

(f) An apparatus that is not complicated, for signalling when the entire train, including the very last car, has passed the switch points.

(g) A system of weighing that will permit of the weighing of cars in motion, whether detached or in a train.

(h) A proposition for the simplification of the accounts of the interchange of rolling stock.

If in any of the three groups the commission cannot decide on the allotment of the first or second prizes to any invention or improvement that has been presented for its consideration, the examining commission can divide the sum allowed for this first or second prize in the group in question, so as to grant several second or third prizes. Furthermore, the sum allotted to any one group may be divided among the others.

The conditions are as follows :

1. Only those inventions and improvements are admissible that have been brought out during the term specified below.

2. To be admitted to the competition, the invention or improvement must have been put into use before application upon one of the railroads forming a part of the Verein of German railways, and the request to enter the competition must be seconded by this railroad.

3. The project must be accompanied by a detailed description, together with drawings and models, etc., so as to convey to the judges a complete knowledge of the kind and nature of the device, the possibility of its operation, and the efficiency of the invention or improvement in question.

4. The obtaining of a prize shall not prevent the inventor from exploiting or soliciting a patent. Furthermore, each candidate for a prize for inventions or improvements must submit to the officers of the Verein a statement of the conditions upon which he will concede to it the right to use the invention or improvement.

5. The Verein has the right to publish the successful inventions.

6. All literary works submitted must be in triplicate. One of the copies will be placed in the library of the Verein, the other two will be returned to the candidate if he shall make a formal application for them.

7. The applications must contain the proof that the inventions and improvements have been brought out and the literary works published during the period named below. A commission composed of twelve members will be appointed by the Verein to examine into the projects that are presented, and decide whether the prizes are to be awarded and to whom. The first award will embrace all inventions and improvements that have been brought out between July 16, 1887, and July 15, 1895. Therefore all inventions and improvements that are to be presented to the commission must be executed before the date mentioned. The same statement also applies to all literary works. All applications should be sent, free of all charges, to *Kranoid*, in care of the Verein, at No. 3 Bahnhofstrasse, S. W. Berlin, Germany, between January 1 and July 15, 1895.

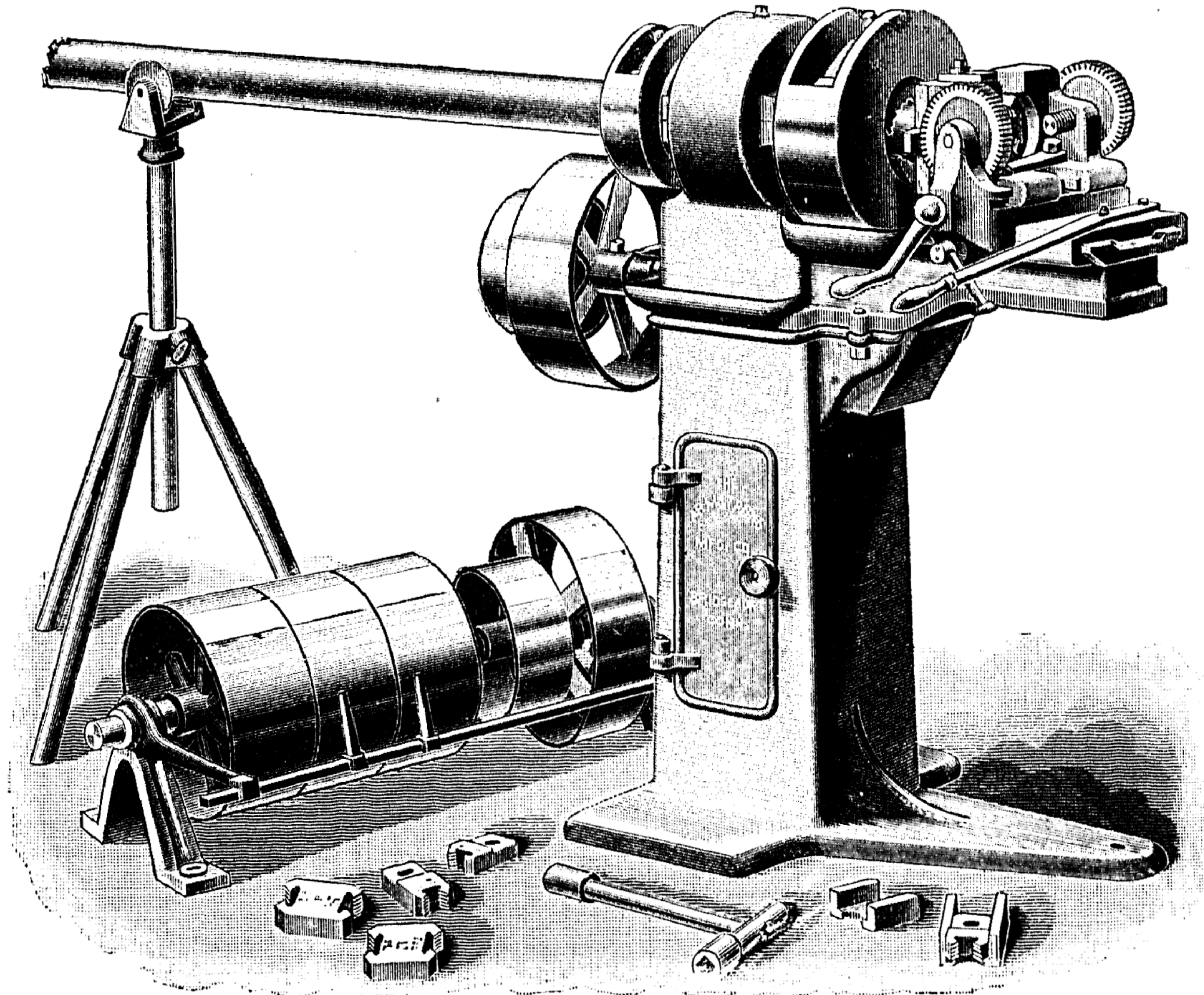
ARMSTRONG PIPE-THREADING AND CUTTING-OFF MACHINE NO. 2 $\frac{1}{2}$.

STEAM-FITTERS and others having to do with the cutting and threading of pipe will find in this machine a most convenient tool built for their especial line of work. It is an improved form of the No. 2 pipe-threading and cutting-off machine for hand or power, built by the Armstrong Manufacturing Company, Bridgeport, Conn., and retains the many attractive features of that machine in addition to others peculiarly its own. It is very compact, rigid and durable, and does not require the services of a skilled operator. All of the gears and working parts are enclosed in an oil-tight chamber, which insures their perfect lubrication, and effectually keeps out dust, dirt and chips which might otherwise get to them and thus interfere with the perfect working of the machine.

In one particular this machine differs essentially from all other pipe-cutting and threading machines of its class built by the Armstrong Company. In its operation the pipe revolves instead of the dies, being held securely by tight-gripping chucks.

For radiator steam coil works, etc., and other services where the greater number of pipes are of comparatively short lengths, this will be found a particularly desirable arrangement. The dies and cutting-off tool are held stationary, and are opened and closed by means of a double-gear crank-handle, as shown. Expanding dies are used in connection with a self-centring and powerful gripping chuck, insuring speed in cutting off and threading a pipe. They are furnished to thread from 1 in. to 4 in. inclusive.

Quick interchangeability of the various sizes of dies, coupled with a construction which permits of separate adjustment for three different sizes, enables the operator to thread pipe to suit all variations in ordinary fittings, and to open and close the dies any number of times without changing the adjustment. Again, either of the sizes may be used alternately without change of adjustment, or the dies may be quickly taken out to permit of the free passage of the pipe to be cut



ARMSTRONG PIPE-THREADING AND CUTTING-OFF MACHINE.

off, and the adjustment still remain unchanged. An objection frequently raised against machines using expanding dies is, "Our men are not skilful enough to use expanding dies without threading some of the pipe too large and some of it too small."

This has been met and successfully overcome in the tool here shown. Though the dies are quickly opened after threading a piece of pipe, yet they may be as quickly closed together again without the least danger of variation, unless intentional.

The weight of this machine is about 700 lbs.; with counter-shaft, 850 lbs. Speed of counter-shaft should be about 225 revolutions a minute.

Recent Patents.

FARNSWORTH'S GAS-COMPRESSING PUMP.

THE objects of this invention are to reduce the height of a vertical machine, to facilitate access to the parts and relieve the foundation of strains; to reduce to a minimum the angularity of the connecting-rod during the latter part of the stroke, and to improve various details of construction.

In the accompanying drawings, fig. 1 is a side elevation of a double cylinder compressor embodying my improvements, fig. 2 is a vertical section thereof, and fig. 3 is a cross-section on the axis of the rock shaft.

The cylinders *A A* (fig. 2) are open at each end, and are supported by flanges *a* on a suitable base, *B*, consisting of preferably two parts united by a packed joint, *b*, on a horizontal plane. The upper portion of the base has two necks, *b'*, in which the cylinders are received, their lower ends depending into the base, as shown. The joint between the neck *b'* and the flange *a* is packed, so that the base forms a gas-tight chamber. A pipe, *B'*, provided with a suitable stop valve, con-