

(No Model.)

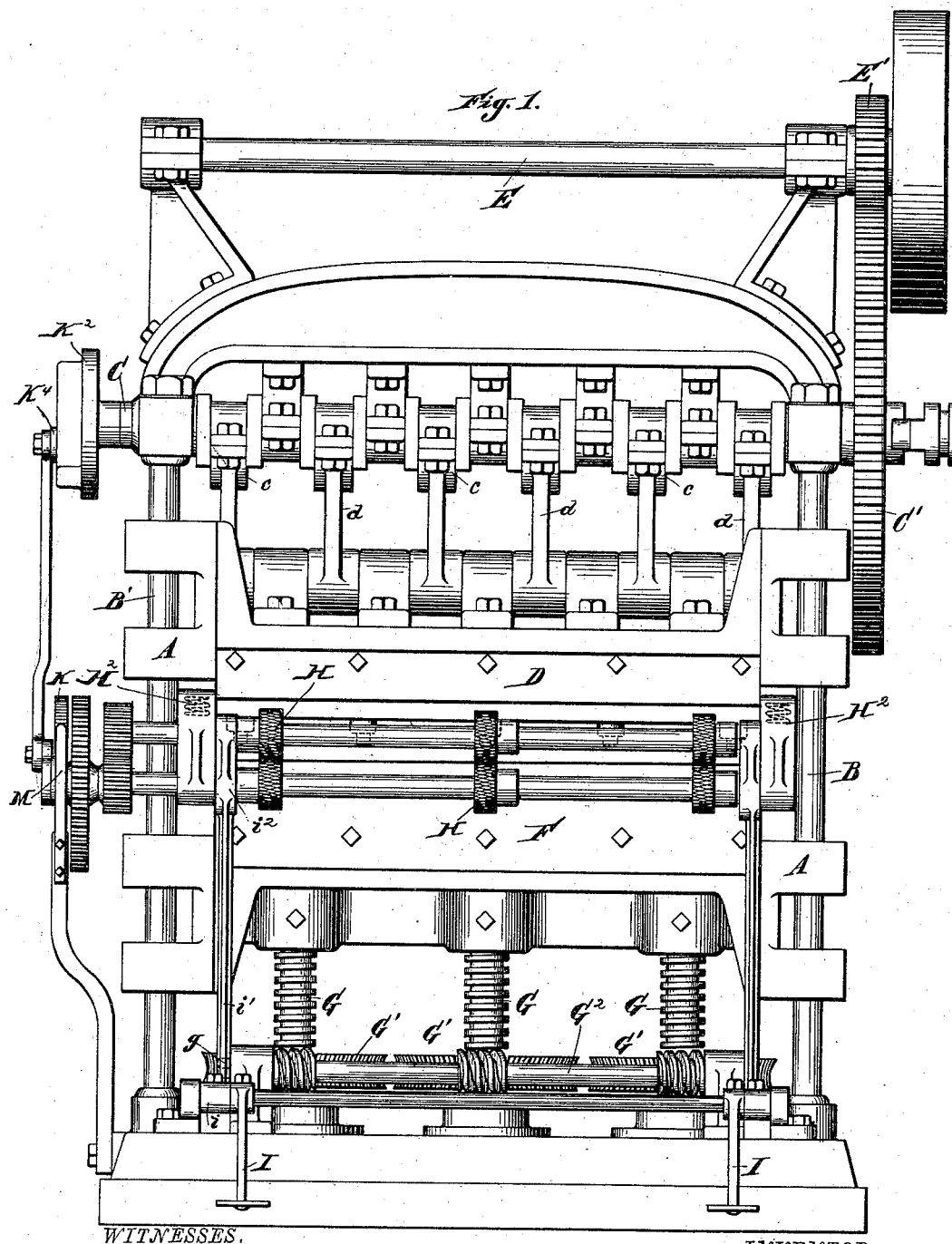
4 Sheets—Sheet 1.

J. R. BRANDEN.

MACHINE FOR SLITTING METALLIC SHEETS FOR METALLIC LATHING.

No. 385,405.

Patented July 3, 1888.



WITNESSES.

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(No Model.)

4 Sheets—Sheet 2.

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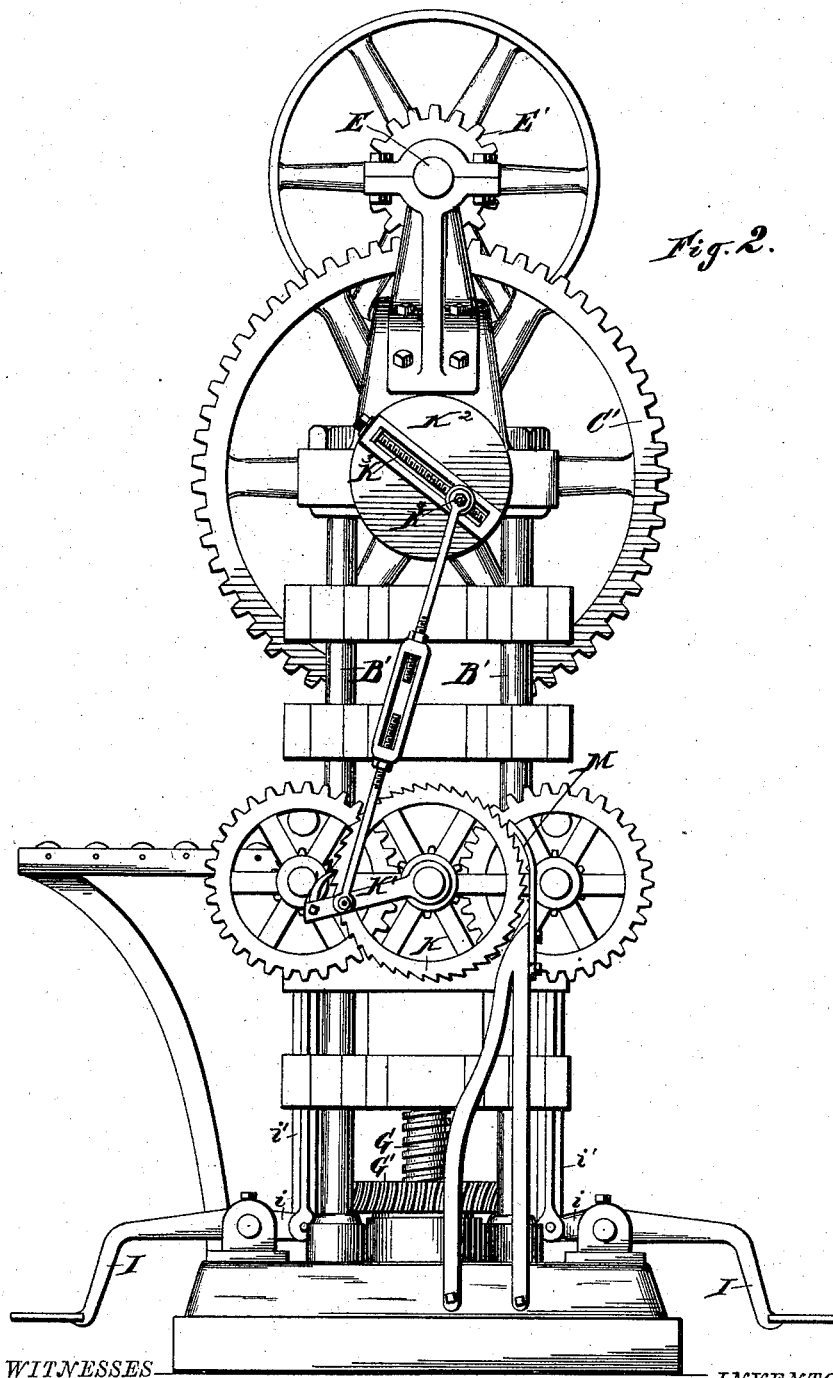


Fig. 2.

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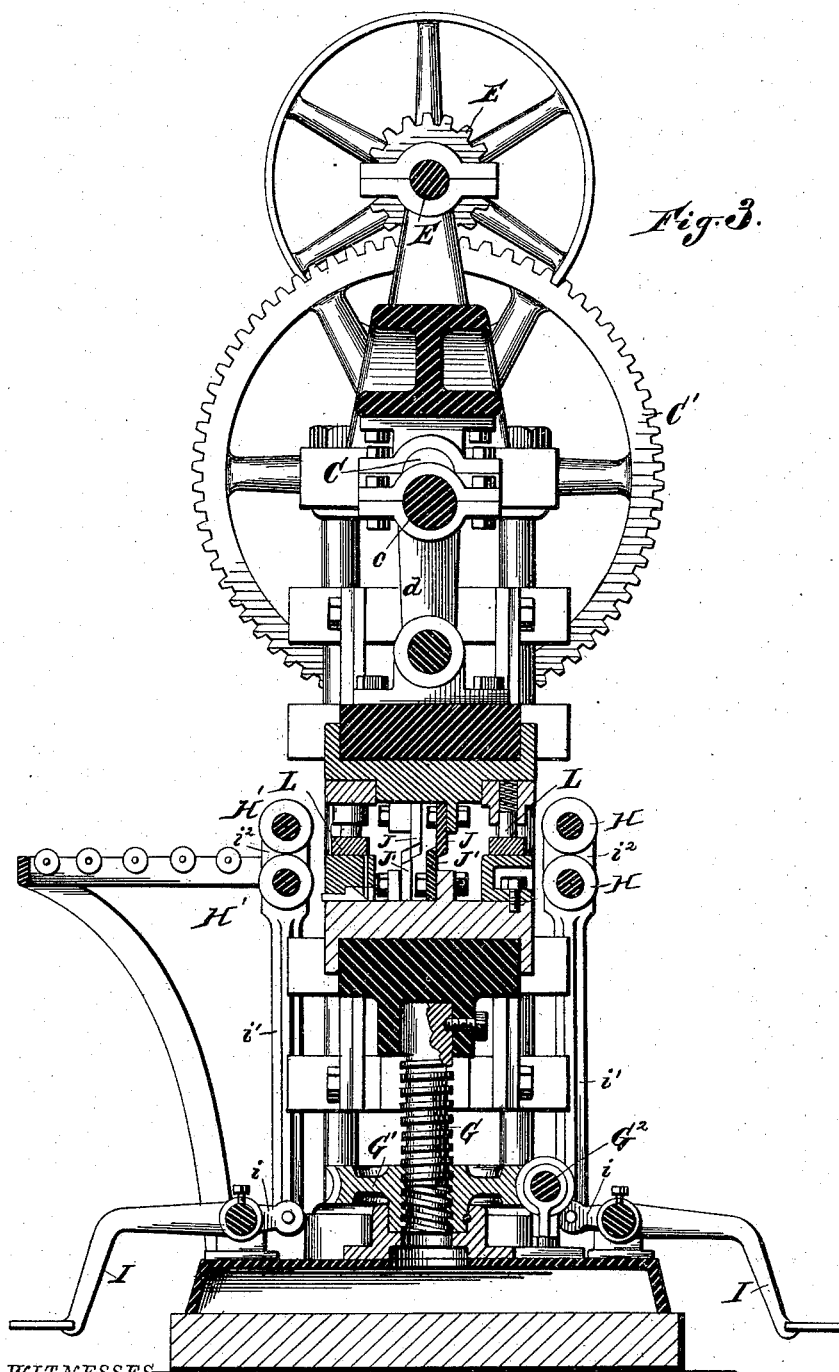
4 Sheets—Sheet 3.

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4 Sheets—Sheet 4.

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Fig. 4.

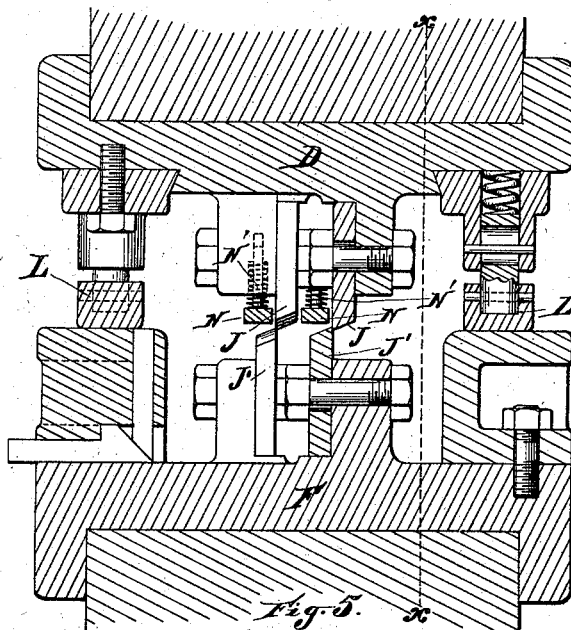


Fig. 5.

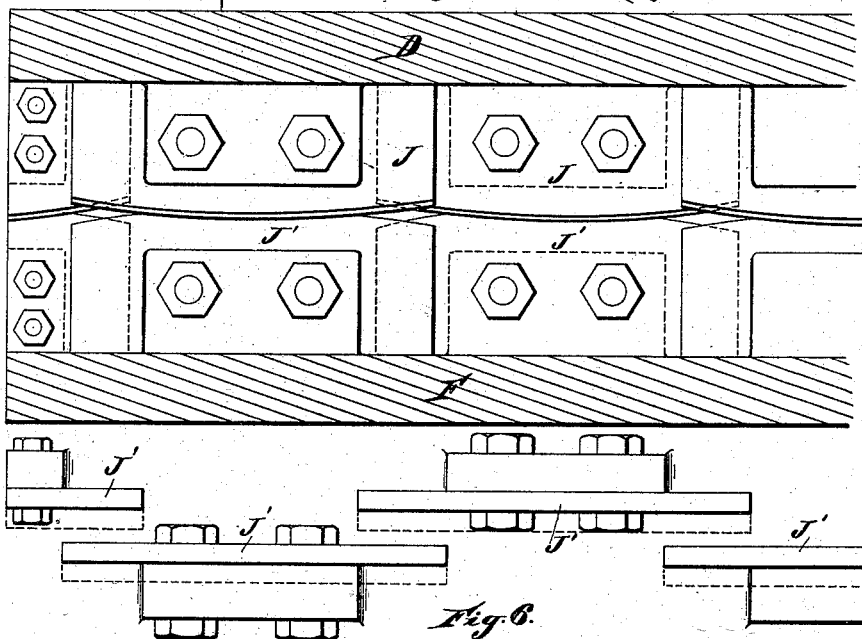


Fig. 6.

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UNITED STATES PATENT OFFICE.

JEFFRIES R. BRANDEN, OF DETROIT, MICHIGAN, ASSIGNOR TO CHARLES C. HODGES AND HENRY C. HODGES, OF SAME PLACE.

MACHINE FOR SLITTING METALLIC SHEETS FOR METALLIC LATHING.

SPECIFICATION forming part of Letters Patent No. 385,405, dated July 3, 1888.

Application filed February 17, 1888. Serial No. 264,342. (No model.)

To all whom it may concern:

Be it known that I, JEFFRIES R. BRANDEN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Machines for Slitting Metallic Sheets for Metallic Lathing; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention consists of the combinations of devices and appliances hereinafter specified, and more particularly pointed out in the claims.

This invention relates more particularly to the manufacture of sheet-metal lathing such as is shown and described in the Letters Patent to Israel Kinney, No. 312,864, dated February 24, 1885, and more particularly to the mechanism for performing the operation of slitting the sheet of metal prior to corrugating the same.

In the drawings, Figure 1 is a front elevation, Fig. 2 a side elevation, and Fig. 3 a longitudinal section, of a machine embodying my invention. Fig. 4 is an enlarged sectional view from front to rear. Fig. 5 is an enlarged view from end to end, illustrating the cutting-knives; Fig. 6, a plan view of the cutting-knives, illustrating their arrangement.

In carrying out the invention, A represents a suitable frame.

B B' are uprights which support the cam-shaft C, and serve as guides for the platen D, that carries the upper or traveling knives. The cam-shaft is engaged with the drive-shaft E by any suitable gearing, C' E'.

F is the lower platform, which supports the lower knives, and this is adjustable up and down by jack-screws G, worm-gears G', and shaft G², the latter being provided with an arbor, g, for the reception of an operating-crank.

H H' are friction feed-rollers at the entrance and exit ends of the machine, between which the sheet of metal is fed. Those at the exit end are a shade larger than those at the entrance end, to compensate for the slight elongation of the sheet, due to the process of slit-

ting, and prevent the same from buckling when engaged with the feed-rollers at both the entrance and exit ends of the machine. It is also apparent that if these rolls were not slightly larger than those at the entering end of the machine the sheet when once engaged with these emerging feed-rollers would elongate toward the rear slightly at each end and result in making the spaces between the successive lines of slits to grow less and less by this degree of elongation. By making these emerging rolls a little longer, however, as explained, just enough to compensate for said elongation, it is apparent that the feed of the sheet past the knives is made regular and uniform.

A treadle, I, with its connecting mechanism i i', serves as a means either at the entrance or exit end of the machine to open the upper friction-roller from the lower for entering or removing the sheet. The rollers are held to their work by the springs H² above their journal-bearings.

J are the upper and J' the lower knives. These knives are adapted to shear past each other, so as to sever the metal by a shearing cut. It is preferred that they shear from the middle toward the ends, and they are therefore convexed from end to end, as shown. To make the slits longer or shorter, it is only necessary to adjust the lower platform farther from or nearer to the upper platform, for the higher the lower platform the greater will be the distance that one knife passes the other, and consequently the longer will be the slits.

The feed of the sheet is effected by the ratchet feed-wheel K and lever K'. The throw of the lever determines the amount of the feed, and this throw is regulated by the feed-screw K² on the disk K². The screw adjusts the distance of the wrist-pin K from its center of motion, and so determines the throw of the lever K'. In this way the feed of the sheet between each descent of the knives and the next succeeding descent is made just twice the distance between two adjacent lines of slits, so that in the finished sheet the successive lines of slits shall be spaced equally throughout.

If it is desired to make the spaces between the slits wider or narrower, each set of knives may be arranged to be adjusted forward or back by means of set-screws or other suitable

means and the feed be regulated to correspond, as above explained.

L represents spring-grips, which as the upper platen descends come into contact with and
5 securely hold the sheet during the operation of the knives and maintain their hold until the knives have risen free from the plate. The further lift of the platen raises the grips and the sheet is again free to be fed forward by the
10 feed-rollers.

A spring-pawl, M, or other convenient device may be employed, if desired, to prevent recoil of the ratchet feed-wheel.

Of course it will be understood that the pro-
15 duct of the machine may be for the manufacture of lathing, fencing, or anything to which a sheet of any thickness thus cut may be employed, and the adjacent slits in each line may or may not be of equal lengths.

20 The knives are arranged in pairs so that each alternate pair stands in advance of and breaks joints with the two adjacent pairs, each series serving to cut a line of slits across the sheet-breaking joints with the slits in the line
25 cut by the other series of knives.

The upper platen is given its motion up and down by pitmen d, which at their upper ends engage eccentrics e upon the cam-shaft C.

30 N represents freeing-knives. They are located in position above the sheet and are provided with spring-cushions N'. They are designed to strip the metal from the knives in case the same should cling to the knives.

What is claimed is—

35 1. In a slitting-machine for slitting metallic sheets for the manufacture of lathing, &c., the combination of a lower platform bearing stationary knives corresponding with two lines of slits, those in one line breaking joints with
40 those in the other, an upper reciprocating platen bearing the companion knives of the lower set, driving mechanism for reciprocating the platen, and feeding mechanism adapted to automatically feed the sheet, substantially as
45 described.

2. In a slitting-machine for slitting metallic sheets for lathing, &c., the combination of an upper reciprocating platen with means for reciprocating the same, a lower platform with means for adjusting the same to a higher or
50 lower level, said platen and platform provided with companion knives corresponding with two adjacent lines of slits, and automatic feeding mechanism for feeding the sheet, substantially as described.

55 3. In a machine for slitting a metallic sheet for the manufacture of lathing, &c., the combination, with an upper reciprocating platen, lower adjustable platform, and knives corresponding with two adjacent lines of slits, of
60 feed-rolls between which the sheet is fed, means for operating said rolls, and an adjustable crank for regulating the amount of feed, substantially as described.

4. The combination, with the upper platen
65 and lower platform and their knives, of feeding mechanism for automatically feeding the sheet, and spring-grips L, constructed to engage and hold the sheet during the operation and retraction of the knives, substantially as
70 described.

5. The combination, with the platen, the platform, and their knives, of the feed-rollers, springs for pressing the upper roller against
75 the lower, and mechanism for separating the rolls, substantially as described.

6. The combination, with the cutting-knives, of the feed-rollers at the entrance and exit ends of the machine, those at the exit end made a
80 shade larger than those at the entrance end, substantially as and for the purposes described.

7. The combination, with the knives, of the freeing-bars N, constructed to strip the metal from the knives, substantially as described.

In testimony whereof I sign this specification
85 in the presence of two witnesses.

JEFFRIES R. BRANDEN.

Witnesses:

M. B. O'DOHERTY,
JOHN E. WILES.