 represents a yoke, the arms 2 being pro-

vided with stud-bolts 3, which fasten it to the frame A, and rigidly hold it in position for supporting a series or nest of adjusting-sheaves, 4 5 6. A similar series of sheaves, 7 8 9, are mounted upon the opposite side of the frame.

10 11 12 represent belts, preferably made of wire, passing around the sheaves and over adjusting-sheaves in the following manner: 13 represents an adjusting-sheave keyed upon shaft M. 14 represents a similar adjusting-sheave keyed upon shaft N, and 15 a similar sheave keyed upon shaft O. These adjusting-sheaves are preferably provided with a worm-groove each, to receive its own rope or cord, and act as guides for the other cords or belts passing over the same, keeping them from contact one with the other. The worm-groove on these sheaves could be dispensed with and plain sheaves used without materially affecting the result.

The wire belts are connected up in the following manner: 10 represents an endless belt passing around the sheave 4, thence once around, say, grooved sheave 15, thence around sheave 7 and through the attaching device *f*, (shown in Fig. 6,) to which it is rigidly connected by a knot formed in the rope *h*, as shown in Fig 7. Shaft O is moved by a hand-wheel, P, which turns adjusting-sheave 15 and drives belt 10, and with it adjusts the carriage G, to which the adjusting-collar *d* is connected, laterally on its shaft D. In order that this movement of one of the carriages may not interfere with the other saws, the other belts, 11 12, rest loosely in and pass freely through the guide-openings *i j*. The belt 11 in like manner passes around sheaves 5 8, and once around sheave 14, and is connected to the adjacent carriage G in the same manner as before described, and moves the saw which is guided by the carriage G. In the same manner pulley 12 is connected to its respective sheaves, guide, and with the other carriage to operate it for adjusting its particular saw; hence each of the saws is adjusted laterally on its shaft by an endless-belt mechanism operated, respectively, by the hand-wheels P P′ P². They are fixed or held in a rigid position, when adjusted to the desired point, by means of the cam-locks R R′ R², as described in our said former application.

In order to compensate for the contraction and expansion of the endless adjusting-belts 10 11 12, we have provided the following features: The sheaves 4 5 6 are each pivoted in an independent block or stirrup, *b b′ b²*. These blocks are supported by the arms 2 of the yoke 1. They rest upon each other, so as to support the same, and are held by adjusting screw-rods 16 17 18. *r s t* represent set-nuts for adjusting the sheaves 4 5 6 so as to take up or adjust the belts 10 11 12.

We obtain important advantages by the use of these endless belts and adjusting-sheaves for moving the saws laterally. First, they are cheaply constructed; second, they are held rigidly in position without lost motion; and, third, should lost motion occur in the stretching of the belt it is readily taken up and avoided.

We prefer to use the shafts M N O for driving the adjusting-belts 10 11 12, as they are rigid and secure a better adjustment; but so far as the features of the endless belts and the adjusting-pulleys 13 14 15 are concerned we do not wish to limit ourselves to this particular means.

We have also devised the following means for adjusting the pressure-roller S: It is journaled on the arm T, pivoted to the brackt V, mounted on the main frame A. U represents a rod or pivot on which the arms T are mounted, bracket V and arms T being duplicated on the opposite sides of the machine. W represents an adjusting crank-arm keyed on the center U. *l* represents a sheave. 20 represents a rope or cord connected to the crank W, passing around sheave *l*, connected to the lock-lever 21, which is pivoted at 22 to the main frame. 23 represents a segmental rack, and 24 a lock engaging with the rack 23, for setting the lever 21 in any desired position. This lever is placed at the front end of the machine, adjacent the adjusting-wheels P P′ P², so that the operator attending to the front of the machine can readily adjust the feed-roller S to the requisite thickness of lumber.

We claim—

1. In a gang-edger, the combination, with a saw-arbor, a series of independently-adjustable saws mounted thereon, a secondary shaft, and two or more laterally-adjustable carriages, G, having an oscillatory movement on said shaft, said carriages being provided with sleeves *d*, of the sleeve-bearings *d′*, having collars D′, made in two sections, clamped around said sleeves, substantially as described.

2. The combination, with the independently-adjustable saws E and two or more adjusting-carriages, G, having sleeves *d*, mounted on a shaft, F, of the sleeve-bearings *d′*, having brackets *e*, rope-attaching guides *f*, and sectional collars D′, clamped around said sleeves and connected by bolts *g*, substantially as described.

3. The combination, with the independently-adjustable saws E and the adjusting-carriages G, having sleeves *d*, of the sleeve-bearings *d′*, clamped around said sleeves and having brackets *e*, and rope-attaching devices *f*, a series of horizontal sheaves mounted at each end of the machine-frame, a series of endless belts or ropes, each connected with a particular carriage, and a series of spirally-grooved adjusting-sheaves, said belts or ropes being passed around said horizontal sheaves and adjusting-sheaves, substantially as described.

4. The combination of the independently-adjustable saws E, the adjusting-carriages G, provided with sleeves *d*, and having a sliding and oscillatory movement on their supporting-shaft, the sleeve-bearings *d′*, clamped around said sleeves, a series of endless ropes or belts, each of which is connected with an attaching

device on one of said sleeves, a series of horizontal sheaves for supporting said ropes or belts, and a series of spirally-grooved sheaves for adjusting said belts or ropes, substantially as described.

5. The combination of the adjustable saws E, the adjusting-carriages G, having sleeves *d*, a shaft, F, for supporting said carriages, the sleeve-bearings *d'*, clamped around said sleeves and provided with brackets *e*, and rope or belt attaching devices *f*, a series of horizontal sheaves mounted at each end of the machine-frame, the shafts M N O, carrying adjusting-sheaves 13 14 15, and the endless ropes or belts 10 11 12, passed around said sheaves, and each connected with a particular carriage, substantially as described.

In testimony whereof we have hereunto set our hands.

SAML. R. SMITH.
EDWARD MYERS.

Witnesses:
JNO. S. ROEBUCK, Jr.,
M. E. MILLIKAN.