(No Model.) 2 Sheets—Sheet 1.

G. E. BUSCHICK & F. RAUTERT.

NAIL MACHINE.

No. 384,422. Patented June 12, 1888.

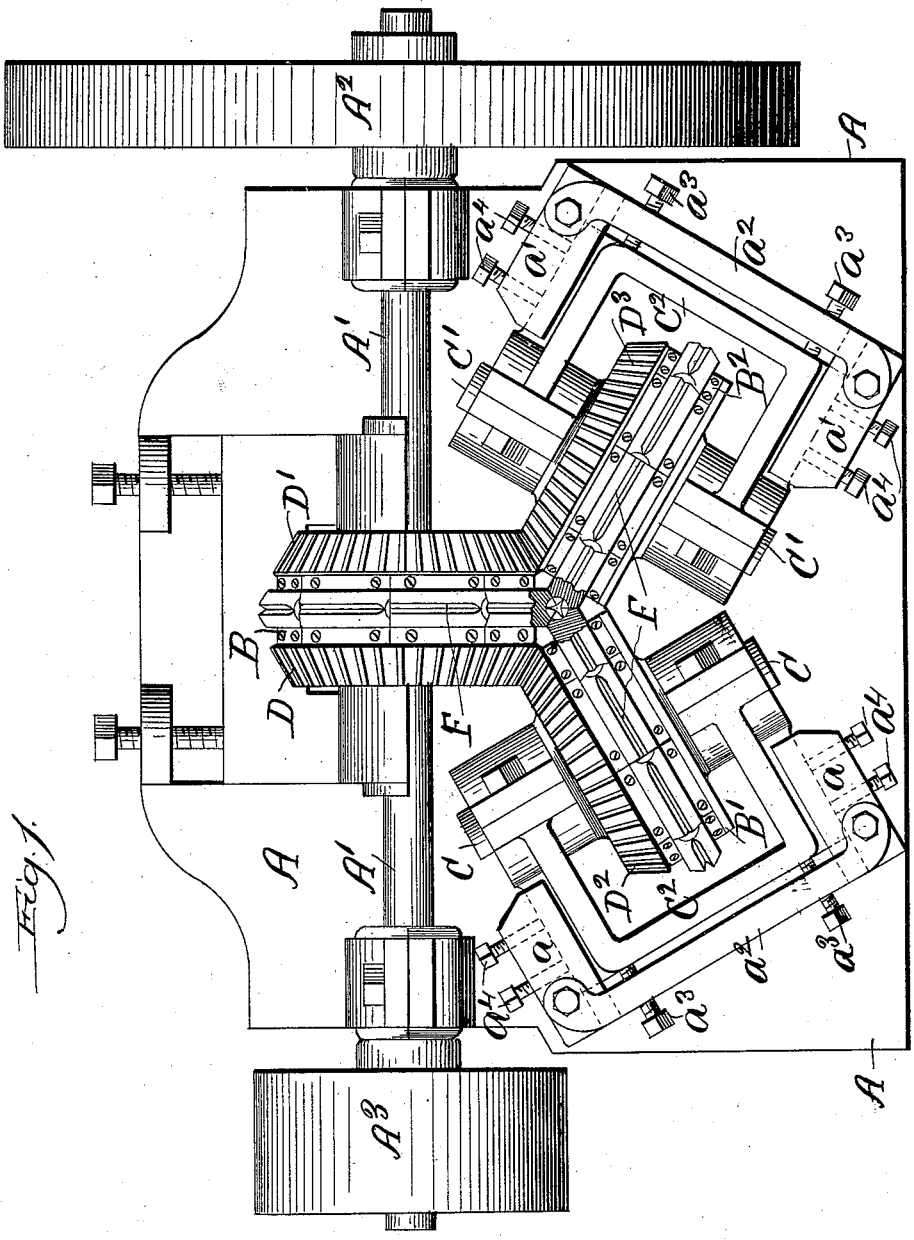

Fig. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

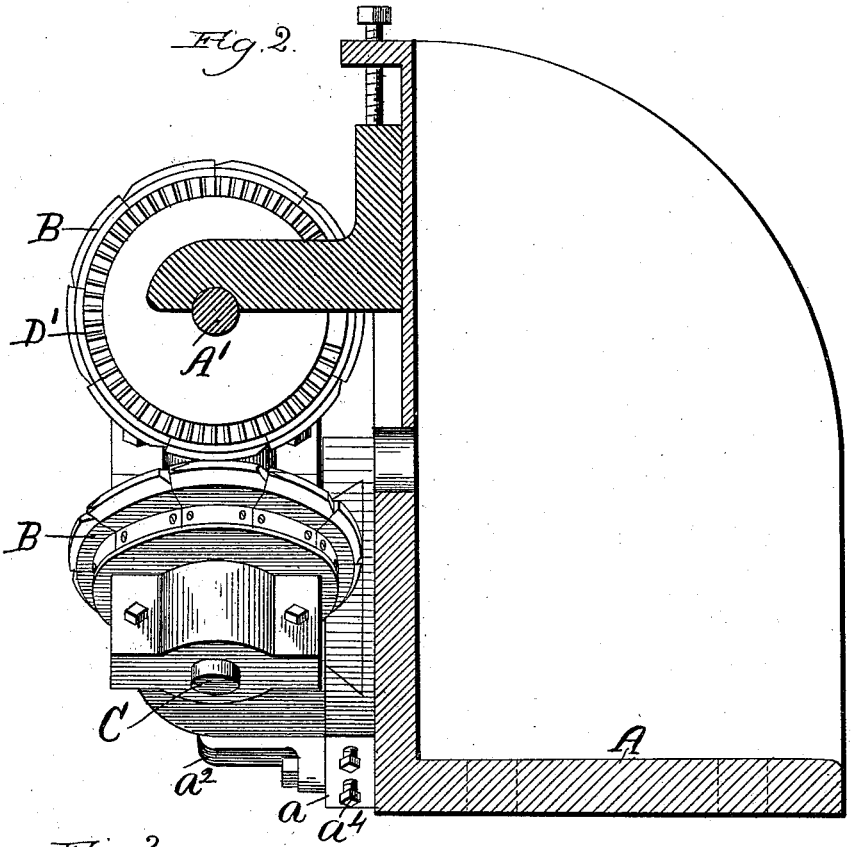


Fig. 3.

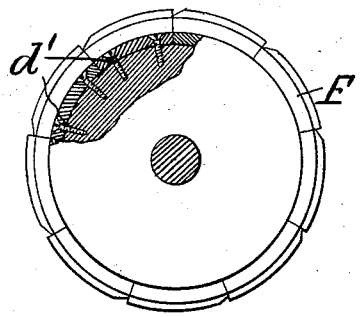
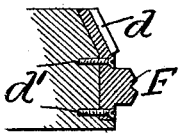


Fig. 4.



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UNITED STATES PATENT OFFICE.

GUSTAVUS E. BUSCHICK AND FRITZ RAUTERT, OF CHICAGO, ILLINOIS.

NAIL-MACHINE.

SPECIFICATION forming part of Letters Patent No. 384,422, dated June 12, 1888.

Application filed August 23, 1887. Serial No. 247,696. (No model.)

To all whom it may concern:

Be it known that we, GUSTAVUS E. BUSCHICK and FRITZ RAUTERT, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in a Nail-Machine, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in that class of machines employed in the manufacture of nails and spikes, the object being to provide a machine that is more especially adapted to produce a nail or analogous article of a triangular form in cross-section.

The nature of this invention consists in constructing a machine that embodies three disk-forming rolls or roller-dies set in a triangular plane relative to each other, the die faces or peripheries of which have a rolling or frictional contact, and are each provided with die depressions or cavities that correspond to one-third of the diameter of a full nail.

Figure 1 is a front elevation of a machine embodying our improved features. Fig. 2 is a side view and section with the roller B^2 and parts removed; Fig. 3, a side view of one of the three rollers, a portion being broken away, and showing the manner of securing the segmental die-sections forming the periphery; and Fig. 4, a broken-away transverse section of the same.

In the drawings, A represents the supporting-frame; A′, the main or driving shaft; A^2, the balance-wheel, and A^3 the band-pulley mounted on said shaft, which is in turn provided with suitable journal-bearings in the supporting-frame.

The three forming-rollers B B′ B^2 are set in a triangular plane relative to each other and form a junction at about the angle shown in Fig. 1, the joining faces having a close rolling or frictional contact and leaving an opening in the center, in accordance with the depressions or design of the dies in the faces of the same for the insertion of the nail rod or stock. The rollers revolve in the direction indicated by the arrows—that is, outwardly from each other—the stock being fed in from the back of the machine.

The die-roller B is mounted on the driving-shaft, the companion rollers B′ B^2 being mounted on the independent shafts C C′, which are provided with adjustable journal-bearings.

The journal-blocks *a a′* are rigidly secured to the main frame, and are connected at the back by the bridge a^2, belted at each end to said blocks. The adjustable bearing yoke or yokes C^2 are placed between the blocks *a a′*, and are adjustable toward a common center by means of the set screws a^3, and laterally by the set-screws a^4. By this arrangement the wear on the roller-dies may be compensated for and the proper angle of adjustment maintained.

The beveled gear-wheels D D′ are mounted on the driving-shaft, and are placed on each side of and close up against the roller B. These gear-wheels engage with the companion gear-wheels D^2 D^3, mounted, respectively, on the shafts C C′, and placed close against the outer side of the die-rollers B′ B^2, as shown in Fig. 1. By this means the required motion is transmitted to the companion parts. These gear-wheels may be cast with and form an integral part of the roller-dies, or made separately therefrom, as practical working may require.

The peripheries or faces of the roller-dies are made up of a number of detachable sections, F, each section corresponding to the length of the nail or similar article to be produced, so that the line of separation relative to the heads and points will be coincident. The segment die-sections are provided with the flanges *b*, which fit closely to the periphery of the rollers, and are secured thereto by means of the screws *d′*.

The dies may be formed in the contacting faces of the rollers instead of in detachable sections, with the same result; but the plan illustrated is preferred, for the reason that when the dies become too much worn they can be replaced by duplicates and the same rollers used indefinitely.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

In a nail-machine, the combination, with the forming-roller B, mounted upon the main shaft, of the companion roller-dies B′ B^2, set at an oblique angle relative to the roller B, and

mounted upon independent shafts, said dies having a rolling contact and being provided on their peripheries with a depression equal to that of one-third the diameter of a nail, the shank whereof is triangular in cross-section, the gear-wheels D D′ D^2 D^3, the journal-blocks a a', the bridge a^2, the yoke or yokes C^2, and the adjusting-screws a^3 a^4, all combined and arranged to operate substantially as and for the purpose set forth.

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Witnesses:
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