

A PERCOLATOR PACKAGE FOR MAKING COFFEE.

The accompanying illustrations represent a novel percolator package or bag which has recently been invented by Henry M. Humphrey, 4 to 8 Water Street, Brooklyn, New York, and which is designed to contain the coffee to be boiled or infused. The bag is made of a porous fabric, such as muslin or cheese cloth, and is provided with a weight which keeps it in proper position in the water. The weight assists the package in its downward course, and serves constantly to change the position of the package, so that the hot water is always in contact with the coffee.

Of the accompanying illustrations, showing the various positions assumed by the percolator package in a coffee-pot, Fig. 1 represents the first action of the weight in drawing the slack bag down into the water. In a few minutes the bag assumes the position indicated in Fig. 2. As the water boils up the bag rises, as shown in Fig. 3, the weight serving to keep the swelling coffee in the hottest part of the water. When the boiling is stopped, the bag sinks to the position represented in Fig. 4; and the coffee is then ready to be served.

Although it is intended that a clean percolator bag be used every time that coffee is made, it is, nevertheless, possible to use a bag several times. This new

**HUMPHREY'S PERCOLATOR PACKAGE FOR MAKING COFFEE.**

method of making coffee, it will be observed, does away with the possibility of leaving grounds in the coffee-pot, and does not require the use of eggs in causing the coffee to settle.

The Inventors' Bank in Austria.

The Austrian government has granted provisional concession for an Austrian inventors' bank. The company's capital is to consist of \$100,000 in shares of \$80 each. The amount can be eventually raised to \$200,000 and to \$400,000 on ratification by the government and stockholders. The statutes designate the aim of the company to be the utilization of inventions and patents for the mutual benefit of the inventor and the bank, which may involve the erection of factories for such patented articles, the founding and management of trade enterprise for the sale of these articles, and the right of the bank to carry on all other legally licensed businesses which are adapted to encourage the activity of the inventors in Austria. If the capital for the new enterprise is not procured at the end of six months, the concession will be withdrawn. Such an establishment, if indorsed by the government and administered by fully reliable parties, cannot but prove of interest to the inventor.

Trade Relations Between Germany and United States.

A good deal of unnecessary anxiety seems to be exhibited both in Germany and in the United States about the trade relations between the two countries. Some figures just prepared by the Treasury Bureau of Statistics showed that the supposition that American trade in Germany or German trade in America is being disturbed or depressed by existing conditions seems to be unfounded. Certainly the United States is giving to Germany a larger percentage of her import trade than ever before and is selling to Germany a larger percentage of her exports than ever before. American exports to Germany increased over 11 per cent in the past six months compared with the corresponding six months of the preceding year, which of themselves were phenomenally large, and the imports from Germany into the United States in the past six months were nearly 25 per cent greater than those of the corresponding six months of last year. The share of our import trade given to Germany has steadily increased during the past decade, as has also the share which she takes of our exports. A decade ago 10 per cent of our imports was taken from Germany, while now 13 per cent comes from that country; a decade ago 8 per cent of our exports went to Germany, now over 13 per cent goes to that country, and in the last half of the calendar year 1897 our exports to Germany were \$32,632,122, and in the last half of the calendar year 1898 were \$40,615,770, an increase of nearly 25 per cent. Our exports to Germany in the last half of the heavy export year 1897 were \$77,132,053, and in the last half of 1898 were \$85,903,120. Even in meats and pro-

visions the exports to Germany in 1898 show a marked gain in nearly all classes. In salted or pickled beef the exportations increased more than 25 per cent in 1898 over 1897. Exports of bacon increased 25 per cent, or nearly 10,000,000 pounds; those of hams increased from less than 5,000,000 pounds to nearly 12,000,000 pounds; those of pork, fresh and salted, from less than 3,000,000 pounds to nearly 13,000,000 pounds; those of lard, from 205,000,000 pounds to 238,000,000 pounds; while in fruits and nuts the exports of 1898 were nearly 50 per cent in excess of those of 1896, and but slightly below those of 1897.

A SIMPLE PIPE CUTTING AND THREADING TOOL.

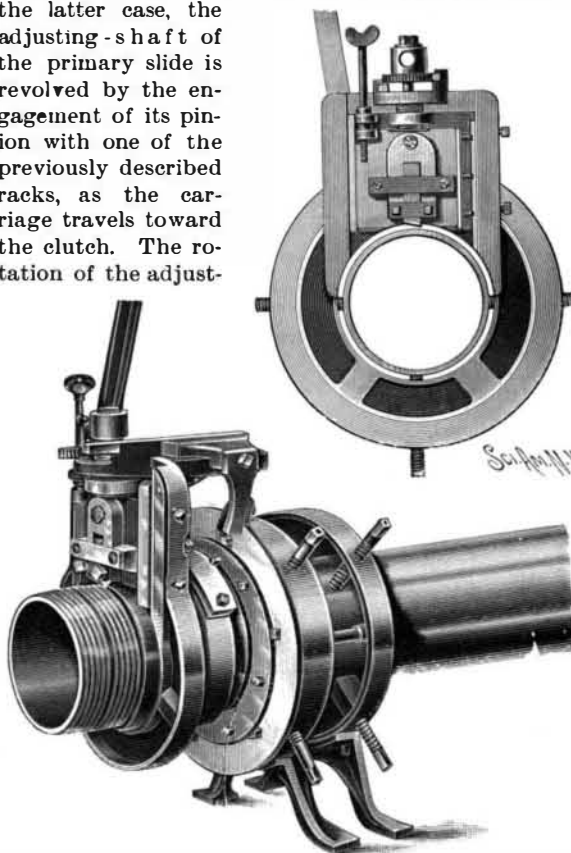
The improved pipe cutting and threading tool illustrated herewith is designed to be used on pipes of various diameters, and to take the place of the usual costly pipe-cutting machinery which can be used only in the shop.

The tool is designed to be attached directly to the piece of pipe which is to be threaded or cut off, and is held in place by means of a universal chuck having a threaded and flanged collar surrounding the pipe. In connection with the chuck, there is also provided a carriage having a threaded sleeve engaging the collar. Upon the carriage two slides are mounted—a primary slide and a secondary slide. These slides are connected by an adjusting bolt having a swivel whereby the two slides can be separated and drawn together. By means of this device the two slides can be separated so as to adjust the cutting-tool nearer to the center when it is desired to thread a smaller pipe. The primary slide is directly in contact with the carriage, and the secondary slide is mounted to move on the primary slide. The primary slide may be moved toward or from the pipe by means of a radial adjusting shaft. To the secondary slide the tool-holder is pivoted.

The carriage has a longitudinally extended portion which is provided with guides receiving two rack-bars which extend parallel with the pipe and are adapted to be engaged by a pinion on the upper portion of the adjusting-shaft of the primary slide. By means of this construction the threading or cutting tool can be automatically fed.

The carriage, the slides and the tool are made to travel by means of a long handle, a portion of which is shown in the illustration. As the carriage passes about the pipe it is gradually worked toward the clutch, as the sleeve on the carriage moves along the collar of the clutch.

The tool may be fed manually or automatically. In the latter case, the adjusting-shaft of the primary slide is revolved by the engagement of its pinion with one of the previously described racks, as the carriage travels toward the clutch. The rotation of the adjust-

**A SIMPLE PIPE CUTTING AND THREADING TOOL.**

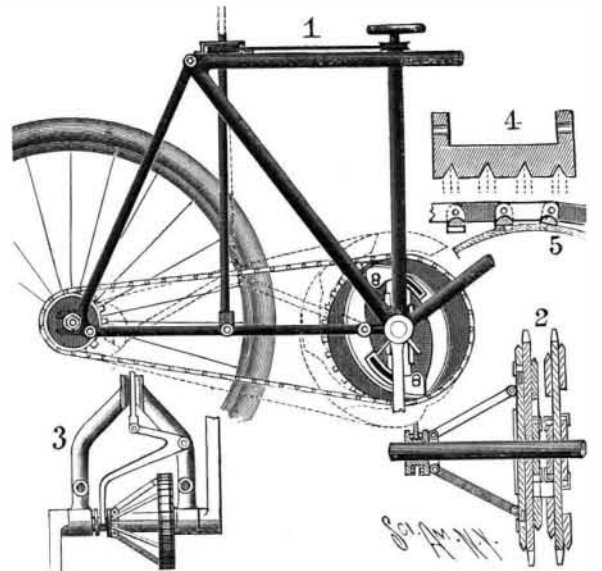
ing-shaft will cause the tool to be automatically fed toward the pipe in order to cut a taper thread. The tool may be fed away from the pipe by bringing the other rack into engagement with the pinion. When it is desired to cut a pipe, the carriage-sleeve is loosened so that it will not turn with the carriage; by this means the carriage will be held in one position relative to the pipe, and the cutting-tool may be fed inwardly by hand, until the pipe has been severed.

The tool has been patented by the inventors, Ferdinand C. Walter and Herman F. Repkow, of 149-151 East Huron Street, Chicago, Ill.

A VARIABLE BICYCLE DRIVING-GEAR.

An ingenious mechanism has been invented and patented by Charles G. Evans, of Nelson, British Columbia, Canada, by means of which the driving-gear of a bicycle may be changed to any degree of speed between two extreme points.

Fig. 1 is an elevation showing the device applied to

**EVANS' VARIABLE BICYCLE DRIVING-GEAR.**

a bicycle. Fig. 2 is a sectional view of the sprocket-wheel. Fig. 3 is a fragmentary front elevation showing the means for controlling the sprocket-wheel. Fig. 4 is a cross-section of a link of the sprocket-chain. Fig. 5 is a detail section showing the action of the sprocket-chain on the sprocket-wheel.

From the top bar of the bicycle there extends downwardly a vertical front brace, forked at its lower end to carry the crank-shaft. From the rear end of the top bar there extends a diagonal brace likewise forked and joined to the fork of the previously mentioned brace. The rear wheel is held in a fork pivoted to the rear end of the top bar. For the usual back stays of the bicycle, toggle-links are substituted, which are pivotally connected with a forked, link-controlling rod running vertically through the top bar. On the rear portion of the top bar is a nut engaging a thread on the link-controlling rod. The nut is grooved to receive a band which runs to a pulley carried on the front portion of the top bar and operated by a hand-wheel. The hand-wheel also controls a rod, which runs through the front brace, and which is provided at its lower end with a bell-crank lever, engaging the sprocket-operating devices (Fig. 3).

The main driving-wheel consists of two sprocket-sections, as shown in Fig. 2, on each side of which sections, extension plates are held to slide. These plates are pivotally connected with links, which are in turn pivoted to a collar sliding on the crank-shaft and engaged by the lower member of the bell-crank lever, shown in Fig. 3.

By turning the hand-wheel on the front portion of the top bar, the rod extending through the forward vertical brace will be caused to operate the bell-crank lever in order to adjust the sprocket-wheel. When the hand-wheel is turned in one direction, the collar of the crank-shaft will slide and cause its links to force the extension plates radially outward, as shown by dotted lines in Fig. 1. When the hand-wheel is turned in the opposite direction, the extension plates will be retracted.

The sprocket-chain, as indicated in Fig. 4, consists of links, the under surfaces of which are formed with four V-shaped grooves running longitudinally with the chain and designed to engage the edges of the extension plates. When the plates are extended in the manner before described, they will grip the four V-shaped grooves of the chain links as shown in Fig. 5. Simultaneously with the extension of the driving-wheel, by means of the hand-wheel, the toggle-links between the rear wheel and the crank-shaft will be raised by means of the rod pivoted to their inner ends and connected with the hand-wheel by the band passing around the rod-nut and the hand-wheel pulley. In this manner the variations in diameter of the driving wheel and the change in position of the rear wheel are compensated for.

It will be observed that the gear is not limited in its changes to a fixed set of speeds, but that the adjusting devices and the construction of the driving sprocket-wheel enable the bicycle to be geared to any degree within the two extremes.

An Italian medical journal states, according to The New York Medical Journal, that while water will not quench the flame of burning petroleum in a limited space, milk accomplishes the object by forming an emulsion with the oil, disturbing its cohesion, and thus attenuating the combustible element.