(No Model.)

C. P. COTTRELL.

TOOTHED RACK FOR PRINTING OR OTHER MACHINES.

No. 574,196. Patented Dec. 29, 1896.

Fig. 4.

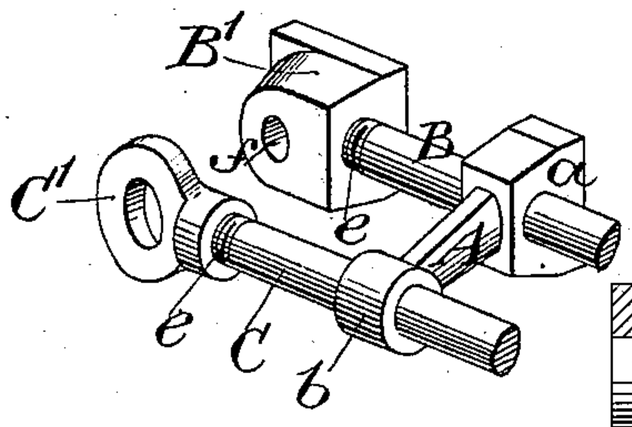


Fig. 3.

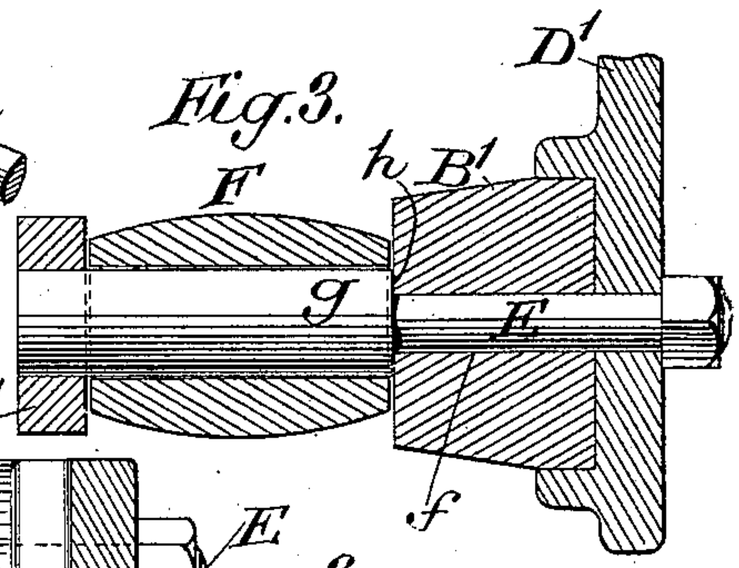


Fig. 1.

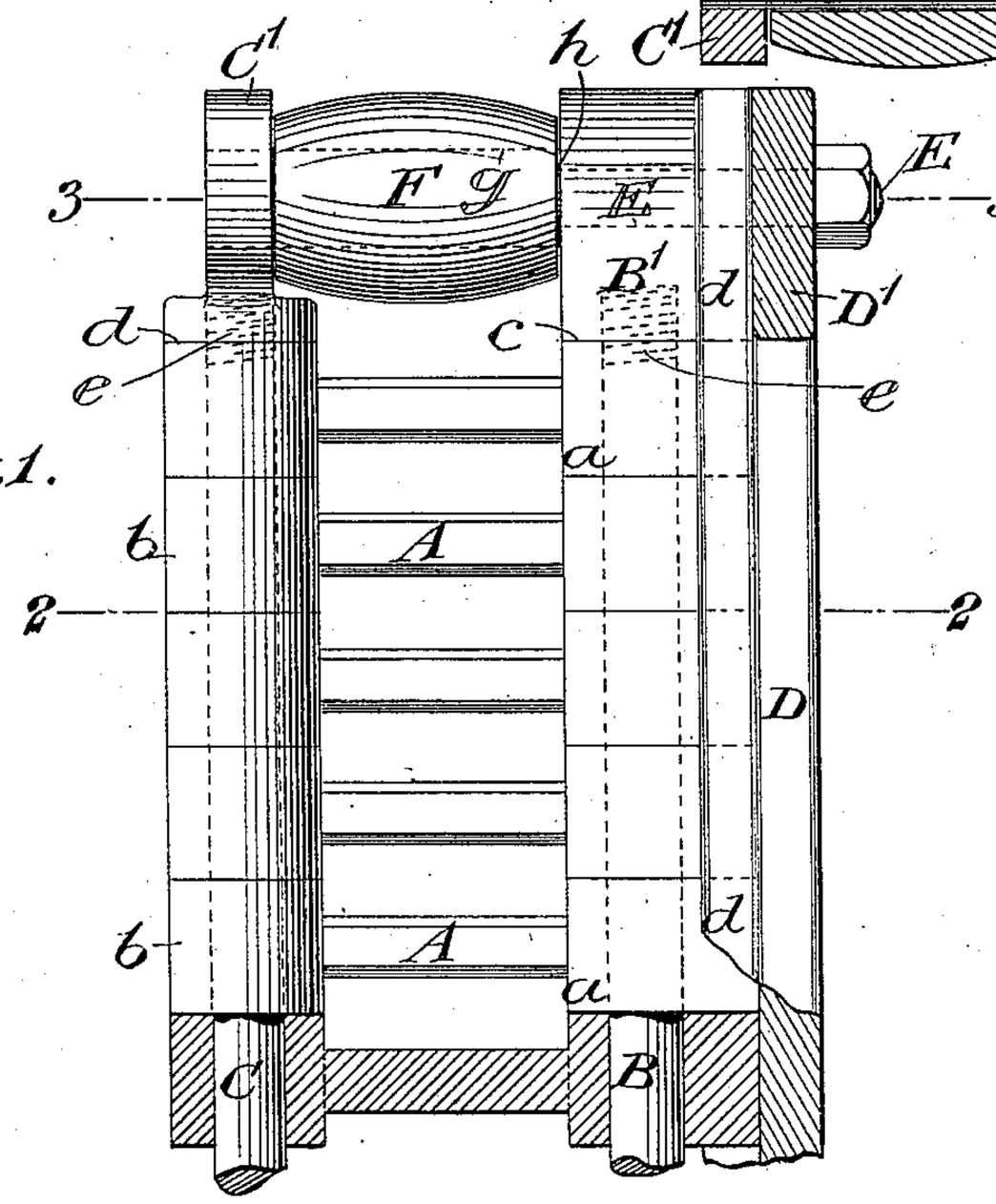
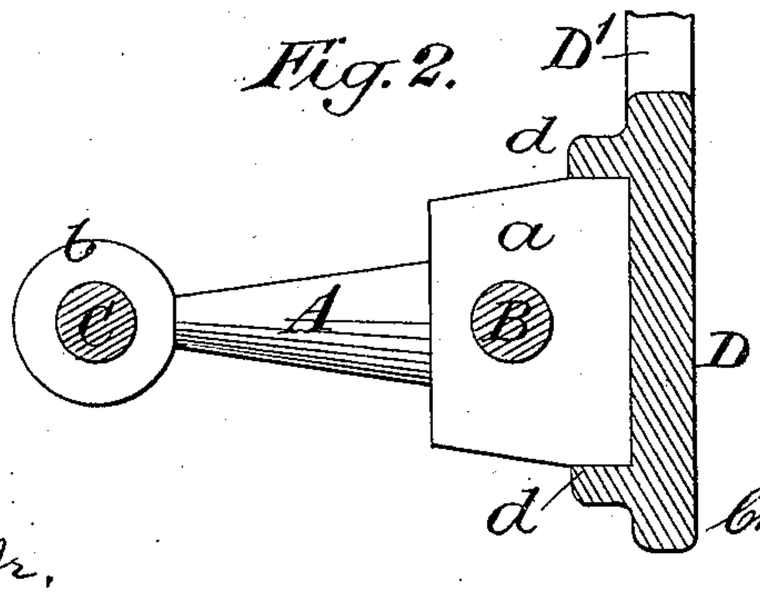


Fig. 2.



Witnesses:-

George Barry Jr.

M. E. Fletcher

Inventor:-

Charles P. Cottrell

by attorneys

Brown & Seward

UNITED STATES PATENT OFFICE.

CHARLES P. COTTRELL, OF STONINGTON, CONNECTICUT, ASSIGNOR TO THE C. B. COTTRELL & SONS COMPANY, OF SAME PLACE AND NEW YORK, N. Y.

TOOTHED RACK FOR PRINTING OR OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 574,196, dated December 29, 1896.

Application filed October 21, 1896. Serial No. 609,516. (No model.)

To all whom it may concern:

Be it known that I, CHARLES P. COTTRELL, of Stonington, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Toothed Racks for Printing or other Machines, of which the following is a specification.

This invention relates especially to what is known as a "mangle-rack," which is employed in combination with a pinion known as a "mangle-pinion," which engages with the said rack on its upper and lower sides alternately, such a rack and pinion being commonly used for giving reciprocating motion to the type-bed of a printing-machine.

The mangle-rack as heretofore commonly constructed has had the teeth solid or integral with the rack-bar, and consequently it has been difficult to trim them to a proper profile to correspond with the teeth of the pinion, and, moreover, it has been difficult to repair or replace the teeth in case of fracture or damage thereto.

This invention consists in a mangle-rack of novel construction, with each tooth of one piece separate from the others, and provides for the separate dressing of the teeth before they are incorporated into the rack and for their removal therefrom in case of breakage or damage, the so-constructed rack being stronger and more durable than the solid rack in common use.

I will first describe, with reference to the accompanying drawings, a rack embodying my invention and will afterward point out its novelty in claims.

Figure 1 in the drawings is a plan view, partly in section, of a portion of a mangle-rack embodying my invention and a portion of the hanger by which it is attached to the bed of the machine. Fig. 2 represents a transverse section of the rack and hanger in the line 2 2 of Fig. 1. Fig. 3 represents a transverse section of the rack and hanger in the line 3 3 of Fig. 1. Fig. 4 is a skeleton view in perspective, illustrating the mode of assembling the parts of which the rack is composed.

Similar letters of reference designate corresponding parts in all the figures.

A A designate the teeth of the rack, each having formed in the same piece with it a stock *a* at one end and an eye *b* at the other end, the said stock and eye having a thickness in the direction of the length of the rack equal to the distance between the centers of two teeth, or, in other words, equal to the pitch of the rack. The teeth thus constructed are firmly secured together by two bars or rods B and C, the bar or rod B passing through holes provided for it in the stocks *a*, and the bar or rod C passing through the eyes *b*. The bar or rod B is provided at each end with a head-piece B′, and the bar or rod C is provided at each end with an eyepiece C′, the said head-piece and eyepiece being shouldered, as shown at *c* and *d*, respectively, against the stocks *a* and eyes *b* of the first and last teeth of the rack. At one end of each of the bars B and C the head-piece B′ and the eyepiece C′ may be formed in the same piece with its respective bar, but at one end at least the said head-piece and eyepiece should be formed as nuts to screw upon screw-threads *e* on the bars for the purpose of clamping all the teeth together, both through the stocks *a* and through the eyes *b*, the said teeth, bars, head-pieces, and eyepieces forming a practically solid rack which may be fitted and secured in any suitable manner to to the hanger D D′, by which it is attached to the bed of the printing-machine.

In the example represented the so-constructed rack is represented as having the stocks *a* of its teeth abutting against the face of the hanger between two longitudinally-arranged flanges *d d* thereon and as secured thereto by a bolt E, which also serves as a pivot for one of the rollers F, which is applied at each end of the rack to conduct the mangle-pinion from the lower to the upper and from the upper to the lower side of the rack. The said bolt is inserted through the eye C′ and through a hole *f*, provided in the head-piece B′, and its pivotal portion *g* is shouldered, as shown at *h* in Fig. 3, against the head-piece,

so that the nut applied to the screw-threaded portion of the bolt which protrudes through the back of the hanger serves to clamp the head-piece to the hanger and secure the rack thereto.

What I claim as my invention is—

1. In a mangle-rack the combination of separate teeth having each a stock at one end and an eye at the other the thickness of said stock and eye in the direction of the length of the rack being equal to the pitch of the rack, screw-threaded bolts one passing through the stocks and another passing through the eyes of the several teeth and nuts applied to said bolts to clamp the several teeth together, substantially as herein described.

2. The combination of a rack composed of separate teeth having each a stock at one end and an eye at the other end, screw-threaded clamping-bolts passing one through the stocks and the other through the eyes of the several teeth, a hanger against which the said stocks severally abut and which is provided with flanges between which said stocks are received, and means of securing the so-formed rack to the said hanger, substantially as herein set forth.

3. The combination of a rack composed of separate teeth each having a stock at one end and an eye at the other end, screw-threaded clamping-bolts passing one through the stocks and another through the eyes of the several teeth, nuts on said bolts one of said nuts forming a head-piece to the rack and the other forming an eyepiece, a hanger against which the stocks of the teeth abut, a roller between said head-piece and eyepiece, and a bolt which passes through said head-piece and eyepiece and which constitutes both a pivot for said roller and a means for securing the rack to the hanger, substantially as herein described.

CHARLES P. COTTRELL.

Witnesses:

FREDK. HAYNES,

EDWARD VIESER.