(No Model.) 2 Sheets—Sheet 1.

A. P. HINE.

SCRAP CUTTER FOR SHEET METAL EDGING MACHINES.

No. 438,845. Patented Oct. 21, 1890.

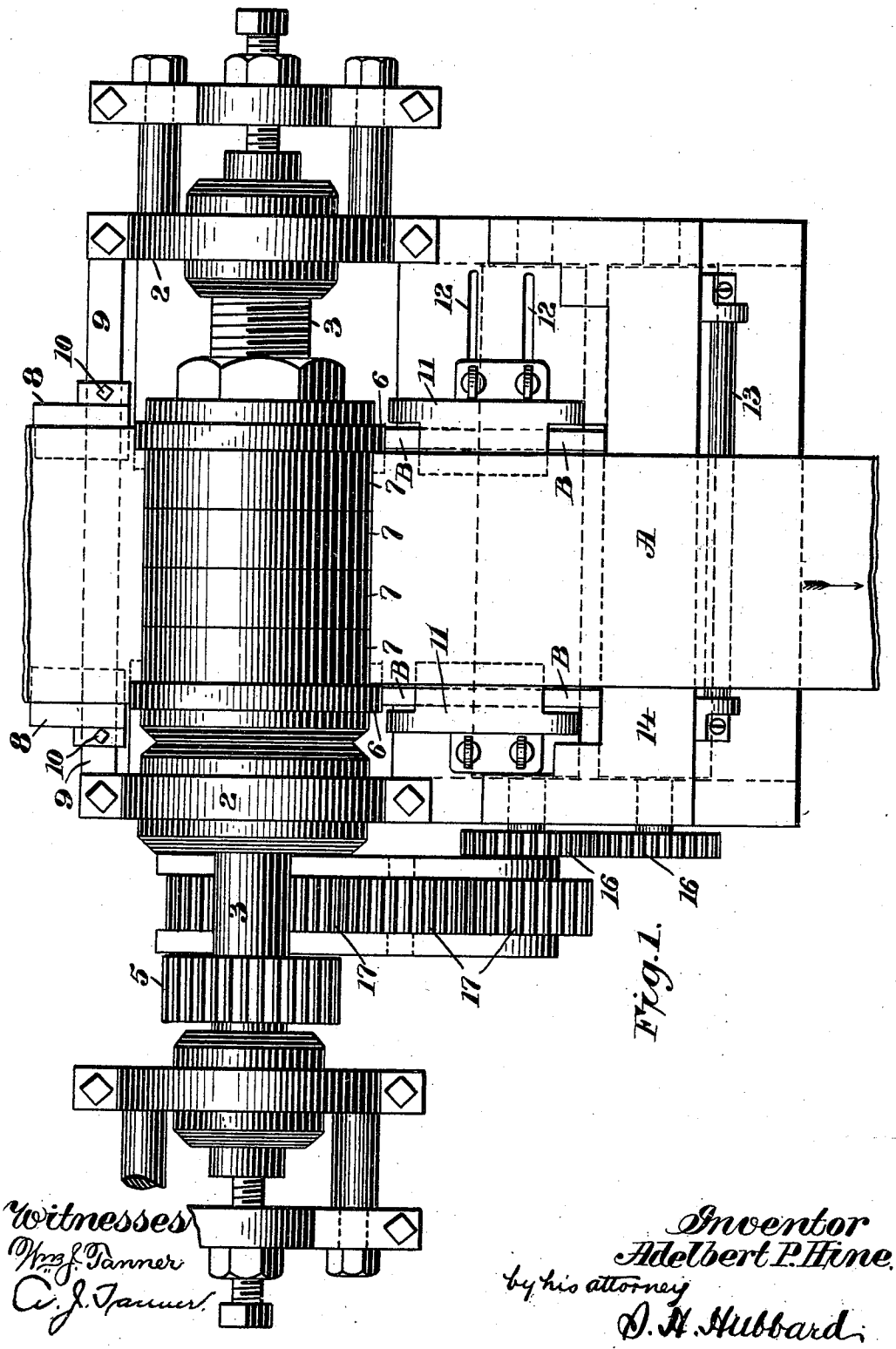


Fig. 1.

Witnesses
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by his attorney
D. A. Hubbard.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

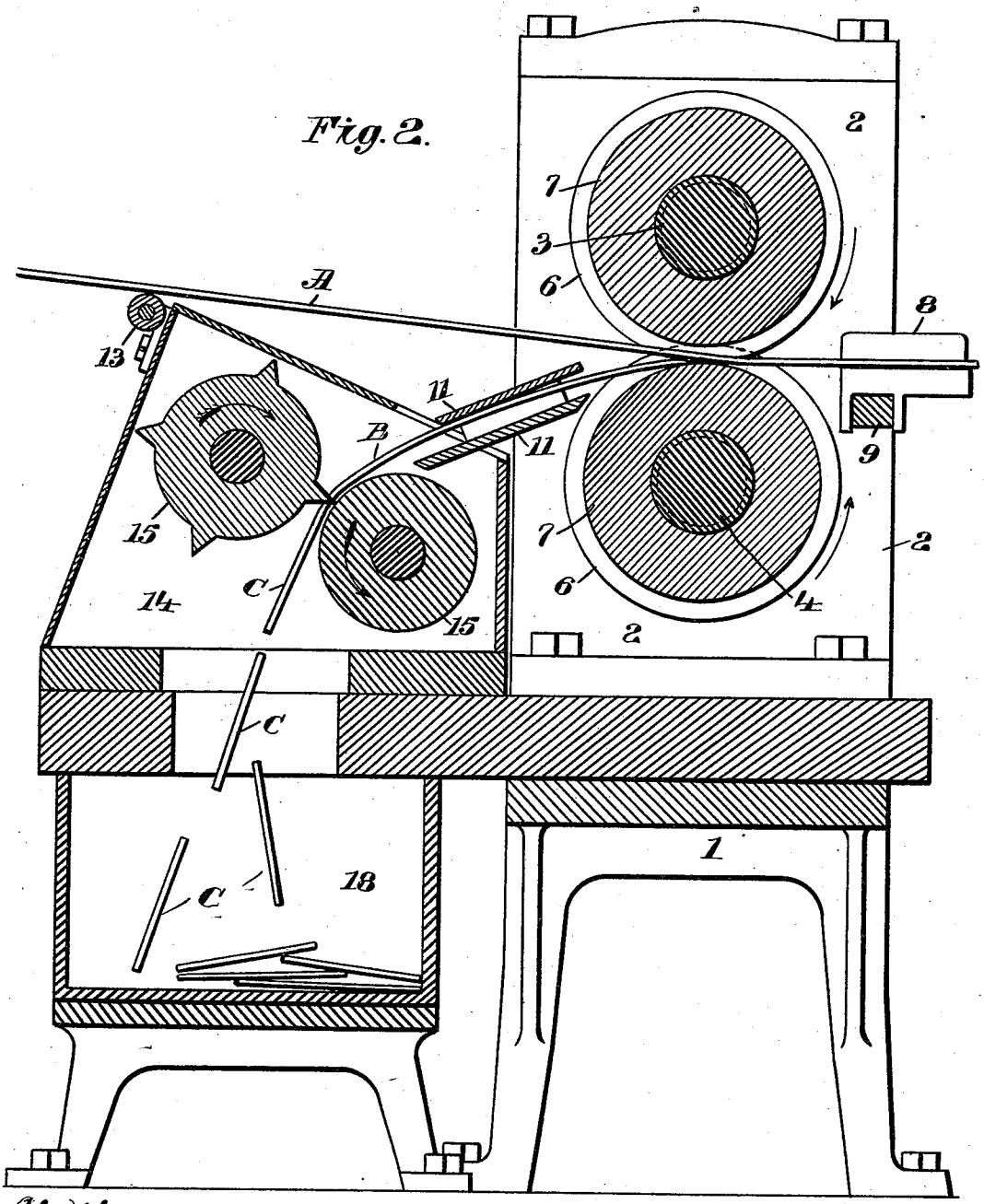
(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.



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UNITED STATES PATENT OFFICE.

ADELBERT P. HINE, OF TORRINGTON, CONNECTICUT, ASSIGNOR TO THE COE BRASS MANUFACTURING COMPANY, OF SAME PLACE.

SCRAP-CUTTER FOR SHEET-METAL-EDGING MACHINES.

SPECIFICATION forming part of Letters Patent No. 438,845, dated October 21, 1890.

Application filed July 5, 1890. Serial No. 357,868. (No model.)

To all whom it may concern:

Be it known that I, ADELBERT P. HINE, a citizen of the United States, residing at Torrington, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Scrap-Cutters for Sheet-Metal-Edging Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in machines for edging or trimming sheet or strip metal, and has for its objects to automatically dispose of the scrap cut from the edges of the strip and divide the same into short pieces which may be conveniently handled in filling crucibles for remelting and the like.

Heretofore in the operation of edging-machines it has been customary to have one or more attendants, whose duty is to seize and roll or bunch the strips as they issue from the cutters, so that they may neither pass outward and be wound with the finished coil nor enter and foul the working parts of the machine.

My invention is designed both to dispense with the services of the attendant above referred to and to divide the scrap as aforesaid.

With the ends heretofore specified in view, my invention consists, primarily, in the combination, with the devices for edging the strip, of a cutting or chopping mechanism into which the scrap is led and wherein it is divided, and also in the general features of construction and combination of elements hereinafter fully explained, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of one form of machine embodying my invention, and Fig. 2 a vertical section substantially central of Fig. 1.

Like numerals and letters denote the same parts in both the figures of the drawings.

Upon a suitable frame 1 are standards 2, having bearings in which are journaled parallel shafts 3 4, preferably connected together by a pair of gears 5 and driven from any suitable source of power. These shafts carry a pair of rollers provided with rotary cutters 6, which are adapted to shear the metal. The rollers preferably consist of a number of rings 7, strung together on the shafts so as to separate the cutters, which are either independent rings of larger size than the rings 7 or are in the form of flanges upon certain of said rings. The machine may therefore be altered so as to operate upon metal of various widths.

8 denotes a guide through which the strip of metal to be cut, and which is lettered A, enters between the cutters. This guide is preferably adjustable as to its width, as by being formed in two parts capable of movement along a bar or way 9 and of being secured thereon by set-screws 10 or similar fastenings. Arranged behind the cutters is another guide 11, which is like the guide just described, inasmuch as it is made in two parts, which are adjustable toward and from each other in slots or ways 12, (see Fig. 1,) as required by the width of the metal to be cut. This guide extends outward and downward obliquely to the feed-line of the sheet, whose main portion, after passing between the rollers, runs outward over a guide-roller 13, and is thereafter coiled or wound or otherwise disposed of. The guides last referred to are adapted to conduct the strips B, which the cutters trim from the edges of the sheet, downward into a box or case 14, within which is a chopping or cutting mechanism, which I show as consisting of two rollers 15, connected by gears 16 and driven from the lower shaft 14 through suitable interposed gears, preferably three, which I denote by the numeral 17. One of the rolls 15 has radially-projecting cutting-blades, which engage against the surface of the other roll, and thereby sever the scrap into short lengths, which I letter C, and which fall from the cutters into a suitable receptacle 18.

In the operation of my invention the strip to be operated upon is led between the cutters from a suitable roll or reel, (not shown,) and said strip is thereupon trimmed or cut to the width determined by the distance between the

cutters. As it issues from between the cutter-rolls the central portion of the sheet is led outward substantially in a horizontal line and is coiled up or otherwise disposed of. The ends of the narrow edges severed from the strip are conducted into the obliquely-placed guides and thence are presented to the chopping-rollers, whereby they are cut into the short lengths shown at Fig. 2. The chopping-rollers being geared to the edgers will vary in speed with them, and are adapted to use up the scrap as fast as it issues from the edge-cutters.

In this my invention I do not confine myself to the construction which I have illustrated and described, since it may be widely varied in accordance with the claims without departing from the spirit and aim of my invention.

I claim—

1. In a machine as described, the combination, with a pair of slitting-shears, of a chopping mechanism at the rear of the slitting-shears and adapted to sever the scrap transversely to the length of the latter, substantially as set forth.

2. In an edging-machine, the combination, with the cutters for trimming the strip, of a chopping mechanism arranged behind the cutters and a suitable guide whereby the scrap from the trimmed sheet is conducted to the chopping mechanism.

3. In a sheet-metal-edging machine, the combination, with the cutters whereby the strip is trimmed, of a chopping mechanism located below the feed-line of the sheet and a guide or deflector arranged in the path of the issuing scrap, whereby the latter is conducted to the chopping devices, substantially as set forth.

4. In a machine of the character described, the combination, with a pair of shear-carrying rolls, of a pair of chopping-rolls arranged behind the first-named rolls and driven therefrom and a guide interposed between the two pairs of rolls and adapted to conduct the scrap from the first-named pair to the second-named pair, substantially as set forth.

5. In a machine of the character described, the combination, with the devices for trimming the sheet, of a guide through which said sheet or strip passes to the trimmer, a roll or guide at the rear of the trimming devices for the support of the body of the strip, a guide arranged behind the trimming devices and oblique to the path of the body of the strip, and a chopping mechanism located at the lower end of said oblique guide, substantially as set forth.

6. The combination, with the cutter-carrying rollers, of the chopping-rollers, whereof one carries radial knives or cutters, the oblique guide adjustable in width and interposed between the two pairs of rollers, and a suitable receptacle for the chopped scrap, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ADELBERT P. HINE.

Witnesses:

CHAS. F. BROOKER,

S. H. HUBBARD.