

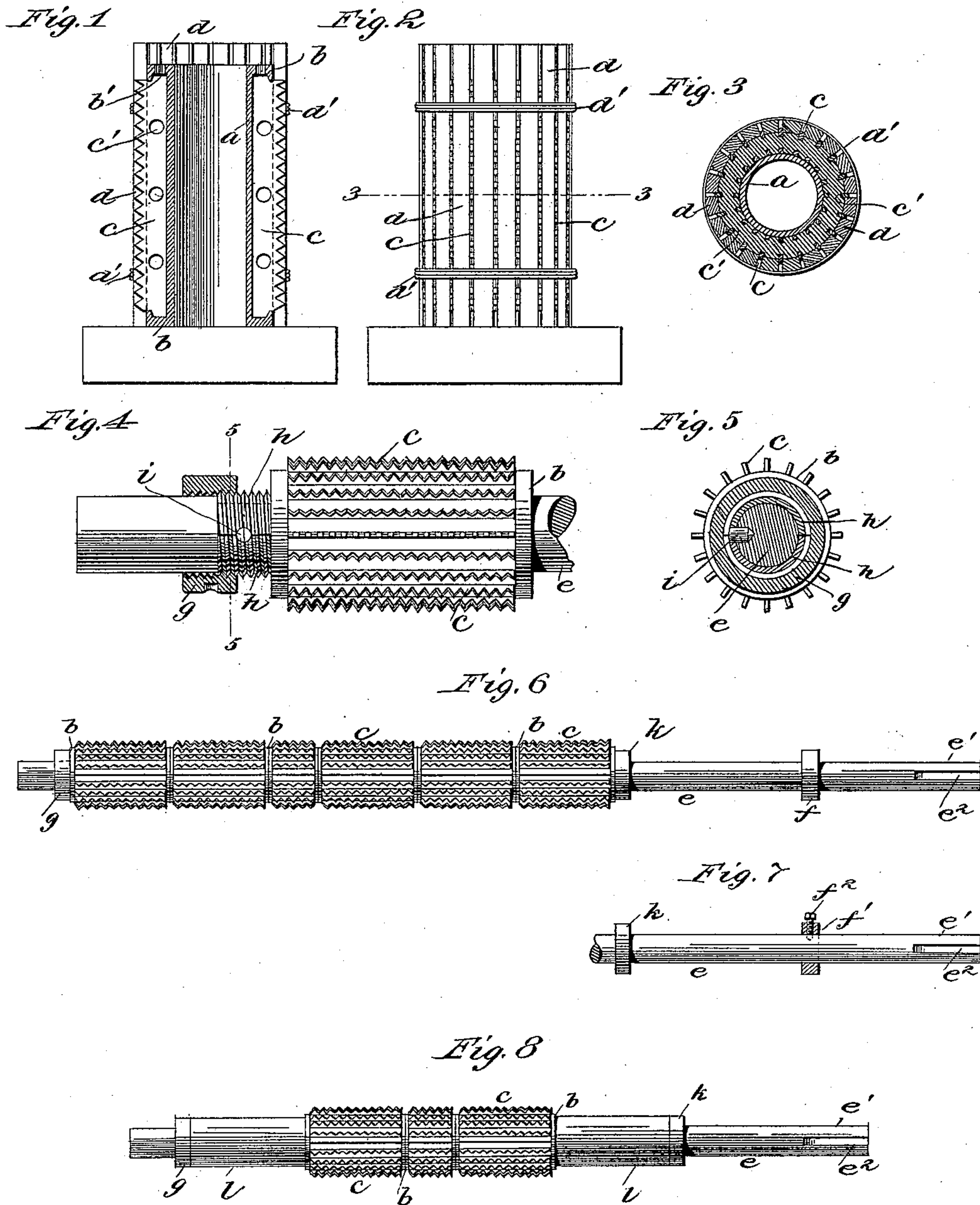
No. 606,886.

Patented July 5, 1898.

C. E. BUEK.
SECTIONAL FEED ROLL FOR GANG EDGERS.

(Application filed July 31, 1897.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

CHARLES E. BUEK, OF RICHMOND, VIRGINIA.

SECTIONAL FEED-ROLL FOR GANG-EDGERS.

SPECIFICATION forming part of Letters Patent No. 606,886, dated July 5, 1898.

Application filed July 31, 1897. Serial No. 646,583. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. BUEK, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented a certain new and useful Improvement in Sectional Feed-Rolls for Gang-Edgers, of which the following is a full, clear, and exact description.

This invention relates more especially to feed-rolls for that class of sawing-machines known as "gang-edgers." It is a fact that the greater part of the sawing is done to one side of the machine and to such extent that one end of the feed-roll is worn more rapidly than the other, and hence it results that the feed-roll has to be replaced as a whole when it is only worn out in part. In some cases the feed-roll is taken out and has to be sent to a distance for repair, and meanwhile, unless a duplicate is at hand, the machine is idle. Not only so, but freight or express charges are high, owing to the weight of the feed-roll. With these difficulties in mind I have invented a feed-roll made in sections and with the sections interchangeable, so that when one section becomes worn it may be replaced by another section of the same roll or by a change section or by turning the section end for end, or the worn section may be removed and repaired while the remaining sections are in use. By this construction the machine never need be idle. Moreover, by making the roll in sections the worn section may be removed and returned to the manufacturer for repair, and being separate from the shaft and of proportionately light weight the transportation charges are materially reduced. Another advantage obtained by my invention is that feed-rolls of different lengths and having the active feeding devices located in any desired manner may be readily assembled upon a shaft which may be fitted to work in any machine, and hence my invention is applicable not only to new machines, but to those already in use.

As already sufficiently indicated, my invention consists of a feed-roll having serrated active edges and made up in sections, which sections are applicable to a shaft or spindle in any desired number and manner, all sub-

stantially as I will proceed now more particularly to set forth and finally claim.

In the accompanying drawings, illustrating my invention, in the several views of which like parts are similarly designated, Figure 1 is a longitudinal section of one of my feed-roll sections in process of construction. Fig. 2 is an elevation. Fig. 3 is a cross-section taken in the plane of line 3 3, Fig. 2, showing the addition of the blade-holding metal. Fig. 4 is an elevation and partial section of one section and a part of its shaft or spindle. Fig. 5 is a cross-section taken in the plane of line 5 5, Fig. 4. Fig. 6 is an elevation showing one capacity of my invention. Fig. 7 is an elevation, partly in section, of the driving end of the shaft or spindle supplied with a movable collar. Fig. 8 is an elevation showing a further capacity of my invention.

The several sections of my feed-roll may be constructed as follows: A spool *a*, having undercut or other heads *b*, in one of which openings *b'* are made, is taken, and between the heads are arranged the plates *c*, of steel and having serrated edges. These plates are spaced equidistant by means of strips of wood or other material *d*, after which all are bound together by wire or other bands *d'*. The plates may be provided with holes or openings or notches, as *c'*. Molten metal, such as Babbitt or other fusible metal, is then poured through openings *b'* until the spaces between the plates are filled up to the level of the inner edges of the strips *d*, the metal flowing through the opening *c'*, and thus keying in the plates. After the molten metal is cooled the strips *d* are removed and the surplus metal trimmed off. The plates are thus rigidly and readily secured to the spool. So far as the method of and means for securing the plates to the spool are concerned the foregoing description states the invention of Patent No. 325,339, dated September 1, 1885.

The plates are arranged with their teeth in alinement, so that the said teeth may be readily sharpened by an ordinary file, passed circumferentially around the roll. The plates are also spaced apart so short a distance that in the revolution of the roll one plate is just leaving the board as the next adjacent plate

in the direction of rotation touches the board, and by so arranging the plates the board is fed regularly and straight, and the impact of the roll thereupon is insufficient to disfigure materially the surface of the board.

In order to economize in the manufacture of the shaft or spindle upon which the sections of my feed-roll are mounted, I use a metallic rod *e* of uniform diameter throughout and without reduced ends for the bearings and for the driving-pulley. The end *e'* for the driving-pulley may have a key-seat *e*². That end also is provided with a bearing-collar *f*, which may be shrunk on it, as in Fig. 6, or such bearing-collar may be movable and secured by a set-screw, as in Fig. 7, *f'* being the collar and *f*² the set-screw.

If a roll of the extreme width of the machine be desired, the bearing-collar may be used as the abutment for the end section, and then section after section is applied to the shaft or spindle, and the end section at the opposite end is secured by a collar or nut *g*, having an internal screw-thread, which is adapted to engage a split screw-seat *h*, which is countersunk in the shaft or spindle *e*, the said countersink being the only reduced portion of the shaft or spindle. As shown in Figs. 4 and 5, the split seat is made up of semicircular halves abutted against one another at one side and against a centering-pin *i* at the other side. When all the sections are on the shaft or spindle and the split seat in place, the collar or nut *g* is turned up against the end section, and the several sections are thus held in place by friction. The collar or nut *g*, having its screw-thread running in an opposite direction to the direction of rotation of the roll, serves as a jam-nut, the hold of which is tightened under resistance in operation of the roll.

The sections may be made of any desired length, and sections of different lengths may be placed upon one and the same spindle or shaft. If it be desired to have only one end or less than the whole length of a shaft or spindle of given length supplied with my sections, then an abutment-collar *k* may be placed upon the shaft at the desired point, either by shrinking or by a set-screw, and then the desired number of sections applied to the shaft or spindle and secured by a screw-collar or nut *g*, such as shown in Fig. 4. Furthermore, when it is desired to arrange the active portion of the feed-roll (my toothed sections) at points between the ends, as in Fig. 8, dummy sections *l* of reduced diameter, such as pieces of ordinary tubing, may be placed between the toothed sections and the collars. Thus it will be seen that by making the feed-roll in sections in accordance with my invention I am enabled to fill orders in accordance with the individual purchaser's wishes without the necessity of altering the main construction of the sections and their shaft or spindle. Not only so, but all of the advantages of repair

and change and transportation heretofore referred to accrue.

While I have specially designed my invention for use in gang-edgers, I wish to be understood as not limiting my invention to a feed-roll of that one particular kind or class of machine.

Not only may the sections be changed from one end of the shaft or spindle to the other, but the individual sections may be turned end for end when one end is worn more than the other.

Abundant practical tests show that with the use of my feed-roll, and by changing the sections as they are worn so as to preserve uniform diameter of such roll, there is practically little or no output of crooked lumber or lumber having its edge cut in other than straight lines. Another attribute of my feed-roll is that it does not follow the grain of the lumber.

Of course I do not limit my invention to the means for securing the sections to the shaft or spindle, nor to the described means for securing the several collars to said shaft or spindle.

What I claim is—

1. As an improved article of manufacture, a sectional feed-roll for gang-edgers, comprising a shaft or spindle, a bearing-collar fixed thereon, a series of change sections arranged on the shaft or spindle and having blades arranged in longitudinal parallel rows, the said sections being adapted to be changed end for end and rearranged at pleasure upon the shaft or spindle, a screw-threaded seat on said shaft or spindle at the end opposite the bearing-collar, and a nut on said seat adapted to be crowded against the near section and to press the sections together and against the collar and frictionally hold them on said shaft or spindle to turn with it, substantially as described.

2. A sectional feed-roll, comprising a shaft or spindle, a series of roll-sections mounted upon said shaft or spindle, an externally-screw-threaded split seat countersunk in said shaft or spindle, and a nut applied to the shaft or spindle on such split seat and abutted against the endmost section, substantially as described.

3. A sectional feed-roll, comprising a shaft or spindle of uniform diameter, a series of roll-sections mounted upon said shaft or spindle, an externally-screw-threaded split seat countersunk in said shaft or spindle, and a nut applied to the shaft or spindle on such split seat and abutted against the endmost section, substantially as described.

In testimony whereof I have hereunto set my hand this 30th day of July, A. D. 1897.

CHARLES E. BUEK.

Witnesses:

C. W. BOURNE,
N. LODOR.