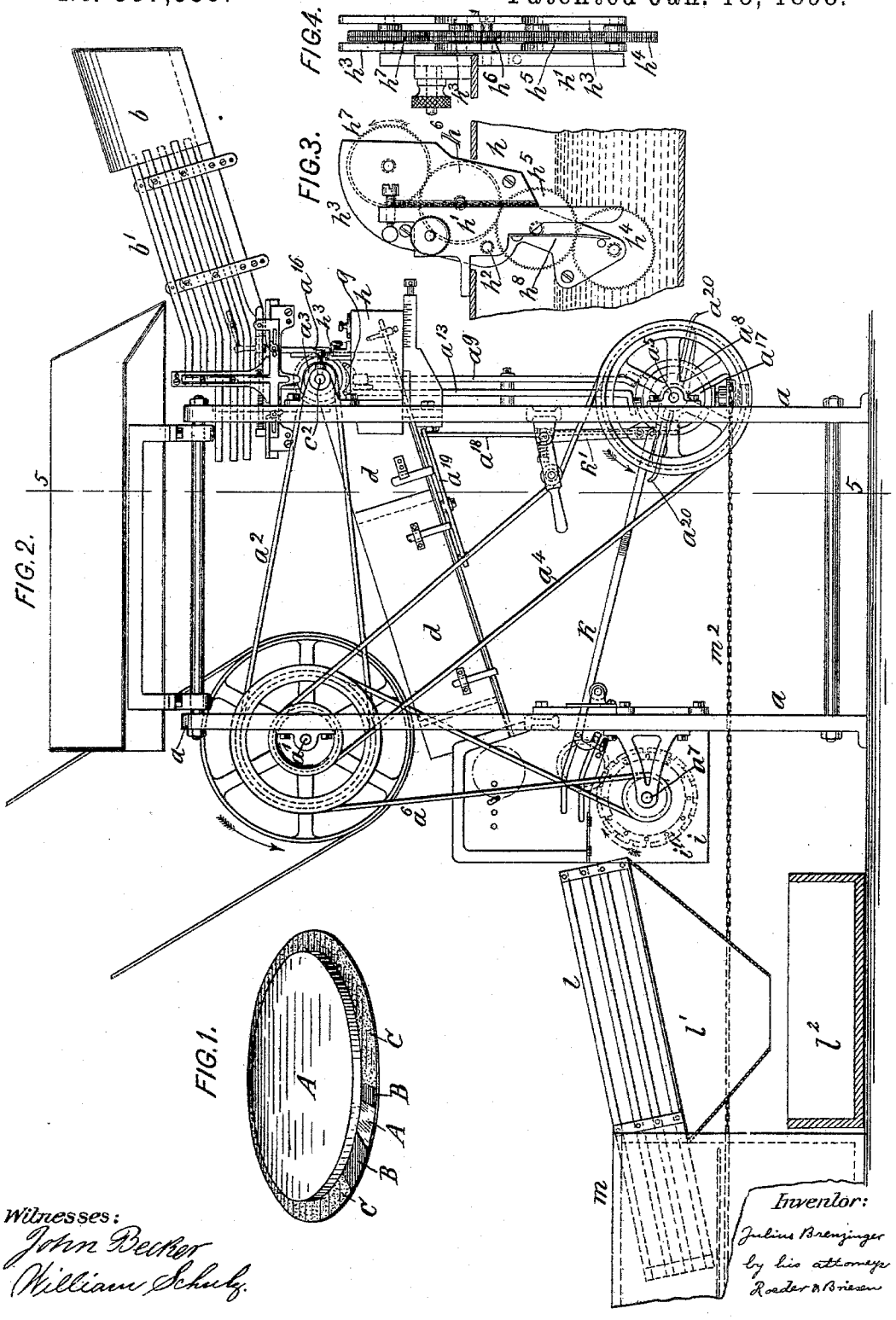
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J. BRENZINGER.

MACHINE FOR LINING COVERS OF METAL CANS.

No. 597,386. Patented Jan. 18, 1898.



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J. BRENZINGER.

MACHINE FOR LINING COVERS OF METAL CANS.

No. 597,386. Patented Jan. 18, 1898.

FIG. 7.

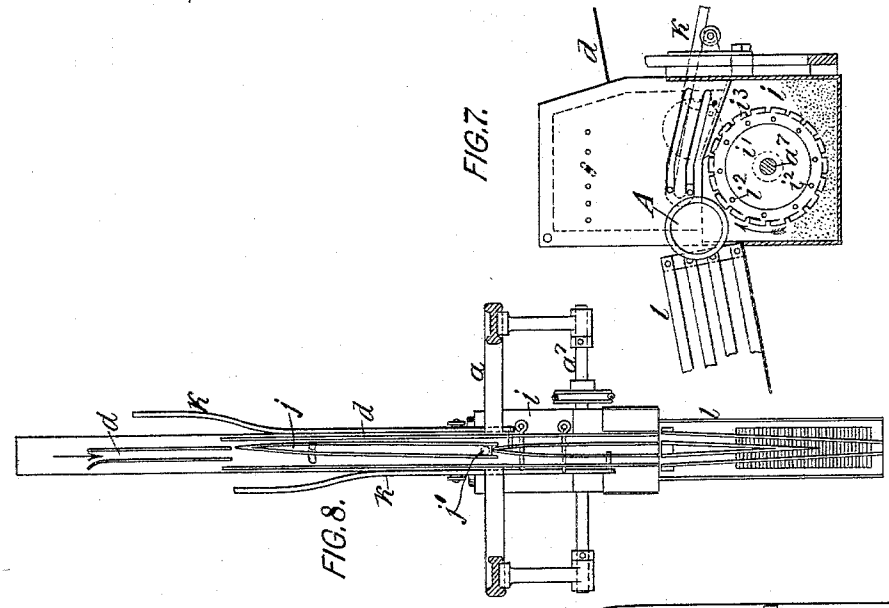


FIG. 8.

FIG. 6.

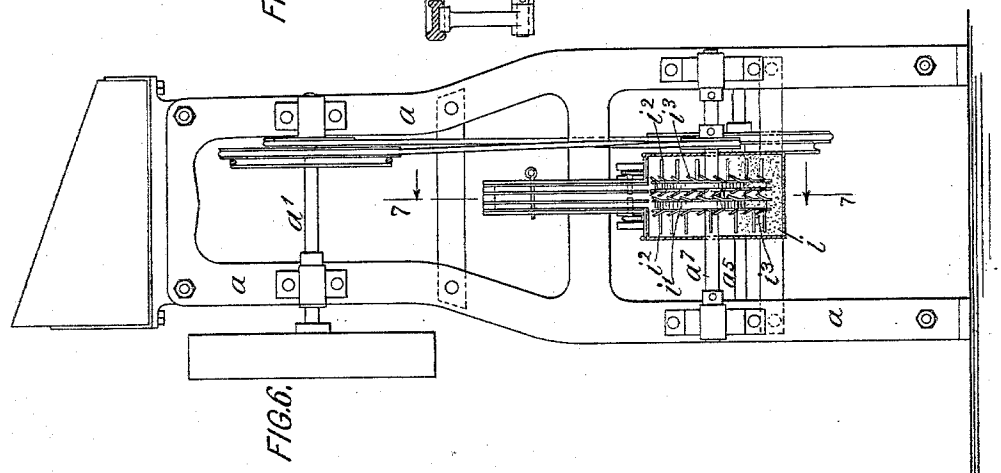
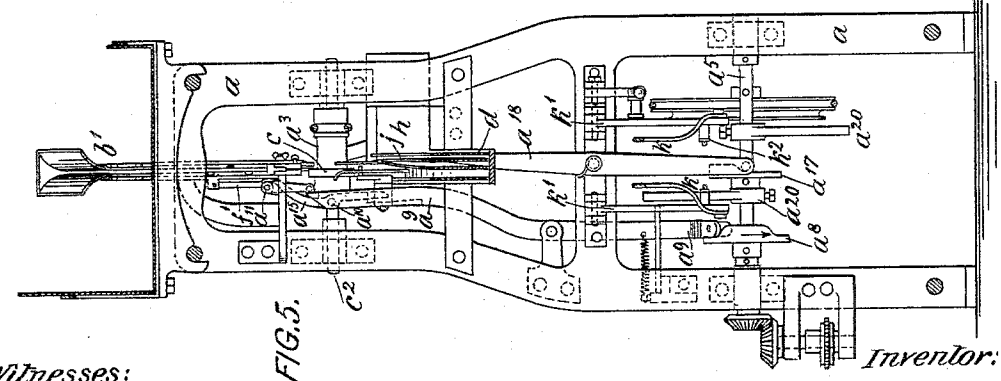


FIG. 5.



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J. BRENZINGER.

MACHINE FOR LINING COVERS OF METAL CANS.

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FIG. 7 b

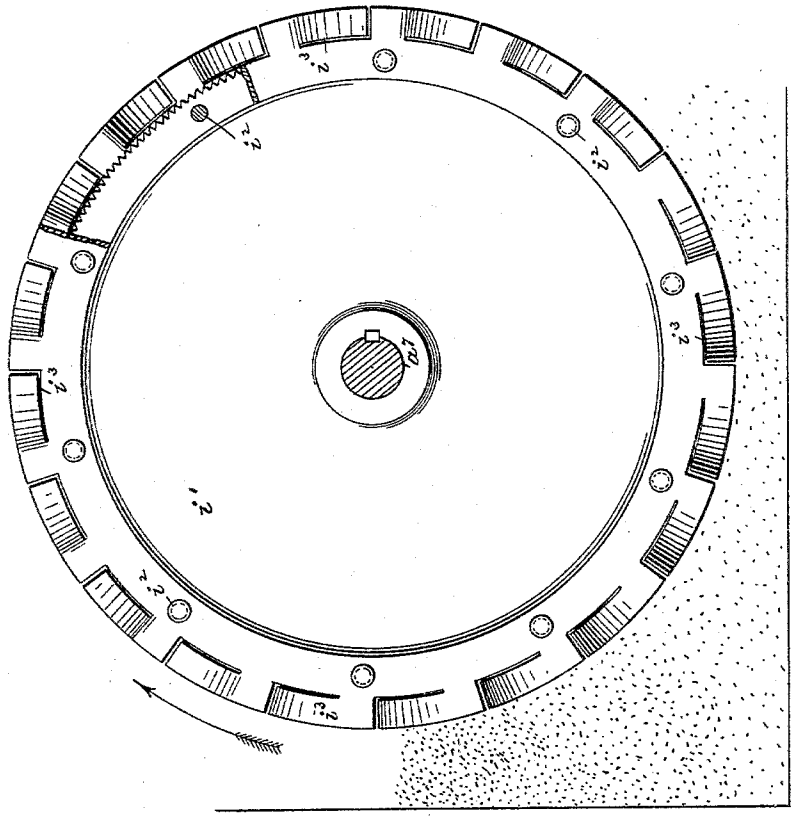
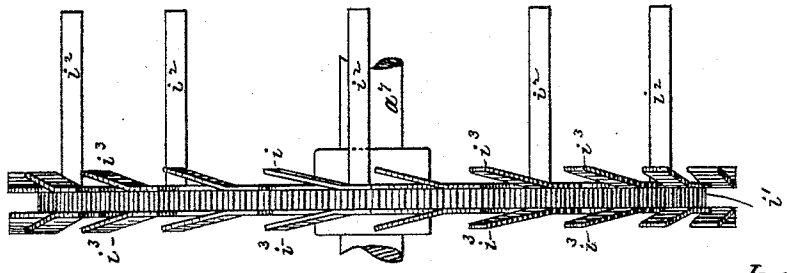


FIG. 7 a



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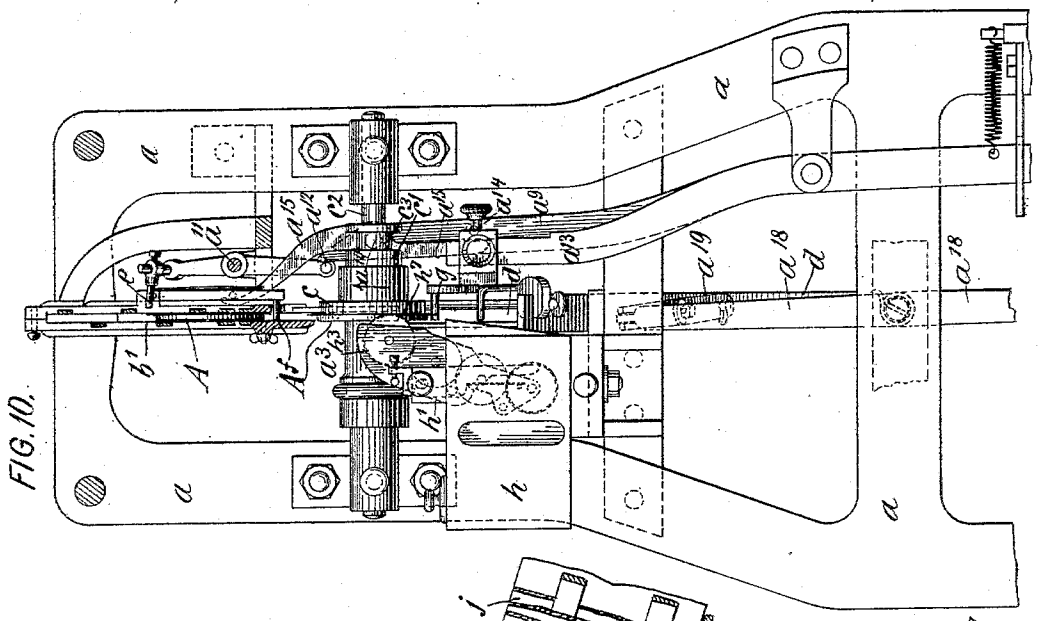


FIG. 10.

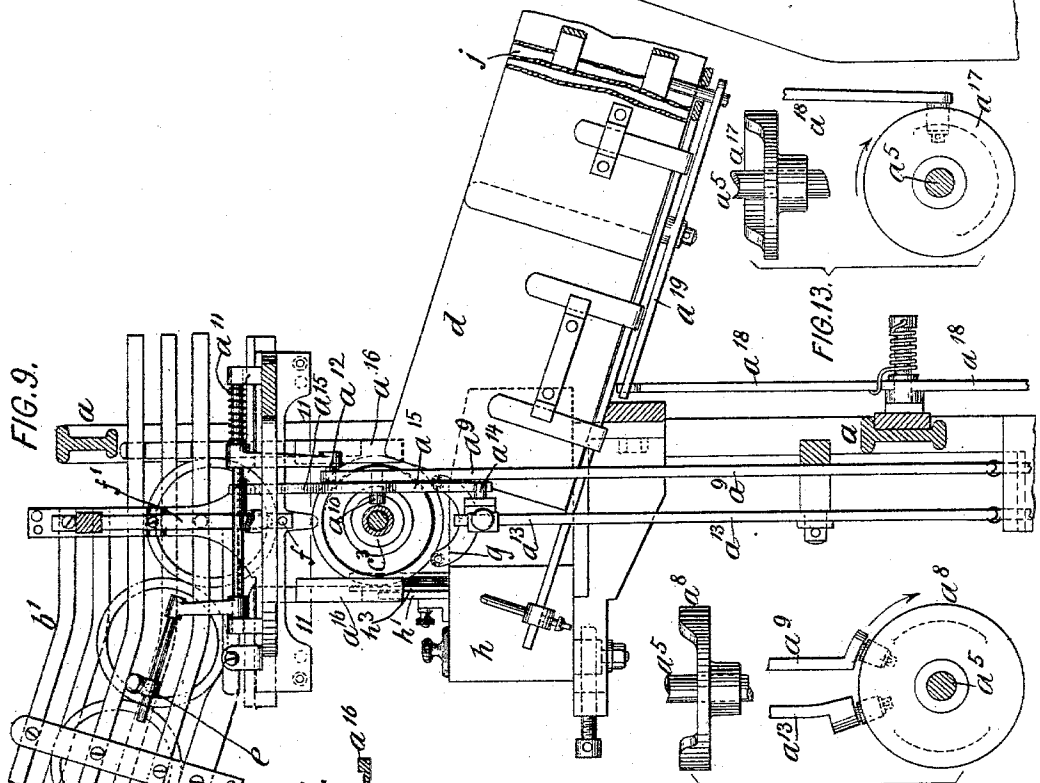


FIG. 9.

FIG. 13.

FIG. 12.



FIG. 11.

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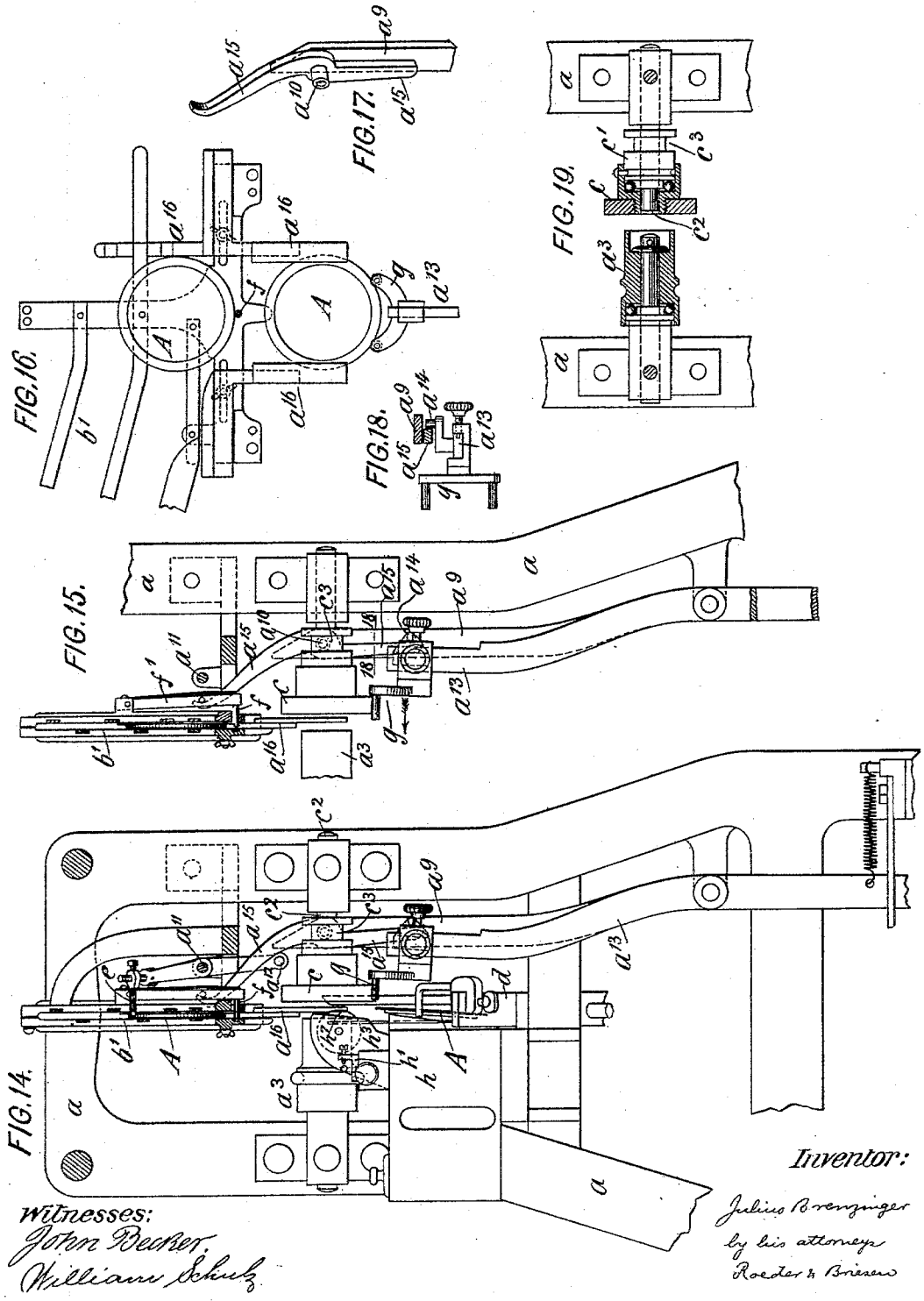
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MACHINE FOR LINING COVERS OF METAL CANS.

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FIG. 20.

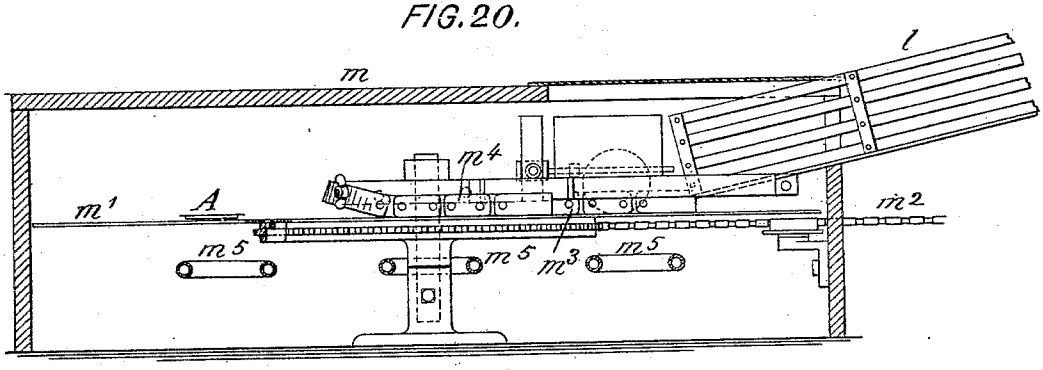
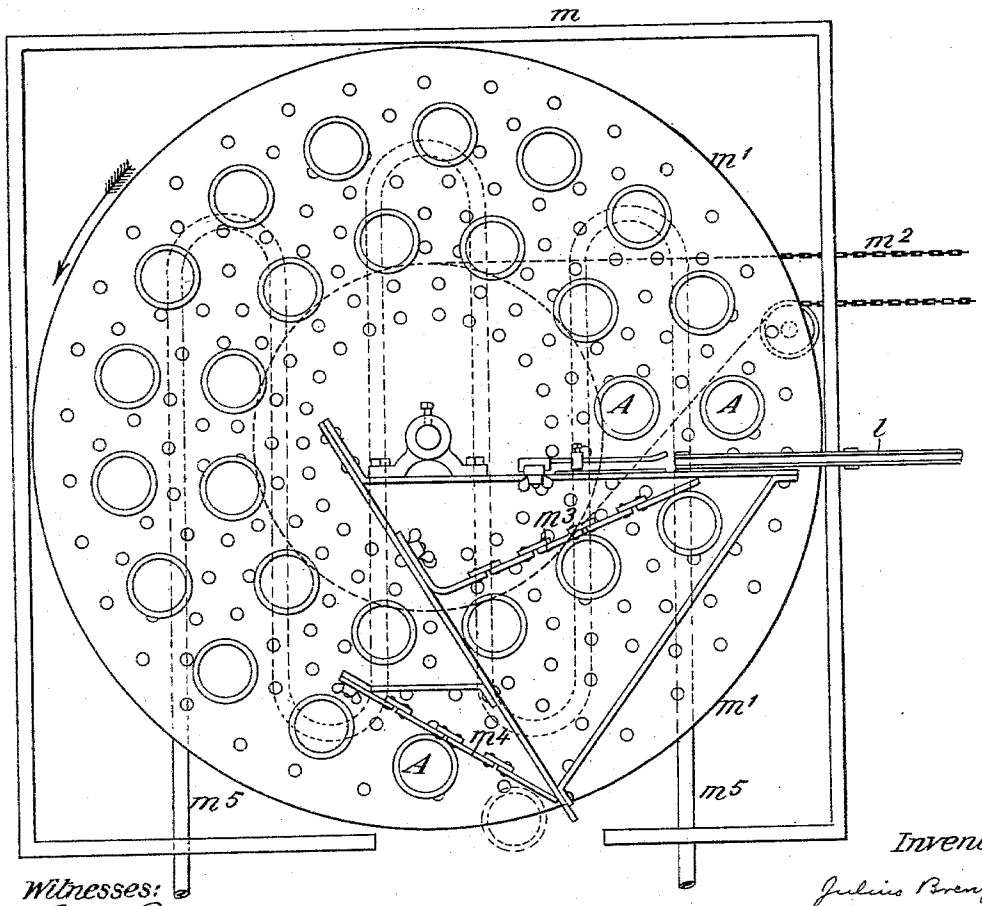


FIG. 21.



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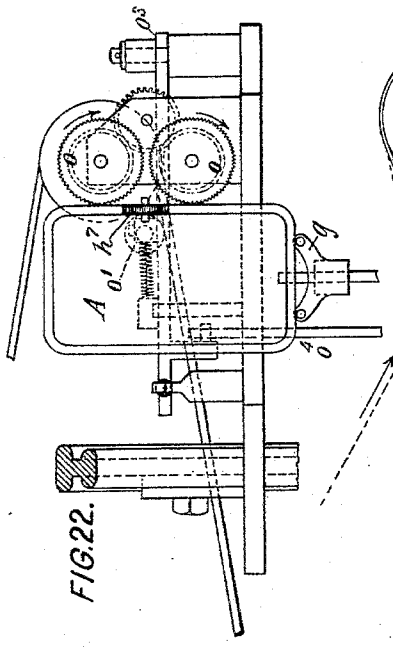


FIG.22.

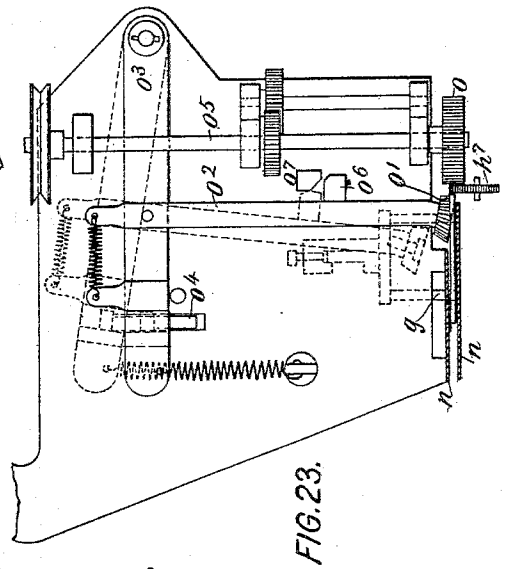


FIG.23.

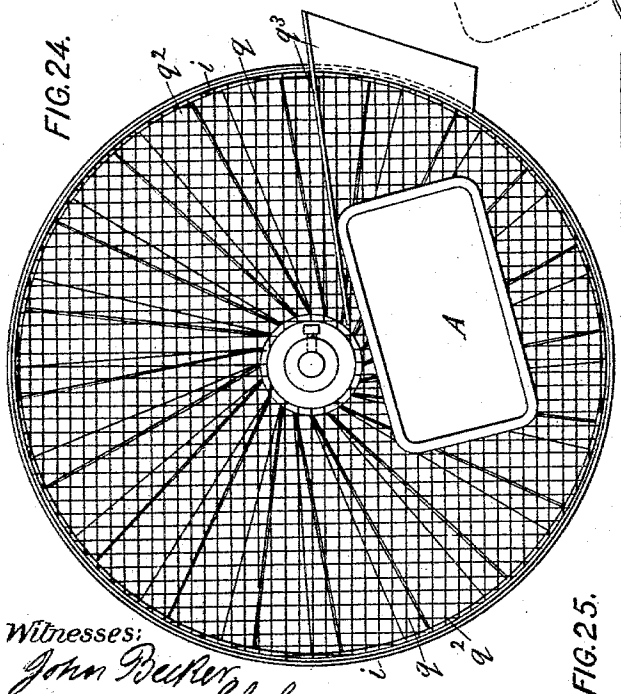


FIG.24.

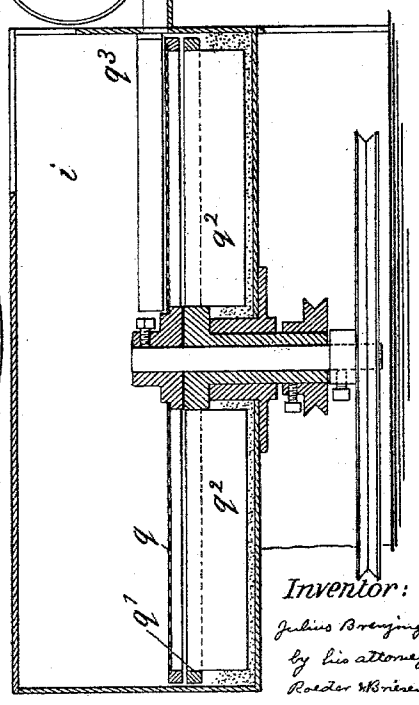


FIG.25.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JULIUS BRENZINGER, OF NEW YORK, N. Y., ASSIGNOR TO MAX AMS, OF SAME PLACE.

MACHINE FOR LINING COVERS OF METAL CANS.

SPECIFICATION forming part of Letters Patent No. 597,386, dated January 18, 1898.

Application filed November 1, 1897. Serial No. 656,984. (No model.)

To all whom it may concern:

Be it known that I, JULIUS BRENZINGER, a citizen of Germany, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Lining Covers of Metal Cans, of which the following is a specification.

This invention relates to a machine for providing the flange of a cover for sheet-metal cans with a lining which insures an air-tight seam between can and cover when the latter is connected to the can-body by the usual lap-joint. This lining consists of an adhesive layer, such as rubber cement, and of a powder, such as asbestos, which forms a thin film upon the adhesive layer. The machine first applies the adhesive layer to the cover, then throws on the powder while the layer is still moist, and finally dries the layer, after which the cover is ready to be joined to the can-body.

In the accompanying drawings, Figure 1 is a perspective view of a cover lined by my machine, showing the lining partly removed; Fig. 2, a side elevation of the machine with the drying-chamber partly broken away; Fig. 3, a detail of the cement feeding and applying rolls; Fig. 4, an end view thereof; Fig. 5, a vertical cross-section of the machine on line 5 5, Fig. 2; Fig. 6, a rear elevation, partly in section, of the machine; Fig. 7, a vertical section through the powder-box on line 7 7, Fig. 6; Fig. 7^a, a face view of the dusting-wheel i'; Fig. 7^b, a side view thereof; Fig. 8, a plan of the chute d for conveying the covers to the powder-box; Fig. 9, a detail sectional elevation of the front part of the machine, showing the stops and clamps; Fig. 10, a sectional front elevation of the machine; Fig. 11, a section on line 11 11, Fig. 9; Fig. 12, a detail of cam a^8; Fig. 13, a detail of cam a^{17}; Fig. 14, an elevation similar to Fig. 10, showing the parts in a different position; Fig. 15, a further partial elevation of the machine, showing the parts in a still different position; Fig. 16, a detail of the guides a^{16} for conveying the covers to the clamp; Fig. 17, a detail of auxiliary lever a^{15}; Fig. 18, a section on line 18 18, Fig. 15; Fig. 19, a sectional detail of the clamp a^3 c; Fig. 20, a sectional elevation of the drying-chamber m; Fig. 21, a plan thereof with the cover removed; Fig. 22, an elevation of a modification of the cementing mechanism, showing the same adapted for square covers; Fig. 23, a plan thereof; Fig. 24, a plan view of the powder-box used in connection therewith, and Fig. 25 a sectional elevation thereof.

The letter a represents the frame of the machine, and a' is the power-shaft that transmits motion by belt a^2 to the collar a^3 of the clamp that holds the cover while the adhesive layer is applied. It also transmits motion by belt a^4 to the shaft a^5, which operates the stops e f g and the ejectors k, and finally it transmits motion by belt a^6 to a shaft a^7, which operates the dusting-wheel i'.

b is the hopper, mounted on one end of frame a and from which the blank covers A are guided in an upright position by a narrow inclined chute b' to a clamp by which the cover is held and revolved during the application of the liquid rubber cement or other adhesive coating. This clamp consists of the rotating collar a^3 and of a reciprocating plate c, Fig. 19, fitted on a collar c', which turns loosely on its stud c^2. The plate c is moved intermittently toward and away from collar a^3, so as to cause the cover A to be alternately grasped and revolved by the clamp during the application of the cement and to be then released so as to drop into an inclined chute d, that conveys it to the powder-box.

The reciprocating motion is imparted to plate c from shaft a^5 by a cam a^8, Figs. 5 and 12, mounted upon the shaft and operating a shifting-lever a^9, that engages by pin a^{10} a groove c^3 of collar c'. The shifting-lever a^9 also serves to throw an upper stop e intermittently across the chute b', so as to prevent the advance of the row of blanks A while the clamp is open, Fig. 14. Motion is imparted to this stop from the lever a^9 by means of a spring-actuated rock-shaft a^{11}, Fig. 9, upon which the stop is mounted and which carries a tappet a^{12}, engaged by lever a^9. After a blank has cleared the upper stop e it encounters a second stop f, which holds it above the clamp while the latter is closed, Fig. 10, and releases it to become engaged by the clamp as the latter is opened. The stop f is oper-

ated from cam a^8 by a lever a^{13}, having nose a^{14}, which actuates an auxiliary lever a^{15}, Fig. 17, fulcrumed on pin a^{10}. The lever a^{15} engages the stop f, which is influenced by spring-pressed pivoted bar f', Fig. 15, so that the stop is alternately thrown in and out by the motion of lever a^{15}. The blank A clears the stop f while the clamp is open and is guided by adjustable guards a^{16}, Fig. 16, between the two jaws of the clamp a^3 c and upon a third stop or support g, which prevents the blank from falling through the clamp until the latter closes upon the same. The stop g is attached directly to lever a^{13}, Figs. 9 and 15, to be operated by the same. Fig. 15 shows the position of the parts as the stop g advances to support the blank A, which is liberated by the withdrawal of stop f.

While the blank is revolved by the clamp, a layer of liquid cement or other adhesive B, Fig. 1, is applied to its flange as follows: Into the fountain h, containing the liquid cement or other adhesive, Figs. 3 and 4, projects a bearing-plate h', to which is pivoted at h^2 an oscillating frame h^3, within which the train of corrugated feed and distributing rolls h^4, h^5, h^6, and h^7 is hung. A spring h^8 throws the frame h^3 forward, and consequently causes the distributing-roll h^7 to apply the paste to blank A as the latter is held and revolved by the clamp, Fig. 10. When the clamp opens, the blank thus properly coated drops into the inclined chute d to be by it conveyed to a box i, within which the powdered asbestos or other powdered material C is applied. Within this box there revolves a dusting-wheel i', Figs. 6 and 7, provided with a number of stirring-fingers i^2 and scoops i^3. The blank A drops upon a seat of the wheel formed between the two blades of the scoops, and thus the powder stirred up by fingers i^2 is thrown against the moist adhesive coating to adhere to the blank.

In order to increase the capacity of the dusting-wheel i', I prefer to make it of duplex construction, Fig. 6, so that it has two seats upon which the blanks are alternately guided by means of a switching-tongue j, pivoted within the chute d at j', Fig. 8. The tongue j is operated from shaft a^5 by cam a^{17}, Fig. 13, mounted upon the shaft and engaged by a lever a^{18}, which actuates the switching-lever a^{19}, that shifts the tongue j, Fig. 9. The blank A remains seated upon the dusting-wheel i' for a number of revolutions and is then pushed off said wheel by means of ejectors k, which throw the blank into a chute l to be conveyed to the drying-chamber m.

The chute l has a perforated bottom, Fig. 8, so that any surplusage or loose powder may fall through it and be conveyed by a hopper l' into a suitable receptacle l^2, Fig. 2. The ejectors k are suspended from the frame of the machine at one end by rollers and at the other by hangers k' and are provided with pins k^2, engaged by tappets a^{20}, Fig. 5, mounted on shaft a^5, so that the desired reciprocating motion is imparted to the ejectors. Within the drying-chamber m the blanks A fall with their coated and dusted side downward upon a perforated disk m', revolved by chain m^2, Figs. 20 and 21. Above the upper face of this disk are fixed two eccentric guides m^3 m^4, of which the guide m^3 pushes the blanks toward the periphery of the disk after one revolution of the same, while the guide m^4 pushes the blanks off the disk after the second revolution to fall into a suitable receptacle.

Beneath the disk m' is placed a heating-coil m^5, which causes the blanks to be properly dried while lying upon the disk. It will thus be seen that by my machine the blanks are fed singly to the clamp and are then grasped and revolved by the latter. During this revolution the adhesive coating is applied by roller h^7, after which the clamp opens and the coated blank rolls down the chute d onto the dusting-wheel i', alternate blanks being by the tongue j guided to opposite seats of the wheel, so that the capacity of the latter is doubled. The blanks remain seated upon the wheel until the adhesive coating has been covered with a thin film of powder, and then the ejectors k push the powdered blanks off the wheel and into the chute l to roll upon the revolving disk m' of the drying-chamber. Here the blanks are subjected to the action of the heating-coil m^5 during a few revolutions of the disk, to be finally thrown into a suitable receptacle ready for use.

In Figs. 22 to 25 the machine is shown to be adapted for lining rectangular covers. Here the blank A is supported in an upright position upon the stop g described by means of a pair of upright plates n. The edge of the blank is held against the faces of a pair of feed-rollers o, revolved from shaft o^5 by means of a pressure-roller o', mounted upon a spring-actuated lever o^2. This lever is fulcrumed to a second spring-actuated lever o^3, engaged by a lever o^4, which is operated by one of the cams of the machine. As the wheels o are revolved they rotate the cover and bring its flange into contact with the cement-applying roller h^7. After the cover has been properly coated the pressure-roller o' is withdrawn by the action of lever o^4, which tilts lever o^3 and causes a projection o^6 on lever o^2 to engage an inclined fixed stop o^7, so that the roller o' is swung away from rollers o. The blank being thus released drops upon an endless feed-apron p, which conducts it upon a revoluble perforated plate or screen q within the powder-chamber i. The dusting-wheel q' has wings q^2 and revolves beneath the screen q, so as to throw the powder upon the lower coated flange of the blank. A fixed inclined guide q^3 conducts the blank off the screen after a complete revolution of the latter.

What I claim is—

1. A machine for lining covers, composed of an opening and closing clamp adapted to revolve the cover, means for applying a moist

adhesive coating to the cover while held by the clamp, and means for applying a powdered film to the moist coating, substantially as specified.

2. A machine for lining covers, composed of an opening and closing clamp adapted to revolve the cover, means for applying a moist adhesive coating to the cover while held by the clamp, means for applying a powdered film to the moist coating and means for drying the coating, substantially as specified.

3. A machine for lining covers, composed of means for revolving the cover, a fountain for holding an adhesive material, means for conveying the adhesive material from the fountain to the cover as the latter is revolved, a powder-box, a rotating wheel within the same, and means for conveying the cover to the powder-box, substantially as specified.

4. In a machine for lining covers, the combination of a clamp for holding and revolving the covers with a fountain for holding an adhesive material, means for conveying the adhesive material from the fountain to the covers as the latter are revolved, stops for retarding the motion of the covers as they are fed to the clamp, and means for operating the stops, substantially as specified.

5. In a machine for lining covers, the combination of means for revolving the cover, with a fountain for holding an adhesive material, means for applying the adhesive material to the cover as the latter is revolved, a duplex dusting-wheel having two cover-seats, means for conveying the cover to the dusting-wheel, and a switching-tongue for conveying alternate covers to opposite seats on the wheel, substantially as specified.

6. In a machine for lining covers, the combination of a clamp for revolving the cover, with a fountain for holding an adhesive material, means for applying the adhesive material to the cover as the latter is revolved, a series of stops to retard the motion of the cover, a powder-box, a dusting-wheel having a series of scoops and fingers and means for conveying the cover to the dusting-wheel, substantially as specified.

7. In a machine for lining covers, the combination of a fountain for holding an adhesive material with means for applying a moist adhesive coating to the cover, a powder-box, means for applying a powdered film to the moist coating, a drying-chamber, a revolving plate and eccentric guide within the chamber, and means for feeding the cover from the powder-box to the revolving plate, substantially as specified.

Signed at New York, in the county of New York and State of New York, this 15th day of October, A. D. 1897.

JULIUS BRENZINGER.

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