

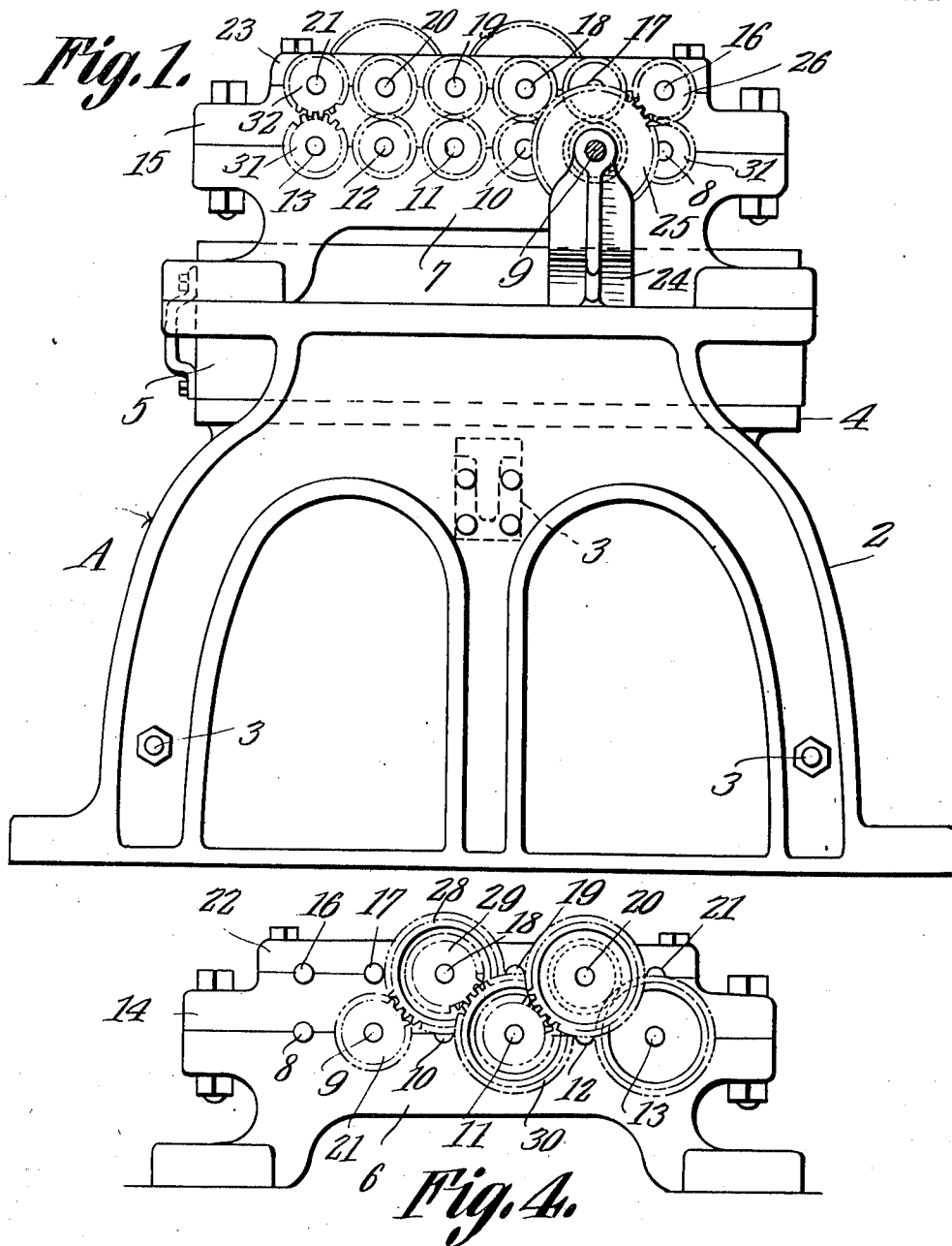
W. M. CONNOR.
DETINNING MACHINE.

APPLICATION FILED AUG. 1, 1911.

1,021,302.

Patented Mar. 26, 1912.

3 SHEETS-SHEET 1.



WITNESSES
Frank B. Woodw.
E. Walton Brevington

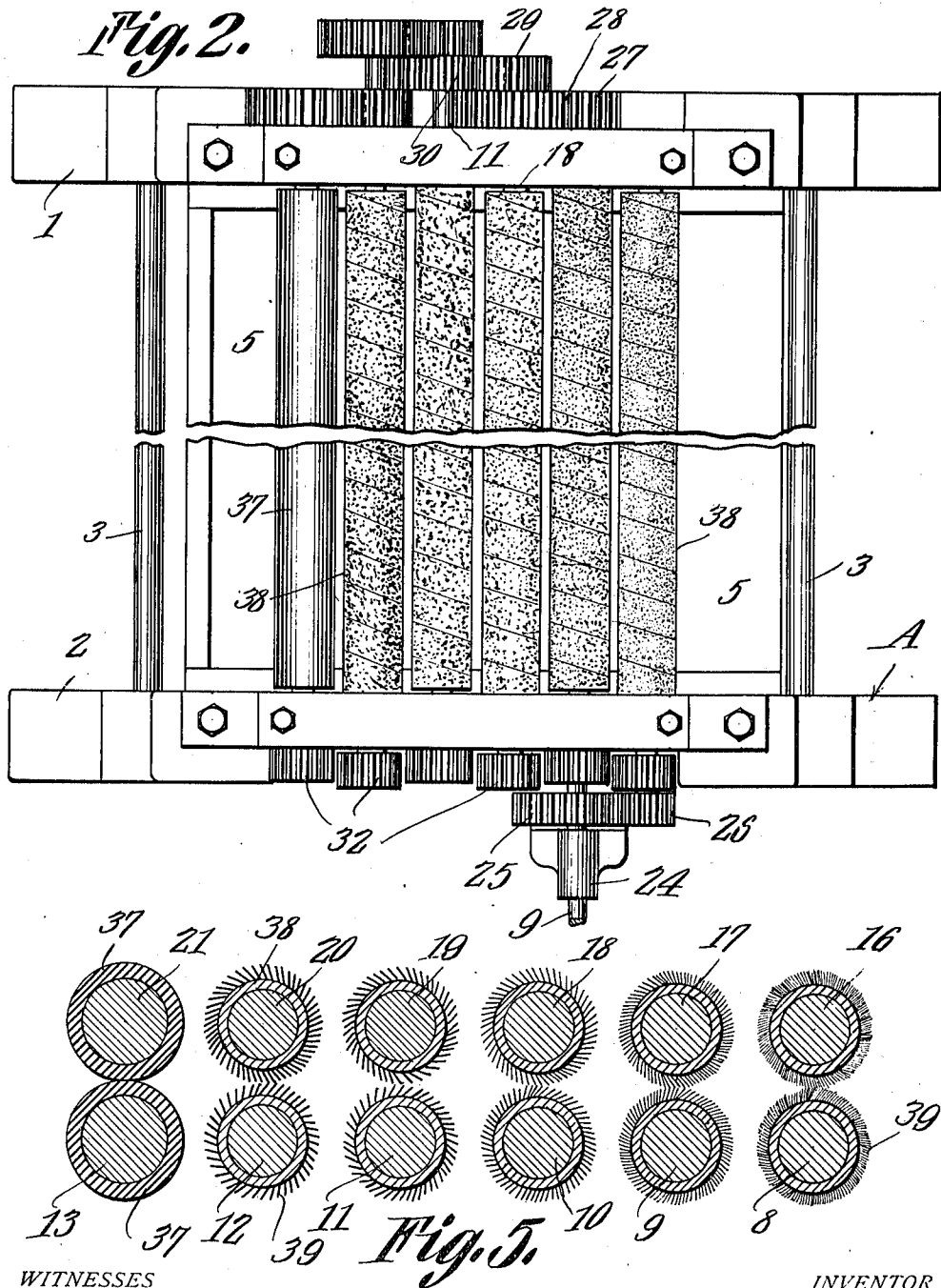
INVENTOR
By William M. Connor
Henry J. Brevington, Attorney

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WITNESSES
Frank B. Woodew.
C. Patton Brumington.

INVENTOR
William M. Connor,
By Henry J. Brumington
Attorney

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3 SHEETS-SHEET 3.

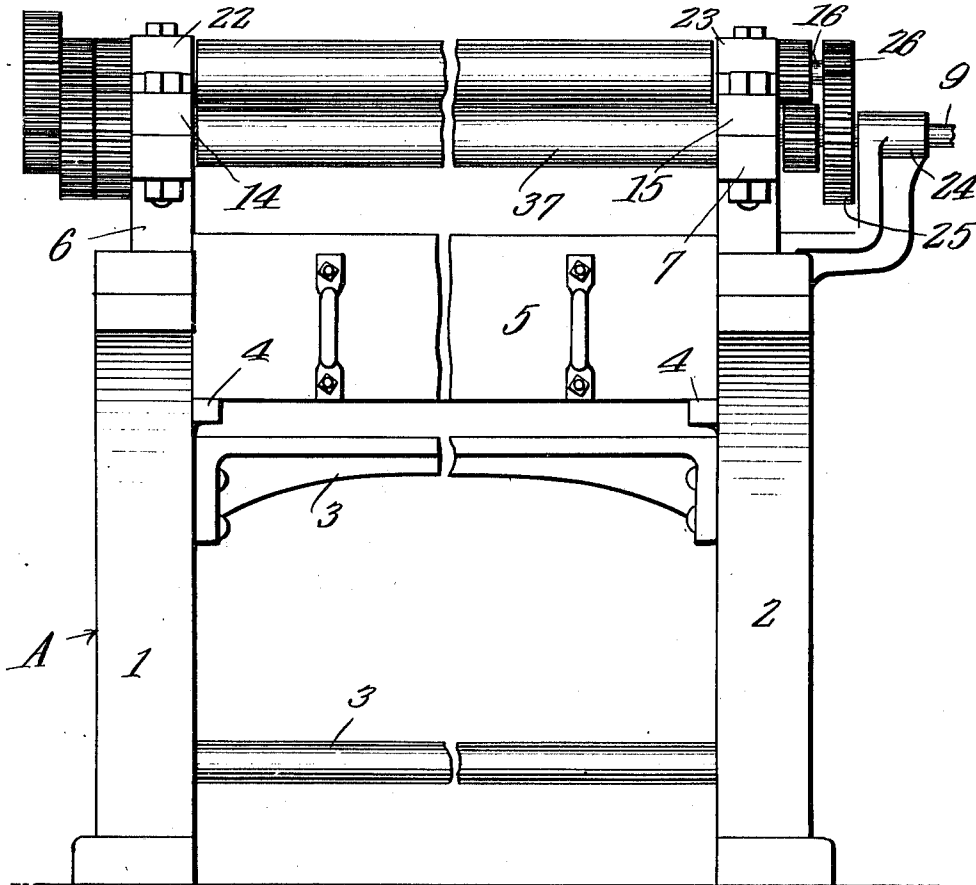


Fig. 3.

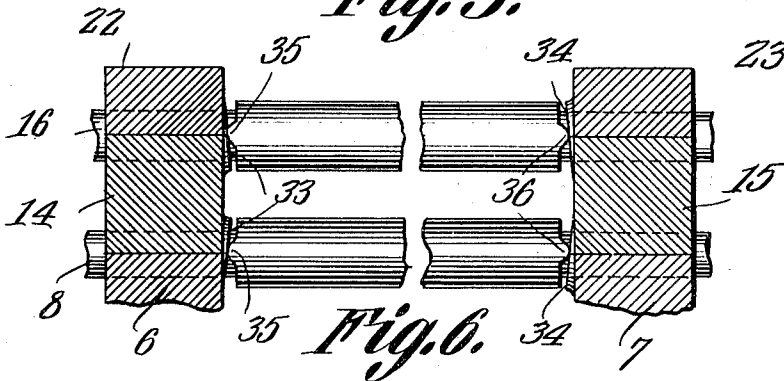


Fig. 6.

WITNESSES
Frank B. Woodew.
C. Walter Brevington.

INVENTOR
By William M. Connor
Henry J. Brevington
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM M. CONNOR, OF BALTIMORE, MARYLAND.

DETINNING-MACHINE.

1,021,302.

Specification of Letters Patent. Patented Mar. 26, 1912.

Application filed August 1, 1911. Serial No. 641,791.

To all whom it may concern:

Be it known that I, WILLIAM M. CONNOR, a citizen of the United States, residing at Baltimore city, State of Maryland, have invented certain new and useful Improvements in Detinning-Machines, of which the following is a specification.

This invention relates to machines for removing the deposit of valuable metal from a base of relatively less value; such for instance as the removal of tin from scrap tin plate or the like, and has for its object the design of a machine of this type whereby the material to be treated is subjected to a thorough scraping action to remove all traces of the plate. This object is obtained by a series of sets of parallelly arranged scraping rolls which are so geared that the rolls of each set rotate at a uniform speed while the speed of each set is increased progressively as the material is fed through the machine.

A still further object being to provide means for imparting a lateral motion to the rolls which tends to break joint between the scraping points on the rolls.

With the foregoing and other objects in view, the invention consists in the combination and arrangement of the parts as will be hereinafter more fully described and shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form arrangement of the parts, proportion as to size, and minor details may be made, within the scope of the claims without departing from the spirit and scope of the invention, or sacrificing any of the advantages pertaining thereto.

In the accompanying drawings forming a part of this specification, Figure 1 is a view in elevation of one side of the machine; Fig. 2 is a plan view of the complete machine; Fig. 3 is a front elevation of the same; Fig. 4 is a side elevation of the reverse side of the machine from that shown in Fig. 1; Fig. 5 is a sectional view in the nature of a diagram of the operating rolls, and Fig. 6 is a detail sectional view of the bearings showing in elevation the causes for imparting longitudinal movement to the rolls.

Similar numerals of reference designate corresponding parts in all of the figures of the drawings.

For the support of the operating parts of the present embodiment of the invention,

there is provided a frame A, consisting of end plates 1 and 2 connected by transverse braces 3. Slidably mounted on bars 4, secured to the end pieces 1 and 2 is a drawer 5 for the deposit of the metal removed from the scrap material. Secured to the frame pieces 1 and 2 are base blocks 6 and 7 which serve as the lower half of a set of bearings for a series of transversely disposed shafts 8, 9, 10, 11, 12 and 13. Disposed above the bases 6 and 7 are bearing blocks 14 and 15 which serve as the other half of the bearing for the shafts 8, 9, 10 etc., as well as the lower bearing for a second set of transversely disposed shafts 16, 17, 18, 19, 20 and 21 corresponding and identical with the aforementioned shafts 8, 9, 10, etc., leap bearing blocks 22 and 23 are respectively fitted to the blocks 14 and 15 thus completing the set of bearings.

Projecting from the base block 6 is an auxiliary bearing 24 and supports the end of the main drive shaft 9, which receives power from any available source. Secured to the shaft 9 between the blocks 7 and 24 is a gear 25 which meshes with a pinion 26 secured to the shaft 16, said pinion being approximately one half the diameter of the gear 25. Secured on the opposite end of the shaft 9 is a pinion 27 which meshes with a gear 28 secured to the shaft 18, said pinion 27 being approximately one half the size of the gear 28; secured to the shaft 18 adjacent to the gear 28 is another pinion 29 which is approximately one half the size of a gear 30, with which it meshes, said gear being secured to the shaft 11. This train or arrangement of gearing is carried throughout the series of shafts, thus increasing the speed progressively throughout the series, from the feed end to the outlet end of the machine.

At the end of the shafts remote from the train of gear just described, each shaft of a set is provided with a gear 31, 32, which intermesh and are of the same size, which serve to transmit power from the live or driven shaft of the set to the dead shaft, thus it will be seen that the two shafts of a set will be driven at a uniform speed, but each set will be driven at a different speed to that of each adjacent set.

Although any one of a number of devices may be used for imparting a longitudinal movement to the rolls, a simple form is herewith shown which consists of cam faces

33, 34 formed on the bearings around each shaft at either end, and cam lugs 35, 36, formed on the enlarged portion of the shaft, and as shown in detail in Fig. 6 is so arranged that the relative movement of each shaft of a set will be in a direction opposite to that of the other of the same set.

It will be seen by reference to Fig. 5 that the first set of rolls or shafts 13 and 21 are covered with leather or other suitable material 37, while the other rolls are covered with a specially prepared abrasive covering consisting of a strip 38 of suitable material, such as leather or canvas which has projecting from one side thereof numerous projections 39, which is in effect a wire brush. These strips 38 are secured adjacent, one end of the shafts and then wound spirally around the shaft and secured at the opposite end, the size of the wire used on each set of rolls is decreased toward the high speed end of the machine, and the number of abrasive points are correspondingly increased as indicated. Thus it will be seen that as the scrap metal is fed to the machine through the feed rolls 13 and 21 it is first acted on by the rolls 12 and 20, and as these rolls are revolving at a greater speed than the feeding rolls, an amount of the metal plate is removed and deposited in the box 5. As each succeeding set of rolls are geared to a higher speed than the preceding set, the same action as above described is obtained, that is each set of rolls act as a retarding and at the same time a scraping set.

By reason of the longitudinal movement imparted to the rolls by the cams, a further scraping effect is secured, at the same

time preventing any tendency of the scraping points to travel. It is of course to be understood that the series of rolls are not to be limited to the number of sets shown as a greater or less number may be used to meet the particular requirements. It may also be stated that the device may be used advantageously for polishing metals or other objects.

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

1. A detinning machine, comprising a plurality of successively acting scraping means, and means for operating said scraping means at an increasing peripheral speed from the feed to the delivery end of the machine.

2. A detinning machine, comprising a plurality of successively acting scraping rollers, means for imparting to said rollers a longitudinally reciprocating movement, and means for rotating said rollers and imparting increased peripheral speeds thereto from the feed to the outlet end of the machine.

3. A detinning machine, comprising a plurality of successively acting scraping rollers embodying cylinders having wire prongs projecting therefrom, said prongs decreasing in diameter and number on each succeeding roller, and means for rotating said rollers.

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

WILLIAM M. CONNOR.

Witnesses:

E. WALTON BREWINGTON,
BROWN M. ALLEN.