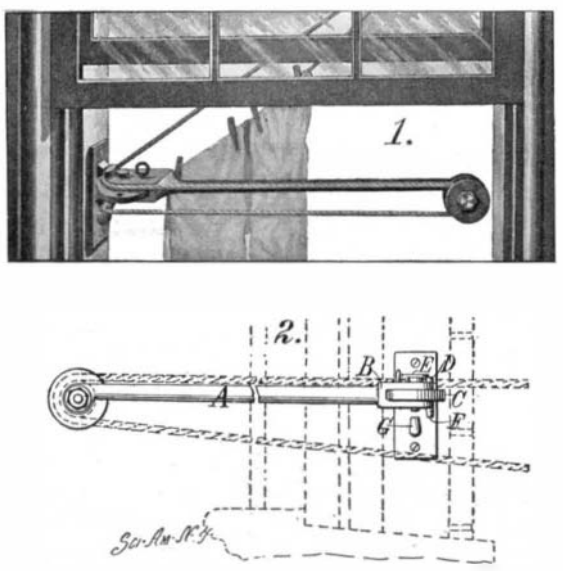
Patent Department

AN IMPROVED CLOTHES LINE HANGER.

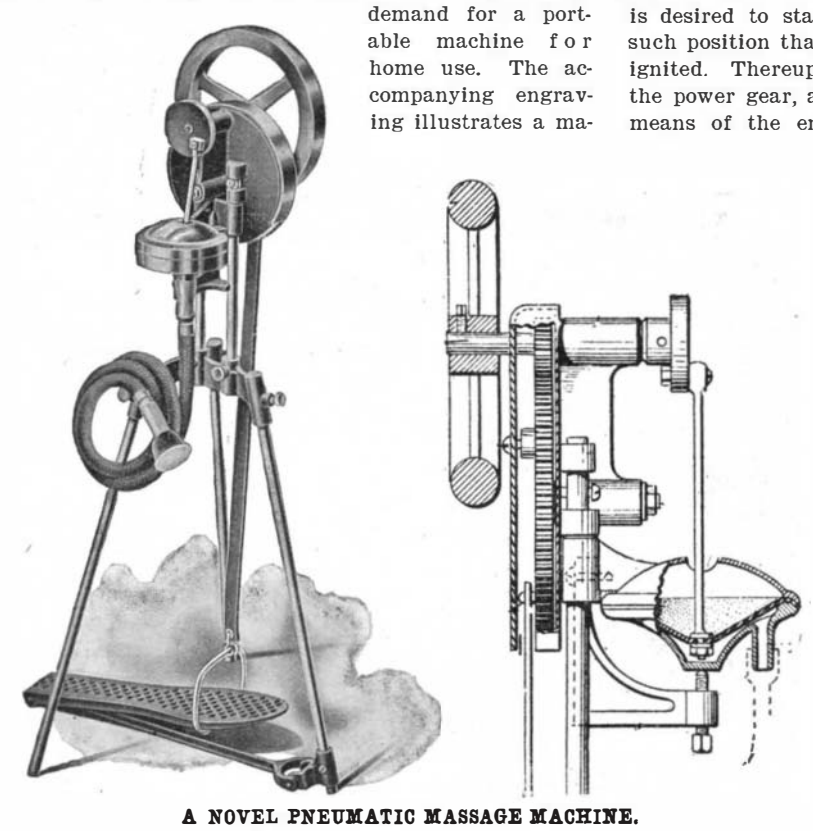
A source of great danger to the servant or housewife in our city flats and apartment houses is to be found in the necessity of leaning out of the window to hang the wash on the line. To overcome this danger a number of hangers have recently been invented, which are so arranged that a portion of the line may be brought into the room to facilitate hanging the clothes thereon; after this the line may be moved out to permit of closing the window. One of the most recent of these devices has been invented by Mr. Frederick W. Steuer, of Plainfield, N. J. As shown in the accompanying engraving, the device consists of an arm *A*, which at its outer end supports a pulley. The opposite end of the arm is formed with a forked head *D*, which fits over a bracket *C*, and is pivoted thereto. The bracket *C* is in the form of a broad horizontal disk, secured to a baseplate, which is fastened to the frame of the window. On the forked head *B* a lug *D* is formed, and on the baseplate of the bracket is a flange *E*. The upper run of the clothes line passes under this flange and around the pulley. In use the arm *A* is swung into the room, and the clothes are hung on the lower run of the line. This done, the lower run of the line is caught over a hook *G* formed on the baseplate. Then the arm is swung outward across the window as shown in Fig. 1, when the lug *D* will lock the line firmly in the aperture formed beneath the flange *E*, and a lug *F* formed on the under side of the forked head *B* will move into engagement with the hook *G* to hold the lower run in place. The disk *C* of the bracket is formed with a number of apertures adapted to receive a locking pin which passes through the forked head *B*. In this manner the arm may be locked at the desired position.



AN IMPROVED CLOTHES LINE HANGER.

A NOVEL PNEUMATIC MASSAGE MACHINE.

The phenomenal popularity of massage treatment, especially of the vibratory type, has created a large demand for a portable machine for home use. The accompanying engraving illustrates a machine of this character which possesses considerable novelty, both in its operation and in its effects. A glance at the line drawing, which shows a vertical section through the mechanism, will reveal the character of this machine. It will be noted that it produces pneumatic pulsations by means of a rubber diaphragm, which is vibrated in a cup at one side of the machine, and that these pulsations may be conducted to the part which is to be treated through a flexible tube. The machine is adapted to be operated by foot power, being provided with a treadle connected by a link to a crank wheel. This wheel is formed with gear teeth adapted to engage a pinion secured on the driving shaft. A flywheel is mounted on one end of the driving shaft, and a crank disk on the other end. A pitman connected to the crank disk passes downward into the cup, and is secured to the rubber diaphragm therein. It is evident that when the treadle is operated, the diaphragm will be moved up and down at a rapid rate, alternately rarefying and compressing the air in the cup, and thus producing the pneumatic pulsations. The design of the machine is very simple, the parts being removable, so that the entire apparatus may be folded up into a small space to permit of packing it in a suit case. The height of the apparatus when set up is only 30 inches, and its weight is but 15 pounds. A patent on this novel massage machine has been granted to Mr. Carl Rosen, Pennoyer Sanitarium, Kenosha, Wis.

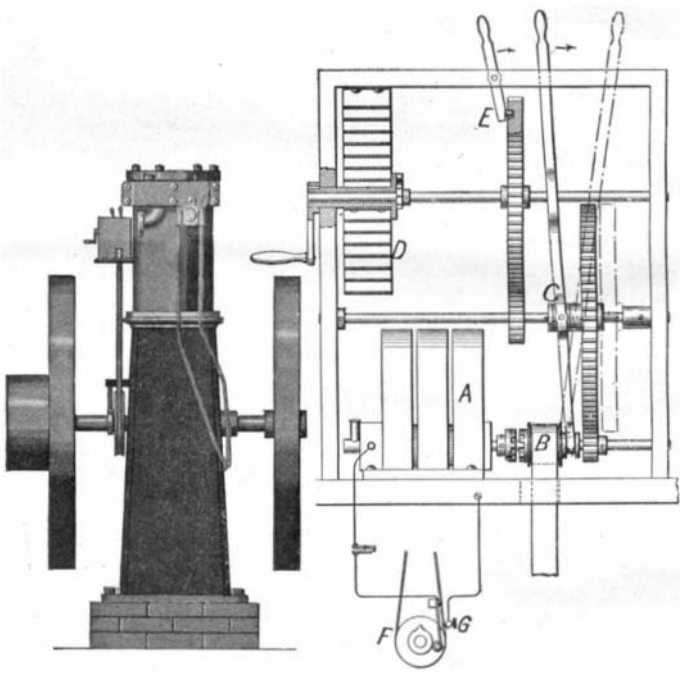


A NOVEL PNEUMATIC MASSAGE MACHINE.

SPARK-PRODUCING MECHANISM FOR EXPLOSION ENGINES

It is the custom in explosion engines which use a magneto to provide an induction coil with which to start the engine until it has attained sufficient speed to properly operate the magneto. In the accompanying engraving we illustrate an improved mechanism, whereby the magneto may be mechanically operated independently of the motor with sufficient speed to produce the requisite spark, thus dispensing with the necessity of using an induction coil. The accompanying illustration shows the mechanism in detail, and also a view of an explosion engine with the spark-producing mechanism applied thereon. The magneto is illustrated at *A*, and the armature shaft is provided with a clutch, whereby it may be connected with a loose pulley which carries the usual driving belt *B*. The lever *C* provides means for throwing the clutch into and out of mesh. Keyed to the armature shaft is a pinion, which is engaged by a large gear wheel splined to a second shaft supported in bearings in the frame of the mechanism. This gear wheel is connected to the lever *C* in such manner that when the latter moves the clutch into mesh, the driving gear is moved out of mesh with its pinion, as shown by dotted lines in the illustration. Keyed to the shaft which supports the gear wheel is a pinion, which engages a second gear secured on the power shaft. A heavy clock spring is fastened at one end to a sleeve on the power shaft, and at the opposite end to the frame of the mechanism. The spring may be wound up by operating a hand crank, which is keyed to the sleeve. The latter is connected to the power shaft by means of a ratchet and pawl. Mounted in the upper end of the frame is a short lever *E*, provided with a lug adapted to engage an aperture in the power gear wheel. In operation, after the spring has been wound up, when it is desired to start the motor the latter is turned to such position that an explosive charge is ready to be ignited. Thereupon the handle *E* is moved to release the power gear, and the mechanism is then turned by means of the energy of the spring *D*. This serves to energize the magneto and deliver current to the spark plug. As the engine shaft is turned, the cam *F* operates in the usual manner to periodically make and break the circuit at *G*, and thus explode the successive charges in the engine cylinder, but the power belt *B* turns idly because it operates on a loose pulley.

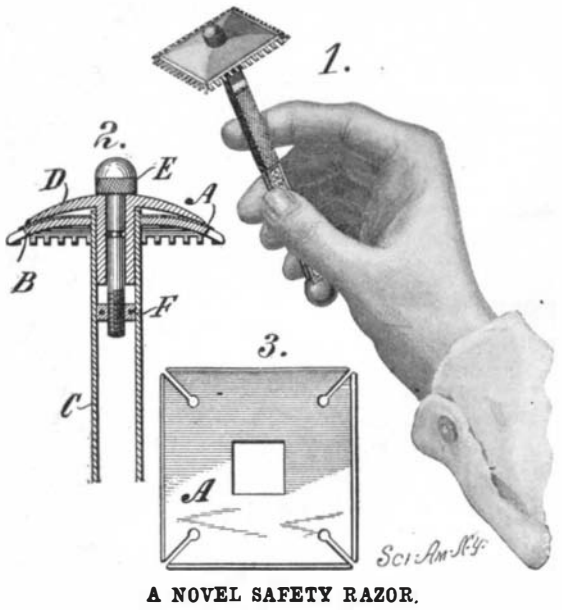
After the engine has attained a sufficient degree of speed, the lever *C* is thrown to normal position, indicated by broken lines, disconnecting the spring-operated mechanism and coupling the armature with the power belt *B*. The inventor of this mechanism is Mr. Lorenzo D. Stamps, care of F. M. Hamilton, Anahuac, Texas.



SPARK-PRODUCING MECHANISM FOR EXPLOSION ENGINES.

NOVEL SAFETY RAZOR.

With a view to increasing the life of the razor blade and prolonging the interval between honings, Mr. Edward Krusius, of No. 896 Third Avenue, New York, has invented a safety razor with four cutting edges. An illustration of this novel razor is reproduced herewith. The razor blade, as shown best in Fig. 3, consists of a square plate of steel which is thin enough to be quite flexible. Each edge of the plate is sharpened and, in order to permit the cutting edges to be flexed independently of each other, they are separated by diagonal slots cut inward from each corner. The blade support consists of a square plate, *B*, somewhat dished in order to provide a convex upper surface. The edges of this plate are indented to form guards. The plate *B* is supported on a tubular handle, *C*, which is of square cross section. The handle projects slightly above the convex face of the plate and provides a key which fits into the square central opening in the razor blade, *A*. The backing for the razor blade is shown at *D* and consists of a square plate provided with a square shank which fits into the hollow handle, *C*, so as to hold it against turning, but at the same time permit it to slide in the direction of the length of the handle. The backing is held in place by means of a thumb screw, *E*, which passes through a central bore in the shank and engages a nut, *F*, secured in the handle, *C*. The backing, *D*, is provided with a concave under surface so that it engages the razor blade, *A*, near the cutting edges. It will be evident that the blade may be bent down onto the plate, *B*, and firmly clamped between the backing and the support by tightening the thumb screw. In use the four sides of the razor may be successively used, thus multiplying by four the time interval usually required between honings. When it is desired to replace the razor blade with a fresh one, this can readily be done by removing the thumb screw, *E*. Owing to the large number of cutting edges on each blade, the operator can repeatedly shave without changing the blade.



A NOVEL SAFETY RAZOR.

The fishermen round the Scottish coasts are beginning to interest themselves in the internal combustion engine as a means of helping them to compete with the steam drifter. Several motor-propelled boats, states the Motor World, are now to be found on the east coast, the latest to be put into service being an Eyemouth boat, fitted with a three-cylinder kerosene motor, constructed by Messrs. McBain Brothers, of Alnwick. This vessel was driven round from Eyemouth to Anstruther the other day at a speed of fully eight knots.