A NEW GAS ENGINE.

We give an engraving of a small gas engine, made by the Economic Motor Company, of this city, which may be used wherever gas is obtainable, and we are informed that the engine is being adapted to run with naphtha gas or the vapor of gasoline.

These engines are made in four sizes, the largest being one horse power, and the smallest of sufficient size to run one or two sewing machines, or pump enough water for domestic use. They are well calculated to fill the great deficiency in motors heretofore existing below one horse power. It requires about one-thirtieth of a horse power to run an ordinary sewing machine, and this is probably the smallest use for which a motor is required. The elevation of water for domestic use in our cities requires, ordinarily, from one-eighth to one-sixth of a horse power. Foot lathes, printing presses, and the entire class of machinery operated by treadle or hand power requiresan engine of from one-half to one horse power; machinery operated intermittently by hand, and requiring the entire power of a strong man, would require an engine of one horse power.

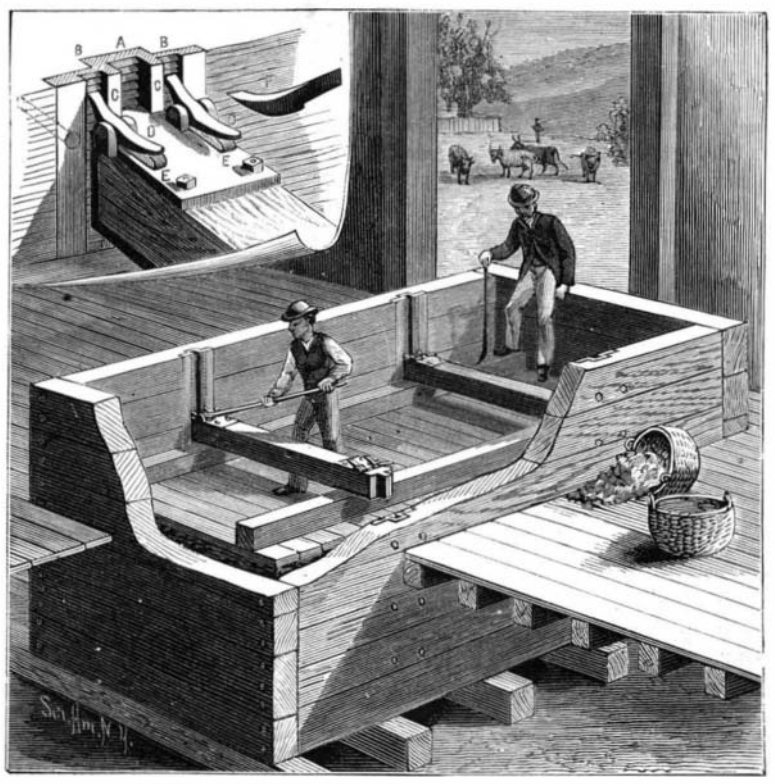
The one horse power engine shown in the engraving has a cylinder 4½ inches in diameter, and a stroke of 10 inches. The bearing surfaces of this engine are extraordinarily large, and designed to wear for years. Steel and bronze are used wherever practicable, and there has been no lack of care to render the engine perfect in every detail. There are no intricacies in its construction; it is as plain and simple as a steam engine, which it very much resembles, both in appearance and in operation. It is always ready for work; the striking of a match and once turning of the wheel being all that is required to start it. It develops its full power at once, and runs steadily, quietly, and uniformly.

These engines are the result of long and careful experimentation, the object having been to produce a practicable, small motor, which would be perfectly manageable, and which would need no delicate adjustments and no special care other than that required by machinery generally.

It is stated that any part of this engine may be thrown out of adjustment ten times the amount due to its natural wear for the life-time of the engine without rendering it inoperative. With respect to economy, as no engineer is required, and as all outlay ceases when the power stops, two sources of the expense of steam power are avoided; it costs nothing to convey the fuel to the place of consumption, and the products of combustion are disposed of without cost. Of course the consumption of gas is the only item of expense, and this is not large. For example, it costs about one-third of a cent a barrel to raise water fifty feet. The sewing machine motor is driven by gas taken from an ordinary gas burner.

Recent improvements in this engine make it impossible to blow out the igniting flame, and a new gas cut-off, which has been applied, prevents the escape of gas, when the engine stops, no matter when or how. These new features render a gas explosion in connection with the engine impossible.

The Economic Motor Company has established in Brooklyn an extensive factory, which is devoted exclusively to the manufacture of these engines. The office of the company is at 12 Cortlandt Street, New York city.



JEFFERSON'S IMPROVED SILO PRESS.

IMPROVED SILO PRESS.

The engraving represents an inexpensive silo press, recently patented by Mr. C. W. Jefferson, of Rugby, Tenn., which has strong and durable parts so arranged as to provide for very great compression of the ensilage by the use of a common lever or pinch bar. To the inner faces of the opposite walls of the silo are fixed the metal plates, A. Placed loosely on top of the fodder filled into the silo are planks, across which rest timbers, one at each side. Across the timbers rest press beams set with their ends facing the opposite pairs of plates; when these beams are made of wood the ends are provided with metal caps secured by bolts and formed with lugs in which the pawls, D, are pivoted. The pawls are pressed into engagement with the teeth of parallel racks, B, formed in the wall plates, by springs. The central portions of the plates are set back to form grooves into which enter tongues formed on the ends of the caps; at the backs of the grooves are formed racks. The flanges, C, of each plate project sufficiently to prevent the end shoulders of the beams, or the caps, from striking the plate; by this construction very little friction occurs between the ends of the press beams and the silo walls or wall plates.

The ensilage having been placed in the silo, and the covering boards and timbers adjusted, the press beams are carried downward by means of the pinch bar, the end of which engages with the central rack. As the beams descend, the pawls engage lower teeth of the rack to keep them in position. It is obvious that by the use of this press enormous pressure may be brought to bear on the ensilage to pack it closely for preventing fermentation and keeping it in good condition until consumed.

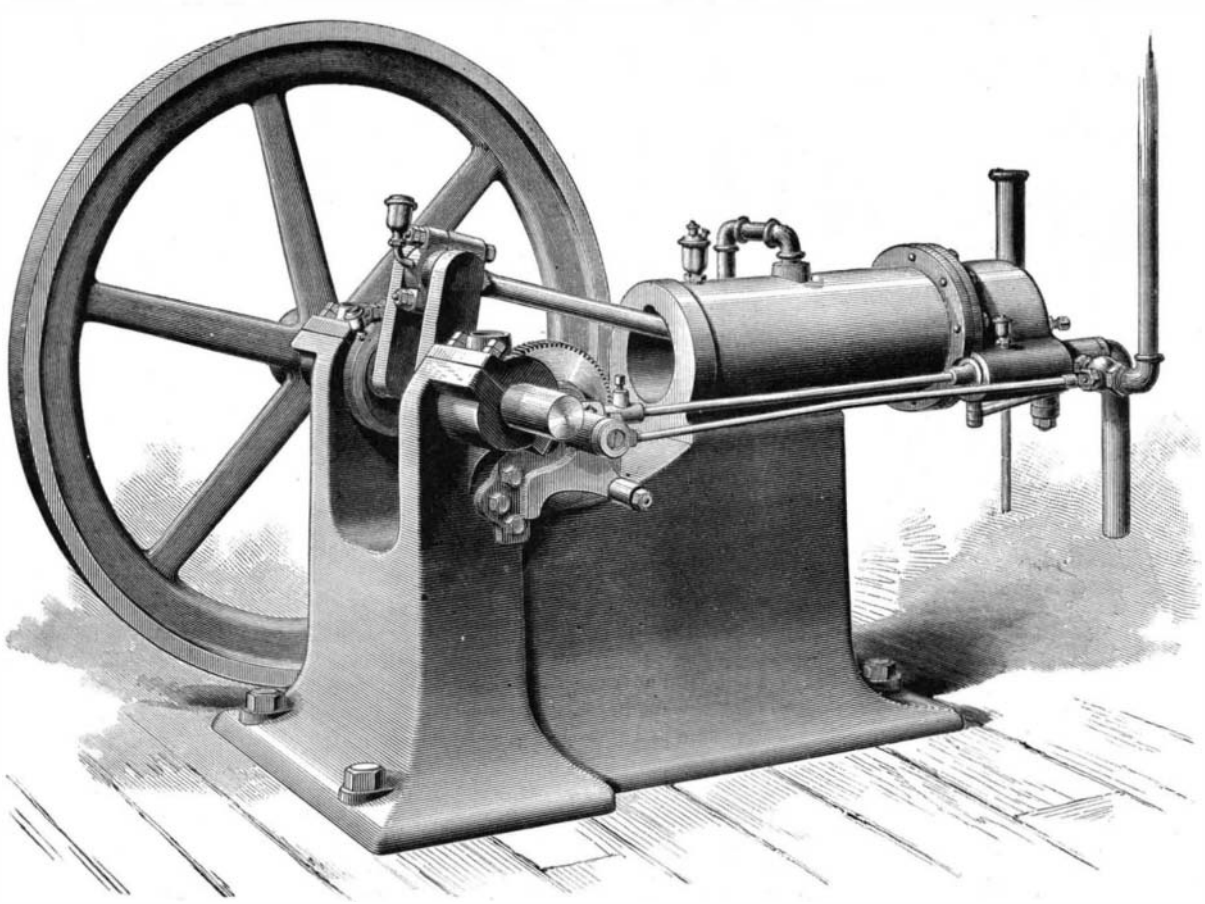
Whims in Building.

Nothing adds so much to the cost of building as indulgence in whims. To set out deliberately to do a "queer," "fanciful," or, as it is sometimes called, "original" thing in building is always to incur unnecessary expense. If we look through the books that contain pictures of the architecture of all ages and nations, we shall find that, without an exception, in the times all men of taste are agreed in calling the good times, the modes of building have been sensible, founded on the needs of the case, and that whatever may seem fanciful—the whole of what we call picturesque—when its charm has proved enduring, is the result of what we may call, in every case, "accepting the situation." Nothing has been done in such instances for the sake of being picturesque. Good building, good ornament, never poses.

In building, as a rule, every departure from the rectangular form is an added expense. One of the things impressed on the mind of a young man who goes into an architect's office to study the profession is that, if cost is to be considered, which it sometimes is, and sometimes is not, all excrescences and projections must be avoided. A rectangular house is the cheapest. Bay windows, porches, octagonal or circular, external ends to rooms—all these things cost money; and it is by multiplying these features that the expenses of building are often made so great as to deter people from undertaking it, for the things seem so small in themselves, it is not suspected what drains they are on the purse. If a good reason cannot be given for any so-called ornamental feature in a house, if it cannot be shown that something worth while is to be gained by making it, we may be reasonably sure that it is a fancy which will cost, as the country people say, more than it comes to. And, in the greater number of cases, nothing, even in looks, is gained by indulging the fancy.—*The Studio.*

Musk.

Although musk has long been well known in the West, yet, says Dr. Macgowan in his report on the health of Wenchow ("Imperial Maritime Customs"), it seems worth while to translate what Chinese writers have to say about it. The musk deer is found throughout the mountains of Yunnan, Szechwan, and Thibet; it is a timid little animal, and often dies of fright. It feeds on juniper leaves and reptiles; snake bones are found in its stomach. In spring its glandular pouch is much swollen and inflamed. The secretion is discharged with the urine. Musk deer always resort to the same place for micturition, and cover their urine with earth. In such places deposits of a superior quality are found, amounting sometimes to fifteen catties (a catty is a Chinese weight of about one and one-third pounds). The article which is most prized is that which falls from the musk deer on to the ground, and is gathered in grains that are as precious as pearls. These deposits are so pungent that, if carried through a garden or woods, it prevents fructification. The poisonous effect of fresh musk on vegetation is shown also by the blighted appearance of places which the musk deer selects for its convenience. For some distance around these places there is an absence of plants, and farther off the leaves exhibit a yellow tinge. This valuable substance no sooner leaves the hunter's hands than skillful manipulators adulterate the article for wholesale dealers, who further adulterate it for the trade, by which time it contains about 10 per cent of genuine musk. Musk is said to be an anthelmintic, and to cure the bites of venomous serpents.—*Lancet.*



THE ECONOMIC MOTOR CO.'S NEW GAS ENGINE.

Chinese Paper.

Eighteen hundred years ago, says the *Papermaker's Journal* (London), the Chinese, acting upon the wasp's suggestion, made paper from fibrous matter reduced to pulp. Now each province makes its own peculiar variety from the innermost bark of different trees. The young bamboo, which grows six or eight inches in a single night, is whitened, reduced to pulp in a mortar, and sized with alum. From this pulp sheets of paper are made in a mould by hand. The celebrated Chinese rice paper, that so resembles woolen and silk fabrics, and on which are painted quaint birds and flowers, is manufactured from compressed pith, which is first cut up spirally, by a keen knife, into thin slices, six inches wide and twice as long. Immense quantities of paper are used by the Chinese for a great variety of purposes. Funeral papers, or paper imitations of earthly things which they desire to bestow on departed friends, are burned over their graves. They use paper window frames, paper sliding doors, and paper visiting cards a yard long.

THE history of the discovery of the circulation, recapitulated, divides itself naturally into a series of epoch making periods: 1. The structure and functions of the valves of the heart, Erasistratus, B.C. 304. 2. The arteries carry blood during life, not air, Galen, A.D 165. 3. The pulmonary circulation, Servetus, 1553. 4. The systemic circulation, Cæsalpinus, 1593. 5. The pulmonic and systemic circulations, Harvey, 1628. 6. The capillaries, Malpighi, 1661.—*Dr. Henry C. Chapman.*