(No Model.)

E. F. VERDEL.

CAN MACHINE.

No. 386,096. Patented July 10, 1888.

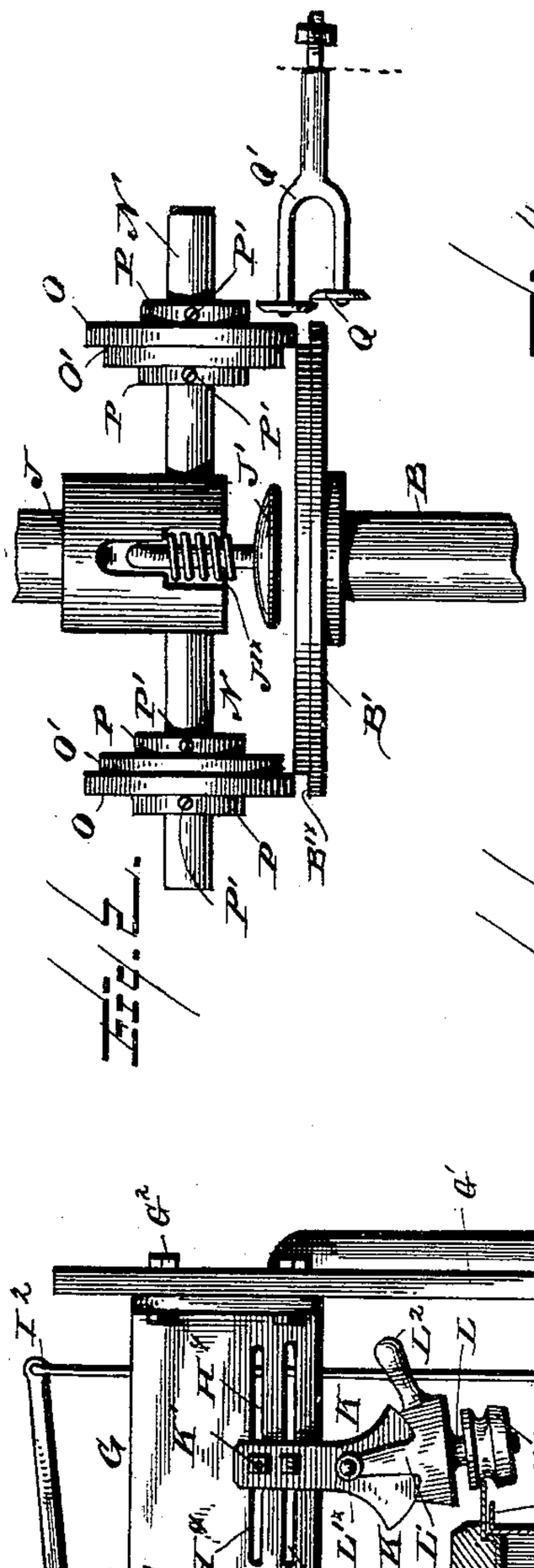

Fig. 2.

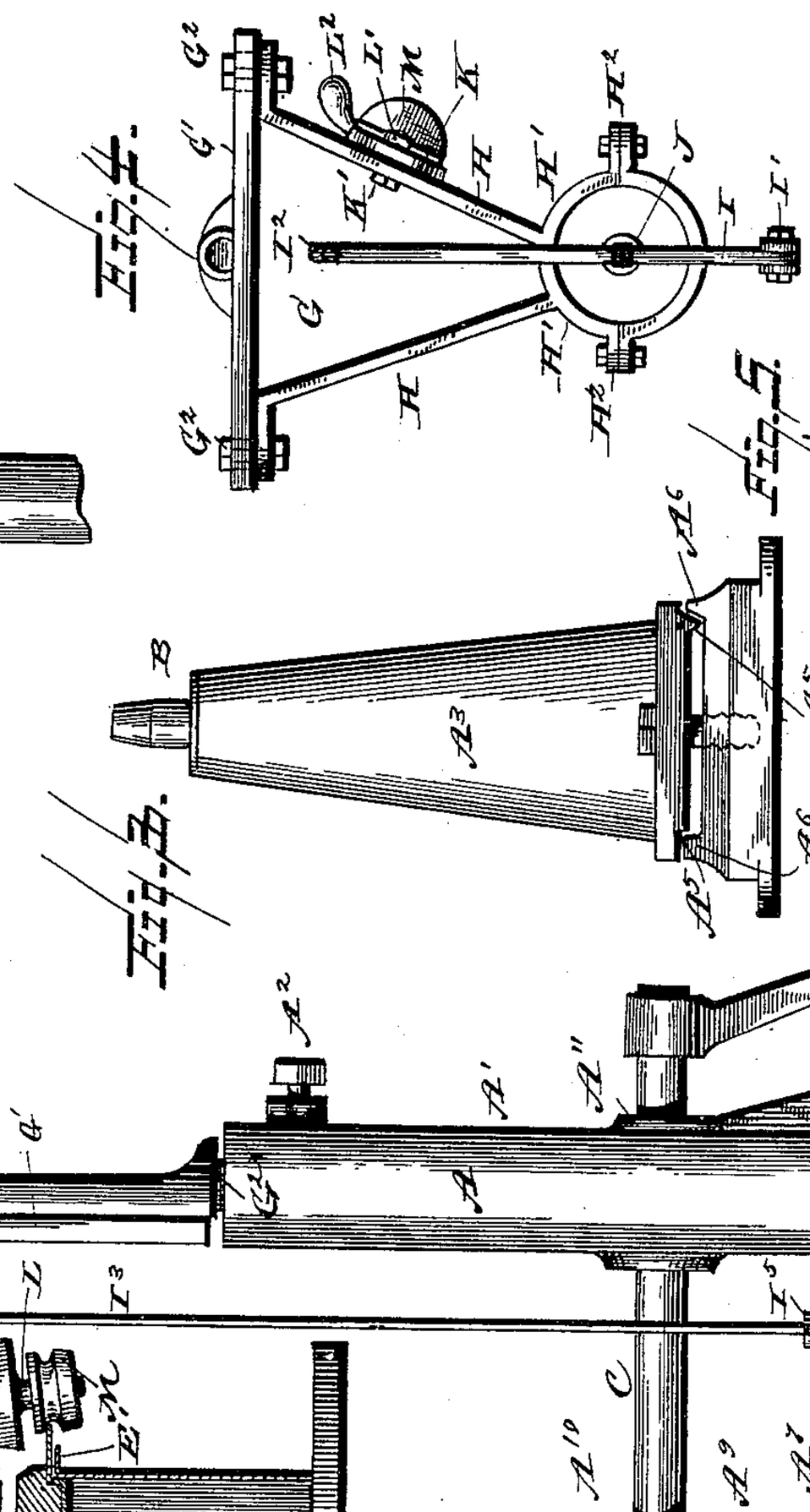

Fig. 4.

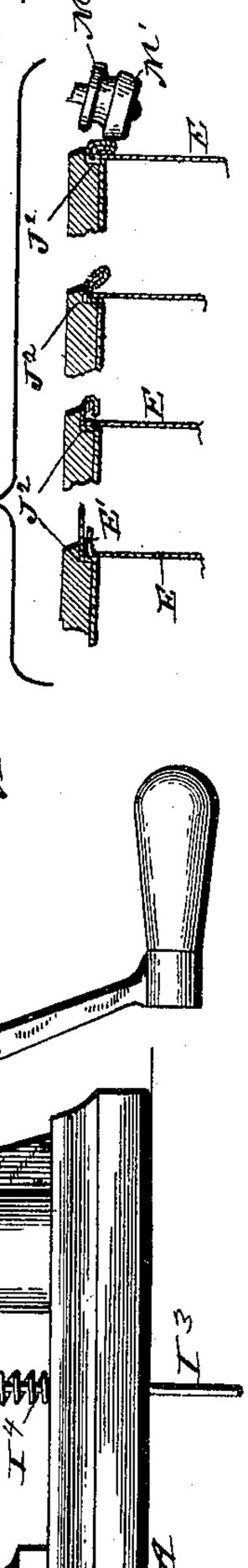

Fig. 5.

Fig. 3.

Fig. 1.

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CAN-MACHINE.

SPECIFICATION forming part of Letters Patent No. 386,096, dated July 10, 1888.

Application filed August 27, 1887. Serial No. 248,071. (No model.)

To all whom it may concern:

Be it known that I, EMILE F. VERDEL, a citizen of the United States, residing at Memphis, in the county of Shelby, State of Tennessee, have invented certain new and useful Improvements in Can-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to tinners' machines, and among the objects in view are to provide a machine adapted to receive certain operative parts as attachments, whereby different kinds of work may be accomplished with a single machine, so that the cost of an outfit of machines may be reduced to a minimum. A base or foundation provided with a work-holding table and gearing for operating the same, and constructed to be adjusted for work of different dimensions, is supplied with a standard adapted for the removal and connection of different heads each adapted to perform a different class of work upon material resting upon the table. In a machine constructed as stated and provided with interchangeable heads a possibility of performing different classes of work is accomplished with a reduction of the expense for details and machinery as above stated.

The invention consists in certain features of construction, hereinafter described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of a machine constructed in accordance with my invention. Fig. 2 illustrates in side elevation an interchangeable head-tool with rotary cutters for a purpose hereinafter specified. Fig. 3 is an end elevation of one standard of the base and the table-supporting spindle thereon. Fig. 4 is a plan of the framework of the head shown in Fig. 1. Fig. 5 are sectional details illustrating one class of work performed by the machine.

Like letters indicate like parts in all the figures of the drawings.

A represents a base, upon which is formed integrally a standard, A′, having a socket in its upper end for the reception of a tenon formed on the head of the machine. A set-screw, A^2, serves to firmly bind the tenon in the socket, thereby connecting the head rigidly with the base. A^3 is another standard secured to the base removably by means of a bolt, A^4, passing through the flange of said standard A^3 and into the base, and, by means of ribs or shoulders A^5, formed on the under surface of the standard, is adapted to take into or around grooves or ribs A^6, formed on the base, whereby the standard A^3 may be moved longitudinally on the base toward and away from the standard A′, for a purpose hereinafter specified.

The bottom A^7 of the standard A^3 is extended and provided with a bearing, A^8, for the spindle B of the machine, and also with a short upright standard, A^9, provided with a bearing, A^{10}, for the crank-shaft C, which passes through the standard A′ at A^{11}, and forms a bearing for the crank-shaft, and is of a size to permit longitudinal movement of the shaft through the bearing when the standard A^3 is adjusted upon the base, as above mentioned.

D represents a miter-gear on the end of the crank-shaft C, and a miter-pinion, D′, is rigidly connected with the spindle B and meshes with the gear D.

B′ represents the table, which is fitted to the cone-shaped upper end of the spindle B, so as to be rotated by the spindle.

As thus far described, it will be seen that the standard A^3, shaft B, and table B′ can be moved to bring the center of the shaft and table under the center of any head which may be mounted in the standard A′, so that work upon cylinders and heads of different diameters may be accomplished. As this machine is intended for operating upon sheet metal in the manufacture of vessels of various different kinds made of that material, it will be seen that various heads may be connected and operated with a single base. For example, a head provided with the necessary devices for single-seaming or double-seaming a cover or bottom of a cylinder or can-body may be employed; or, as illustrated in Fig. 2, a head adapted to cut and simultaneously form caps or bottoms for vessels may be employed with the base. For instance, taking a can-body, E, after a flange, E′, has been formed thereon, let the proposed work be to apply a bottom, F, to said body. In this instance a head, G, is mounted in the standard A′.

The head G consists of a vertically-disposed back plate, G′, terminating in a tenon, G^2, for insertion into the socket of the standard A′, to which back plate a bracket is secured by

means of bolts $G^{2\times}$ passing through the bracket and through vertical slots in the back plate, whereby the bracket may be adjusted at different elevations on said back plate. The bracket comprises two arms, H, terminating in a circular sleeve, H′, formed in halves and connected by bolts H^2. The outer half of the sleeve is provided with a lever-supporting bracket, H^3. To this bracket a lever, I, is pivoted, as at I′, and is at its free end I^2 connected with a treadle-rod, I^3, having a coiled spring, I^4, encircling the same and resting upon the base A and against a collar, I^5, secured to the treadle-rod. The lever I is pivotally connected to a spindle, J, to which a capping-head, J′, is secured. This capping-head may be of any well-known usual construction. In this instance, and for a purpose hereinafter specified, it has a peripheral groove, J^2, extending completely around the head.

In one of the arms H are formed longitudinal parallel slots H^4, through which bolts K′ pass for the purpose of adjustably securing to the same a seaming-roller supporting-plate, K. The lower end, K^2, of the plate K is semicircular, and is embraced by extensions L′ of the roller-spindle L, so as to guide said spindle and the roller M thereon, in the operation hereinafter described. A handle, L^2, projects from the spindle for the purpose of operating the same. The spindle is otherwise so formed as to fit the lower circular or curved edge of the plate K.

Referring to Figs. 1 and 5, it will be seen that when the roller M is brought into contact with the cap F and the crank-shaft C is rotated, the shaft B, table B′, can-body, and cap F, together with the capping-plate J^2 and its spindle, are all rotated, so that when pressure is applied to the handle L^2 the roller M comes into contact with the edge of the cap or cover and forms it around the flange E′ of the can-body, sufficient pressure being applied by means of the treadle and rod to suitably and properly hold the cap upon the body. By these means a single seam can be readily formed.

If a double seam is required, the operation may be modified, as follows: Taking the sectional details in Fig. 5, the one at the left represents the parts and material in the position illustrated in Fig. 1. Sufficient pressure is applied to the treadle to hold the cap while a single seam is formed, as shown at the next detail at the right, when by increasing the pressure upon the treadle the capping-head is forced farther down than is shown in the preceding sectional details, and this provides an additional inclination to the single seam, when, by swinging the roller M and bringing its tapering periphery M′ in contact with the work with sufficient pressure, the seam is doubled against the body of the can.

As one illustration of a different form of head which can be applied to the base and operated in connection therewith, I illustrate in Fig. 2 a head adapted to simultaneously cut and flange a cap or cover. In this instance the spindle J is provided with a yielding holder or plate, J′, the spindle of which is seated in the spindle J, and is encircled by a coiled spring, $J'^{\times}$.

Projecting diametrically from the spindle J are shafts N, having mounted thereon flangers O, which may be adjusted at different points on the shafts N by means of collars P, secured by set-screws P′ at desired points upon the shafts, whereby plates of different diameters may be flanged. The table B′ is peripherally shouldered, as at $B'^{\times}$, to co-operate with the flangers O. The flangers are simply disks mounted loosely on the shaft N between the collars and provided with peripheral grooves or shoulders O′, adapted to match with the peripheral shoulder $B'^{\times}$ of the table.

Q represents the rotary cutters mounted on the bracket Q′, which is adapted to be connected to the back plate, G, so as to project therefrom toward the table B′.

By substituting the table described for that shown in Fig. 1, and the flangers and their spindle J for the capping-plate and spindle shown in Fig. 1, and by connecting the bracket Q′ with the back plate, G′, the machine is adapted to cut and flange a cap from a sheet of metal, in that by rotating the crank-shaft and table, as before described, a circular disk is cut from a sheet of metal on the table B by the rotary cutters Q, and by increasing the pressure on the treadle the flangers are brought into action and form a depending flange by compressing the material between the shoulders $B'^{\times}$ and O′ of the table and flangers, respectively.

Other well-known sheet-metal implements may be suitably mounted for operation on the base B, so that instead of the expense of providing a separate piece for each class of tools, that expense is avoided by constructing the machine as hereinbefore described.

Having described my invention, what I claim is—

1. In a machine of the class described, a standard having a socket, a head comprising a back plate terminating in a tenon and provided with longitudinal slots, a bracket having bolts passing through the slots to adjustably connect said head and bracket, a seaming-roller-supporting plate adjustably mounted in the bracket for longitudinal movement thereon, and a capping-plate connected with a lever pivoted to the bracket and connected with a treadle-rod, substantially as specified.

2. In a machine of the class described, a base provided with an integral standard, a head removably mounted thereon, and carrying an adjustable seaming-roller-supporting plate and a capping-plate, in combination with a table and its spindle mounted in a standard adjustable upon the base and provided with bearings for the spindle, and a crank-shaft passing through the rigid standard and taking bearing upon the movable standard of the base, substantially as specified.

3. The combination, with the standard A′,

having the socket, of the back plate, G′, having the tenon $G^{2\times}$, the bracket H, having the slots H^4, the roller-supporting plate K, having circular curved end, the roller M, having the spindle L, adapted to fit the end of the plate K, and the extensions L′, adapted to embrace the same and pivoted, as at $L'^{\times}$, to the plate K, substantially as specified.

4. In a machine of the class described, a seaming-roller journaled upon a stem having extensions L′, in combination with a seaming-roller-supporting plate, K, having a curved end, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

EMILE F. VERDEL.

Witnesses:
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