(Model.) 2 Sheets—Sheet 1.

G. H. PERKINS.

Machine for Feeding Sheet-Metal to Trimmers, &c.

No. 230,962. Patented Aug. 10, 1880.

Fig. 1.

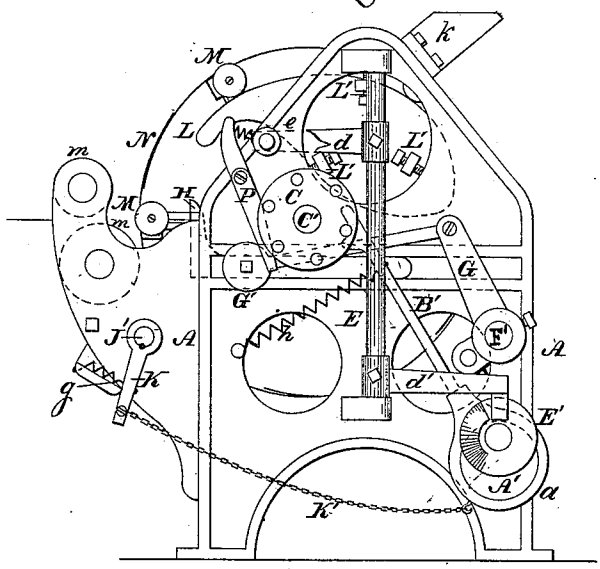
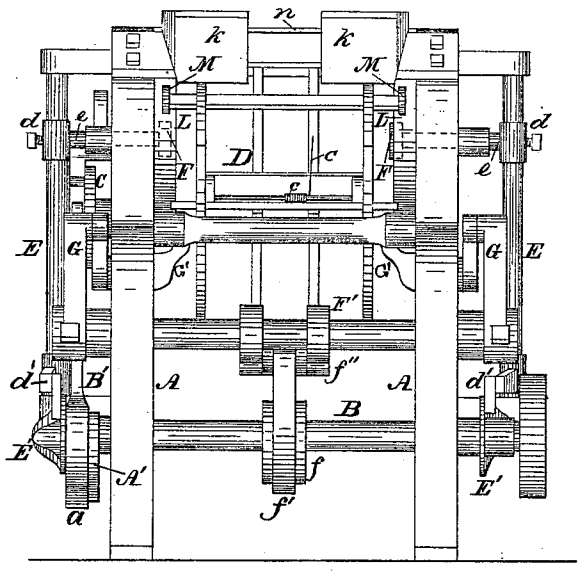


Fig. 2.



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(Model.) 2 Sheets—Sheet 2.

G. H. PERKINS.

Machine for Feeding Sheet-Metal to Trimmers, &c.

No. 230,962. Patented Aug. 10, 1880.

Fig. 3.

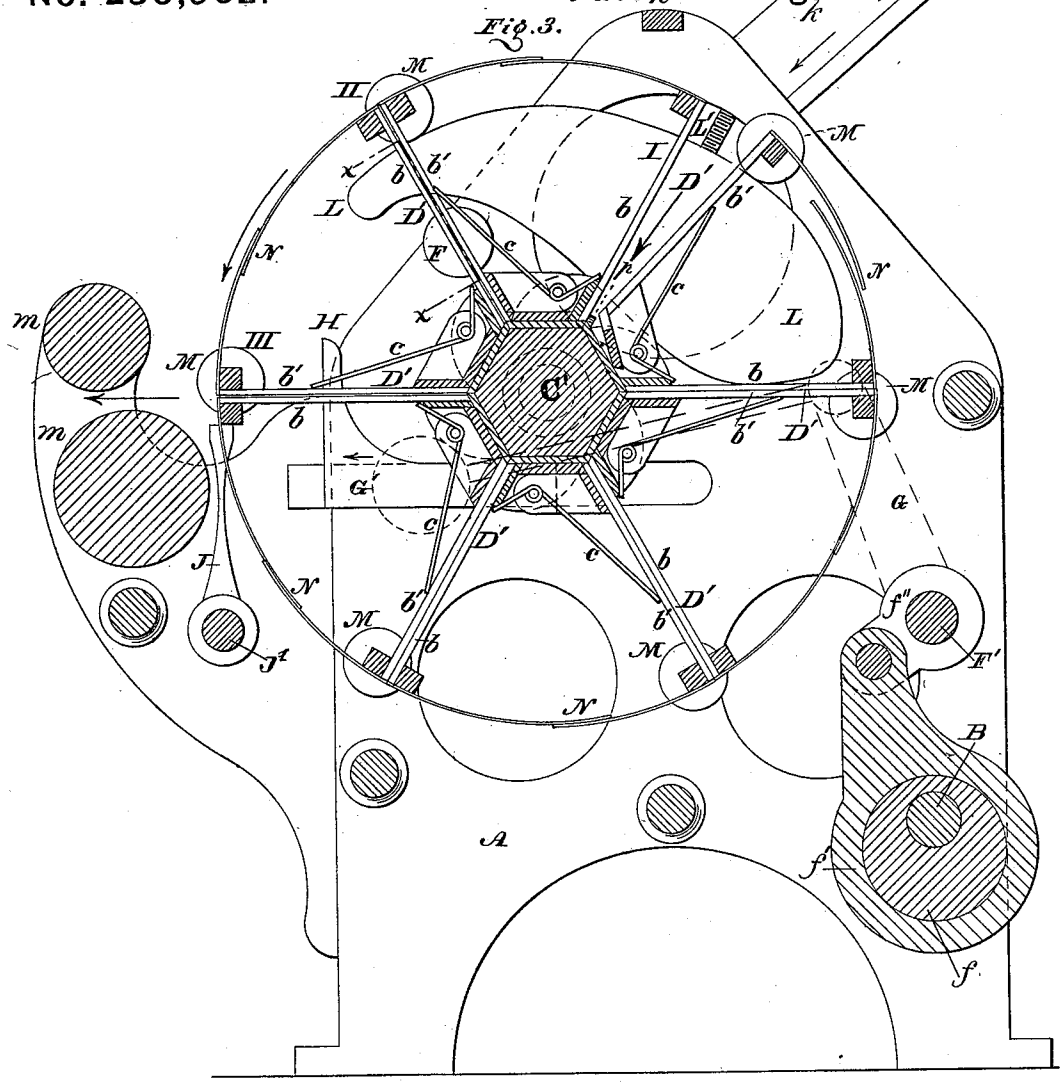
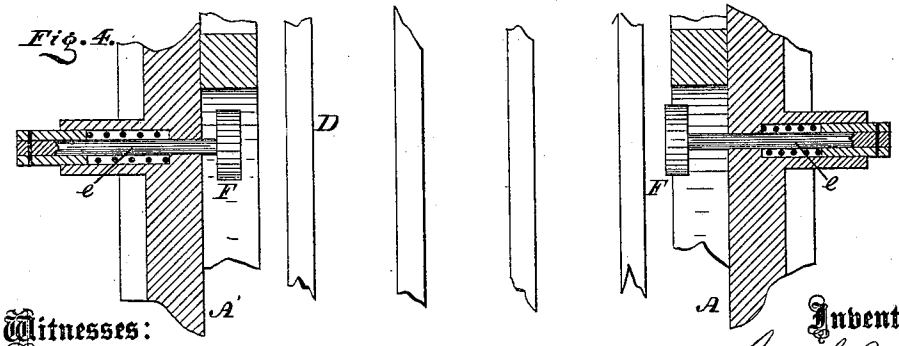


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE H. PERKINS, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR FEEDING SHEET METAL TO TRIMMERS, &c.

SPECIFICATION forming part of Letters Patent No. 230,962, dated August 10, 1880.

Application filed April 16, 1880. (Model.)

To all whom it may concern:

Be it known that I, GEORGE H. PERKINS, a citizen of the United States, residing in the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Feeding Sheet Metal to Trimmers and Formers, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a side elevation of the apparatus embodying my invention. Fig. 2 is an end view thereof. Fig. 3 is a central longitudinal section thereof enlarged. Fig. 4 is a transverse section of a portion in line *x x*, Fig. 3.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of pockets opening and closing to receive and hold the metal sheets and operated intermittently.

It also consists of means for closing the pockets.

It also consists of means for opening the pockets.

It also consists of screws for adjusting the devices which open the pockets.

It also consists of guards for preventing the premature dropping of the metal sheets.

It also consists of springs at the base of the pockets for preventing cutting action on the hub of the feed-wheel or shaft thereof.

It further consists of heads for setting the sheets or plates true on the feed-wheel.

It also consists in operating one of the heads in advance of the other for preventing shifting of the sheets or plates.

It also consists of discharge-fingers at the sides of the feed-wheel.

It also consists of the combination of an intermittent rotary feed-wheel, setting-heads, and discharging-fingers.

It also consists of props for supporting and stopping the feed-wheel when the sheet or plate is to be discharged.

Referring to the drawings, A represents the frame of the apparatus, and B the driving-shaft mounted thereon.

A′ represents an eccentric secured to one end of the shaft B and encircled by a yoke, *a*, to which is attached an arm or pawl, B′, extending vertically and engaging with a ratchet or trundle wheel, C, which is keyed or otherwise secured to the shaft C′ of a carrying or feed wheel, D. This wheel D, which occupies a position between the side pieces of the frame A, consists of radiating pockets D′, formed of frames or plates *b*, fixed to the hub of the wheel, and radiating frames or plates *b′*, hinged to said hub, the frames or plates being in pairs, one fixed, the other hinged, the latter being held against the former by means of springs *c*, suitably applied.

E represents rock-shafts, which are arranged vertically and mounted on opposite sides of the frame A. Each shaft carries at its upper and lower ends arms *d d′*. The upper arms, *d*, bear against or are connected to sliding pins *e e*, which extend horizontally and transversely near the top of the frame A, and have on their inner ends heads F, the heads thus appearing at the sides of the wheel D, and denominated the "setting-heads." The lower arms, *d′*, bear against cams E′, secured to the ends of the shaft B, whereby, as the lower arms are forced out by said cams E′, the upper arms are forced in, and the setting-heads F thus moved close to the sides of the wheel D, the springs of said heads F afterward restoring the parts to their normal positions.

To the frame A, above the driving-shaft B, is mounted a rock-shaft, F′, which receives motion from an eccentric, *f*, connected to said shaft B, a yoke, *f′*, on the eccentric, and the crank-connection *f″* on the shaft F′. To the ends of the shaft F′ are secured jointed arms G, the forward ends of which are connected to horizontal slides G′, which are guided on the sides of the frame A. To the inner sides of said slides G′ are connected fingers H, located adjacent to the sides of the wheel D, and occupying positions below the setting-heads F.

J represents uprights or props, which are secured to a rock-shaft, J′, mounted on the frame A at the end opposite to the driving-shaft B, the tops of said props being adapted to come under the outer end of each pair of frames or plates *b b′* and sustain the same, as seen in Fig. 3. Rocking motions are imparted to the shaft J′ in one direction by means of an arm, K, on the end of said shaft, and a connection, K′, secured to said arm K and the eccentric A′, and in the other direction by means of a spring,

g, attached to the arm K and a part of the frame A, or otherwise suitably applied.

L represents eccentric or cam shaped pieces, which are secured to the inner sides of the upper portion of the frame A; and M represents rollers connected to the outer ends of the hinged frames or plates *b'* of the pockets of the wheel D, and adapted to ride on the upper faces of said pieces L.

The object of the rollers M and cams L is, first, to hold back the upper ends of the hinged frames or plates *b'* and open the pocket under the chute *k* to receive the metal sheet or plate, and afterward permit the closing of the pocket against said plate or sheet, as will be hereinafter more fully set forth.

To the outer end of each frame or plate *b b'* are secured guards or strips N, preferably of metal, forming peripheral bands for the wheel D, the strips of adjacent frames or plates being disconnected or overlapping, so that the hinged frames or plates may be separated from the fixed frames or plates without interference of the strips or breaking the continuity of the strips between adjacent frames or plates.

The pawl B' is held against the ratchet or trundle wheel C by means of a spring, *h*, connected to said pawl B' and the frame A, and said wheel C, and consequently the carrier or feed-wheel D, are prevented from improper rotation by means of a spring-pawl, P, hinged to the frame A and bearing against the wheel C.

The operation is as follows: In the present case there are six pockets, D', and the wheel C has six teeth; consequently when power is imparted to the shaft B the wheel D receives an intermittent motion in the proportion of sixths. The sheet of tin or other metal to be fed is supplied to the wheel D from the chute *k*, said wheel being of less width than the sheet. As the wheel D revolves, when the rollers M reach and ride over the cam or eccentric L the upper ends of the relatively-hinged frames or plates *b'* are held back, so that the pair of frames or plates or pocket is opened under the chute *k*, as shown at I, Fig. 3. The sheet of metal now drops from said chute and falls between the two frames or plates or pocket, now separated or open. The wheel D now makes one-sixth revolution, and as the rollers M leave the wide parts of the cams or eccentrics L the latter no longer control the hinged frames or plates, and the spring *c* exerts its power, closing the hinged frames or plates and holding the metal plates between the pair of frames or plates which have now assumed the position No. II. Another pair of frames or plates has meanwhile presented itself opened under the chute *k*, ready to receive the next metal sheet. The setting-heads F now advance against the projecting side edges of the metal sheet, so as to set the latter true in its resting-place, the the cams E' or shaft and arms E *d d'* and pins *e* being so constructed or timed that one head F advances a little in advance of the other head, the object of which is to move the sheet in one direction to the extent of motion of the head, and then move the other head against the sheet and press it against the first advanced head, thus adjusting the sheet true in the pocket. Then the two heads successively leave the sheet, and it will be found that the sheet has not been jarred or shaken laterally in the slightest degree. The wheel D then makes its next motion and carries the sheet to position No. III, where the fingers H press against the rear edge of the metal sheet and force it through and out of the pocket, when the guiding-rollers *m m* direct it to the trimming, forming, shaping, or other mechanism.

The props J assume such position that when the pockets reach position No. III their outer ends abut against said props, so as to stop and support the same during the discharge of the metal sheet. Then the props move out quickly from under the pockets, so as to permit the wheel to rotate, and again assume their upright and stationary positions to stop and support the next advancing pocket. The other operations with the next supplied sheets are repeated and the closed frames or plates or pockets are carried around until they again reach the cams or eccentrics L, when they are opened and supplied as before.

If, during the feeding operation, a sheet is dropped from the chute before the next pocket is opened, it strikes the guards N and is held thereon by the cross-bar *n* at the top of the frame, the guards passing on with the wheel, and when the next pocket is opened the sheet loses its support and properly drops into place in the pocket.

In order to prevent cutting action of the sheets as they fall on the hub of the wheel D, there are secured to said hub at the bases of the several pockets springs *p*, which receive the shock of the falling sheets, one of said springs being most clearly illustrated at the base of the open pocket, position No. I, Fig. 3.

The screws L', which connect the cams or eccentrics L to the frame A, also serve to adjust the same to the pockets D'.

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

1. Opening and closing pockets fitted to a rotary shaft and operated intermittently, substantially as and for the purpose set forth.

2. The hinged frames or plates *b'*, the fixed frames or plates *b*, supporting shaft C', the rollers M, and cams L, and the springs *c*, combined and operating substantially as and for the purpose set forth.

3. The hinged frames or plates *b'*, fixed frames or plates *b*, roller M, cams or eccentrics L, and the frame A, in combination with the adjusting-screws L', substantially as and for the purpose set forth.

4. The feed-pockets D', provided with guards N, substantially as and for the purpose set forth.

5. The protecting-springs *p* at the base of the pockets D′, substantially as and for the purpose set forth.

6. The setting-heads F at the sides of the feed-wheel, substantially as and for the purpose set forth.

7. The combination, with the feed-wheel D, of the setting-heads F at opposite sides thereof, and operated one in advance of the other, substantially as and for the purpose set forth.

8. The fingers H at the sides of the feed-wheel, connected to slides G′, the arms G, and shaft F′, combined and operating substantially as and for the purpose set forth.

9. The hinged props J, in combination with the feed-wheel D, substantially as and for the purpose set forth.

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