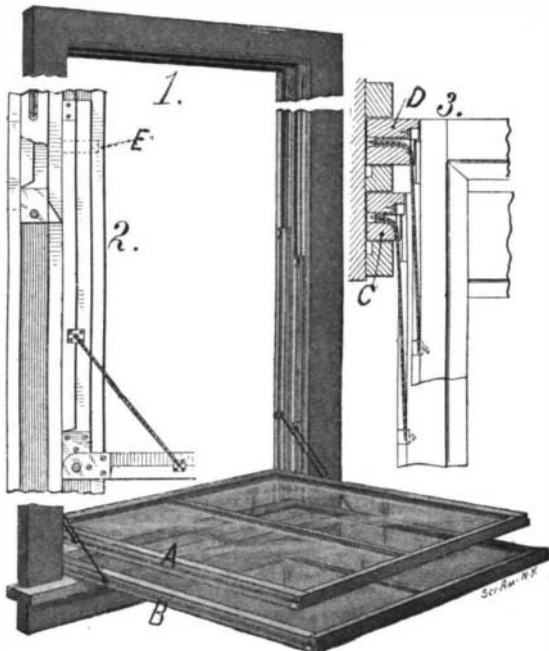




IMPROVED WINDOW CONSTRUCTION.

The window which is illustrated in the accompanying engraving, is so arranged that the sashes may be raised or lowered in the usual manner or, when desired, may be swung inward into a horizontal position for cleaning or repairing purposes. The window frame is provided at the sides with the usual guideways for the sashes *A* and *B* to slide in a vertical direction. The sashes are provided at each side with fixed stiles, forming an integral part of the sash, and sliding stiles *C* and *D*, complementary to the fixed stiles and hinged thereto at their lower ends, so as to permit the sashes to swing. The sash cords pass in the usual manner over pulleys at the upper end of the frame, and thence run down in grooves back of the sliding stiles, and through grommets therein to the fixed stiles of the sashes. When the sashes are swung up into vertical position, the fixed and sliding stiles may be fastened together by means of a pair of latches. The sashes will then operate vertically, after the manner of the ordinary window sash. If it be desired to clean the window, the latches may be released, permitting the sashes to be swung inward to an approximately horizontal position, as indicated in the illustration. It will be observed that the stiles *C* are somewhat narrower than the stiles *D*, to permit the upper sash to swing freely inward. The stiles are preferably rabbeted, to permit outward swinging of the sashes, and at the same time render



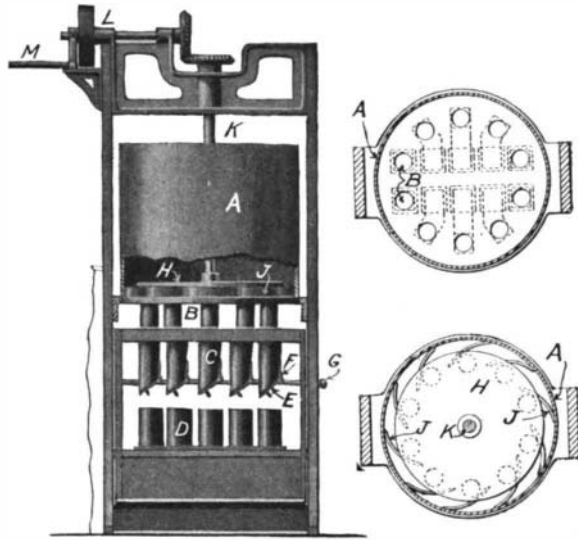
IMPROVED WINDOW CONSTRUCTION.

the sashes air and moisture proof at the joints. The sliding stiles are fitted with guide plates *E*, which extend into a recess formed in the parting strip. It will be observed that in swinging the sashes into the room, they do not interfere in the least with iron guards or fly screens placed outside of the window. A patent on this improved window has been secured by Messrs. L. W. Penzer and J. A. Kain, of Richmond, Va.

CAN-FILLING MACHINE.

Pictured in the accompanying illustration is a machine which is adapted to fill cans or similar receptacles with material such as ground or whole coffee, breakfast cereals, and the like. The machine is provided with a weighing attachment, which will weigh accurately a predetermined amount and deposit this in packages with no waste of material, and without noise or dust. The machine comprises a hopper *A* provided at its lower ends with a circle of spouts *B* which are adapted to feed the material from the hopper into a set of pockets *C*. Below these pockets is a shelf on which a tray may be placed carrying the receiving cans or receptacles *D*. The lower end of each pocket is provided with a door *E*, which is normally kept in closed position by means of a spring *F*. A horizontal slide rod *G* connects with each door *E* and it may be operated whenever desired to open the doors and permit the material in the pockets to drop into the receptacles below. In order to prevent the material from choking the spouts *B*, an agitator is provided in the hopper *A*. This consists of a plate *F* to the lower side of which a series of curved blades *J* are affixed. The plate *H* is secured to a vertical shaft *K*, which by means of suitable gearing is driven by a pulley *L*. A clutch is provided by which the mechanism may be coupled to the pulley *L* and this clutch is operated by an arm *M*. The latter may be connected

with any suitable weighing apparatus operated by the shelf which supports the cans. The plate *H* is of smaller diameter than the interior of the hopper, leaving an annular space through which the material that is to be fed into the cans may pass. As the agitator revolves, the blades *J* will scrape the material into the openings *B*. It will be observed from the upper sec-

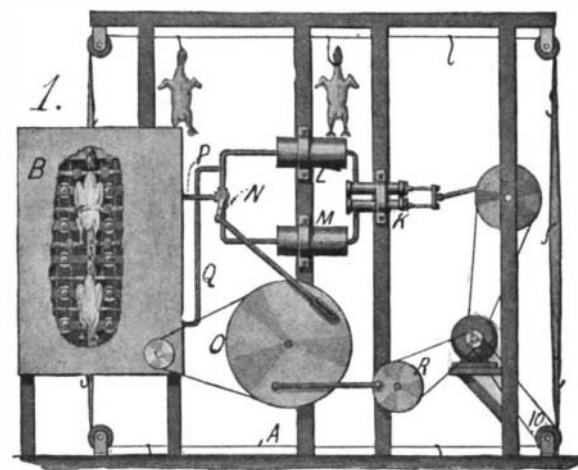


CAN-FILLING MACHINE.

tional view that the spouts *B* are arranged in a circle, but that their lower ends are bent inward so as to deliver the material into the pockets *C* which are arranged in parallel rows. From time to time as the pockets become filled with material the operator throws the lever *G*, which permits them to discharge into the receptacles *D*. The inventor of this can-filling machine is Mr. George H. Mallett, of Copake, Columbia County, New York.

POULTRY-PICKING MACHINE.

A machine for picking poultry has recently been invented which possesses many admirable features, chief of which is that it does not require an operator to hold the fowl against the pickers. The fowls are attached to a belt which travels through the machine, and the picking is done automatically. The endless belt on which the fowls are hung is indicated at *A* in the engraving and it passes upward through the picking chamber *B*. Within the latter are two types of pickers. The lower pickers are of the form indicated in Fig. 2. They consist of a tubular member *C* flexibly connected with a tubular spindle which passes through a frame arranged within the picking chamber. The picker may be moved out of its normal position in any direction required by the passage of the fowl through the chamber. The member *C* is provided with a comb *D* and a slot *E* adjacent thereto. Air may be fed from pipe *F* through the spindle and the slot *E*. The spindle carries a double grooved pulley *G* by which it is connected to an oscillating mechanism. The upper series of pickers are of the form indicated in Figs. 3 and 4. They are also flexibly connected to spindles whereby they may be oscillated and at the same time be moved in any desired direction. The tip of each picker *H* is of annular corrugated form, this form being produced by means of rings *J* which encircle the



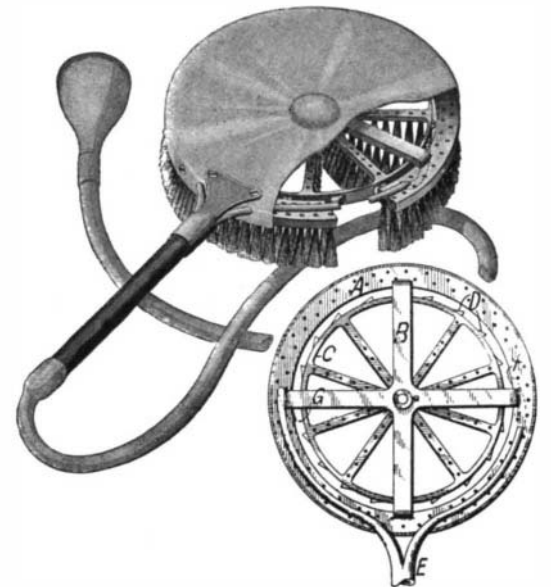
POULTRY PICKING MACHINE.

flexible tips and rings *I* of larger diameter which are situated within the flexible tips. The pickers *H* communicate with an air supply and an alternate compression and vacuum is produced in them, causing them to expand and contract like a cylindrical bellows. The feathers and down on the fowl are grasped be-

tween the folds of the bellows and pulled off as the fowl is fed upward by the belt. In order that all parts of the fowl may be brought into contact with the pickers, the belt is given a half turn as it passes through the picking chamber. A small compressor *K* is used in connection with this machine and supplies a compressing chamber *L* and exhausts the air from a vacuum chamber *M*. A three-way valve *N* serves to connect pipe *P* first with one chamber and then with the other. This valve is operated by a pitman which connects with a wheel *O*. The latter is oscillated by means of a continuously revolving wheel *R* with which it is connected by a pitman. The pipe *P* communicates with the pickers and operates the bellows *H* in the manner just described. The pickers *C* are arranged to seize the feathers by means of the combs *D* and at the same time the suction through the slot *E* serves to hold the feathers fast to the pickers and causes them to be torn from the fowl. Immediately thereafter a supply of compressed air passes through the picker, causing it to release the feathers, which are then blown out of the top of the chamber by means of a continuous draft of compressed air from the supply pipe *Q*. The pickers are all belted together and are rocked back and forth by means of belt connection with the oscillating wheel *O*. Mr. Theodore G. Griggs, of 101 North 15th Street, East Orange, N. J., has just secured a patent on this poultry-picking machine.

SELF-CLEANING BRUSH.

The device which is illustrated in the accompanying engraving is particularly adapted for use as a bath brush, although with slight modifications it may be used as a scrubbing brush for floors, windows, and similar articles. The brush is provided with an inner revoluble part arranged, like a water wheel, to be revolved by a stream of water which is supplied from a faucet, through the brush handle. The water serves



SELF-CLEANING BRUSH.

to keep the bristles clean. The outer ring *A* of the brush is formed with a spider *B* in which the inner ring or wheel *C* is journaled. The ring *A* is fitted with two rows of bristles arranged to form a continuous brush surface. The spokes of the inner wheel also carry bristles, the ends of which are at the same level as those of the outer ring. Formed on the periphery of the wheel are a series of buckets *D* which open through the rim. The hollow handle of the brush communicates by means of a branched pipe *E* with two nozzles *F* and *G* which are arranged to direct streams of water against the buckets and thus rotate the wheel *C*. The water passes through the buckets to the inner side of the wheel and is dashed against the radial rows of bristles. The bristles are thus kept continually wet, and the water flowing over them serves to keep them clean. The top of the brush is covered by a casing which prevents the water from splashing upward. A patent on this improved brush has been secured by Mr. M. A. Dickison, of Phoenix, Ariz. (Box 275).

Alkaline Silicates.

The alkaline silicates are usually made by fusing silica with the caustic alkali or its carbonate. The product dissolves in water with difficulty and it must be treated with water at a high temperature and pressure in order to convert it into a salable article. The solution thus obtained requires tight packing for shipment, and the expense of carriage is further increased by the large quantity of water which must be transported with the silicate. By a recently devised process silicates of the alkalis are produced in the dry state and are easily soluble in boiling water. This result is obtained by forcing steam or air through the fused mass and thereby converting it into a fibrous form similar to that of cotton wool. This operation is much cheaper than treatment with hot water under pressure.