(No Model.) 2 Sheets—Sheet 1.

J. C. GOULD.

GRIPPING DEVICE FOR NAIL PLATE FEEDERS.

No. 329,549. Patented Nov. 3, 1885.

Fig. 1.

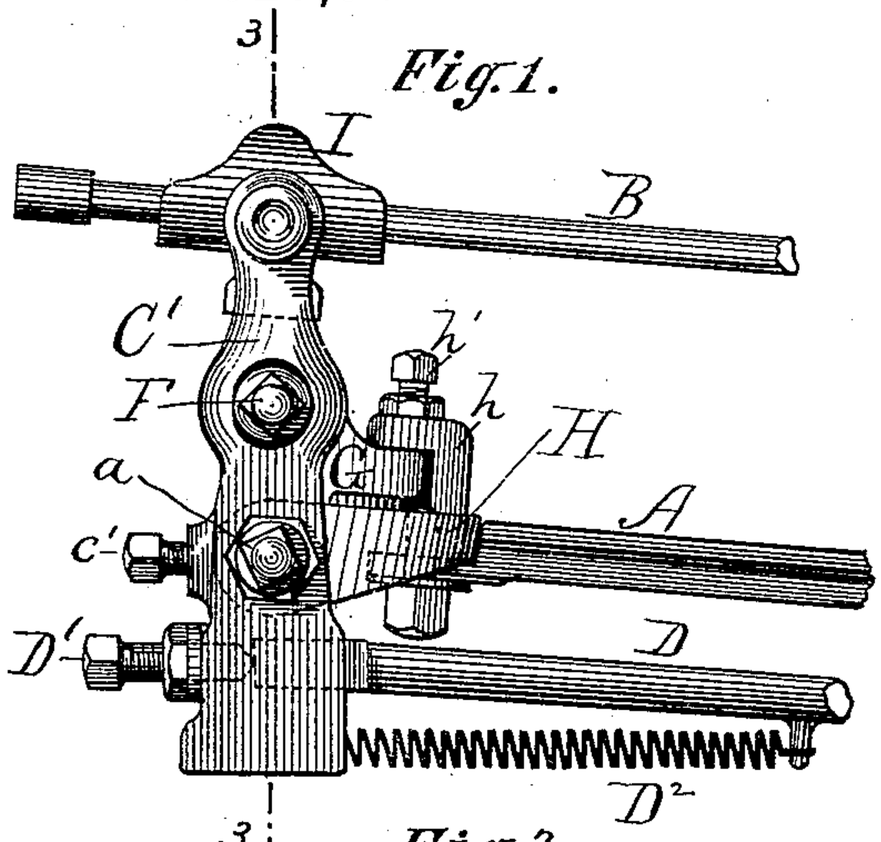


Fig. 2.

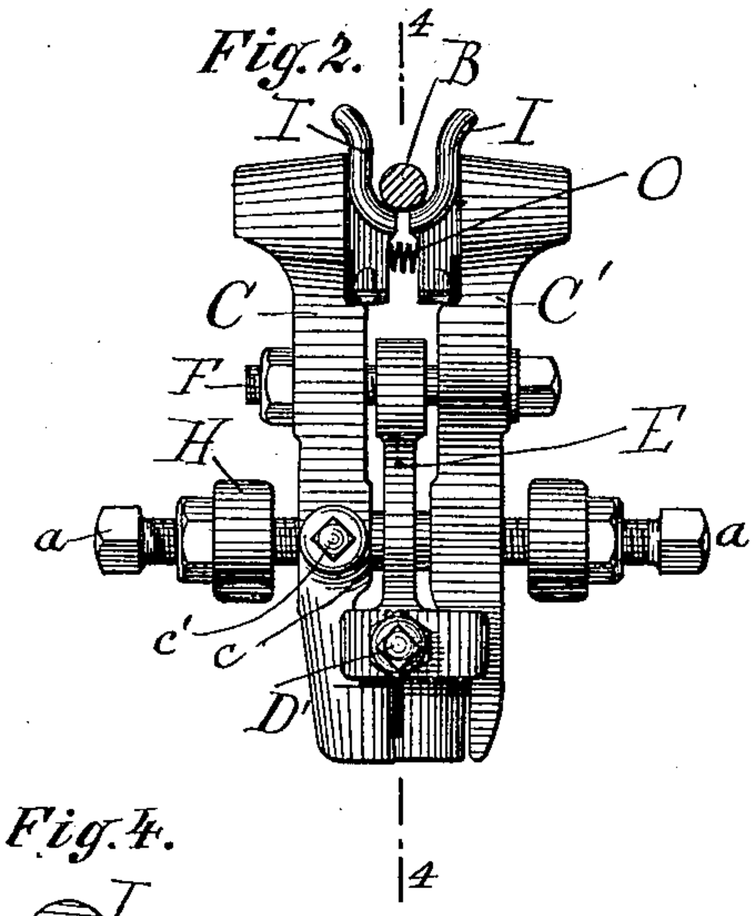


Fig. 3.

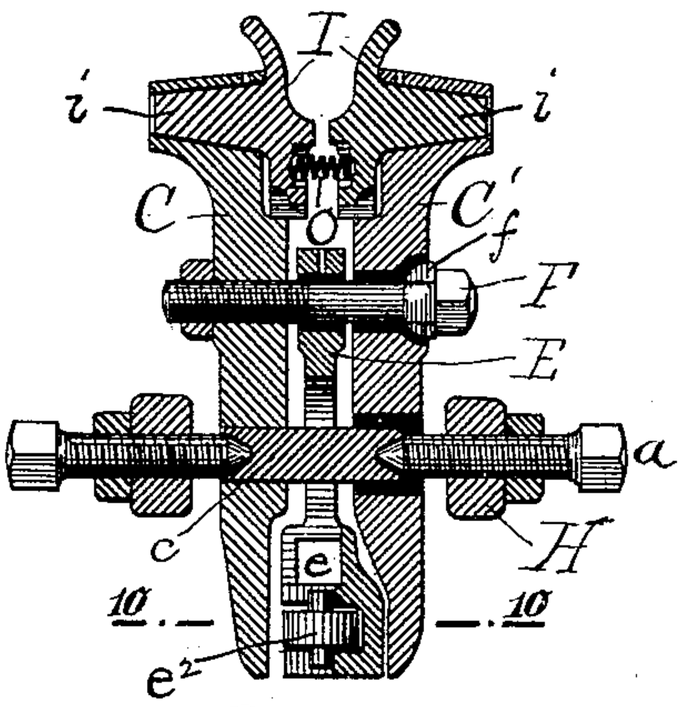


Fig. 4.

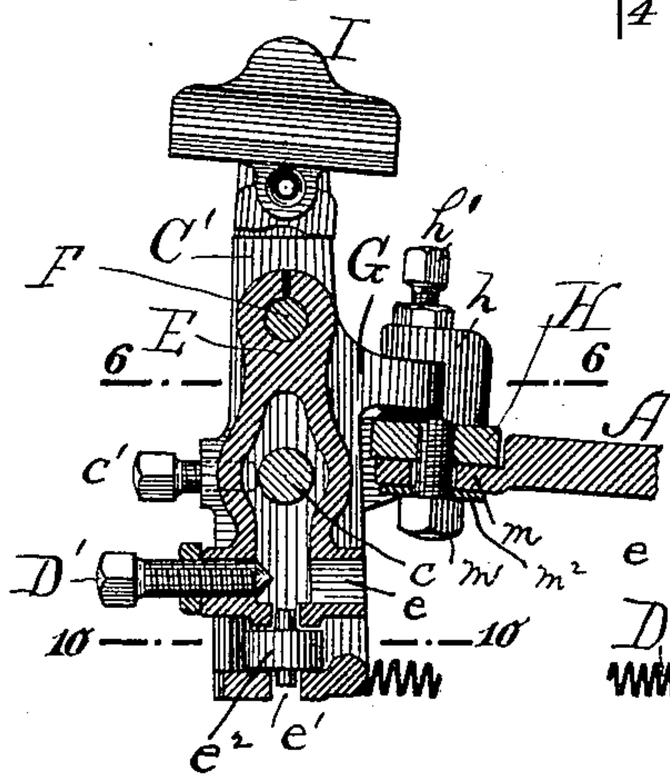


Fig. 5.

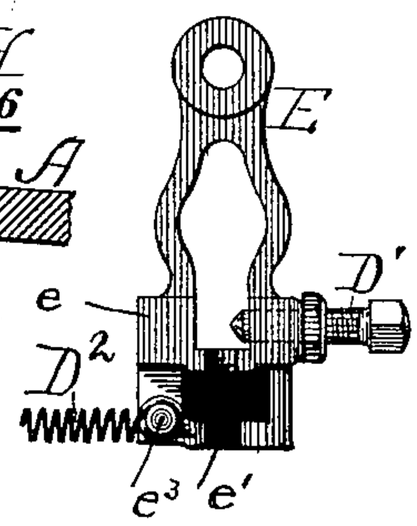


Fig. 7.

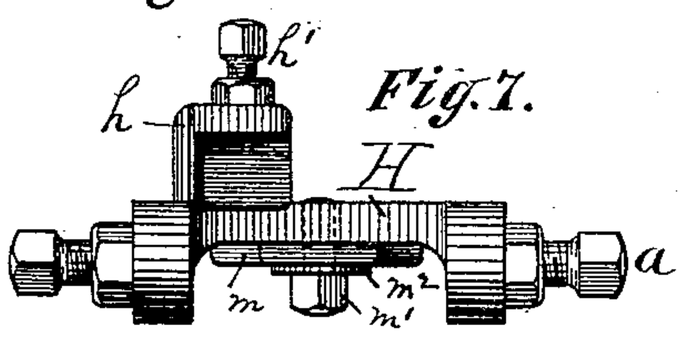


Fig. 6.

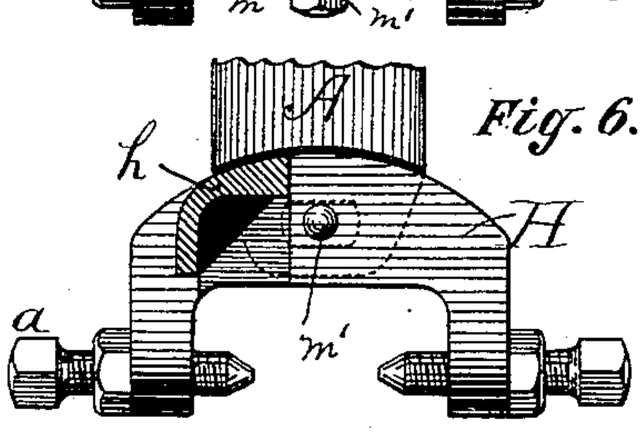


Fig. 8.

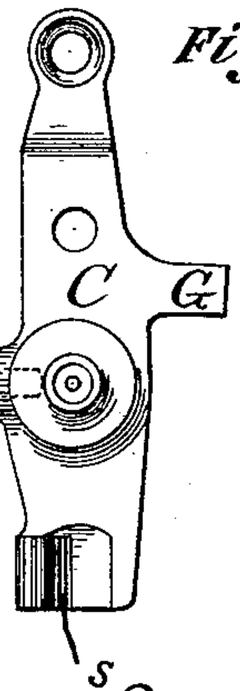


Fig. 9.

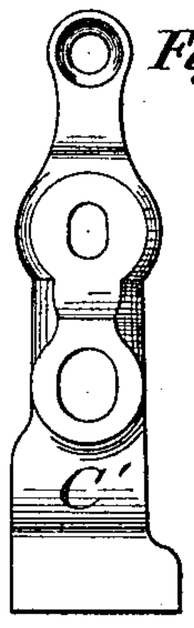
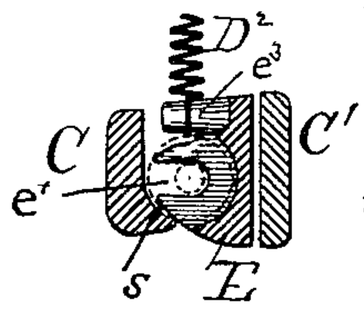


Fig. 10.



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by Munday Evarts & Adcock

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(No Model.) 2 Sheets—Sheet 2.

J. C. GOULD.

GRIPPING DEVICE FOR NAIL PLATE FEEDERS.

No. 329,549. Patented Nov. 3, 1885.

Fig. 11.

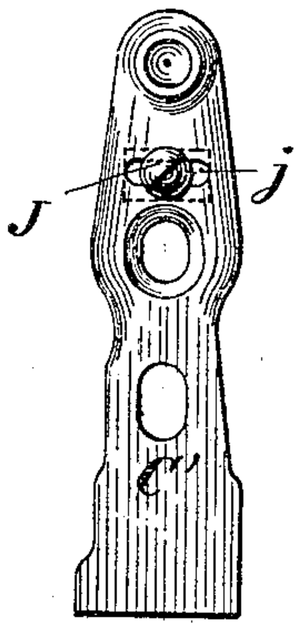


Fig. 12.

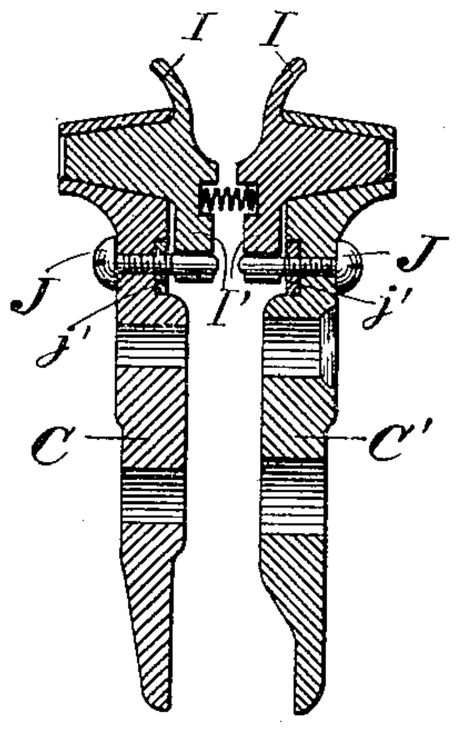


Fig. 13.

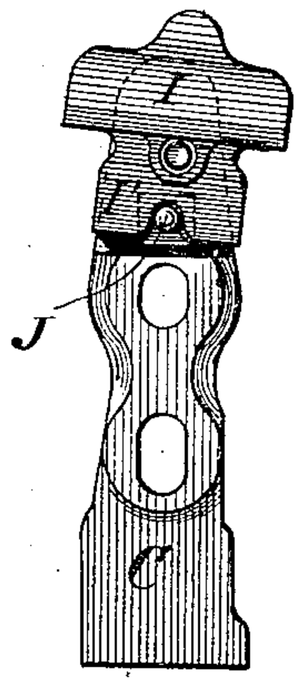
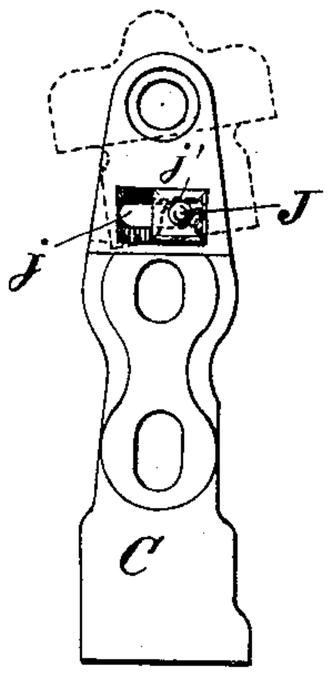


Fig. 14.



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UNITED STATES PATENT OFFICE.

JOHN C. GOULD, OF CHICAGO, ILLINOIS.

GRIPPING DEVICE FOR NAIL-PLATE FEEDERS.

SPECIFICATION forming part of Letters Patent No. 329,549, dated November 3, 1885.

Application filed March 28, 1885. Serial No. 160,432. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. GOULD, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Gripping Devices for Nail-Plate Feeders, of which the following is a specification.

This invention concerns the construction of the gripping devices of nail-plate feeders.

The main feature of the invention relates to the construction of that part of the grippers which seize the nail-plate rod. In all the forms of grippers now in use the extent of surface-contact between the rod and grippers is very limited, and as a consequence thereof either the nail-plate rod is worn out rapidly or grooves are worn in the gripping-jaws, necessitating frequent renewals of the gripping-surface, or, if that surface is not separate and detachable from the grippers, the renewal or replacement of the grippers. In my present invention I make the gripping jaws or pieces separate from the levers by which they are carried, usually called the "grippers," and form said jaws in concave shape corresponding to the exterior of the rod, and of considerable length—say two and a half or three inches—and these jaws are mounted upon horizontal pivots, so that as the grippers oscillate back and forth the jaws will swing to accommodate the changes in the relative angle of the grippers and rod without deflecting the rod and without causing wear between the surfaces and the rod. This and the other features of my invention are set forth more fully below, and are illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of my improved grippers. Fig. 2 is an end view. Fig. 3 is a cross-section upon line 3 3 of Fig. 1. Fig. 4 is a longitudinal section upon line 4 4 of Fig. 2. Fig. 5 shows the intermediate piece detached. Fig. 6 is a horizontal section on line 6 6 of Fig. 4. Fig. 7 shows the yoke detached. Figs. 8 and 9 show the interior sides of the two grippers, and Fig. 10 is a horizontal section on line 10 10 of Figs. 3 and 4.

In said drawings, A represents the supporting-bracket; B, the nail-plate rod; C C, the grippers; D, the stop or push rod; D′, the set-screw for regulating the throw caused by the stop-rod, and D^2 the spring secured to the rod and the intermediate piece, E. *c* is the pivot upon which the grippers are swung by the push-rod, and said pivot is supported by set-screws *a*, passing through the ends of the fork or yoke H, and the gripper C is made rigid upon said pivot by the set-screw *c*′. The yoke H carries an Γ-shaped projection, *h*, and by means of said projection and set-screw *h*′, in connection with the arm G upon the gripper C, the throw of the grippers is further regulated. The intermediate piece, E, encircles the pivot *c* loosely, and is formed in the manner illustrated in the drawings. It finds support upon the bolt F, whereby the spread of the grippers is limited. Such bolt is provided with a globular head, *f*, and the opening occupied by said bolt in gripper C′ is enlarged, said globular head and enlarged opening being to give the necessary freedom to said gripper. The recess *e* in the intermediate piece, designed to receive the stop-rod, I now place above the recess *e*′, occupied by the anti-friction roller e^2, instead of in front of the latter recess, as shown in some former feeders constructed by me. This is a more convenient and cheaper method of construction. The anti-friction roller e^2 acts upon the angling surface *s* of the gripper C in the usual manner whenever the plate-rod is to be seized, and the bearings and cavity wherein said roller is inserted are completely formed in the casting of the piece E; and when formed in the manner shown the roller will be completely held therein by the proximity of gripper C, so that it needs no other securing. The pin e^3, to which the spring D^2 is secured, is made horizontal instead of vertical, as heretofore, for convenience of manufacture. The yoke H, I find, can be more conveniently adjustably secured to the supporting-bracket by the construction shown in this application than in the manner shown in the application filed by me January 27, 1885, Serial No. 154,091—that is to say, by providing the bracket with an under horizontally-projecting lip, *m*, upon which the yoke will rest, and securing the parts together by a vertical bolt, *m*′, and washer m^2. To permit the adjustment, the opening in the lip *m* through which the bolt passes is laterally enlarged, as indicated by broken

lines in Fig. 6. The gripping-jaws are shown at I. Their faces conform to the exterior of the rod, and are made of such length as to insure considerable surface-contact with the rod, and so that when forced against the rod they will not dent or abrade it, while at the same time they seize it with all requisite firmness, and do not themselves wear away under the friction of the rod. In order that they may maintain the direction of the rod in all positions of the grippers, they are mounted upon horizontal pivots *i*, thereby allowing them to rock without deflecting the rod from its proper line. The spring O, by which the grippers are spread after each seizing operation, I place between these gripping-jaws, as illustrated. It is thereby made to perform the additional function of preventing the jaws from clutching the rod when that is not desired. The pivots *i* are preferably tapering.

I have alluded to the construction of the intermediate piece, E. In further explanation it may be added that the socket *e* is in the front of said piece, while the recess *e'* is upon the side thereof toward the gripper C, but in a lower plane than said socket *e;* also, that the pin e^3 lies in front of the roller-recess and under socket *e*. The lip *m* of the bracket A supports the yoke during the adjusting operation, and as the adjustments of the yoke are very minute it is important that it be thus upheld until the fastening-bolt can be tightened.

Figs. 11 to 14, inclusive, illustrate another feature of the feeder, designed to adapt it to use in different machines where varying inclinations are required for the plate-rod, the object being to render the gripping-jaws so adjustable that they may be changed to accommodate these various inclinations. To this end I provide the gripping-jaws I with downwardly-projecting forked ends I', which forks lie with their limbs at either side of horizontally-adjustable bolts J, secured in the grippers C C'. The spread of the forks serves to allow the necessary swing to the parts I, and the position of the bolt determines the inclination of those parts, as will be readily understood. The bolts I' pass through horizontally-elongated slots *j* in the gripper-arms, and through nuts *j'* upon the inner sides of the gripper-arms. When tightened, the bolts are stationary, and of course may be changed to any position allowed by the limits of the slots *j*.

I claim—

1. In a nail-plate feeder, the combination, with the grippers, of the concave elongated pieces I, forming the jaws by which the nail-plate rod is seized, substantially as specified.

2. In a nail-plate feeder, the combination, with the grippers, of concave elongated jaws I, for seizing the nail-plate rod, said jaws being mounted upon horizontal pivots, substantially as specified.

3. In a nail-plate feeder, the combination, with grippers and the concave jaws I, of the spreading-spring O, located between said jaws, substantially as specified.

4. The intermediate piece, E, having recesses for the stop-rod and the roller, and the pin e^3, relatively arranged in the manner shown.

5. The yoke H and the parts supported therein, in combination with the bracket A, having the horizontally-projecting lip *m*, and the securing-bolt passing into the yoke through an elongated slot in the lip, substantially as specified.

6. The gripping-surface pieces I, having depending forks I', in combination with the adjusting-bolts J, substantially as specified.

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