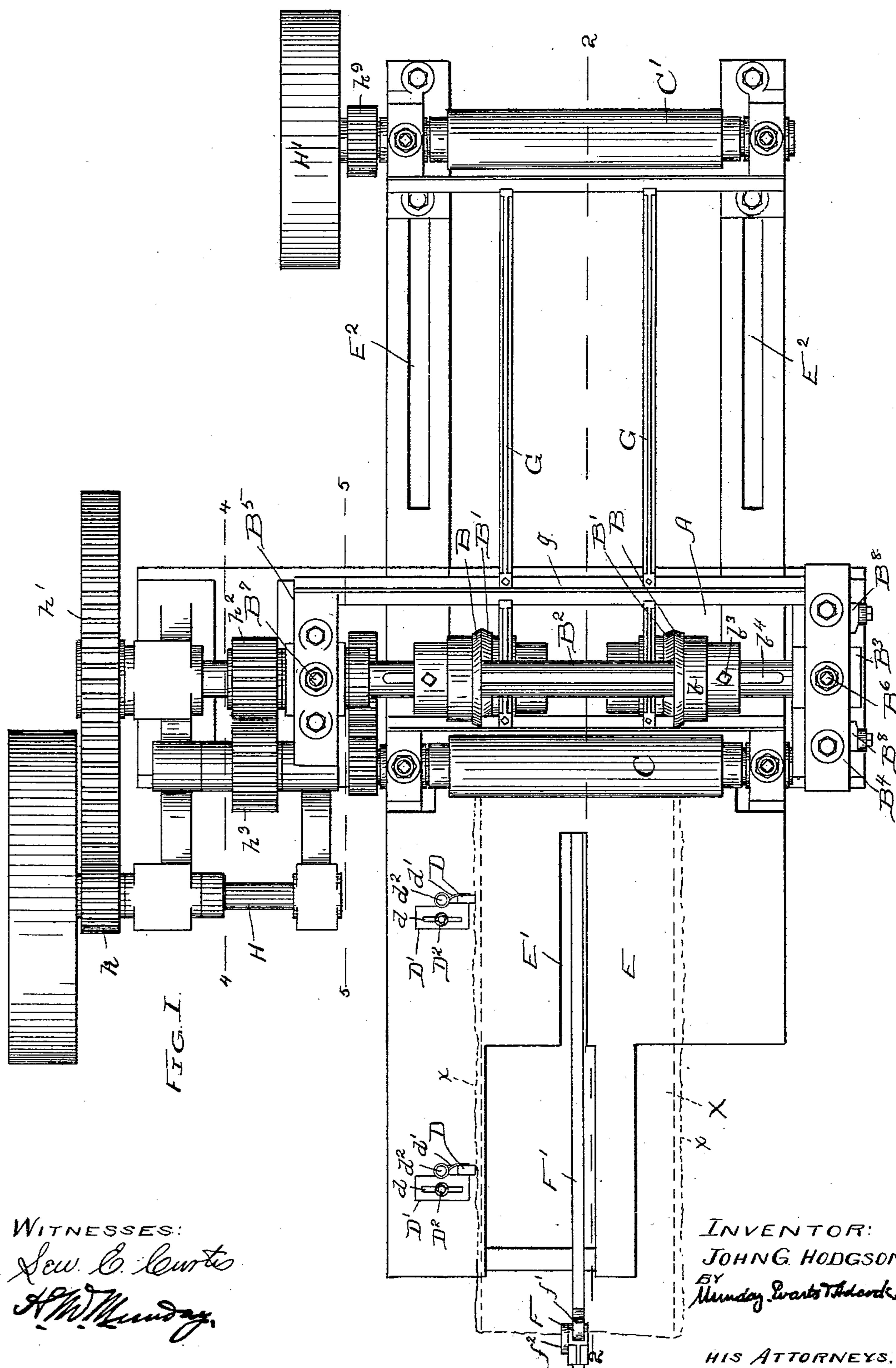


3 Sheets—Sheet 1.

MACHINE FOR CUTTING OR TRIMMING PACKS OF METAL SHEETS.

Patented May 12, 1896.



WITNESSES:

Sew. C. Curtis
H. W. Munday.

INVENTOR:
JOHN G. HODGSON
BY
Munday, Evans & Thorne.

HIS ATTORNEYS.

(No Model.)

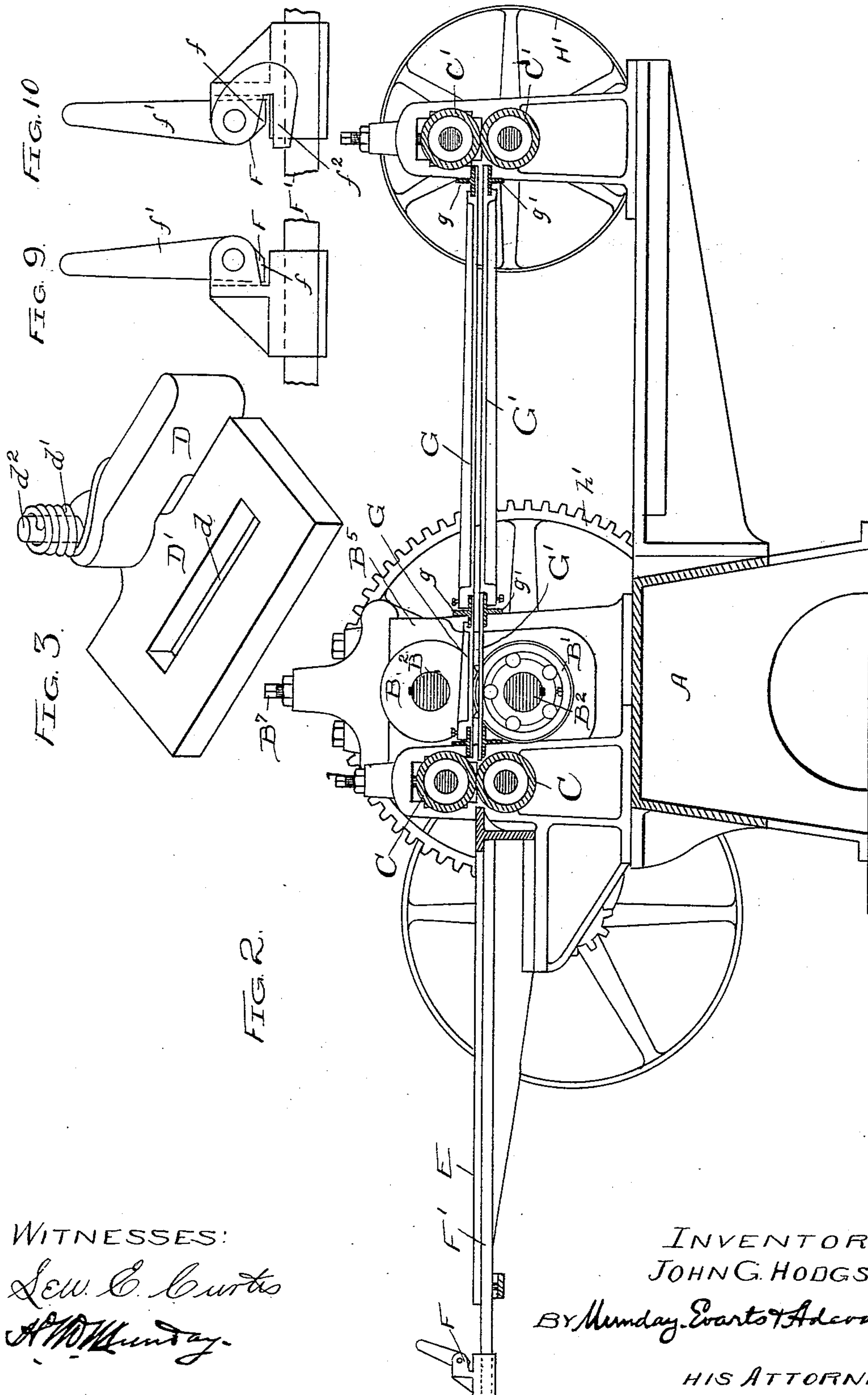
3 Sheets—Sheet 2.

J. G. HODGSON.

MACHINE FOR CUTTING OR TRIMMING PACKS OF METAL SHEETS.

No. 560,065.

Patented May 12, 1896.



WITNESSES:

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INVENTOR:
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(No Model.)

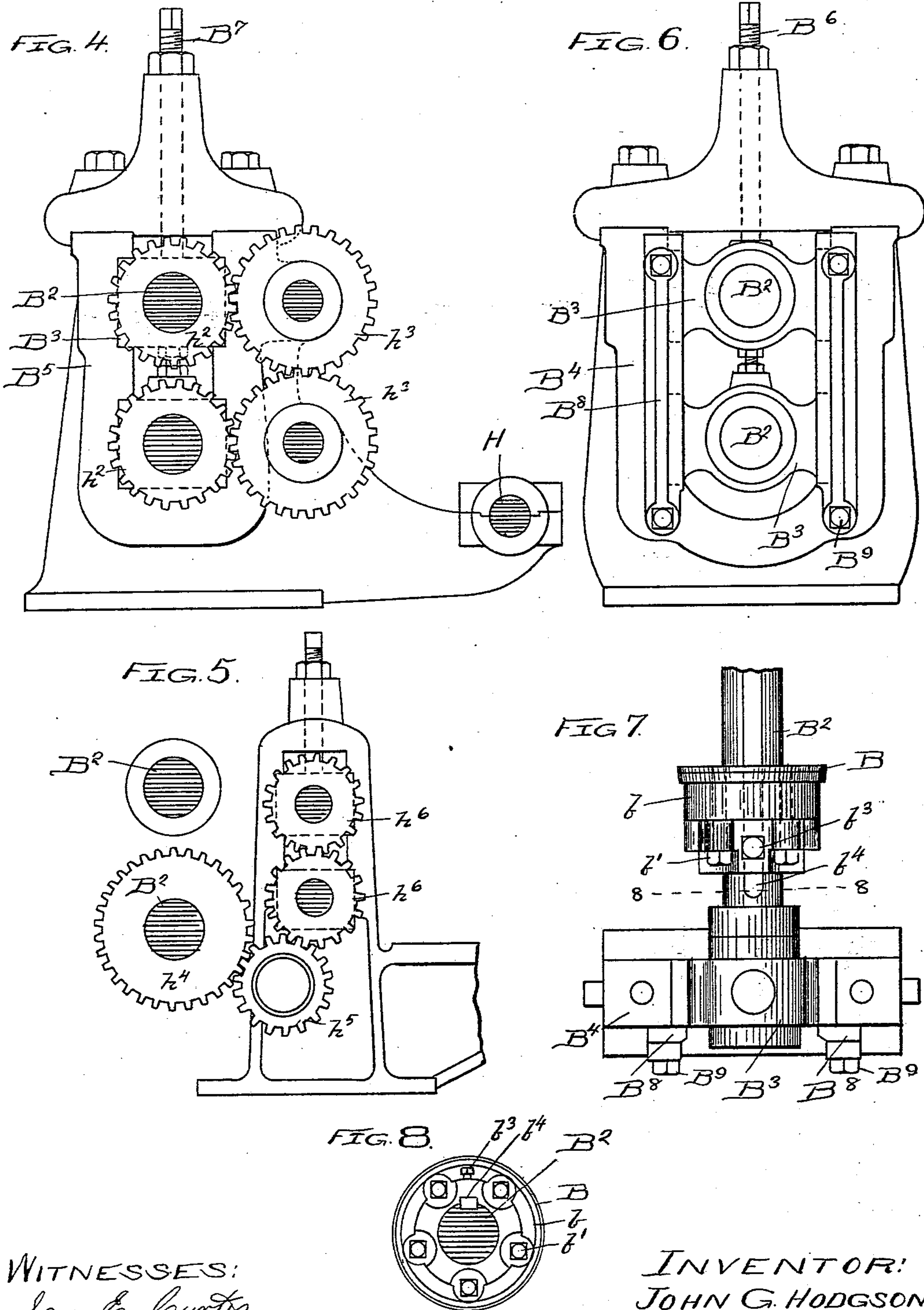
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J. G. HODGSON.

MACHINE FOR CUTTING OR TRIMMING PACKS OF METAL SHEETS.

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WITNESSES:
Sew. C. Curtis
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INVENTOR:
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UNITED STATES PATENT OFFICE.

JOHN G. HODGSON, OF MAYWOOD, ILLINOIS, ASSIGNOR TO EDWIN NORTON,
OF SAME PLACE, AND OLIVER W. NORTON, OF CHICAGO, ILLINOIS.

MACHINE FOR CUTTING OR TRIMMING PACKS OF METAL SHEETS.

SPECIFICATION forming part of Letters Patent No. 560,065, dated May 12, 1896.

Application filed December 5, 1894. Renewed December 9, 1895. Serial No. 571,598. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. HODGSON, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Machines for Cutting or Trimming Packs of Metal Sheets, of which the following is a specification.

My invention relates to machines for cutting or trimming sheets of metal in packs. Thin sheets of iron or steel are customarily rolled in packs of, for example, eight or more. The edges of the pack as it comes from the rolling-mill are more or less irregular or uneven, and before the sheets can be tinned it is necessary to trim or straighten the edges of the sheets and to square the sheets. Owing to the thickness of the pack and its uneven edges it is a matter of difficulty to start and feed the pack properly between the rotary cutters or feed-rollers of the trimming-machine. To practically overcome this difficulty, I combine with the feed-table of the trimming-machine swinging or yielding gages or guides for the rough side edge of the pack to fit against, the gages swinging or yielding to permit the projections or inequalities at the edge of the pack to pass, and in order to cause the pack to enter straight and squarely between the feed-rollers and rotary cutters of the machine I combine with the feed-table a sliding clamp adapted to travel upon a suitable guide or bar and to be clamped firmly to the pack at its back edge, so that the pack is forced to travel in a straight line with this clamp and thus properly and squarely enter the machine.

My invention primarily consists in these features or combinations.

It also consists in the novel devices and novel combinations of parts and devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, I have illustrated at Figure 1, in plan view, one good form of machine for embodying my invention in practice, and that which I believe to be the best form therefor now known to me. Fig. 2 is a

vertical longitudinal section on the line 2 2 of Fig. 1. Fig. 3 is an enlarged detail perspective view of one of the swinging or yielding gages. Figs. 4 and 5 are vertical sections on lines 4 4 and 5 5, respectively, of Fig. 1. Fig. 6 is a side elevation looking toward the left of Fig. 1. Fig. 7 is a detail plan view of one of the rotary cutters and its shaft. Fig. 8 is a section on line 8 8 of Fig. 7; and Figs. 9 and 10 are side elevations of the sliding clamp for the pack, looking from opposite sides.

Each part is indicated by the same reference-letter throughout all the figures.

In the drawings, A represents the frame of the machine.

B B' are the upper and lower rotary cutters between which the pack X is passed to trim off its rough or irregular side edges *x x*.

C C are the feed-rollers by which the pack is fed or forced between the rotary cutters, and C' C' are the discharge-rollers.

D D are the swinging or yielding gages against which the rough or irregular side edge of the pack abuts as it passes into and through the machine.

E is the feed-table, F the sliding clamp, and F' the guide or bar upon which the sliding clamp travels.

G G' and G G' are two pairs of upper and lower bridges or guides extending between the upper and lower rotary cutters for supporting and guiding the pack as it passes through the machine and is being operated upon by the cutters.

The shafts B², upon which the rotary cutters B B' are secured, are mounted in suitable bearings B³ B³, which fit in the housings B⁴ B⁵ and are adapted to be adjusted up and down, as required for thicker or thinner packs or to accommodate the wear or grinding away of the rotary cutters, by means of adjusting-screws B⁶ B⁷. The housing B⁴ at one end of the shafts B² is provided with removable gibs B⁸ B⁸, secured in place by threaded bolts B⁹, to permit the bearings B³ B³ to be bodily removed and the rotary cutters B B' to be slipped off the shafts B² when required for grinding or replacing, the opening in the housing B⁴,

closed by the gibs B^8 , being made large enough to permit the rotary cutters to pass through the same. The rotary cutters each consist of a steel disk removably secured to
 5 a head b by bolts b' . Each of the heads b are adjustable on the shafts B^2 to permit the cutters to be set closer together or farther apart as may be necessary for trimming packs of different widths. The cutter-heads b are se-
 10 cured in place on the shaft B^2 by set-screws b^3 in connection with the spline b^4 on the shafts B^2 .

The swinging or yielding gages D D are pivotally mounted upon adjustable blocks D' ,
 15 fixed to the table E by set-screws D^2 , passing through slots d in said blocks D' , and the swinging or yielding gages D are preferably held in their normal position by springs d' ,
 20 coiled around the pivot d^2 of the movable gage D . The pack X is placed upon the table and shoved against the gages D D . The gages are held by the springs d' against the blocks D' firmly in position, and as the force
 25 or blow of the pack comes directly in line with the pivot of the swinging gage the gage will not yield at this time, but, on the contrary, serve to properly adjust or position the pack on the feed-table E . When, how-
 30 ever, the rough-edged pack moves forward into the bite of the feed-rollers C and rotary cutters B B' , the gages D D may readily swing or yield to accommodate any projections or inequalities on the edge of the pack. The
 35 feed-table E is furnished with a slot or opening E' to permit the sliding pack-clamp F to move forward with the pack until the pack is firmly under the control of the feed-rollers
 40 C C and rotary cutters B B' . The sliding clamp F may be of any suitable form or construction adapted to travel upon its guide or bar F' . For convenience, however, its mov-
 45 able or pivoted jaw f is preferably provided with a hand-lever f' for closing or locking the clamp and with a dog or lever f^2 for automatic-
 50 ally opening the clamp and releasing the pack therefrom after the pack has advanced sufficiently far into the machine to become fully under the control of the feed-rollers and rotary
 55 cutters so that the pack no longer requires the guiding action of the sliding clamp. The lever or dog f^2 operates to thus automatically open the clamp by striking against the table
 60 E at or near the end of the slot E' or against other fixed part or projection on the machine. The sliding clamp F thus serves as a travel-
 65 ing guide for the pack. The upper and lower bridges G G' are secured to cross-bars g g' , the portion of these bridges which extends between the rotary cutters being made in sepa-
 rate or removable sections, so that by removing these removable sections of the bridges both pairs of the rotary cutters may be slipped
 off the shafts B^2 at the end of said shafts opposite the driving-gears. H is the driving-
 shaft connected by gears h h' with one of the

shafts B^2 , from which the other shaft B^2 is driven by gears h^2 h^3 . Motion is communicated to the shafts of the feed-rollers C C by the train of gears h^4 h^5 h^6 . The feed-rollers
 70 C C are furnished with a separate driving-pulley H' and are connected together by gears h^9 . The frame A is provided with slots E^2 to permit the discharge-rollers C' C' to be set
 nearer to or farther from the rotary cutters as may be necessary to accommodate packs of
 75 different lengths.

I claim—

1. In a machine for trimming or cutting sheet-metal packs, the combination with the rotary cutters and feed-rollers, of a feed-table,
 80 a pair of swinging or yielding gages on the table for the side edge of the pack to fit against and adapted to swing or yield toward the rotary cutters as the pack advances and a sliding or traveling guide or clamp to hold and
 85 guide the pack, substantially as specified.
2. In a sheet-metal cutting or trimming machine, the combination with the rotary cutters of a feed-table and laterally swinging or yielding
 90 gages, adapted to swing toward the cutters as the sheets advance substantially as specified.
3. The combination with rotary cutters and feed-rollers, of a feed-table and a laterally
 95 swinging or yielding gage, adapted to swing toward the cutters as the sheets advance and acting as a rigid gage for the sheets when the sheets are pushed directly against it substantially as specified.
4. The combination with rotary cutters and
 100 feed-rollers, of a traveling clamp or guide, and a rigid laterally-swinging gage having a vertical pivot or hinge to permit the rough edge of the sheet fitting against said gage to
 105 swing the gage out of the way as the sheets advance substantially as specified.
5. The combination in a sheet-metal cutting or trimming machine, of rotary cutters with a feed-table, a movable or sliding clamp and
 110 a guide bar or way for said clamp, and a vertically-pivoted gage for the side edges of the sheet to fit against substantially as specified.
6. The combination in a sheet-metal cutting or trimming machine, of rotary cutters with
 115 a feed-table, a movable or sliding clamp and a guide bar or way for said clamp, said clamp having a movable jaw and means for closing said jaw and means for automatically opening
 120 the clamp to release the sheets, substantially as specified.
7. The combination with rotary cutters and feed-rollers, of a feed-table, adjustable gage-
 125 blocks on said table and gages pivotally mounted on said gage-blocks, and adapted to swing toward the cutters as the sheets advance substantially as specified.
8. The combination with rotary cutters and feed-rollers, of a feed-table, adjustable gage-
 130 blocks on said table and gages pivotally mounted on said gage-blocks and adapted to

swing toward the cutters as the sheets advance, and springs for holding said gages normally against said gage-blocks, substantially as specified.

- 5 9. The combination with rotary cutters and feed-rollers, of feed-table E provided with slot E', guide-bar F', sliding clamp F travel-

ing on said guide-bar, having movable jaw *f* provided with lever *f'* and dog or lever *f*² for operating the same, substantially as specified. 10
JOHN G. HODGSON.

Witnesses:

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S. E. CURTIS.