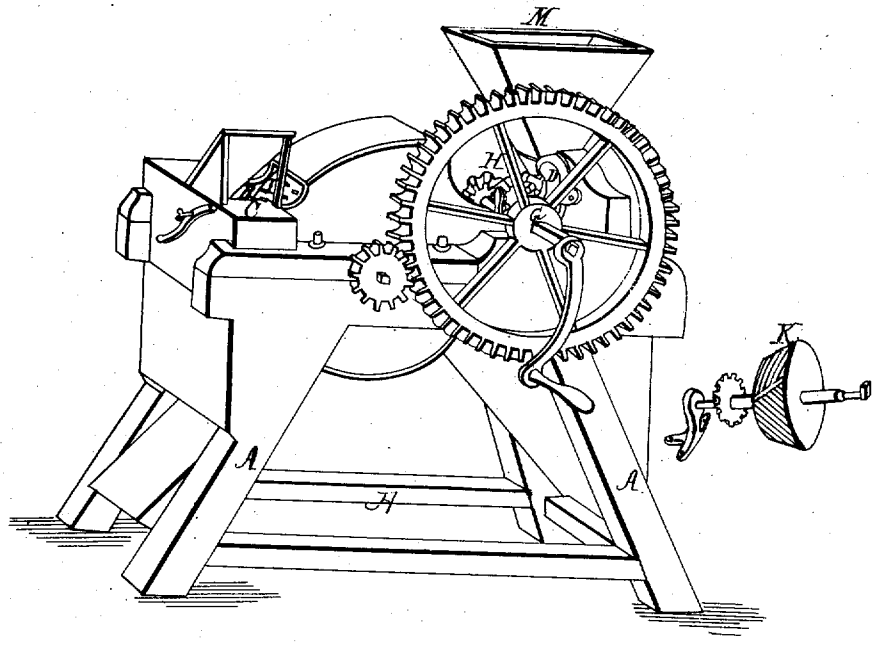
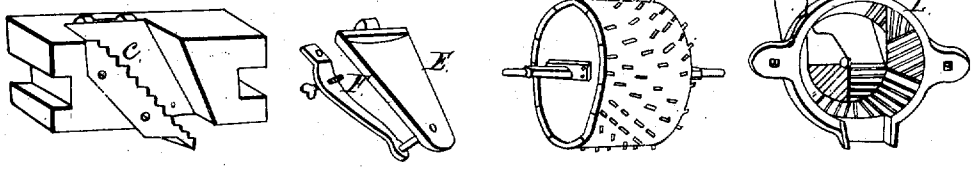
PATENTED JUNE 12, 1835.

G. M. WEAVER.

SHELLING AND GRINDING CORN.

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

8893X June 12. 1835 301

George M Weaver of Montgomery Pennsylvania

Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said George M Weaver himself of his improvement in a Machine for shelling and grinding Corn.

To all to whom these presents shall come.

Be it Known that I George M Weaver of Montgomery Square in the County of Montgomery and State of Pennsylvania have invented a new and useful improvement in a machine for shelling and grinding corn and that the following is a full and exact description of the construction and operation of the said machine as invented or improved by me.

The machine consists of a supporting frame shelling cylinder Feeder Metallic Concave discharging Shoots gear shaft and gearing. The frame is made of two substantial side pieces of a breadth and strength sufficient to support the machinery herein after mentioned having four feet or legs to the Corner with cross girts or side rails near the bottom also three cross girts near the top framed into the side pieces one of which being much broader than the rest rises above the top of the side pieces to receive the grinder on its inner face and the other two lie a short distance below said tops to receive and support the feeder as herein after described. The shelling cylinder is best made of solid wood its cylindrical surface being covered with about six cast iron plates or sections secured to the cylinder by screws each armed with five rows of pins more or less (cast with the plates) ranged in lines at an angle of about 30° with the Axis of the cylinder and placed so that the pins of each row may range with the blanks of contiguous rows which succeed and follow it. These teeth or pins which are of a broad flat square form with the outer edges made sharp by a short bevel on the back diverge projecting at right angles from the cylinder with their broad flat sides forward or next to the feeder and suitable iron shaft passes through the cylinder and has its bearings in proper boxes in the side rails a short distance in front of their middle point. The ends of the shaft project through the rails and receive at one end a pinion that meshes with the large Cog wheel of the gear shaft and a small wheel at the other that drives the saddle shaft of the screen as herein after mentioned. The feeder is made of a solid block of wood secured to the top of the cross girt at the front end of the frame. Its inner face being made to conform as near as the teeth will permit to the front of the cylinder and rising about half the height above the top of the frame

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In its inner face a deep oblique gain or groove is cut called the feed channel. The lower shoulder of which exends nearly the whole width of the cylinder and descends at an angle of about 60° with the axis of the latter (that of the screws of pins being 30° more or less. The gain is also somthing wider at top than at bottom. The inner face of the block is covered with heavy sheet iron. The upper edge of which rises a short distance above the lower shoulder its whole length and is notched or serrated resembling a common saw except that the teeth have no rake but stand straight up. The lower and upper shoulders of the channel may also be faced with sheet iron to prevent wear. The bottom of the gain or groove is entirely occupied by the compresser which is made of a block of wood about one third in thickness of the depth of the gain its inner surface or that next the cylinder being concave the better to press and hold the ears of corn against the cylinder whilst operating it is attached to the feeder block by means of a hinge at its upper edge which permits it to vibrate to and from the cylinder which it is made to do by a flat steel spring fastened on the front side of the feeder block the spring acting on the compresser by means of a pin that passes from the compresser through the feeder block to the end of the spring the latter is also supplied with a thumb screw to regulate the degree of pressure. Under the feeder a shoot is formed by an inclined apron or board sunning from the lower part of the cylinder to the front of the machine and a cap placed against the front legs the object of which is to discharge the corn when shelled the cob being thrown out at a circular opening made for that purpose. in the side of the cap next to and a short distance below the level of the lower or discharging end of the feed channel, to effect which with more certainty a small wooden stripping guide is made fast to the end of the lower shoulder of the feed channel. The feeder is also supplied with a cap open at the ending side of the machine to prevent the shelled corn from flying out when it is operating. The gear shaft which is iron lies across the top of the frame immediately below the cylinder it runs in metal Boxes placed on top of the frame which raise it sufficiently high to be on a level with the centre of the grinders. it has a small bevel pinion near its centre which may be thrown out of gear. which gears to one of the same size on the shaft of the grinders hereafter mentioned. and a large cog wheel on the outer end that takes into the aforementioned pinion of the shelling cylinder and communicates a rapid motion thereto. the outer end of the shaft also receives the operating crank which may be turned by hand or any other power. The grinders is made

of malleable cast iron. the nut is of the form of a short frustrum of a cone the length of which is about 1/3 the diameter of its base and the diameter of the small end may be about 1/4 less than that of the base or large end which I esteem a good proportion. this nut is cast solid with an opening at the centre for a square wrought iron shaft. On the conical surface are cast shallow rectangular furrows six of which run straight across dividing the conical surface into as many equal parts and the intermediate spaces are divided equally into oblique furrows which run from the straight furrows to the front circumference of the nut. the front end is divided and furrowed in a similar manner. the case is cast with its inner surface similarly furrowed and nearly concentric with the nut. the difference in the diameter being a fraction in the proportion left being open at the large end and having an oblong opening at the top contiguous to the front edge which descends obliquely to the centre of the nut laying bare the upper semi circle of the front end of the nut. the lower semi circle of the front end of the case only being therefore furrowed. by which opening the corn is fed into the nut from a hopper of ordinary construction placed over the mill. the case is also cast with ears having screw holes by which it is screwed to the inner face of the cross piece heretofore mentioned. behind and as near to the gear shaft as the gearing will permit At the rear side of the girth a centre screw is introduced which passes through a suitable nut and being pointed at the end enters the extremity of the shaft of the nut which is fitted for the purpose and being screwed in or out causes the mill to grind coarser or finer the front end of the shaft receives a small bevel pinion wheel which tollis into the bevil pinion of the gear shaft and revolves the nut of the grinder. below the grinder an inclined screen or riddle is placed in a frame which is hung to the cross girth already mentioned and covers the top of a discharging shoot formed by an apron that runs from the girth to the rear of the machine and and a case placed between the legs of the frame the screen being agitated by the riddle shaft beneath it geared by a wheel and pinion on its extremity to the wheel on the cylinder shaft already mentioned. the meal falls into a shoot where it is retained by a slide at the foot and the husks pass over. Operation. The corn is fed into the feeder by hand whilst the machine is in revolution. the teeth of the cylinder cause it to revolve and pass down the channel and being at the same time operated on by the compressive the serrated edge completely disengages the corn which falls into the shoot whilst the cobs slide out at the opening in the side of the case. the

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grinder may or may not be put in operation at the same time that the shelling is going on. when it is designed only to chop the corn the screen or riddle is removed. I have omitted giving dimensions of the parts in the foregoing description as they may be varied to suit circumstances. I shall however now give those which I prefer and find to answer practically – Length of the frame 2 feet 8 in. Height of Do 2 ft 8 in. width in clear 9 1/4 in. diameter of cylinder 13 in. Length and breadth of teeth 1/2 inch. thickness of do 1/4 in. thickness of plates about 3/8 in. diameter of spur wheel 3. in. – do of large cog wheel 16. in. feed block 4 in square. large diameter of the nut of the grinder 4 1/2 in diameter of the bevel pinions 2 1/2 in. Now what I claim as new and as my invention for which I ask Letters Patent is the construction and arrangement of the feed operating with the cylinders on the principle and in the manner herein described and also the construction of the grinder by which it is made to grind on the conical and front surfaces at the same time, as herein set forth. In testimony that the foregoing is a true specification of my said improvement I have hereunto set my hand this 25th day of May 1835

Geo. M. Weaver

Witnesses
Sam Stettinius
Isaac Hubber

Exd.
W.G.C.

(Drawing)
(Patented 12 June 1835)
Drawing made

(1834 word)