

(No Model.)

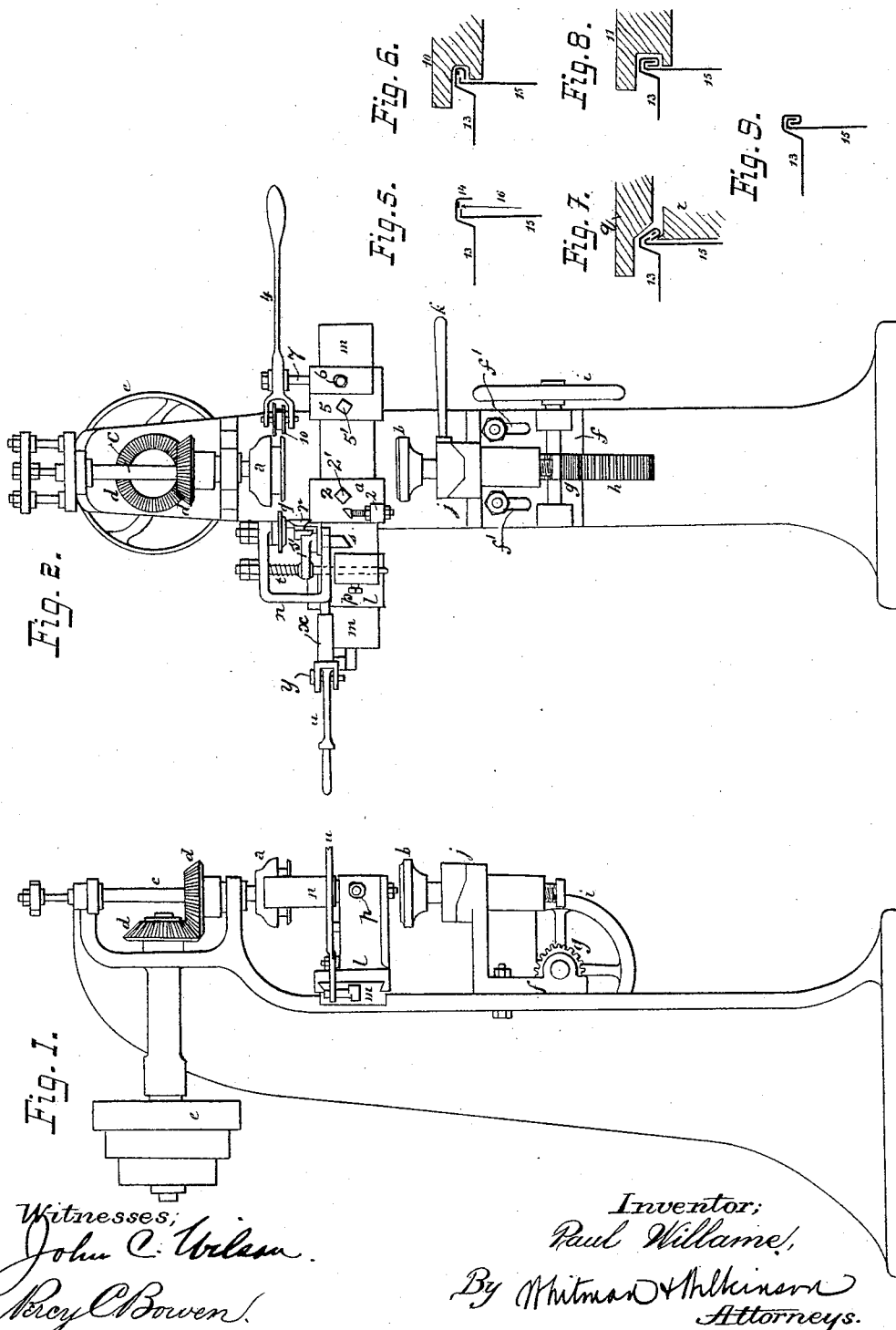
3 Sheets—Sheet 1.

P. WILLAME.

MACHINE FOR HERMETICALLY CLOSING CANS.

No. 489,356.

Patented Jan. 3, 1893.



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John C. Wilson.
Percy C. Bowen.

Inventor;
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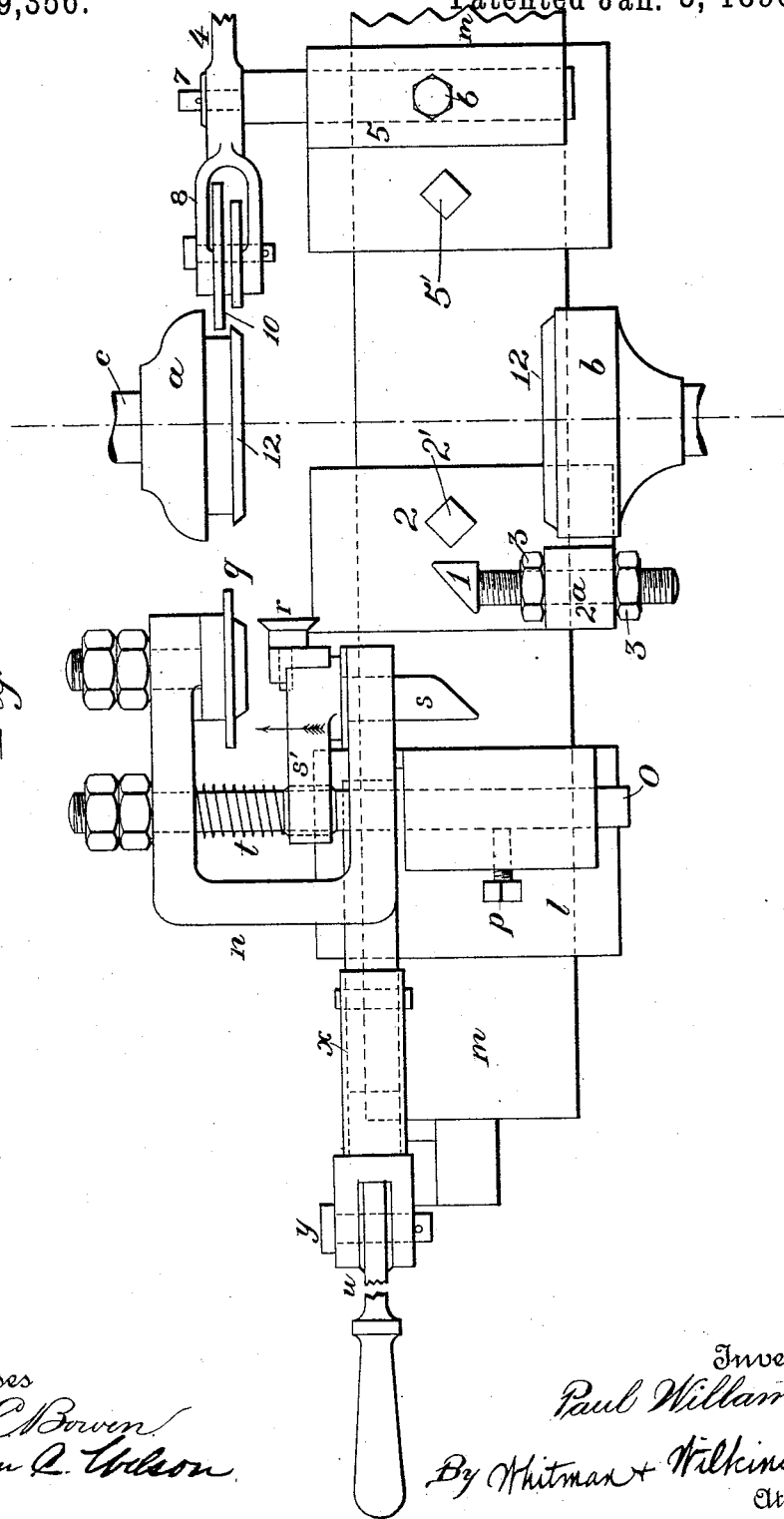
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Fig. 3.



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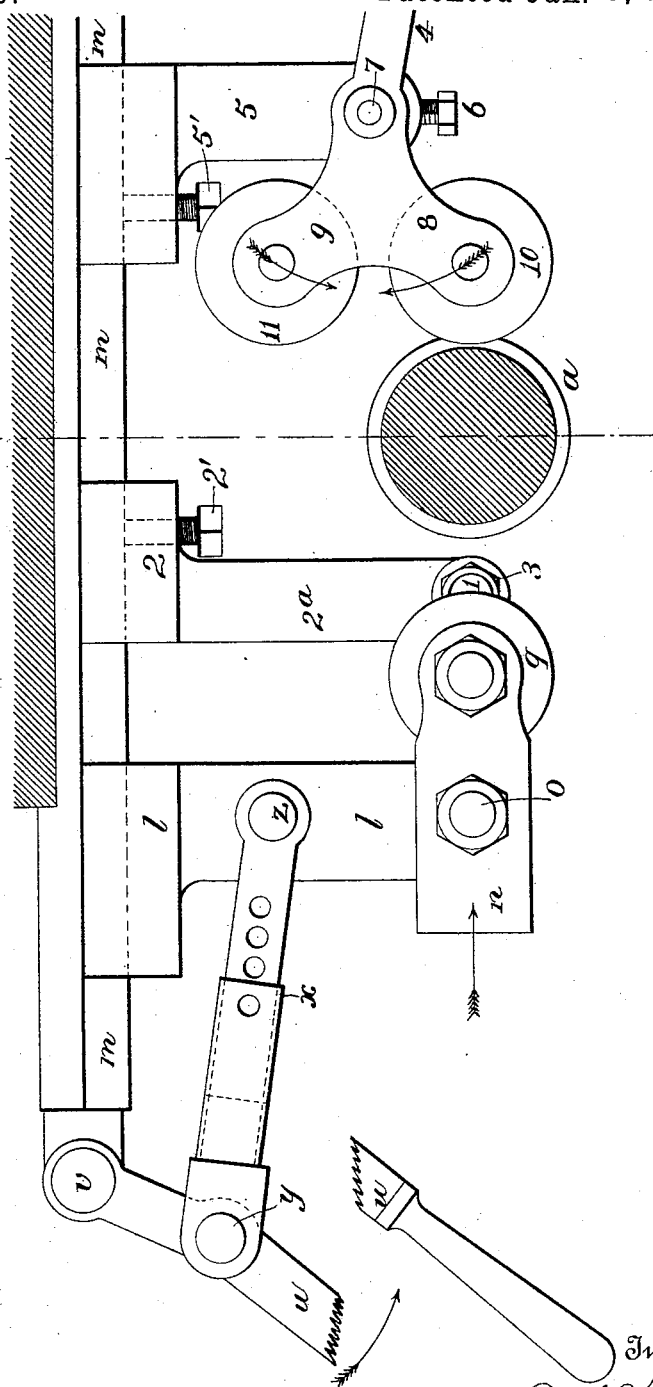
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Fig. 4.



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UNITED STATES PATENT OFFICE.

PAUL WILLAME, OF CLICHY, FRANCE.

MACHINE FOR HERMETICALLY CLOSING CANS.

SPECIFICATION forming part of Letters Patent No. 489,356, dated January 3, 1893.

Application filed August 5, 1892. Serial No. 442,241. (No model.) Patented in France February 20, 1891, No. 211,571, and in Belgium May 5, 1891, No. 94,793.

To all whom it may concern:

Be it known that I, PAUL WILLAME, a citizen of the French Republic, residing at Clichy, in the Department of the Seine, France, have invented certain new and useful Improvements in Machines for Hermetically Closing Cans, (for which Letters Patent have been granted in Belgium, under date of May 5, 1891, No. 94,793, to the Manufacture Belge des Boites Metalliques, and in France, under date of February 20, 1891, to the firm of P. Willame et Cie., No. 211,571,) of which the following is a specification.

My invention relates to improvements in machines for hermetically closing metallic cans containing articles of food and other substances which it is desired to put up in airtight packages.

Briefly my invention consists of a machine containing means for holding and rotating the can body and a certain number of wheels or disks of varying shapes which are brought in turn against the edges of the top or bottom of the can in order to bend over and secure the latter firmly to the body, the arrangement of the machine enabling cans of greatly differing sizes to be dealt with.

To clearly explain my invention reference is made to the accompanying drawings in which:—

Figure 1 is a side elevation of the machine. Fig. 2 is a front view. Fig. 3 is a front view on an enlarged scale of the can holding and closing part of the machine. Fig. 4 is plan of same. Fig. 5 represents in section a lid or a bottom placed upon the box body before closing. Fig. 6 is a similar view to illustrate the first part of the closing movement. Fig. 7 is a similar view illustrating the second part. Fig. 8 is a similar view to illustrate the third part, and Fig. 9 is a similar view to illustrate the closed joint.

The machine consists of a suitable framework on which is carried an upper and a lower disk *a, b* between which the can is held. The upper disk *a* is mounted on a vertical shaft *c* carried in suitable bearings and receiving motions from the bevel wheels *d d* operated by the driving pulley *e*. The lower disk *b* is adjustably carried by its supports so that cans of varying heights may be placed between it

and the upper disk *a* and there held while the upper disk imparts a rotary motion to same and in such a manner that it may be quickly raised or lowered to hold and release the can. To this end the shaft of the disk *b* is carried in a bracket *f* sliding on the frame of the machine. The frame carries a fixed rack *h* (Fig. 2) and the bracket a pinion *g* which can be operated by a hand wheel *i*. The bracket *f* has slots *f'* through which pass bolts as shown so that when raised by means of the pinion and rack it may be held by tightening the nuts of the bolts. The shaft carrying the disk *b* is also connected to a block *j* the lower surface of which is formed on an angle which corresponds with the planes of another surface on the bracket *f*. To the block *j* is connected a handle *k* and by partially rotating this the disk may be quickly raised so that the can is brought up to the disk *a* and as quickly released. Horizontally placed across the frame-work is a dovetailed block *m* on which works a slide *l*. The latter carries a bracket *n* held in the slide *l* by a rod *o* adjustable in same by means of a set screw *p*. The bracket *n* carries a horizontal wheel or disk *q* and a movable arm *s'* of same carries a vertical wheel or disk *r*, both of said disks being loosely mounted on their shafts. The arm *s'* carrying the disk *r* embraces the rod *o* and above this point and below the upper arm of the bracket is a spring *t*. It further carries a depending arm *s* having a beveled face which passes through the lower arm of the bracket *n*.

The slide *l* is operated by means of a lever *u* which is pivoted at *v* to the fixed slide block *m* or to the framework and has pivoted to it at *y* an adjustable connecting rod *x* the other end of which is attached to the slide *l* at the point *z*. By moving this lever *u* in the direction of the arrow Fig. 4 the disks *q* and *r* will be moved toward the can body until the beveled face of the arm *s* strikes a corresponding face of a pin *1* which is held in a projection *2^a* of a slide *2* by means of lock nuts *3 3* which engage with its threaded portion, so that said arm *s* and disk *r* are raised against the pressure of the spring *t*, until the lever *u* is withdrawn, when the spring returns the disk *r* to its original position. It will thus be seen that

by screwing up or down the pin 1 it may be made to correspond to the varying heights to which the bracket *n* is set by means of the shaft *o* while the slide 2 may be moved horizontally on the block *m* and secured in position by a suitable set screw 2' as required by the different diameters of the cans being operated on. On the other side of the block *m* is a third slide 5 also adjustable by means of a suitable set screw 5' or the like, said slide carrying a rod 7 adjustable vertically by means of a set screw 6. The rod 7 has pivotally secured to it a lever 4 one end of which has a handle while the other end is formed into two straps 8, 9 carrying between them respectively a disk 10 and a disk 11 having different profiles or sections and both capable of loosely revolving on their pins.

The can when placed between the two disks *a* *b* is securely held by means of the frustums 12, 12 on the faces thereof said frustums entering corresponding depressions on the top and bottom respectively and is rapidly rotated from the upper disk *a*. The lever 4 is then drawn toward the operator so as to bring the disk 10 against the turned down edge 14 of the cover 13 which has been placed on the can body as shown in Fig. 5 with the result that the rounded faces of the groove in the disk 10 bend the edge 14 as shown in Fig. 6. The lever 4 is then replaced and the lever *u* is next drawn toward the operator so that the disk *q* is brought up to the cover while the disk *r* is also brought up and raised as heretofore described so that its beveled edge is brought under the fold previously produced the disk *q* compressing said fold against the disk *r* as shown in Fig. 7. The lever *u* is then replaced and the lever 4 is pushed by the operator so as to bring the disk 11 into contact with the edge 14. This disk has a deep square angled groove and the effect of the pressure of same is to turn down the fold against the side 15 of the can as shown in Fig. 8, the finished and closed fold presenting the appearance shown in Fig. 9, the parts however being in closer contact than shown both in this figure and in Figs. 5, 6, 7 and 8. For the purpose of mak-

ing an even tighter joint I may place under the edge of the cover 14 a rubber or soft metal strip 16 or a strip of some gummy material which during the closing and crushing process is squeezed into the various interstices.

Although I have shown a particular machine for the purpose of illustrating how my invention may be carried into effect I do not confine myself to the exact arrangement of the parts but what I claim is:—

1. In a machine for hermetically closing cans and in combination with can holding and rotating devices, and movable pressure disks for performing parts of the closing operation, a movable bracket, a slide for carrying the same, means for adjusting the bracket in the slide means for moving the same, horizontal and vertical pressure disks carried by the bracket, a movable arm on which the vertical disk is mounted a spring for controlling the same and an adjustable fixed stop for operating said arm to raise said disk and bring it beneath the fold of the can end substantially as described.

2. In a machine for hermetically closing cans, and in combination with rotating disks for holding the can; pressure disks for performing parts of the closing operation; a bracket *f* vertically movable upon the frame of the machine; means for elevating and depressing the said bracket; means for securing the bracket at any desired height; a bearing block in which is journaled the shaft of the lower disk for holding the can rotatably mounted upon the top of the bracket, and having an inclined lower surface resting upon a corresponding inclined surface upon the bracket, and means for rotating the said bearing block to raise or lower it upon the inclined surfaces, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PAUL WILLAME.

Witnesses:

G. COY,

ROBT. M. HOOPER.