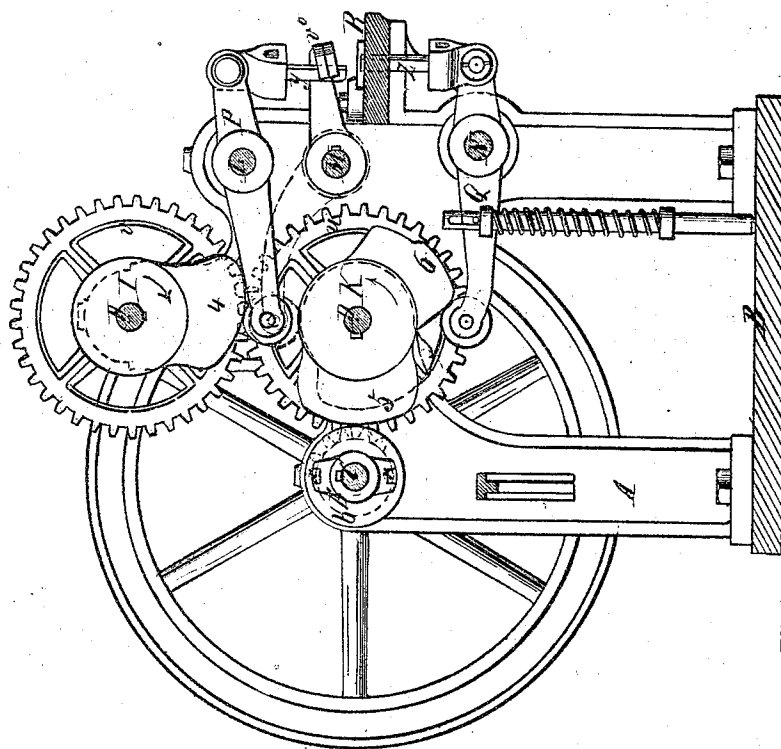


A. Oehme's Imp^d Mach. for Producing Nail holes in and Calks on Horse shoes.

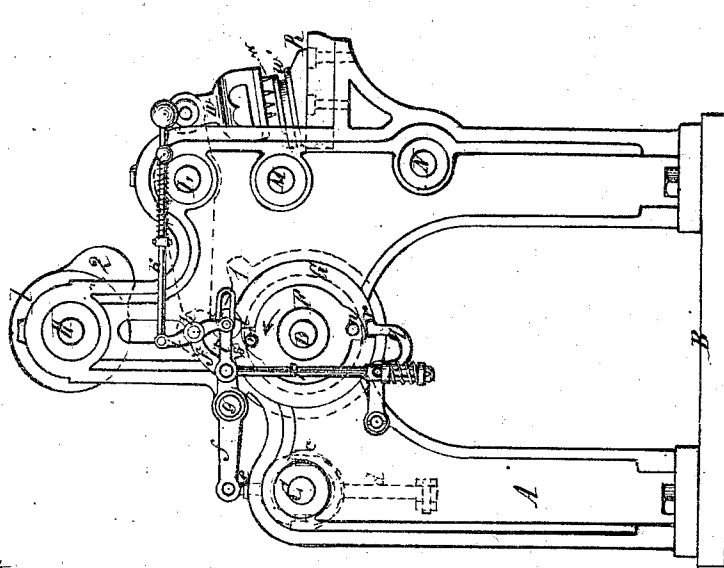
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Patented Oct. 17, 1871.

Fig. 2.



No. 120,088.

Fig. 1.

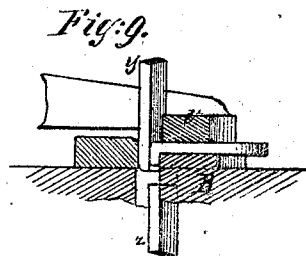
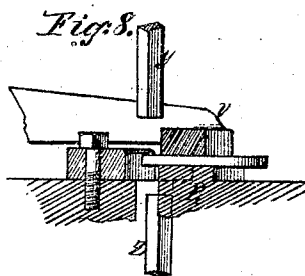
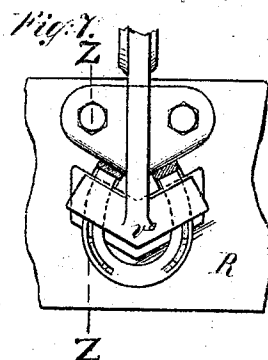
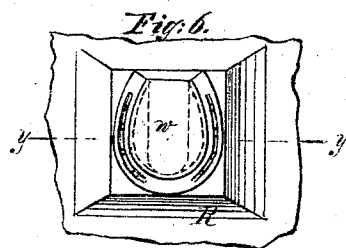
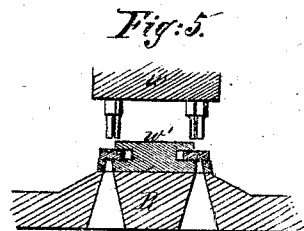
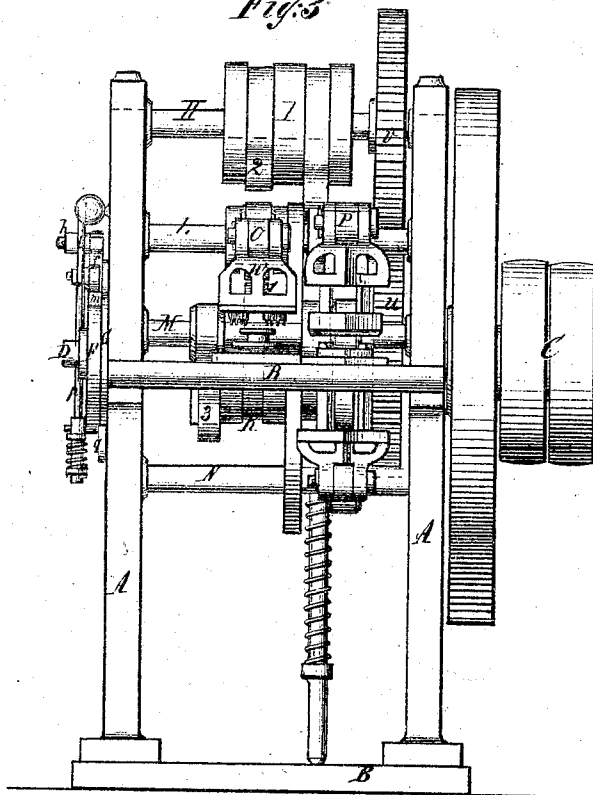


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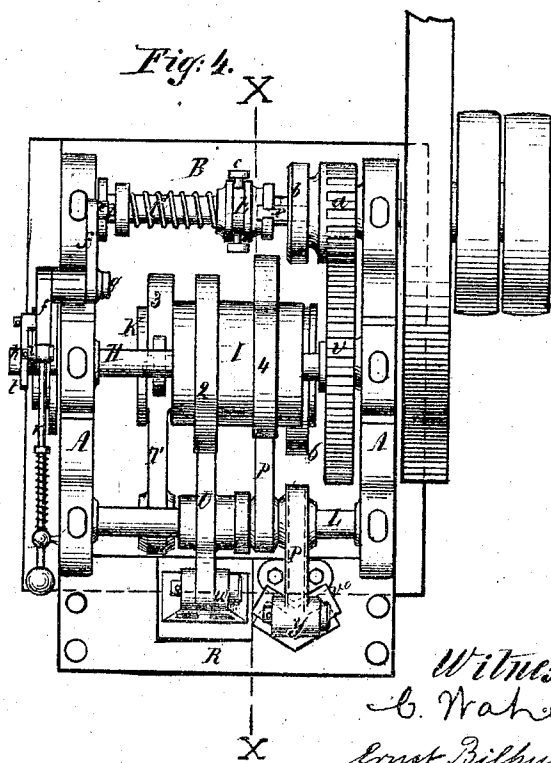
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A. Oehme's Improved Mach: for Producing Nailholes in and Cuts on Horseshoes.

3 Sheets--Sheet 2.
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No. 120,088.

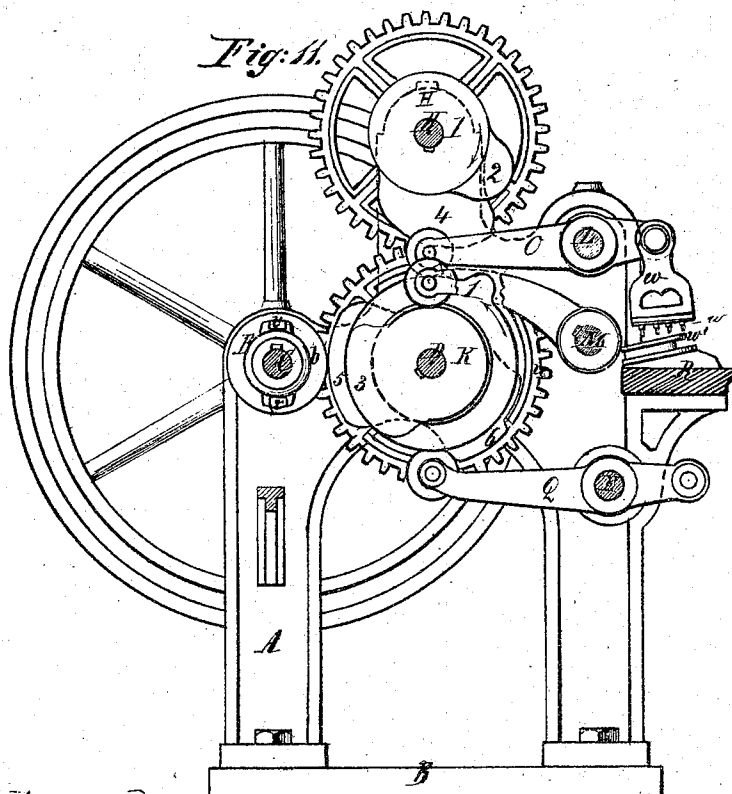
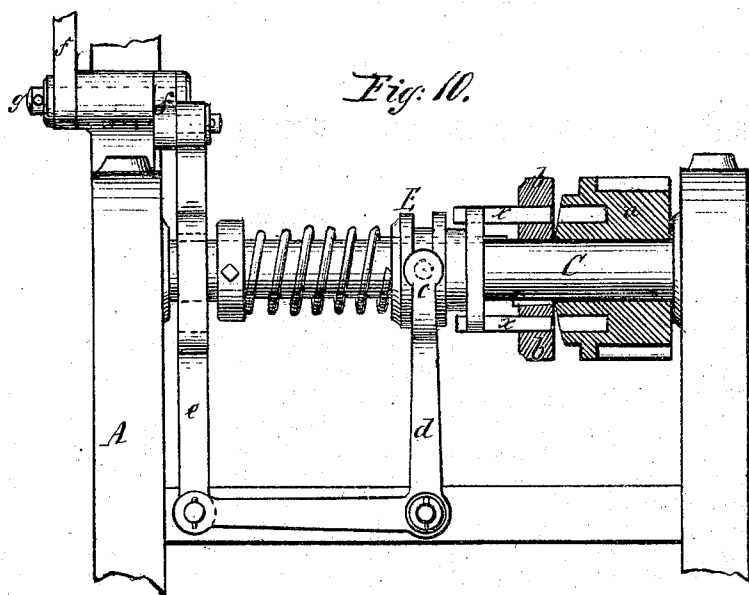


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A. Oehme's Imp^d Mach: for Producing Nail- holes in and Calks on Horse shoes.

3 Sheets--Sheet 3.
Patented Oct. 17, 1871.



No. 120,088.

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UNITED STATES PATENT OFFICE.

ADOLF OEHME, OF ROCK ISLAND, ILLINOIS.

IMPROVEMENT IN MACHINES FOR PUNCHING HOLES IN AND BENDING THE CALKS ON HORSESHOES.

Specification forming part of Letters Patent No. 120,088, dated October 17, 1871.

To all whom it may concern:

Be it known that I, ADOLF OEHME, of Rock Island, in the county of Rock Island and State of Illinois, have invented a new and Improved Machine for Producing Nail-Holes in and Calks on Horseshoes; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a side view of this improved machine. Fig. 2 is a longitudinal vertical section of the same, the line *x x*, Fig. 4, indicating the plane of section. Fig. 3 is an end view of the same. Fig. 4 is a plan or top view of the same. Fig. 5 is a detached section of the punches and dies for producing the nail-holes, the line *y y*, Fig. 6, indicating the plane of section. Fig. 6 is a plan or top view of the punching-die. Fig. 7 is a detached plan of the mechanism for forming the calks on horseshoes. Fig. 8 is a vertical section of the same, the line *z z*, Fig. 7, indicating the plane of section, showing the position of the parts before the calks are formed. Fig. 9 is a similar section of the same showing the working parts in the act of forming the calks. Fig. 10 is a side view of the main shaft with part of the starting mechanism detached. Fig. 11 is a detached view showing the cams for operating the punching mechanism.

Similar letters indicate corresponding parts.

This invention relates to a machine which serves to punch the nail-holes in horseshoes, and also to form calks at their ends or heels, said machine being so constructed that the punches for making the nail-holes are actuated during one-half of the revolution of the main shaft, and the benders and hammers for forming the calks during the other half of said revolution, the motion of the main shaft being stopped automatically after each half revolution, so that the horseshoes can be conveniently introduced in and removed from the machine without difficulty.

In the drawing, A designates a frame, which is composed of two side pieces connected by suitable traverses, and which is firmly secured to a suitable bed-plate, B. C is the main shaft, which has its bearings in the frame A, and on one end of which is mounted a fast and loose pulley and a fly-wheel, as shown in Figs. 3 and

4. On this main shaft is mounted loosely a cog-wheel, *a*, which is provided in its hub with two seats to receive the keys *x*. These keys are guided by slots in a disk, *b*, which is keyed fast to the shaft C, and they are secured to a clutch, E, which is secured to the shaft C by means of a feather-key, and which is provided with an annular groove to receive two pins projecting from the inner surfaces of a fork, *c*, (best seen in Fig. 1.) This fork is formed at the end of the vertical arm of a bell-crank lever, *d*, (see Fig. 10,) which connects by a rod, *e*, with a lever, *f*, which has its fulcrum on a pivot, *g*, one part of said lever being keyed fast to the inner and the other part to the outer end of said pivot, which rocks in a socket in the main frame. On a pivot, *h*, secured in the end of this lever swings a lever, *i*, which connects at one end with the starting-bar *k*, while its other end carries a roller, *l*, which runs on the circumference of a disk, F, provided with two cams, *m* and *n*, Fig. 1. From the lever *f* is suspended a vertical rod, *p*, on the lower end of which is wound a spring that has a tendency to throw the catch *q* into either of the notches *r* or *s* in the circumference of a disk, G. The starting-bar *k* is subjected to the action of a spiral spring, which draws the same out to the position shown in Fig. 1, thereby throwing the lower end of the lever *i* in contact with the inner end of a slot in a bar, *t*, which extends from the vertical rod *p*, and serves to confine the motion of the lever *i* within certain limits. If the starting-bar is pushed in against the action of its spring, the roller *l* is thrown off from the nose *m* or *n*, and it drops down, carrying with it the lever *f* and the rod *p*. The catch *r* releases the disk G, and at the same time a spring which bears against the clutch E on the main shaft carries said clutch up toward the cog-wheel *a*, and the keys *x* are caused to engage with the seats in the hub of said wheel, so that the same is compelled to rotate with the main shaft. The disks F and G are mounted on a shaft, D, which carries a cog-wheel, *u*, that gears into the cog-wheel *a* on the main shaft C, and also in a cog-wheel, *v*, mounted firmly on the shaft H, (see Fig. 2.) The cog-wheels *u* and *v* are of the same size. On the shafts D and H are firmly keyed cams I and K, which act on rollers mounted in the ends of levers O P Q, causing these levers to oscillate on or with the shafts L, M, and N.

The lever O carries the punches *w* for punching the nail-holes, the lever P the benders *y* for bending down the calks, and the lever Q the hammers *z* for upsetting the calks after the same have been turned down by the action of the benders *y*. When the starting-bar *k* is pushed in, the wheel *a* on the main shaft C imparts motion to the shafts D and H. The horseshoe, previously bent and channeled, is placed under the punches *w* on a flanged guide, *w'*, secured to a table or platform, R, as shown in Figs. 1, 5, and 6. The projection 1 of the cam K strikes the lever O from below, and the punches *w* are driven down thereby through the blank shoe and alongside of the guides *w'*. The metal displaced by the punches drops down through holes in the table R, (see Fig. 5.) The projection 2 of the cam I acts on the lever O from above, and withdraws the punches from the horseshoe, which is held down by the upper flange of the guide *w'* and stripped from the punches. By this time the shaft D has completed half a revolution, the cam *n* of the disk F passes under the roller *l*, the disk *q* drops into the notch *s*, and the motion of the cog-wheel *a* on the main shaft C stops as the two are now disconnected or unclutched. A horseshoe, previously heated for the requisite distance at its ends or heels to a white heat, is then placed under the benders *y*, the table R being provided with a suitable guide to receive the same in the proper position; the machine is again started by a pressure on the starting-bar *k*, and by the projection 3 of the cam K the lever T is forced up, and thereby the shaft M is turned, carrying the lever V down so as to clamp the horseshoe firmly down upon the table R, the projection 3 of the cam being extended far enough to enable the lever V to retain the shoe during the subsequent operation of bending the heels. The projections 1 and 2 of the cam K may be so formed that they will not act while the process of forming the calks is going on; or the process of punching and that of forming the calks may be carried on side by side and at the same time, or nearly so, one horseshoe being placed under the punches for the nail-holes, and another under the punches for forming the calks. After the horseshoe has been clamped down upon the table

as above stated, the projection 3 of the cam K acts upon the lever P from below, and the benders *y* are depressed, and by their action the ends of the horseshoe, which extend over an opening in the table R, as shown in Fig. 8, are bent down to the position shown in Fig. 9, and said benders descend still further, sliding over the bent ends of the horseshoe. By the action of the projection 6 of the cam K on the lever Q the hammers *z* are forced up against the bottoms of the bent calks, and thereby the same are upset. By the projection 4 on the cam I the long end of the lever P is depressed and the benders *y* are raised, and by an additional elevation given to the hammers *z* by the projection 6 the horseshoe is raised above the table R so that it can be readily removed therefrom. After the projection 6 has passed the lever Q, said lever is returned to its original position by a spring, Q', acting against it from below; and by the time these several motions have been accomplished the cam *m* of the disk F passes under the roller *l* of the starting mechanism, and the motion of the cam-wheel *a* on the main shaft stops as before.

By these means the operation of forming calks on horseshoes is materially simplified, and it can be carried on with ease and rapidity.

What I claim as new, and desire to secure by Letters Patent, is—

1. The disks F and G, provided, respectively, with noses *m n* and recesses *r s*, in combination with the starting-bar *k*, levers *i f*, click *q*, elbow-lever *d*, clutch E, cog-wheel *a*, and main shaft C, all as shown and described.

2. The cams I K, in combination with the lever O, punches *w*, guide *w'*, and table R, and with the main shaft C, the motion of which is controlled by a disk, F, provided with noses *m n*, substantially in the manner herein set forth.

3. The combination of benders *y* and hammers *z* with each other and with cams I K, receiving motion from a shaft, C, the motion of which is controlled by a disk, F, provided with the noses *m n*, substantially as described.

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