

(No Model.)

E. A. BALZ.  
BOILER FLUE CLEANER.

No. 557,299.

Patented Mar. 31, 1896.

Fig. 2.

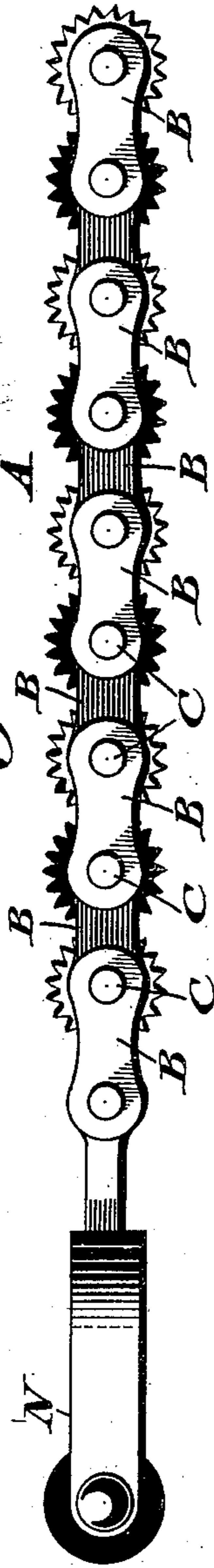


Fig. 1.

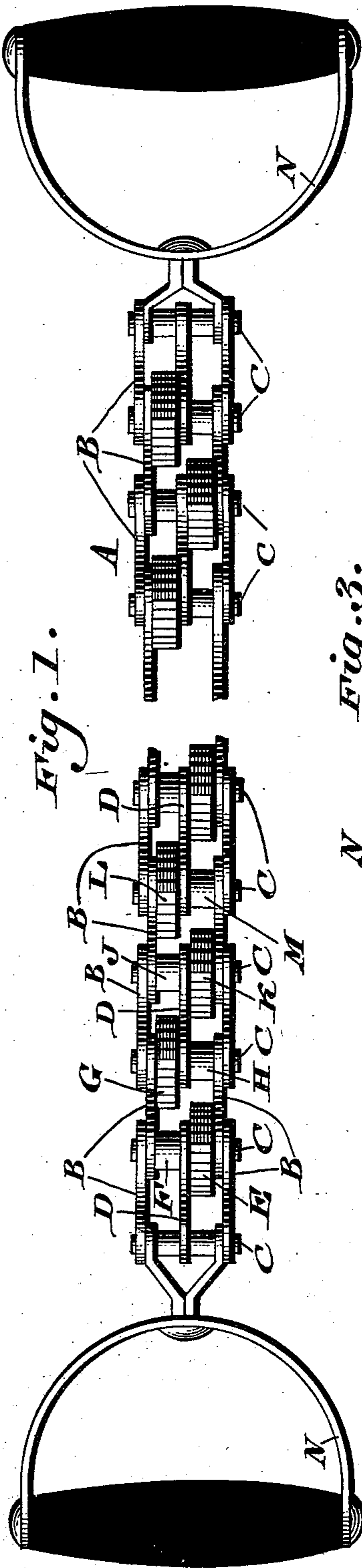
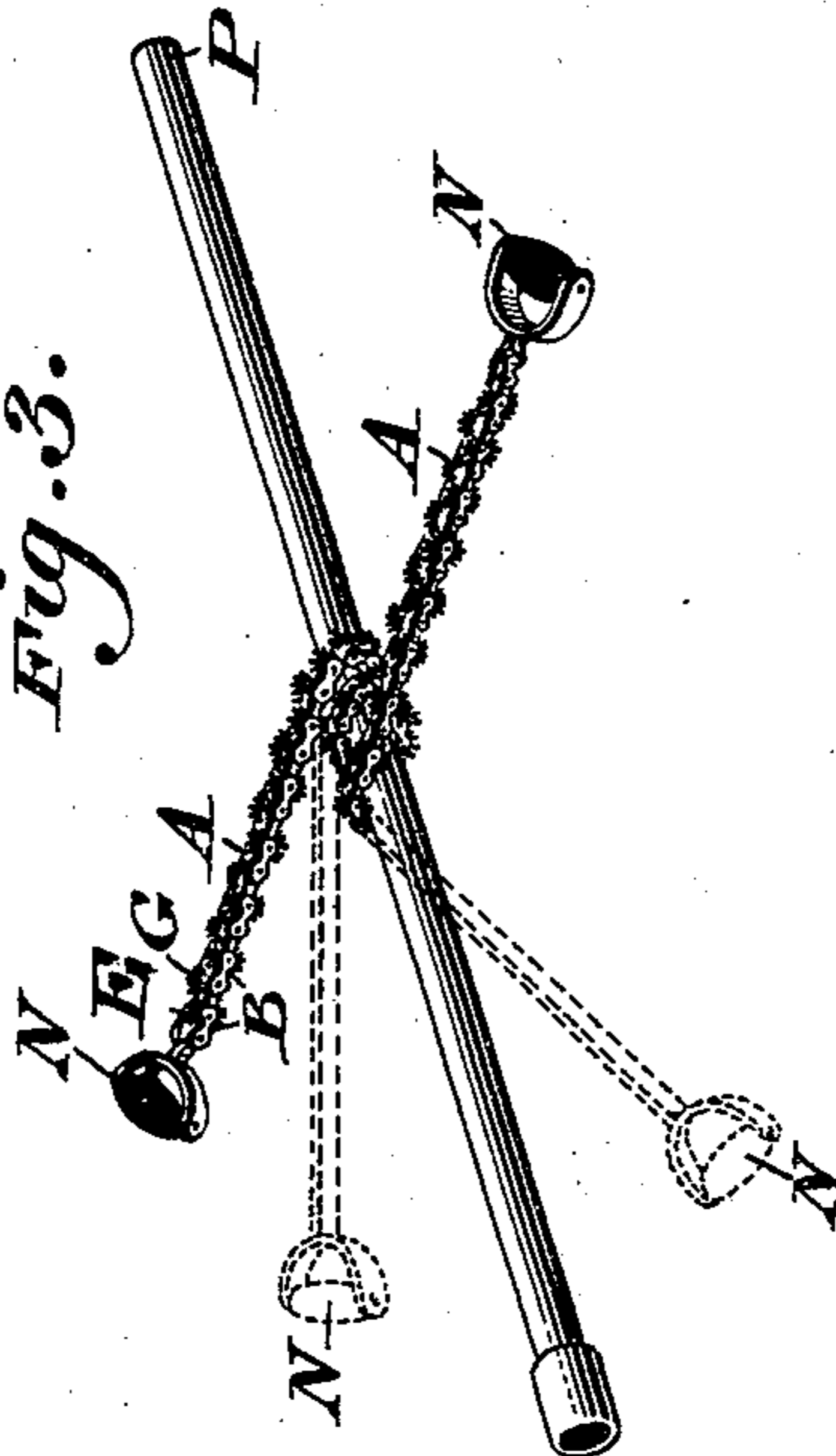


Fig. 3.



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# UNITED STATES PATENT OFFICE.

EMIL A. BALZ, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO WILLIAM W. LAMBERT AND JOHN E. REYBURN, OF PHILADELPHIA, PENNSYLVANIA.

## BOILER-FLUE CLEANER.

SPECIFICATION forming part of Letters Patent No. 557,299, dated March 31, 1896.

Application filed June 22, 1895. Serial No. 553,634. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL A. BALZ, a citizen of the United States, residing in the city, county, and State of New York, have invented a new and useful Improvement in Boiler-Flue Cleaners, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a novel construction of boiler-flue cleaner, which is adapted to be applied to the exterior of a boiler flue or tube for the purpose of removing scale or sediment therefrom, means being provided for enabling the cleaner to be wrapped about the tube to the desired extent and for imparting a movement to the cleaner longitudinally of the tube or flue.

It further consists of novel details of construction, all as will be hereinafter set forth.

Figure 1 represents a plan view of a boiler-flue cleaner embodying my invention. Fig. 2 represents a side elevation of a portion of the same. Fig. 3 represents, on a reduced scale, a perspective view of a boiler-tube, showing the application of the cleaner thereto.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a cleaner for the exterior surface of boiler tubes or flues, the same consisting of the links B B, which are arranged in pairs opposite to each other, and are connected by the pivots or pins C, somewhat after the manner of a sprocket-chain.

D designates centrally-located spacing-strips, through which said pivots C also pass, between which strips and said links are alternately journaled the serrated or roughened rollers E G K L, &c., it being noted that said rollers are arranged in staggered position, one roller being journaled on a pin C at one side of the first spacing-strip D, while the next roller is journaled on the other side of the next spacing-strip, and so on, the thimbles F H J M, &c., being also arranged in staggered position and serving to hold said strips

in their proper position relative to the rollers or cutters, and so prevent lateral shifting of the same.

N designates handles, which are attached in any suitable manner to the extremities of the chain which constitutes the cleaner, the same being of any desired length, preferably about thirty-six to forty inches for ordinary use.

The operation is as follows: When the tube P becomes incrustated with scale or sediment upon its exterior, the cleaner A is wrapped around the same, as seen in Fig. 3, and upon grasping the handles N and pulling on the same in either direction, as indicated in dotted lines in said Fig. 3, it will be evident that the sharp serrated or roughened edges of the rollers or cutters E J K, &c., will contact with substantially every portion of the tube, and the scale will be effectively and completely removed therefrom, the operation being continued as long as any scale remains upon the tube, and each tube being cleaned successively, as is evident.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a boiler-tube cleaner having a body formed of chain-links, serrated rollers alternately on opposite sides of the links, means for retaining said rollers in position and handles on the ends of said body, substantially as described.

2. A boiler-tube cleaner consisting of a chain formed of pivoted links, spacing-strips on the pivotal pins of the links, serrated rollers mounted on said pins and alternately on opposite sides of said spacing-strips, thimbles on said pins and handles on the ends of said chain, said parts being combined substantially as described.

EMIL A. BALZ.

In presence of—

WILLIAM REHFUS,  
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