(No Model.) 2 Sheets—Sheet 1.

E. KUTZNER & A. URBAN.

MACHINE FOR SEALING METAL CANS FOR PRESERVING FOOD.

No. 583,184. Patented May 25, 1897.

Fig. 1.

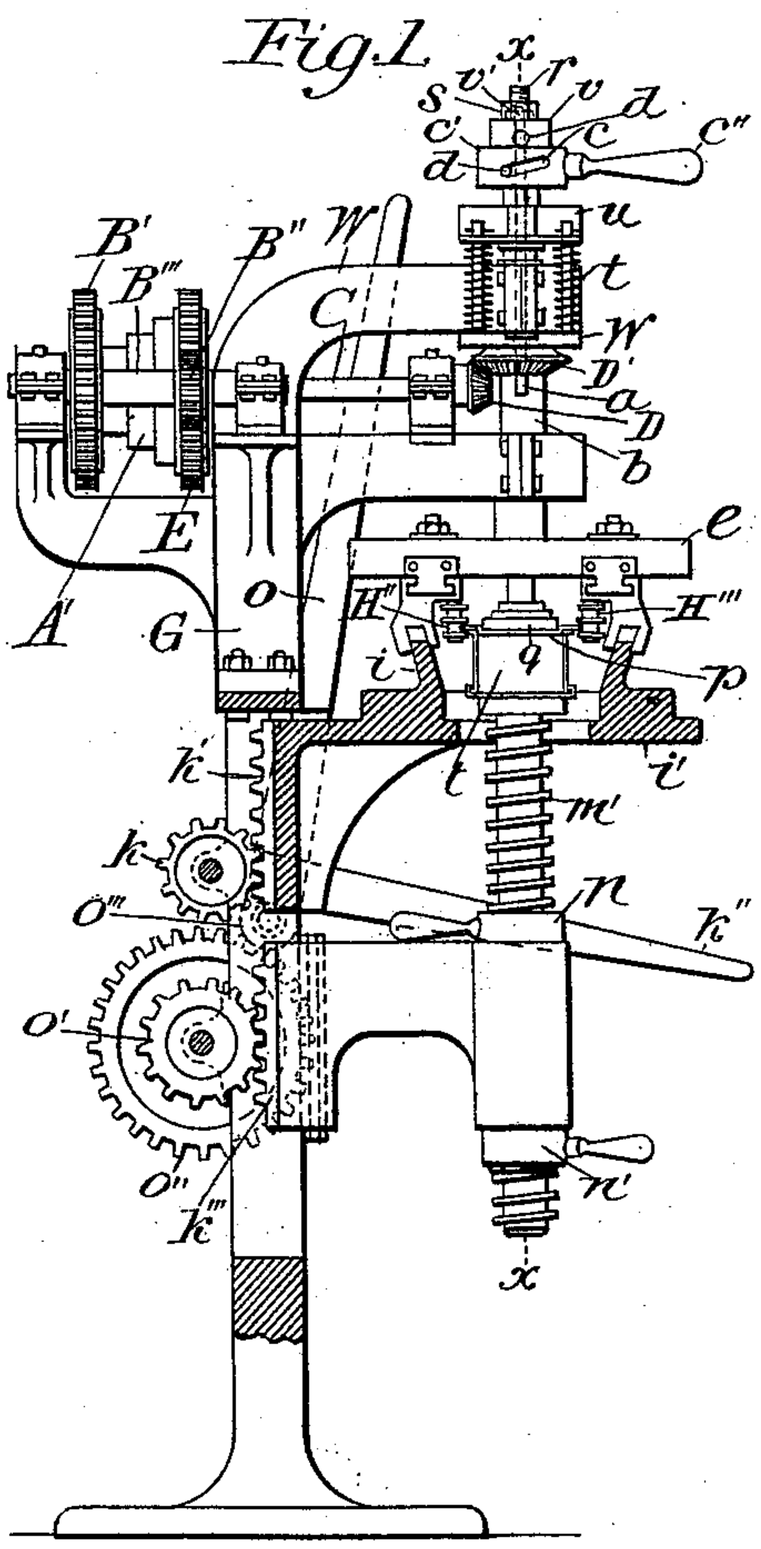


Fig. 3.

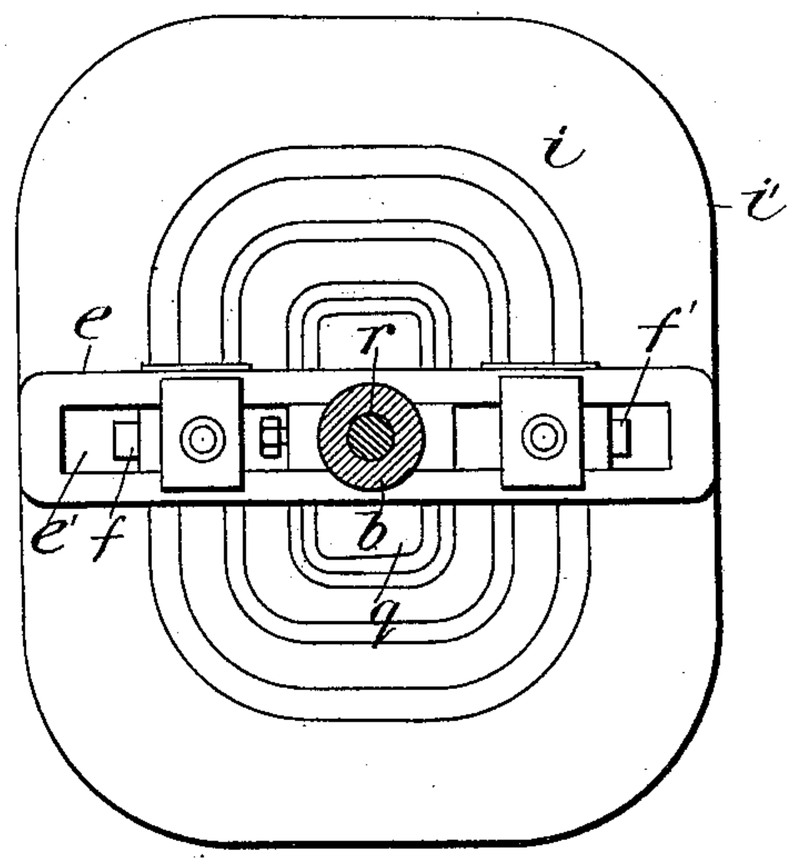


Fig. 4.

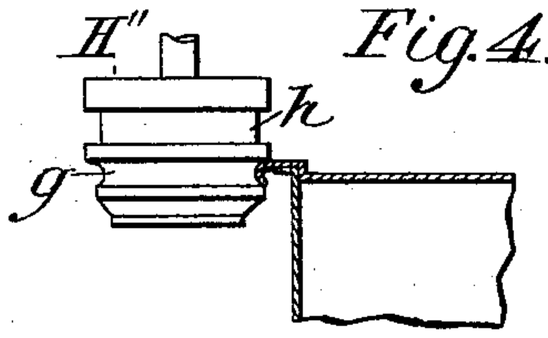


Fig. 5.

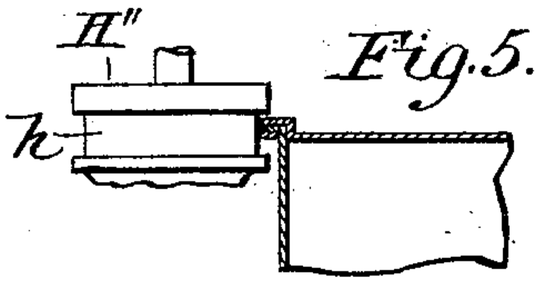
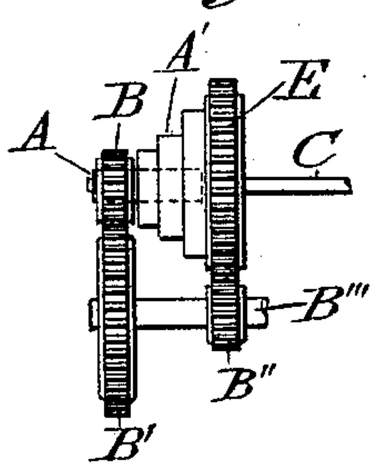


Fig. 6.



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(No Model.) 2 Sheets—Sheet 2.

E. KUTZNER & A. URBAN.

MACHINE FOR SEALING METAL CANS FOR PRESERVING FOOD.

No. 583,184. Patented May 25, 1897.

Fig. 2.

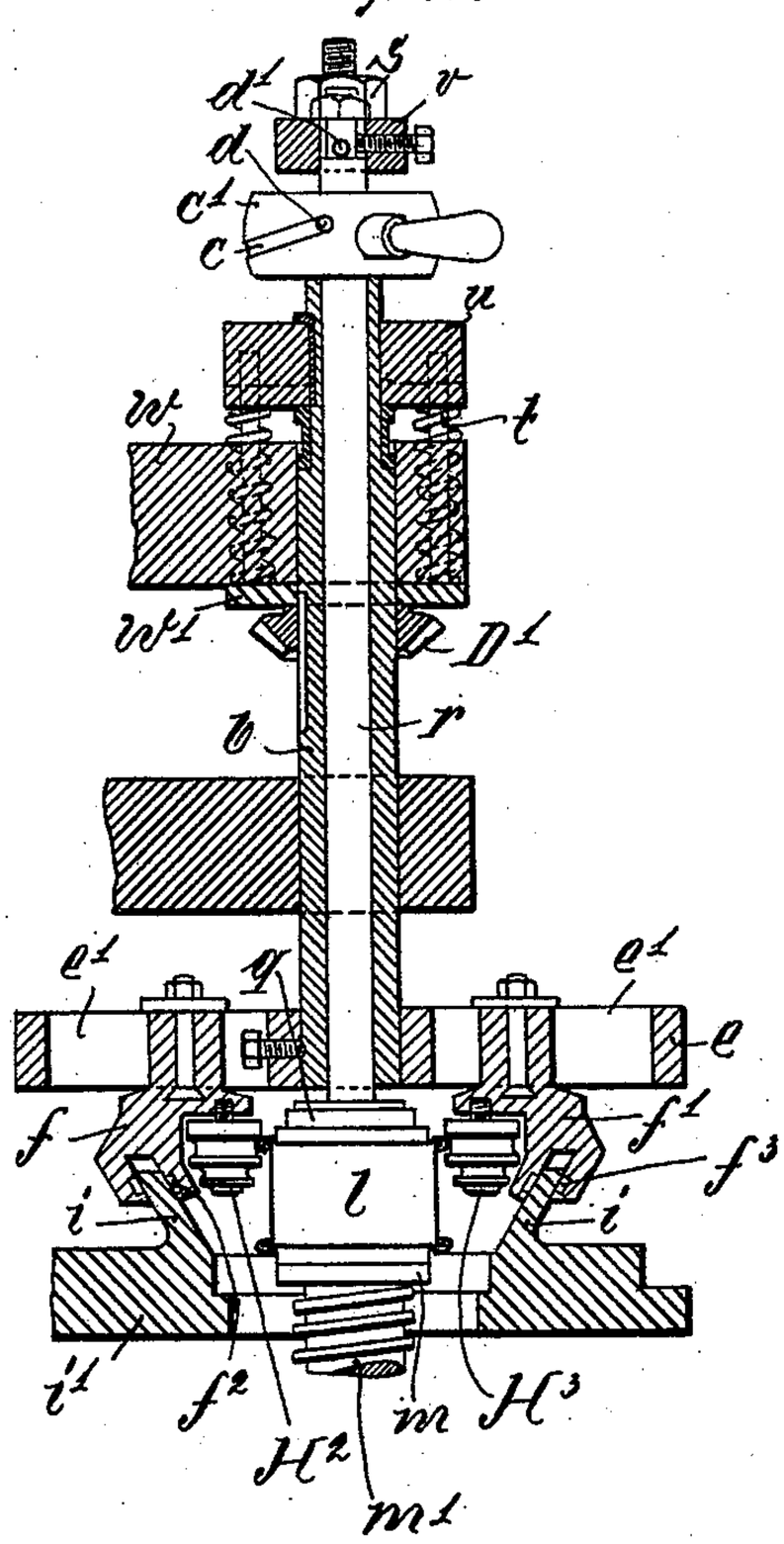


Fig. 5.

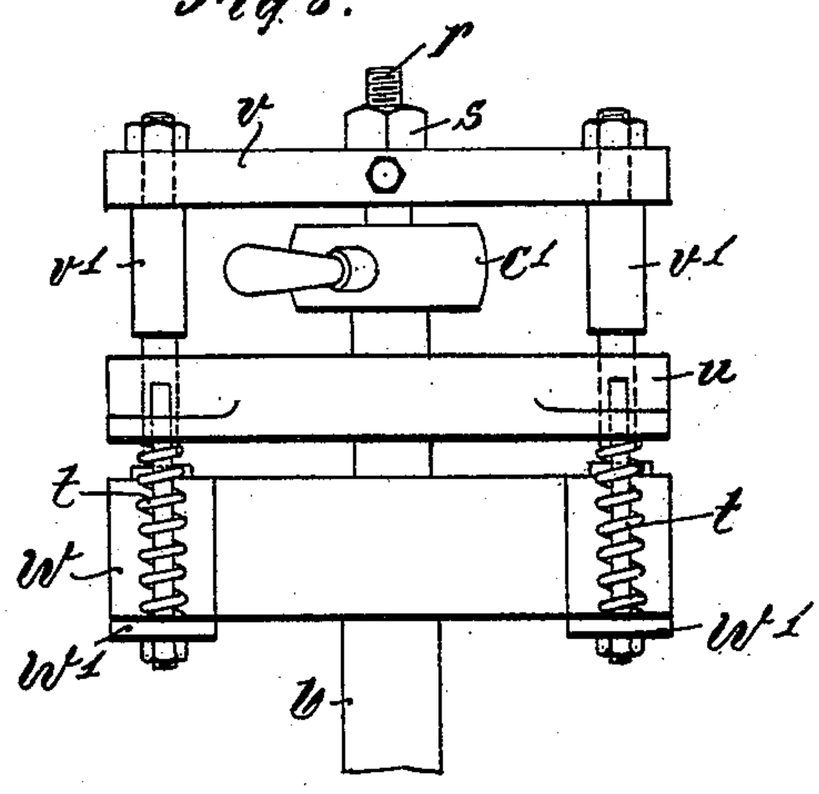
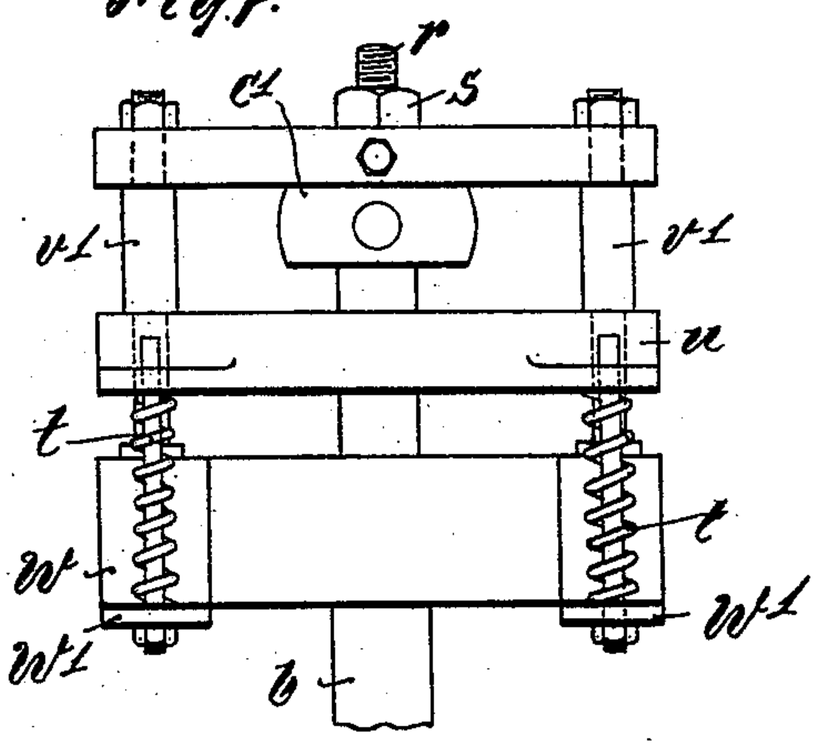


Fig. 7.



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UNITED STATES PATENT OFFICE.

EMIL KUTZNER AND AUGUST URBAN, OF BERLIN, GERMANY.

MACHINE FOR SEALING METAL CANS FOR PRESERVING FOOD.

SPECIFICATION forming part of Letters Patent No. 583,184, dated May 25, 1897.

Application filed February 10, 1896. Serial No. 578,695. (No model.)

To all whom it may concern:

Be it known that we, EMIL KUTZNER and AUGUST URBAN, subjects of the German Emperor, residing at Berlin, Germany, have invented certain new and useful Improvements in Machines for Sealing Metal Cans for Preserving Food; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a machine for the air-tight closing of preserve-cans of all kinds. It possesses the great advantage over the machines hitherto in general use in that the preserve-cans to be closed are no longer, as heretofore, turned round with the pressing-plate, whereby a quantity of the contents of the can is frequently damaged, but remain stationary in a firmly set position. Consequently loss of the contents of the can is entirely avoided. A no less advantage of the present invention is afforded by the peculiar construction of the machine, which is such that ordinary workman can use the machine with ease, thus avoiding the necessity of employing experienced workmen, as is the case with machines of this class as heretofore made and used.

The invention is represented in the accompanying drawings.

Figure 1 is a partly sectional elevation. Fig. 2 is an enlarged part section taken on the line *x x* of Fig. 1. Fig. 3 is a horizontal section taken on the line *z z* of Fig. 2, and Figs. 4 to 6 show detached views of details. Fig. 7 is a view of the uppermost part of the machine drawn on about the same scale as that employed in Fig. 2. Fig. 8 is a view similar to Fig. 7, but showing some parts in another position.

The same letters of reference, where they occur, are used to denote the same or corresponding parts in all the figures.

On the axle C is the pipe or hollow shaft A, to which the step-pulleys A′ are secured, (see Fig. 6,) whereby motion is imparted to the machine. On the pipe or hollow shaft A is a cog-wheel B, which gears with the cog-wheel B′ on the parallel shaft B‴, to which is secured a cog-wheel B″, which gears with the cog-wheel E, fast on the axle C. On the end of the axle C is a bevel-wheel D in gear with another bevel-wheel D′, which is fitted by means of a feather in a groove *a* on the exterior of the pipe or hollow shaft *b*, so that the latter can be moved longitudinally on the vertical rod *r* without moving the bevel-wheel D′ out of gear with the bevel-wheel D. This movement is effected by means of a ring *c*′, furnished with a lever-handle *c*″ and having a cam-groove *c*, which fits on a pin or peg *d*, secured to the vertical rod *r*. By rotating the ring to the left of the position shown in Fig. 1 it is, by reason of the cam-groove and pin, pressed down fast on the upper end of the hollow shaft *b*, which is thereby forced down over the rod *r*. To the lower end of the hollow shaft *b* is secured a plate *e*, having slits or apertures *e*′, in which are carried the sliding blocks *f f*′, to which the working rollers H″ H‴ are revolubly mounted. Thus the rollers H″ H‴ are capable of a twofold movement—namely, rotation on their axes and a vertical displacement—by the movement of the hollow shaft *b*.

The sliding blocks *f f*′ are provided with conical ways which engage on a corresponding conical guiding-rim *i*, forming a circular or oval track and having a base-plate or table *i*′.

f″ and *f*‴ are friction-rollers carried by the blocks *f* and *f*′, respectively.

The vertical displacement of the table *i*′ is effected by means of a vertical rack *k*′, secured to its side, with which gears a pinion *k*, rotating in suitable bearings and actuated by means of a hand-lever *k*″. (See Fig. 1.)

The can *l* to be sealed is stood upon the press-plate *m*, which likewise is capable of vertical displacement by means of the screw-spindle *m*′ and the two lever-nuts *n n*′. The bringing of the press-plate *m* into the working position is effected by means of the hand-lever *o*, the pinion *o*‴, to which it is connected, the cog-wheels *o*″ and *o*′, and the rack K‴. For the purpose of holding the can *l* in fixed position the vertical rod *r*, to the lower end of which is secured the press-cover plate *q*, is furnished at its upper end with a peg or pin *d*′, which engages in a lateral slot in a collar *v*. This collar *v* is provided with three vertical apertures in line, through the central one of which passes the rod *r* and through

the other two pass pillars v', screwed at their upper ends and furnished with adjusting-nuts, their lower ends being firmly secured to the fixed arm W of the machine. The collar v is also provided with lateral set-screws, and by means of these and the adjusting-nuts aforementioned the collar v is fixed in any desired position on the pillars v', and as the rod r is held in the collar v by the pin d' it follows that an adjustment of the collar v adjusts the position of the rod r. A method of adjusting the rod r relatively to the collar v is afforded by the nut s, which screws over the end of the rod r and bears on the top of the collar v. The rod r is kept stationary by the pillars v', that hold the collar v. The latter is coupled to the rod r by means of the pin d' in such a manner that said rod cannot be moved against or from the said collar after such adjustment has been made, since the parts are then secured one to the other by suitably-arranged screws. The collar v may be adjusted in position also with regard to the pillars v', and in doing so also the rod r is adjusted in height; but after that is done the rod is, as it were, coupled to the arm W of the frame of the machine by the pillars v', the collar v, and the screws and nut connecting all said parts. The sleeve b may therefore be raised and lowered by means of the pin d and the ring c' with its handle c''.

u is a collar fast on the hollow shaft b, on the under side of which bear the springs l, whose lower ends are fixed to the plate W', which forms part of the fixed arm W of the machine. The springs t therefore tend to raise the hollow shaft b, and it is against the power of these springs t that the ring c' operates to bring the hollow shaft b down over the rod r in the manner hereinbefore described:

Figs. 4 and 5 show detached views of the roller H'', with the can l in position for the bordering and soldering processes, respectively.

The working of the machine is as follows: After the can l, with its lid lying on it, has been placed on the press-plate m the hand-lever o is actuated so that the can l is fixed fast between the press-plate m and cover q. The table i', together with the conical guiding-rim i, is then forced up by means of the hand-lever k'', and the sliding blocks f f', which are now rotating through the setting in motion of the machine, are drawn by surrounding conical rim i toward the center and the edge of the can-cover to be bordered upon by the surfaces g of the rollers H'' and H'''. This is the position shown in Fig. 4. The rollers H'' and H''' are now brought back to their starting position and the cam-groove ring c' is turned to the left of the position shown in Figs. 1 and 7, whereby the hollow shaft b is depressed, Figs. 2 and 8, and the surfaces h and h' of the rollers H'' and H''' are brought into the same horizontal plane as the edges of the tin to be closed completely air-tight. (See Fig. 5.) The machine is again set in action by the raising of the table i', and on completion of the process can again be operated as before described.

The rod r is hindered from being displaced upward, because the horizontal screw situated in the middle portion of the collar or transverse bar v takes over a shoulder of said rod r, Fig. 2, and presses, moreover, against this rod. The transverse bar v in its turn is held by the pillars v'.

Having fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A machine for sealing metal cans for preserving food distinguished by the guide-plate e fitted to the lower end of the hollow shaft b and provided with slits or apertures e' in which are carried two sliding blocks f, f' having two working rollers H'', H''' revolubly mounted thereon and furnished with grooves g and h, h', conical ways engaging a conical guiding-rim i forming a track, all arranged to operate substantially in the manner described and illustrated in the accompanying drawings and for the purposes stated.

2. In a machine for sealing metal cans for preserving food, the combination of the ring c' loose on the rod r and having a cam-groove c engaging a pin d on said rod r for the purpose of lowering the hollow shaft b thereon, and the springs t for raising said shaft, arranged to operate substantially in the manner and for the purpose hereinbefore described and illustrated in the accompanying drawings.

3. In a machine for sealing metal cans for preserving food, the combination of the rack k' on the table i', the pinion k and hand-lever k'', together with the rack K''' and the gear-wheels o', o'' and o''' and hand-lever o, arranged to operate substantially in the manner and for the purposes hereinbefore described and illustrated in the accompanying drawings.

In testimony whereof we affix our signatures in presence of two witnesses.

EMIL KUTZNER.
AUGUST URBAN.

Witnesses:
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