(No Model.) 2 Sheets—Sheet 1.

J. P. SCHMIDT.

MACHINE FOR FORMING FUEL BRICKS.

No. 474,412. Patented May 10, 1892.

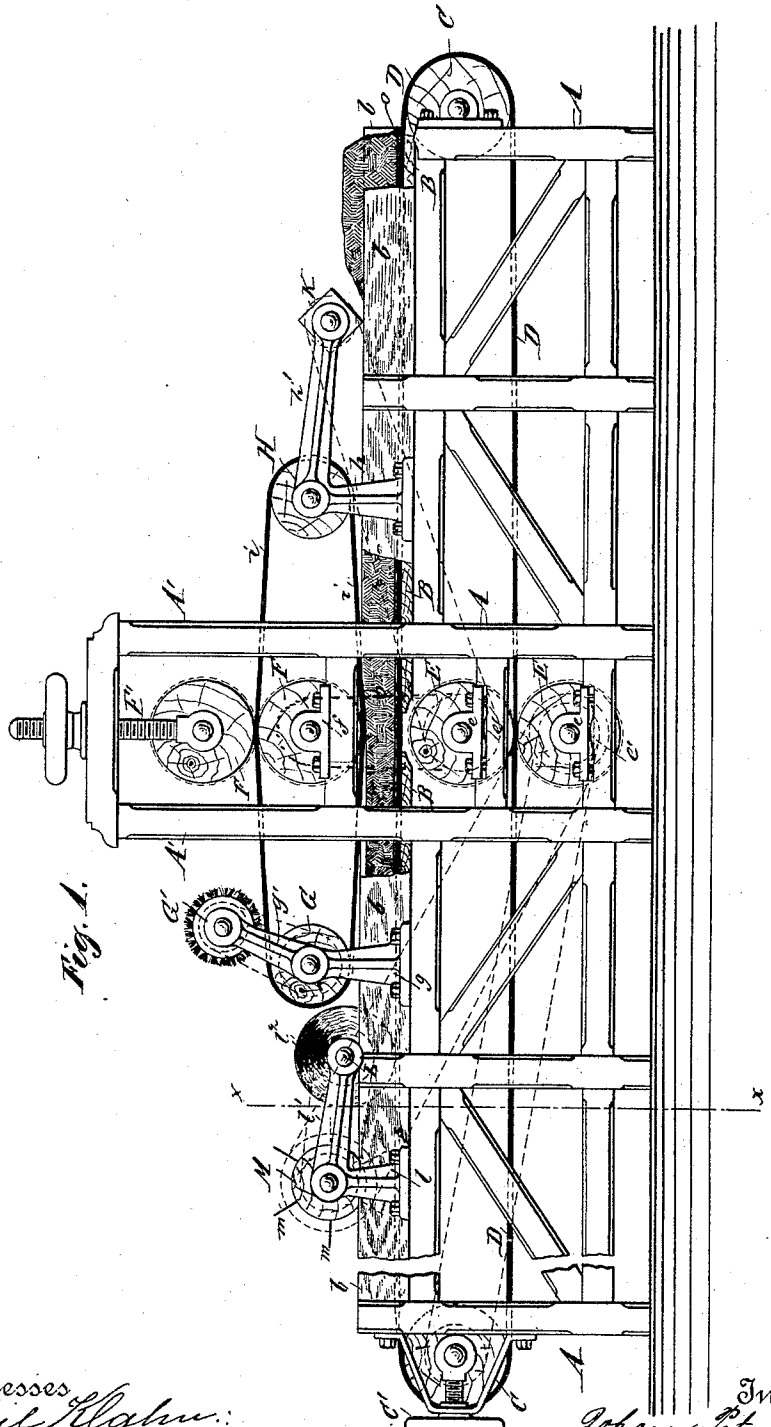


Fig. 1.

Witnesses
Emil Klahn.
M. B. Andalfinger

Inventor
Johann Peter Schmidt
By his Attorney Charles Mark

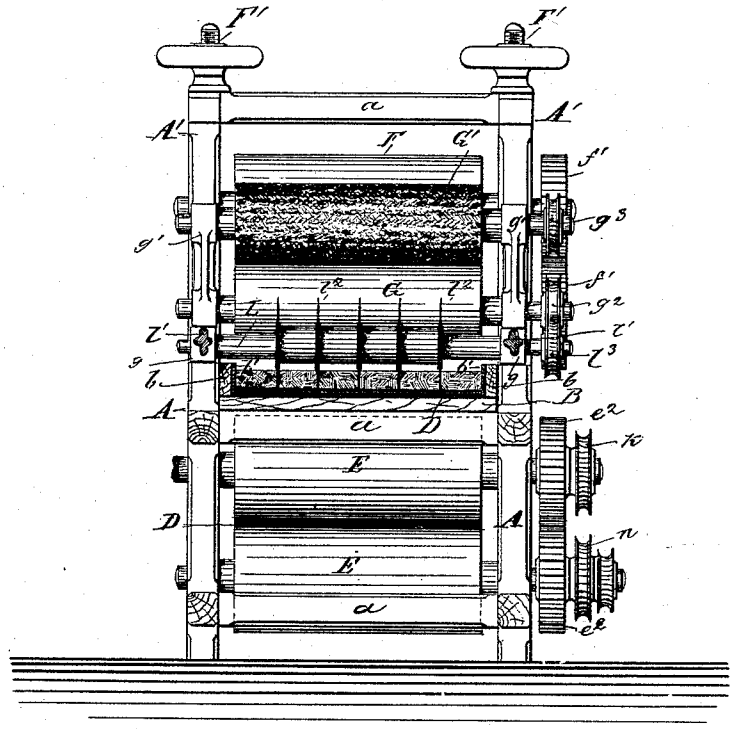
(No Model.) 2 Sheets—Sheet 2.

J. P. SCHMIDT.

MACHINE FOR FORMING FUEL BRICKS.

No. 474,412. Patented May 10, 1892.

Fig. 2.



Witnesses
Emil Klahn.
Wm. B. Sandelfinger

Johann Peter Schmidt - Inventor
By his Attorney Charles Kay

UNITED STATES PATENT OFFICE.

JOHANN PETER SCHMIDT, OF JERSEY CITY, NEW JERSEY.

MACHINE FOR FORMING FUEL-BRICKS.

SPECIFICATION forming part of Letters Patent No. 474,412, dated May 10, 1892.

Application filed January 6, 1892. Serial No. 417,207. (No model.)

To all whom it may concern:

Be it known that I, JOHANN PETER SCHMIDT, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Machines for Forming Fuel-Bricks, of which the following is a specification.

My invention has reference to improvements in machines for forming fuel-bricks of such a construction by which the mass of which the bricks are formed is mixed, pressed, and cut into bricks of the desired shape.

The construction of my improved machine is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, partly in section, of my improved machine for forming fuel-bricks; and Fig. 2 is a vertical section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A A in the drawings represent the side standards of my machine, which are connected with each other by cross-pieces *a a* and have elevated frame portions A′ A′ in about the middle of the side standards.

B is a feed table or plate between the side standards and firmly attached to the same, which table is provided with side boards *b b*, lined with smooth metal or glass strips *b′ b′*. To the ends of the frame rollers C C are attached and fitted in bearings, one of which is made adjustable by an adjusting-screw C′. Over the rollers C C runs a rubber belt D, that covers the whole width of the table. The rubber belt can be tightened or loosened by means of the said adjusting-screw of one of the bearings of the rollers C C.

Guide-rollers E E are fitted in bearings *e e*, attached to the middle portions of the side standards underneath the elevated frame portions A′ A′, which bearings are provided with springs *e′ e′*, so as to impart to the rollers a certain spring action. The aforesaid rubber belt is guided between the said rollers, the spring action of the rollers causing an even guidance of the belt.

To the shaft of the upper roller E the motive power is transmitted from the engine. This may be done by any suitable arrangement, and is therefore not shown in the drawings. The other end of the shaft of the upper roller E, as well as the corresponding end of the shaft of the lower roller E, projecting beyond the side standards, are provided with gear-wheels e^2 e^2, which mesh with each other, so that the lower roller is rotated simultaneously with the upper roller. Of course the rollers and the gear-wheels respectively are of the same diameter. The gear-wheels are shown in Fig. 2.

In bearings *f*, attached to the elevated portions A′ A′ of the frame, runs a guide-roller F, and a second guide-roller F is located over the former and is secured to the frame by means of adjusting-screws F′ F′, vertically attached to the elevated portions of the side standards. The ends of the shafts of the rollers F F which project beyond the frame are also provided with gear-wheels *f′ f′*, Fig. 2, which gear-wheels, as well as the rollers, are of the same diameter, so that by means of the gear-wheels a simultaneous rotation of the rollers F F is obtained.

At both sides of the elevated portions of the frame standards *g* and *h* are placed upon the main side standards, which serve as bearings for the guide-roller G and H. Over the said guide-rollers G and H runs a belt of rubber or any other suitable material, which is guided over the lower roller F, as shown in Fig. 2. This belt is also of the same width as that of the table B. In the upper portions *g′* of the standards *g* a brush-roller G′ is fitted, which receives its rotary motion from the roller G by a belt connecting the pulley g^2 of the roller G with the pulley g^3 of the brush-roller G′, Fig. 2.

The standards *h* have laterally-extending arms *h′*, which serve as bearings for a rotating shaft K of a square cross-section, which is so located that its longitudinal edges are about in line with the upper edges of the side boards *b b* of the table B. The shaft K receives its rotary motion by a belt leading from the pulley *k* of the upper roller E, Fig. 2, to a pulley of the said shaft, which latter pulley is not shown in the drawings. Instead of the arms *h′* separate standards or brackets for the shaft K may be used, which are mounted directly upon the main side standards A A and serve as bearings for the said shaft.

Near the opposite end of the machine

standards l are mounted upon the main side standards A A, into which a roller M is fitted, that is provided with longitudinal radiating knife-blades m, which reach upon the belt D when the said roller is rotated. The standards l l have laterally-extending arms l' l', which serve as bearings for the shaft L, having a number of cutter-disks l^2 firmly attached thereto. The edges of these cutter-disks reach also to the belt D. The shaft L receives its rotary motion from the knife-roller M by means of a belt running over a pulley of the said roller M, which pulley is not shown in the drawings, and over the pulley l^3 of the shaft L. Fig. 2. Rotary motion to the knife-disk M is imparted from the lower roller E by a belt that connects the pulley n of the said roller with a pulley of the knife-roller, which latter pulley is omitted in the drawings.

All the rollers of the machine are of the same lengths which correspond with the width of the belt D and the table.

The machine is set in motion in the following manner: From the engine rotary motion is transmitted to the upper rollers E and from there to the lower roller E. From the lower roller E belts are running to one of the rollers C and to the knife-roller M and set the said rollers in rotation. The second roller C is rotated by the rubber belt D. From the upper roller E the edged shaft K and the lower roller F are rotated by belt connections, and the upper roller F is put into a rotating motion by the gear connection with the lower roller F. The rollers G and H are rotated by the belt running over the said rollers and the lower roller F, and the shaft L, bearing the cutter-disks, and the brush-roller G′ receive their motion from the knife-roller M and the roller G, respectively, as described before.

My machine works in the following manner: Upon the belt D plates o are placed and then the mixture of coal-dust, &c., with a binding medium, of which the fuel-bricks are to be formed, is laid upon the said plates before the edged shaft K. The machine is then set into motion and the mixture fed to the edged shaft K, which more thoroughly mixes the mass and distributes the same over the plate o. The mass is then fed by the belt D and the plates o below the belt i and pressed by the same together to a certain degree of density, and from there to the cutter-disks l^2, which cut the same into longitudinal bars. As soon as the bars come into contact with the longitudinal knives of the rotating roller M they are cut into bricks. The plates with the bricks thus produced are then removed from the belt D at the other end of the machine, and the bricks are then dried in an oven.

The machine works continuously and the mass is carried after upon the belt D before the edged shaft K in the proportion as the bricks leave the machine at the other end of the same.

The brush-roller G′ serves to keep the belt i always clean when the machine is working.

The metal or glass strips by which the side boards of the table are lined serve to keep the edges of the mass smooth and to facilitate the carrying on of the same.

The cutter-disks l^2 and the knives m may be changed, so that bricks of any desired shape may be formed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a machine for forming fuel-bricks, a rotating shaft of a square cross-section to more thoroughly mix the fuel mass and distribute the same over the feed-belt, substantially as set forth.

2. In a machine for forming fuel-bricks, the combination of the rollers F F with the rollers G and H and the belt i, running over the lower roller F, and the rollers G and H, by which belt the fuel mass is pressed together when the same is fed over the table, substantially as set forth.

3. In a machine for forming fuel-bricks, the combination of the spring-acted rollers E E, one located over the other one, with the end rollers C C and the belt D, guided over the said rollers C C and between the spring-acted rollers E E, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 12th day of December, A. D. 1891.

JOHANN PETER SCHMIDT.

Witnesses:
L. B. HASBROUCK,
CHARLES KARP.