No. 712,617. Patented Nov. 4, 1902.

J. H. SWINDELL.

APPARATUS FOR SEPARATING PACKS OF METAL SHEETS OR STRIPS.

(Application filed Feb. 8, 1902.)

(No Model.) 2 Sheets—Sheet 1.

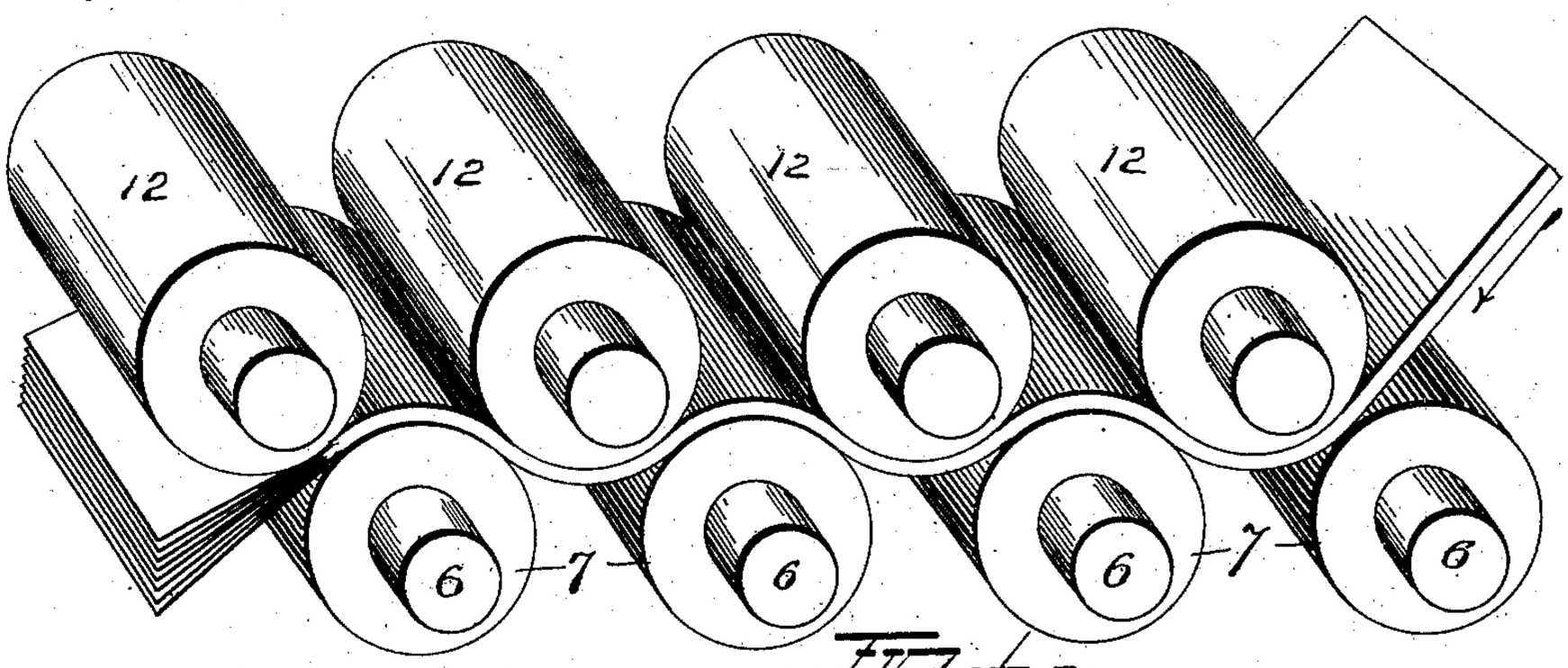

FIG. 1.

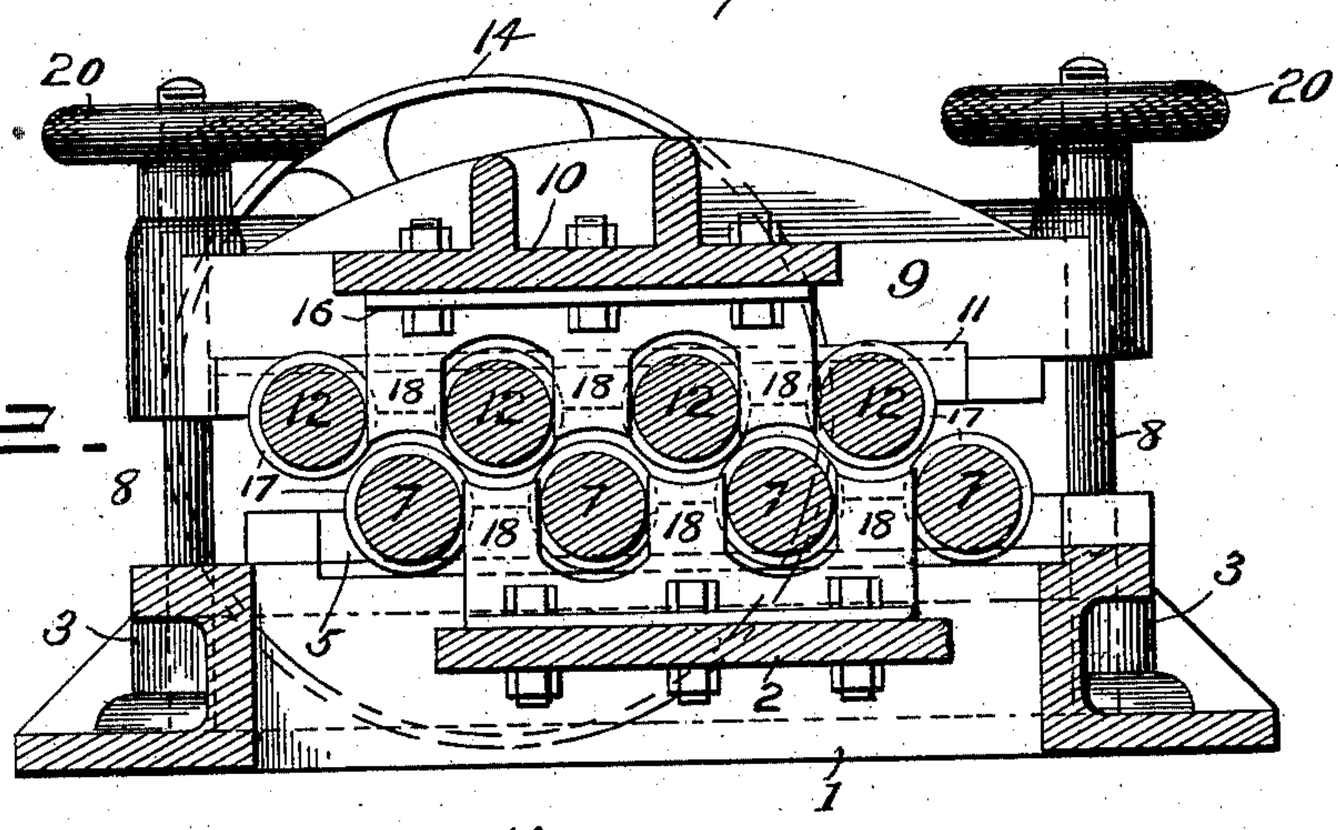

FIG. 2.

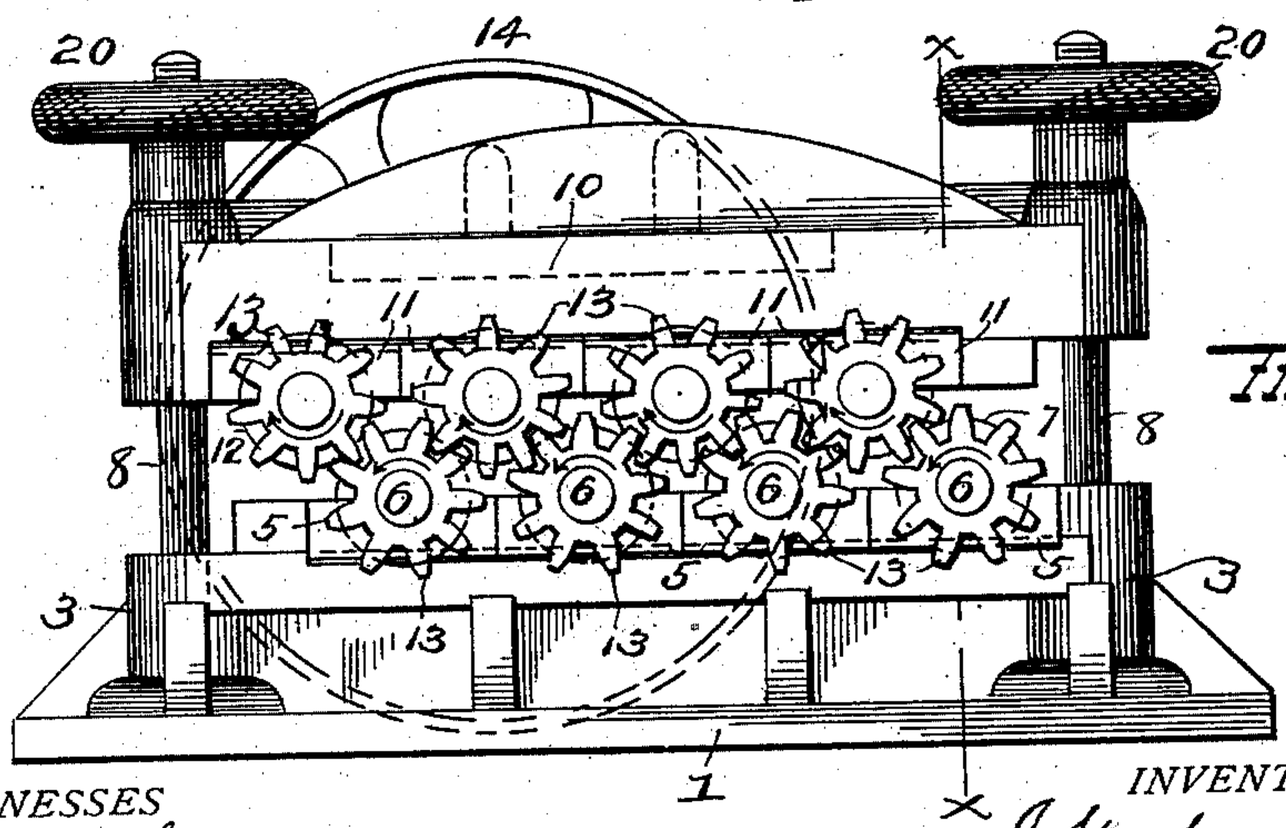

FIG. 3.

WITNESSES

E. L. Nottingham

G. F. Downing.

INVENTOR

J. H. Swindell

By H. A. Seymour Attorney

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FIG. 4.

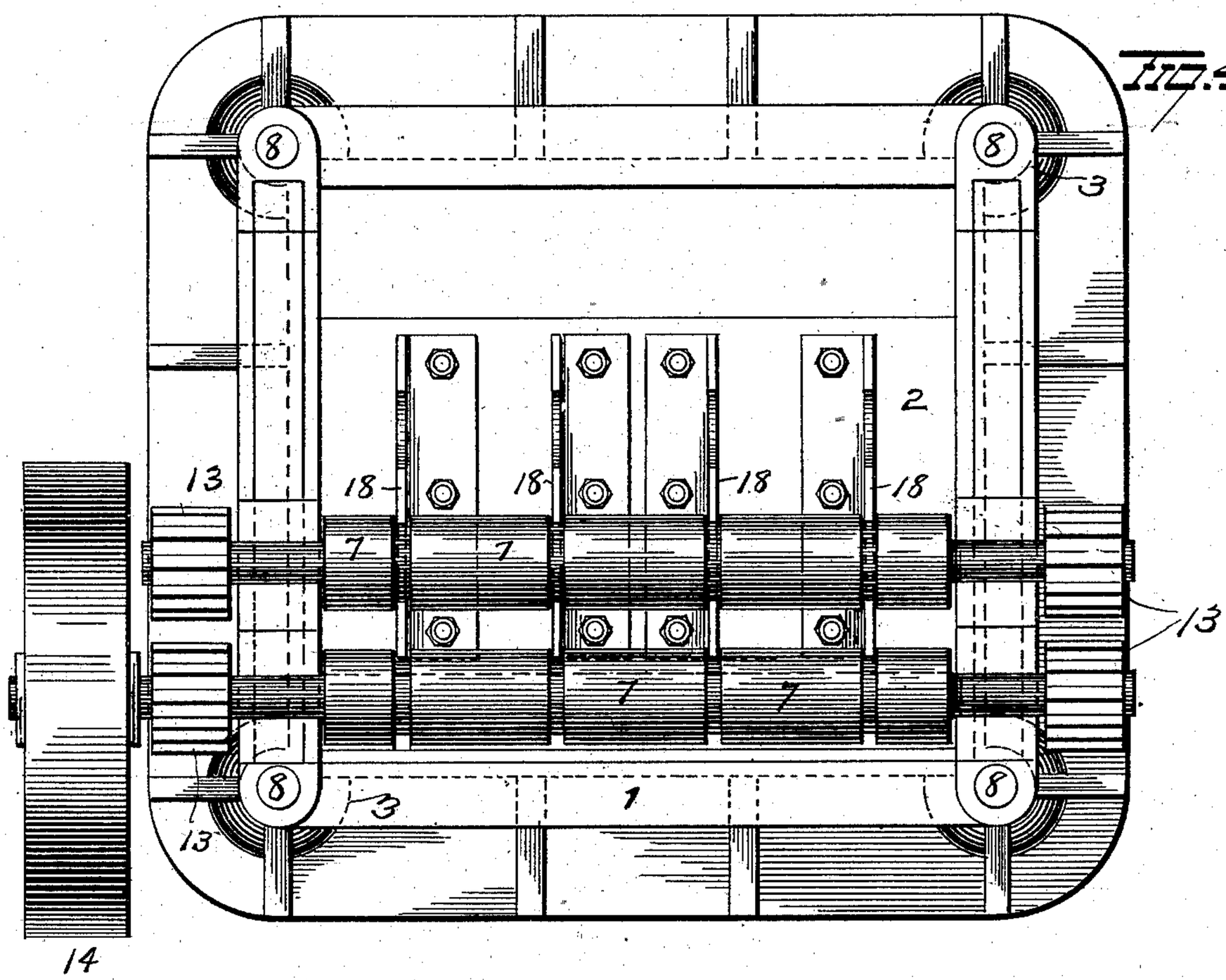
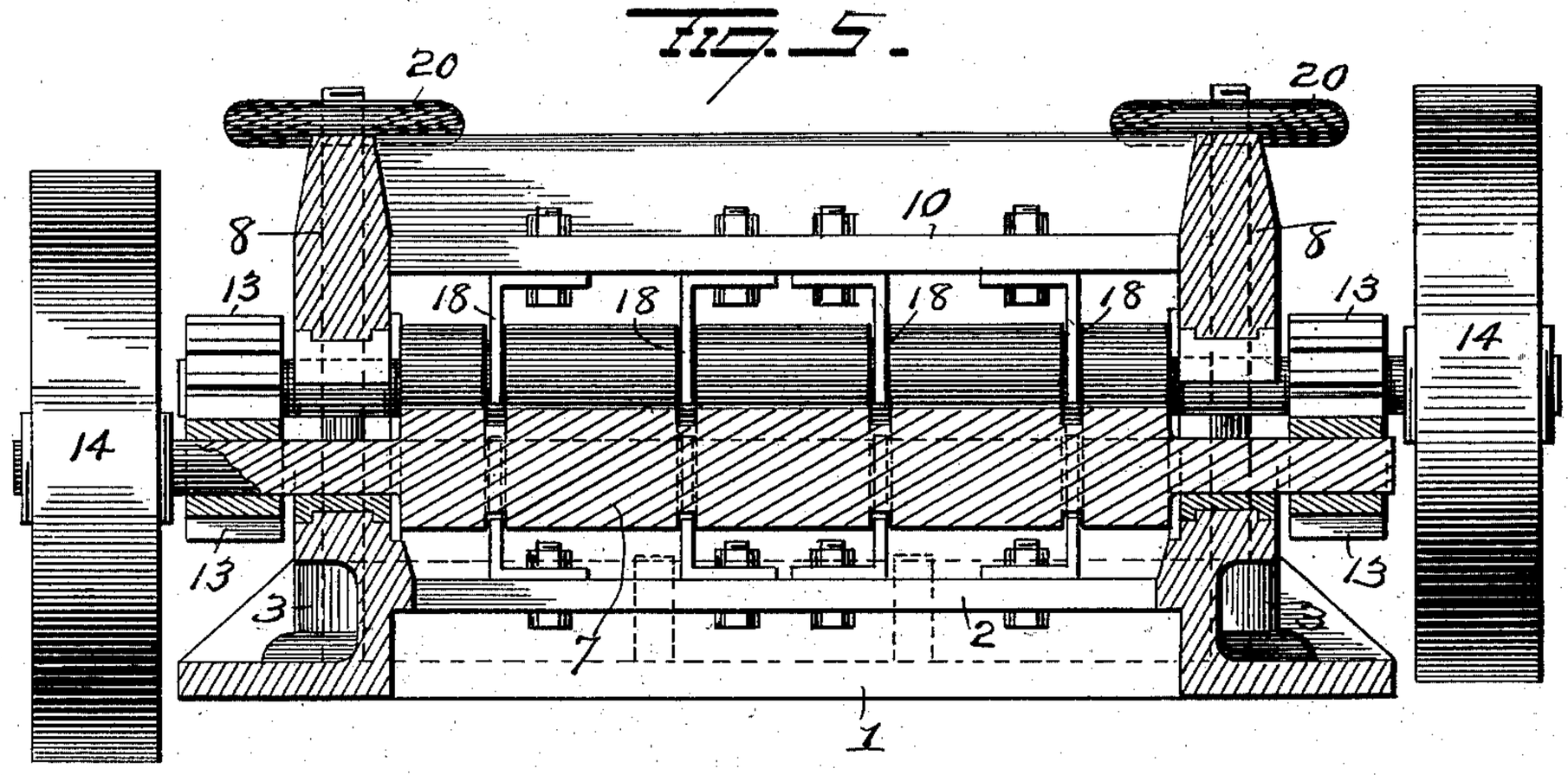


FIG. 5.



WITNESSES
E. L. Nottingham
G. F. Downing.

INVENTOR
J. H. Swindell
By H. A. Seymour
Attorney

UNITED STATES PATENT OFFICE.

JAMES HAMILTON SWINDELL, OF PITTSBURG, PENNSYLVANIA.

APPARATUS FOR SEPARATING PACKS OF METAL SHEETS OR STRIPS.

SPECIFICATION forming part of Letters Patent No. 712,617, dated November 4, 1902.

Application filed February 8, 1902. Serial No. 93,199. (No model.)

To all whom it may concern:

Be it known that I, JAMES HAMILTON SWINDELL, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Separating Packs of Metal Sheets or Strips; 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 an improved apparatus for separating packs of metal sheets or strips, the object of the invention being to provide an improved apparatus of this character through which metal sheets or strips in packs tightly stuck together can be passed and the sheets or strips effectually separated without damage to any of the sheets or strips.

Sheets of tin in their manufacture are sheared into packs composed, usually, of eight sheets, and when finished hot from the mill they stick together, due to the pressure of the rolls on the packs. These sheets have heretofore been separated by hand, which is necessarily a difficult job and results in injury to the sheets, and to provide improved mechanism for automatically separating the sheets without injuring them in the slightest is the purpose of my invention, as will be hereinafter set forth.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view illustrating the principle of my invention. Fig. 2 is a view in section of the apparatus. Fig. 3 is an end view of the same. Fig. 4 is a plan view with the upper half of the apparatus and two of the lower rollers removed, and Fig. 5 is a view in section on the line $x\ x$ of Fig. 3.

1 represents the hollow bed-plate or lower stationary frame of the apparatus, having a platform 2 extending across the same and made with sleeves 3 at its respective corners, as shown. The parallel sides of bed-plate or lower frame 1 are recessed or otherwise made to receive brass bearings 5 for journals 6 on the ends of the lower rollers 7, and rods or standards 8 are mounted in the sleeves 3 at the corners of the bed-plate and headed at their lower ends to prevent their being pulled out of the sleeves and have mounted thereon a rectangular open frame 9, corresponding in shape to the bed-plate or lower frame 1 and having a platform 10, similar to platform 2. On the screw-threaded ends of rods 8 where they project above upper frame 9 hand-wheels 20 are mounted and are adapted to regulate the position of said upper frame, and hence the tension of the rolls, as will more fully hereinafter appear.

The lower edges of the side bars of upper frame 9 are shaped to receive brass bearings 11 for journals on the ends of upper rolls 12, said upper rolls being located above and made to overlap the adjacent rolls of the lower series.

At one side of the machine the journals of all of the rolls 7 and 12 which project outside of the framework have gear-wheels 13 secured thereon, and said gear-wheels intermesh in the manner shown, wherein the gears on the upper rolls mesh with the two gears on the adjacent rolls of the lower series, and vice versa, so that power applied to drive pulleys 14 on any of said journals will operate to simultaneously revolve all of the upper rolls in one direction and all of the lower rolls in the reverse direction, as clearly indicated by the arrows.

On the upper face of lower platform 2 and on the lower face of upper platform 10 metal plates 16 are secured by bolts, as shown, and are made with concave or curved guides 18. The rolls 7 and 12 are made each with a series of circumferential grooves 17, and into these grooves the guides 18 project. Said guides are located between every pair of rolls and are adapted to guide the pack of sheets from one pair of rolls to the next and prevent possibility of the sheets becoming entangled among the rolls.

In operation the pack of sheets or strips is fed between the first pair of rolls 7 and 12, where it is first curved partially around the upper roll 12 by means of the first lower guide or guides 18. The pack is then carried between the first upper roll 12 and the second lower roll 7, around which latter it is bent by the second series of upper guides 18, and so

on throughout the apparatus. This bending of the pack about the rolls serves to effectually separate the sheets or strips from each other, as will be readily understood.

A great many slight changes might be resorted to in the general form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to limit myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. In an apparatus for separating metal sheets or strips, the combination with two series of rolls arranged one above the other and the rolls of one series alternating with the rolls of the other series, each of said rolls having a series of circumferential grooves, and two series of guides, one series interposed between the rolls of one series and entering the grooves therein and the other series disposed between the rolls of the other series and entering the grooves therein.

2. In an apparatus for separating packs of metal sheets or strips, the combination with a lower frame or bed-plate, an upper frame movably supported on rods or standards and having hand-wheels on said rods to regulate the position of said upper frame, of a series of grooved rolls supported in bearings in the lower frame or bed-plate and spaced apart, a similar series of grooved rolls in the upper frame spaced apart and adapted to coöperate with the lower rolls, the rolls of one series alternating with the rolls of the other series, gear-wheels carried by all of said rolls, the gear-wheels of the upper series meshing with the gear-wheels of the lower series adjacent thereto, means for turning said gear-wheels, and guides secured to the upper and lower frames and projecting between the rolls and located in grooved portions thereof, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES HAMILTON SWINDELL.

Witnesses:
GEO. PIPER,
JAMES D. SWINDELL.