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Köpings mekaniska verkstad

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OPEN SIDE
PLANING MACHINES

KÖPINGS
MEKANISKA VERKSTADS
AKTIEBOLAG

FOUNDED

1856

KÖPING, SWEDEN.

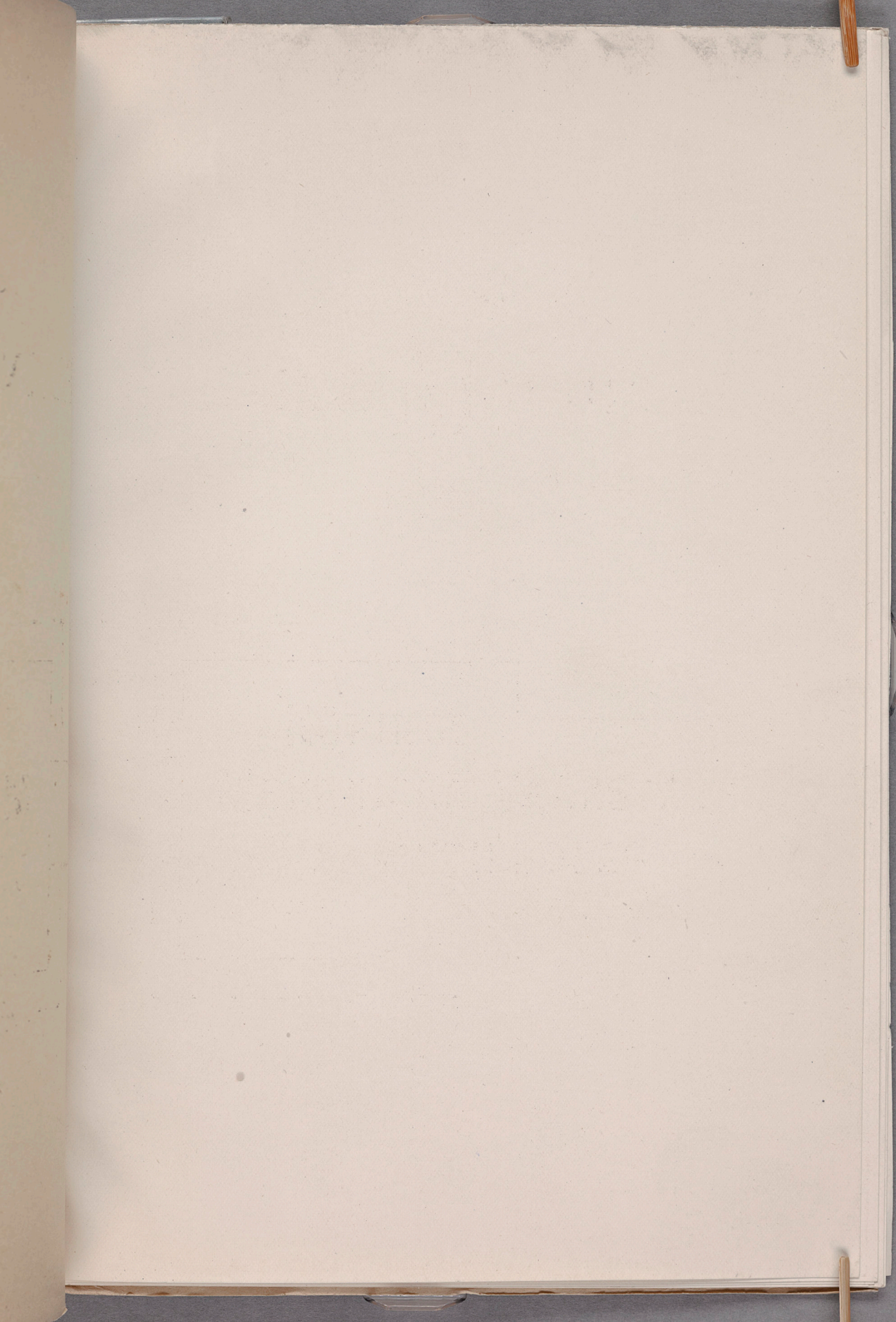
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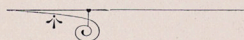
OPEN

JULY 1

Köpings Mekaniska Verkstads Aktiebolag
KÖPING, SWEDEN.

OPEN SIDE
PLANING
MACHINES

JULY 1895.



STOCKHOLM
CENTRAL-TRYCKERIET 1895.



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Open-Side Planing Machines.

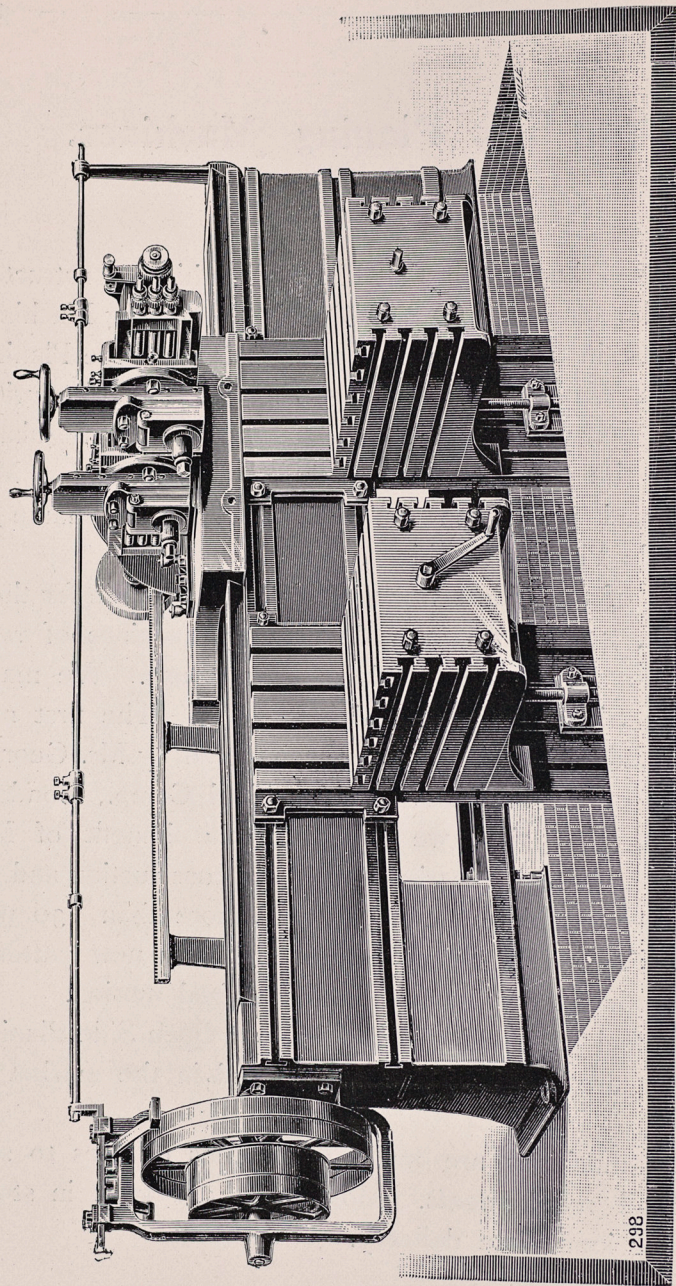
It is a well known fact that Planing Machines constructed on the same principles as Open Side Planing Machines have been in use for many years, as Plate Edge Planing Machines, Wall Planing Machines etc., but it is only during the last ten years that they have been more regularly used for the ordinary work of the standard Planing Machines, and placed on the market under the name of Open-Side Planing Machines.

One of the oldest firms in this country made for their own use, 40 years ago, Side Planing Machines of very much the same type, as those now in use. We made our first Side Planing Machine in 1886. The first machines made in England were constructed by Mr. George Richards of the Richards Machine Tool Comp., London.

Since that time we have had the benefit of Mr. Richards personal experience in their construction and up to the present time we have made more than 130 machines. Two years ago we made entirely new patterns and introduced our improved friction feed motion.

We feel justified in stating that our Open Side Planing Machines are the best that are offered in the market at present.

The machines are made in a series of sizes to suit almost all requirements. Most sizes are kept in stock ready for immediate delivery.



Side Planing Machine R. 3.

To plane 750 mm. in width and 2400 mm. in length.

Description.

The motion of the Overhang Arm is imparted by a strong screw with square threads driven direct by pulleys. The reversing motion is done by means of a belt moving apparatus of a very simple and ingenious construction. This apparatus acts with such precision that keyways can be planed into a single hole, the diameter of which equals the width of the key, and the reversing is done perfectly smooth without the slightest jar or noise.

By the use of differential pulleys we have been able to have the speed of the back stroke three times as quick as the cutting stroke.

The screw is connected with the Overhang Arm by two nuts. By unlocking the clamping stud of one nut and reversing the driving screw by hand, the «back-lash» is taken up completely.

The method of supporting the screw in the long stroke machines is shown in the section of the bed in Fig. 1. The supports are about 600 mm. long, and are placed at several places along the bed. The threads in the nut are not cut entirely away, but are continuous across the gap, so as to hold the oil in the side-faces of the screw threads.

The friction feed motion is the result of great care and many experiments. It gives a feed from 12 mm. down to the finest, and is most easily changed while the machine is in operation. The feed is taken before the cut and not on the return stroke.

No special foundation is needed for the smaller sizes. For the larger machines with two or more tables, a pit in front of machine is of great convenience. The wide possibilities in setting irregular pieces of work when they can be «up-ended» in the pit can only be appreciated in actual practice with one of these machines.

The general design of foundation, as well as the pit in front of the machine and position of the countershaft is shown in Fig. 4.

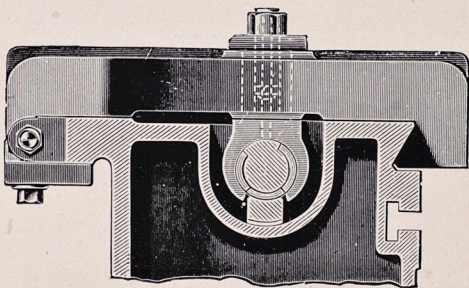


Fig. 1.

A few remarks on Side Planing Machines.

As a new departure, Open Side Planing Machines have been received with a large amount of caution. It is quite natural for anyone at a first glance to criticise this machine as faulty in design. The Overhang Arm is regarded as an infraction on the ordinary rules of strains. »The arm must spring». This is the general summing up of the matter by those who have not investigated the true principle of the machine.

The Figs. 2 and 3, show the comparison between an Open Side Planing Machine and a Shaping Machine of the same size, the same saddle or carriage being employed for both machines, but it will be seen that the slides and supports in the open Side Planing Machine are far more substantial than in the Shaping Machine.

Another objection is made as to the wear of the bed. There certainly is a wear, but it is a well known fact that when cast iron surfaces are as large as in these machines and are properly oiled, there is practically so little wear that it is scarcely perceptible after several years of use. In connection with this question of unequal wear

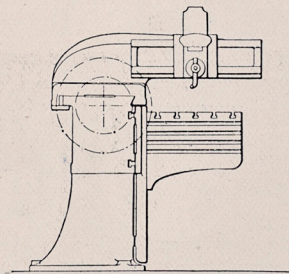


Fig. 2.

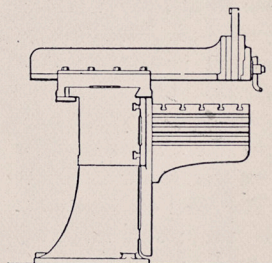


Fig. 3.

of the bed, we wish to point out that it is desirable to move the tables on the front of the bed and so set the work that the saddle shall be used on all parts of the bed. A little judicious care will enable the operator to keep the top of the bed in such condition that the saddle can be adjusted tightly and yet pass from end to end of the bed with an equal fit.

Our actual experience for the past 10 years with a number of the machines have proved to our satisfaction that the objections we have hinted at have no real existence in practice and may be wholly disregarded by those interested.



Points of interest to be noted.

1. An open Side Planing Machine does the same work as a Shaping Machine but has a much larger range and stroke.
2. In comparison with ordinary Planing Machines, the facility of planing large pieces in Side Planing Machines is apparent.
3. An ordinary Planing Machine to plane 5 meters long will require a floor space of 10 meters in length, while a Side Planing Machine to plane the same length, only requires $6\frac{1}{2}$ meters of floor space.
4. The speed of the return stroke of the tool on Side Planing Machines is three times to four the speed of the cutting stroke.
5. The price of the larger Side Planing Machines is considerably lower than the price of a Planing Machine of the same capacity.
6. The tools are always practically at one height for the workman to adjust and watch their operation.
7. On most of the sizes of Open Side Planing Machines, it can easily be arranged, when operating on detail pieces, that a new piece can be set on the one table while the machine is in operation on the other table.

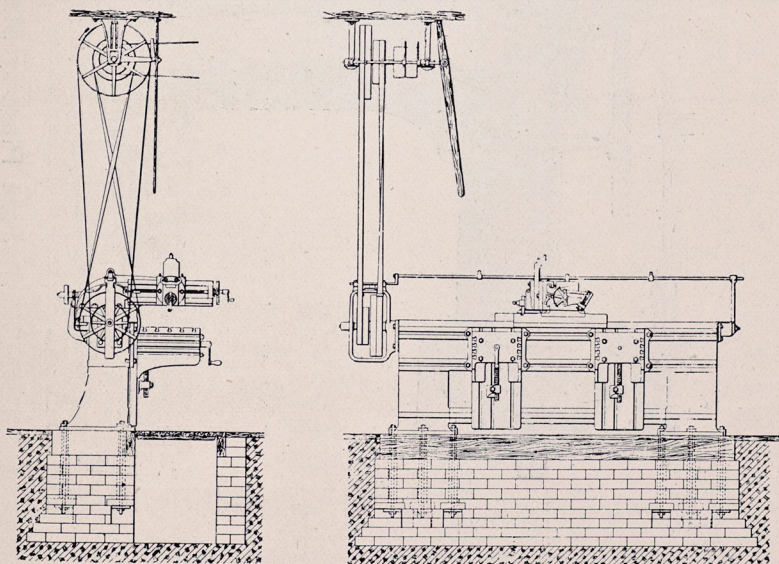
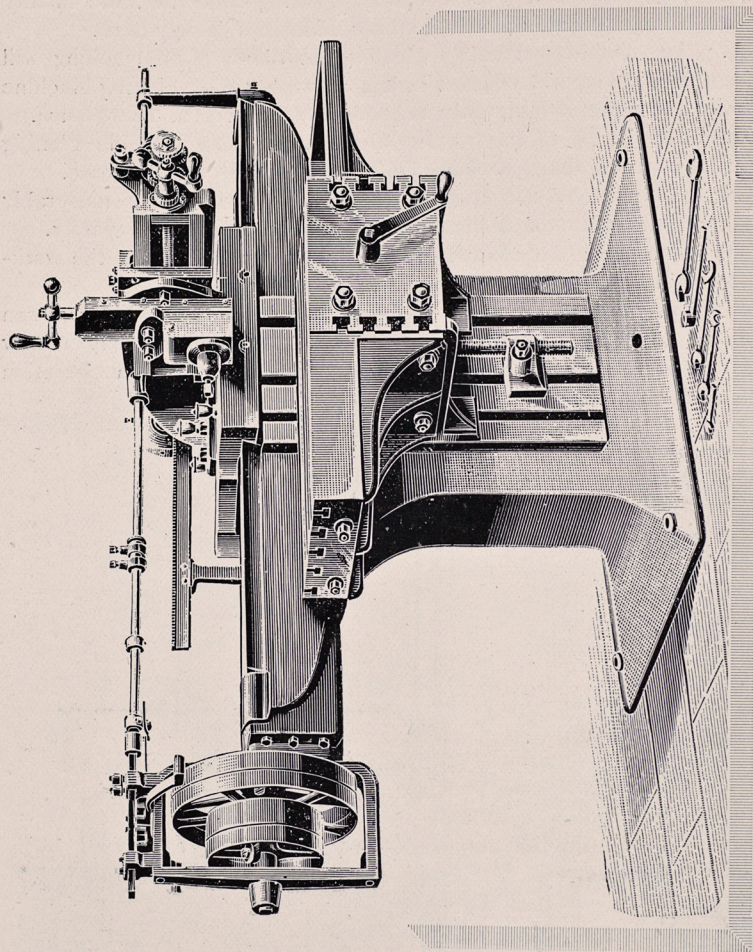


Fig. 4.

Showing position of the countershaft, general style of foundation and pit in front of the machine.

Observe that the centre of countershaft must be direct over the pulleys of the machine.



Side Planing Machine R.O.

To plane 450 mm. in width, 800 mm. in length.

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Side Planing Machines with one table.

R 00 och R 0.

These are the two smallest sizes in which the machines are made and have been designed to take the place of Shaping Machines for a large class of work generally done on them. They have only one table with slots on the top and sides for clamping the work. An extra table is supplied to bolt to the main table for holding work when the full stroke of the machine is required.

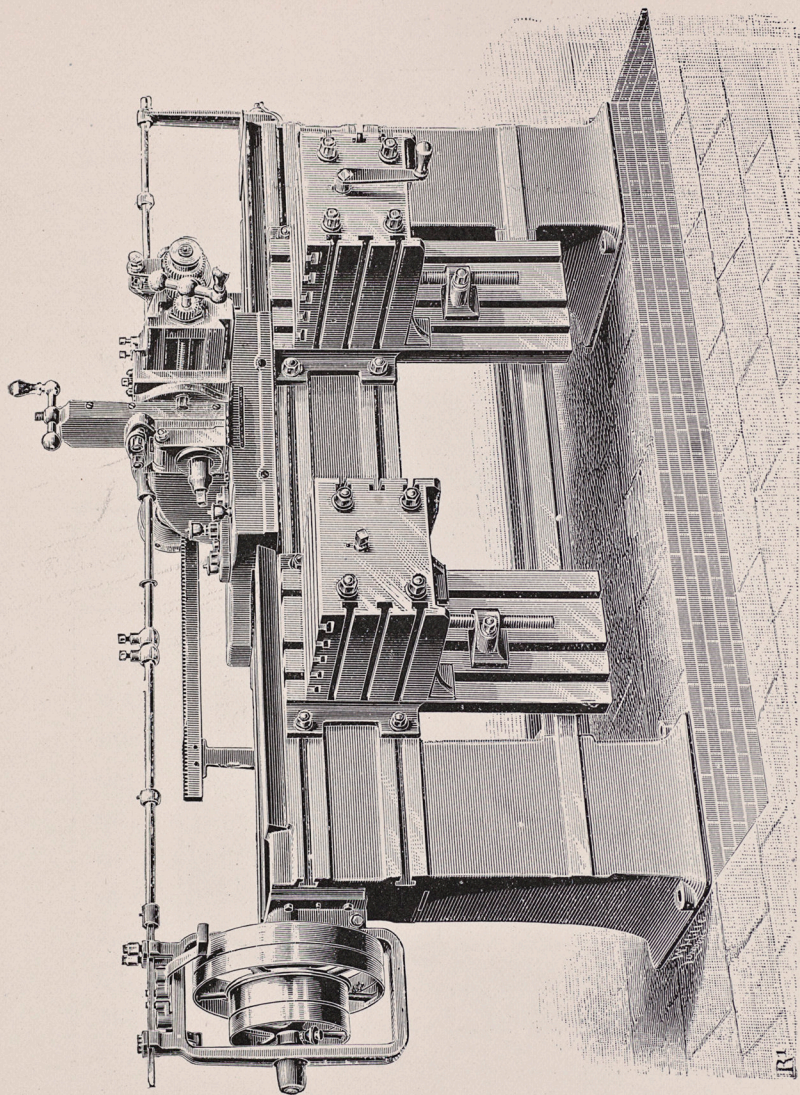
The automatic feed is only horizontal.

The price includes the top motion, screw keys and tables as shown in engraving on opposite page.

Dimensions, weight and price.

	Symbol	R 00.	R 0.
To plane in width	mm.	300	450
» » » length	»	700	1000
Length of both tables together.....	»	600	800
Width » » »	»	320	450
Admits in depth under the arm.....	»	390	490
Floor space, total length.....	»	1700	2250
» » » width	»	900	1150
Fast and loose pulleys, diam.	»	200	200
» » » » width	»	75	75
Revolutions of countershaft	»	400	390
Nett weight	kilogram	810	1325
Price			

Cipher for Telegrams, see end of Catalogue.



Side Planing Machine R 1.

To plane 375 mm. in width, 1200 mm. in length.

Side Planing Machines with two or more tables.

R 1.	to plane in width	375 mm.
R 2.	» » » »	500 »
R 3.	» » » »	750 »
R 4.	» » » »	1000 »

These machines have two tables bolted to table plates that can be moved along the front of the bed. The plates are easily moved by putting a pin in one of the holes in the saddle to strike against a stop clamped on the table.

The tables can be readily removed to enable large pieces to be clamped to the front of the table plates.

R 2., R 3. and R 4. have automatic feeds in all directions. R 3. and R 4. can be supplied with only one tool box on the overhang arm when required.

All the sizes can be made to plane up to 6 meters in length. The machines can have three or four tables fitted for special purposes, or one long continuous table equal to the stroke can be placed on the standard tables.

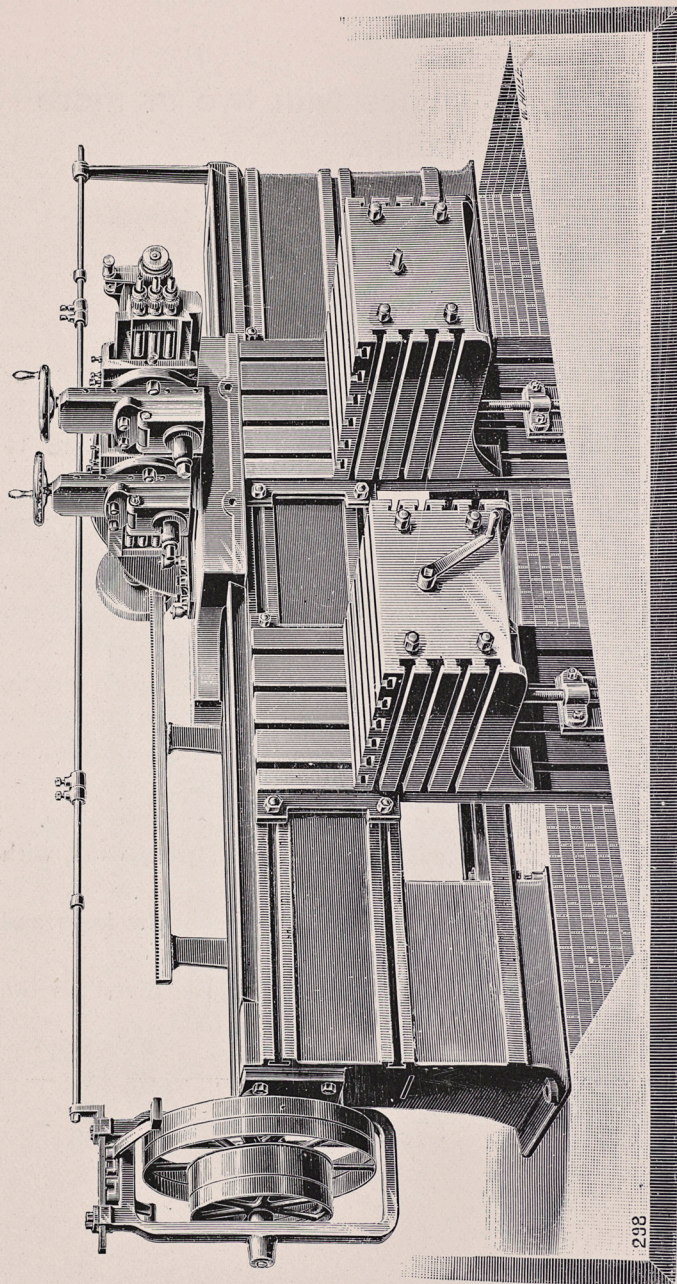
A pit in front is strongly recommended for these sizes.

The machines are most convenient for Shaping work with the shortest strokes from 30 to 50 mm.

In the prices includes: The top motion, Screw keys and two tables as shown in the engraving.

Principal dimensions, weight and price are given on the next page.





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Side Planing Machine R 3.

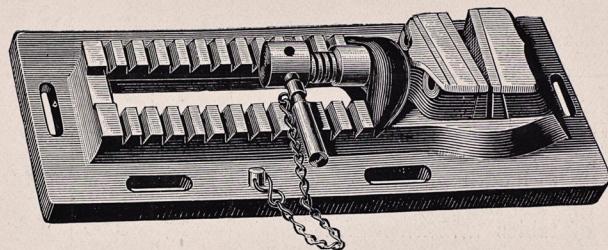
To plane 750 mm. in width, 2400 mm. in length.

Side Planing Machines with two tables.

Symbol	R 1.	R 2.	R 3.	R 4.
To plane in width mm.	375	500	750	1000
» » » length..... »	1200	1800	2400	3000
Length of tables »	325	400	600	750
Width » » »	425	500	750	750
Admits in depth under arm »	500	560	900	1200
Floor space, total length »	2450	3400	4400	5400
» » » width »	1075	1300	1900	2500
Pulleys on countershaft diam. ... »	200	250	300	400
» » » width ... »	75	100	125	150
Revolutions of countershaft »	390	350	350	250
Nett weight kg.	1290	2370	6300	.....
Price .....	.....	.....	.....	.....
Extra for each 600 mm. of longer stroke	.....	.....	.....	.....
Extra tool box.....	.....	.....	.....	.....
Extra for table with plate .....	.....	.....	.....	.....

Cipher for Telegrams see end of Catalogue.

Vices for the Open Side Planing Machine.

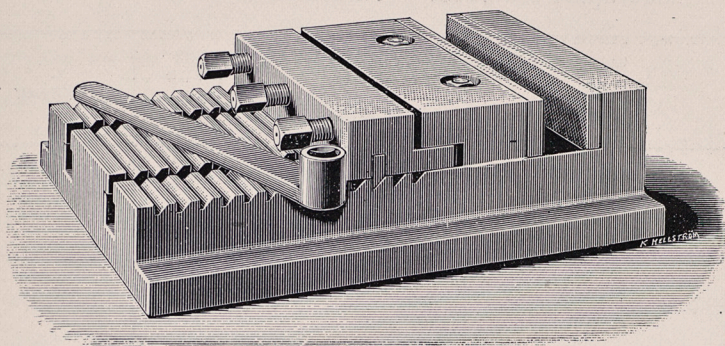


Type A.

In these vices the article to be planed is pressed firmly and uniformly down upon the surface of the vice by the action of the sliding jaw plates. Thus the necessity of hammering on the work is abolished. The loose jaw adjusts itself to hold uneven or tapering work.

N:o	1	2	3	4	5	6
Length of jaw mm.	50	70	100	150	200	250
To open »	100	150	200	300	400	500
Weight kg.	4	10	18	45	75	110
Price each						
Cipher for telegrams	Rasing	Rasp	Rasper	Rat	Rater	Ratch

Vices for the Open Side Planing Machine.



Type B.

These vices are more suited for holding larger pieces than type A.

N:o	1	2	3	4	5
Length of jaw mm.	200	250	300	350	400
To open »	175	200	225	250	300
Weight kg.					
Price each					
Cipher for telegrams	Rath	Ratio	Ratlin	Ratoon	Rattan

Cipher for Telegrams.

Telegraphic Address: Verkstaden, Köping. Sweden.

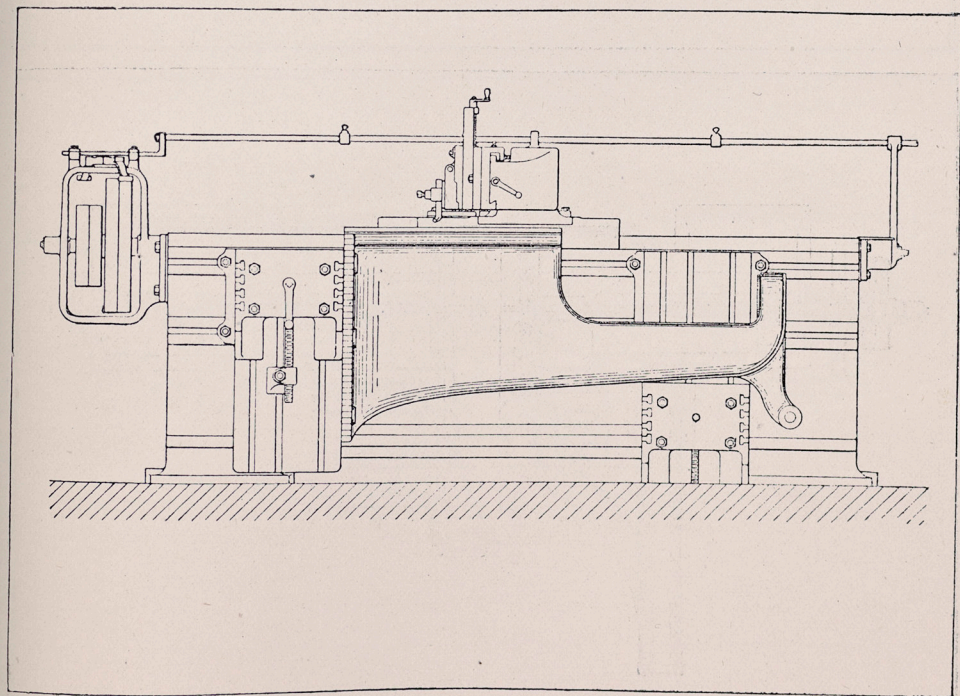
Symbol	To plane in width	To plane in length	Cipher
R. 00	300 mm.	700 mm.	Radical
R. 0	450 »	1000 »	Radius
R. 1	375 »	1200 »	Radish
»	» »	1500 »	Raffle
»	» »	1800 »	Rafter
»	» »	2400 »	Ragged
R. 2	500 »	1800 »	Rampant
»	» »	2400 »	Ramrod
»	» »	3000 »	Rancour
»	» »	3600 »	Random
R. 3	750 »	2400 »	Ranger
»	» »	3000 »	Rankness
»	» »	3600 »	Ransom
»	» »	4500 »	Ranter
»	» »	6000 »	Rapacity

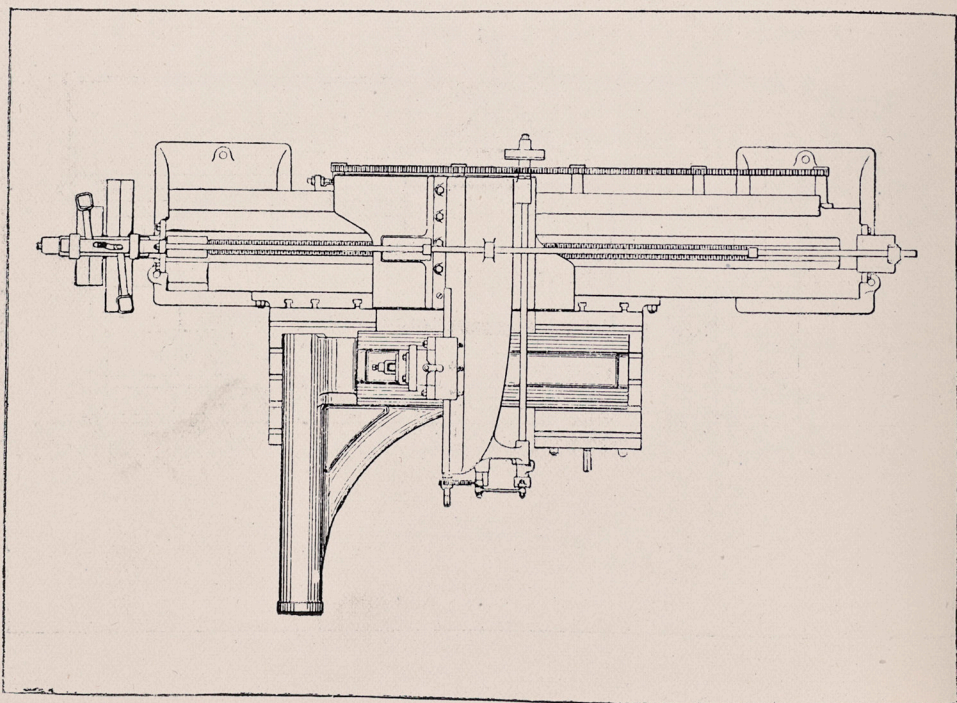
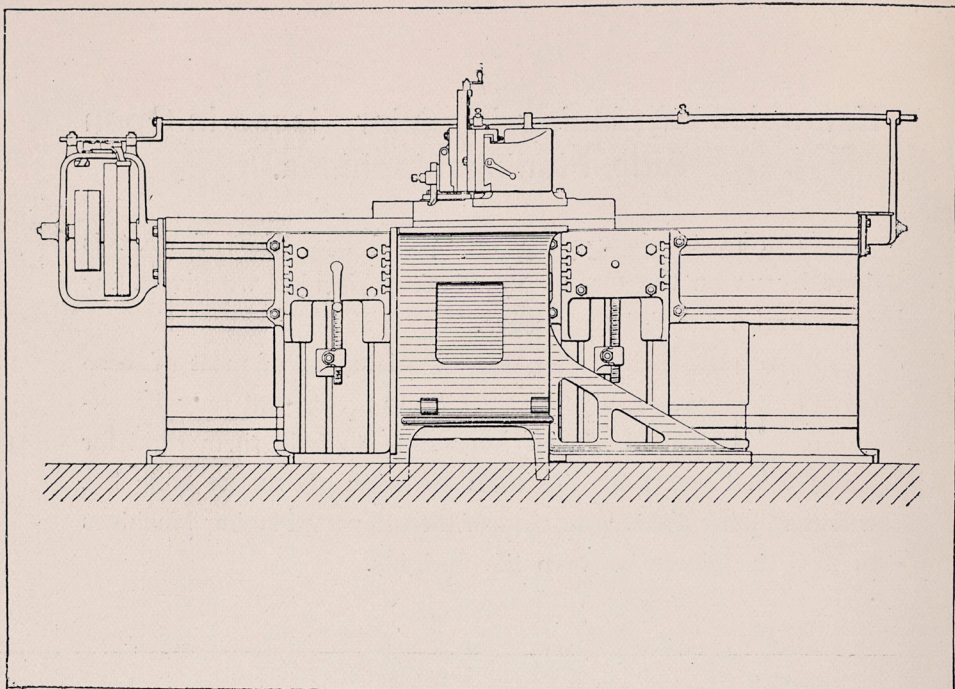


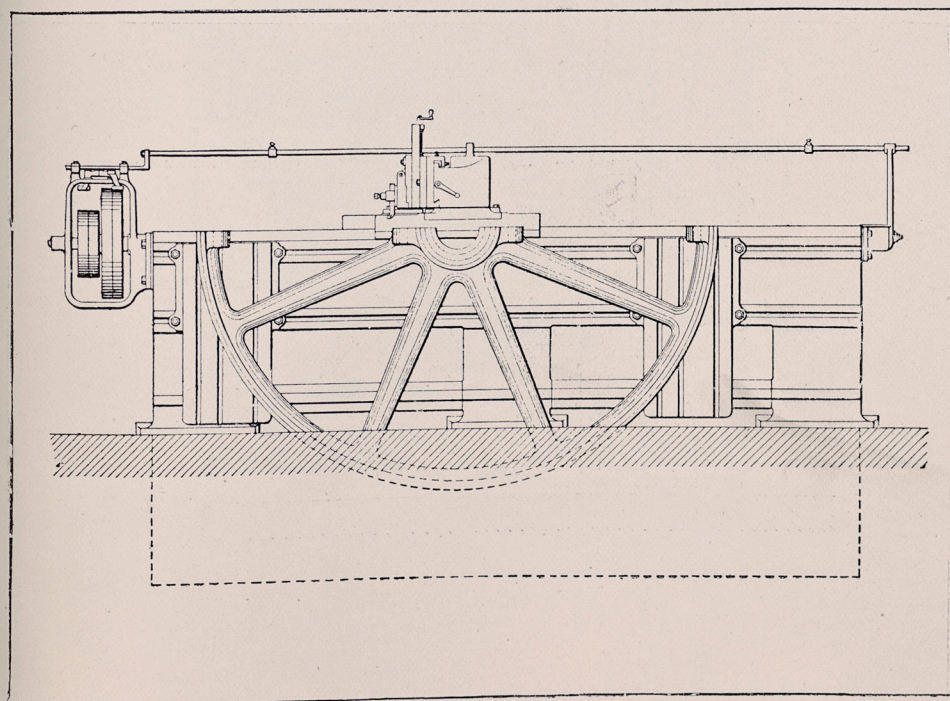
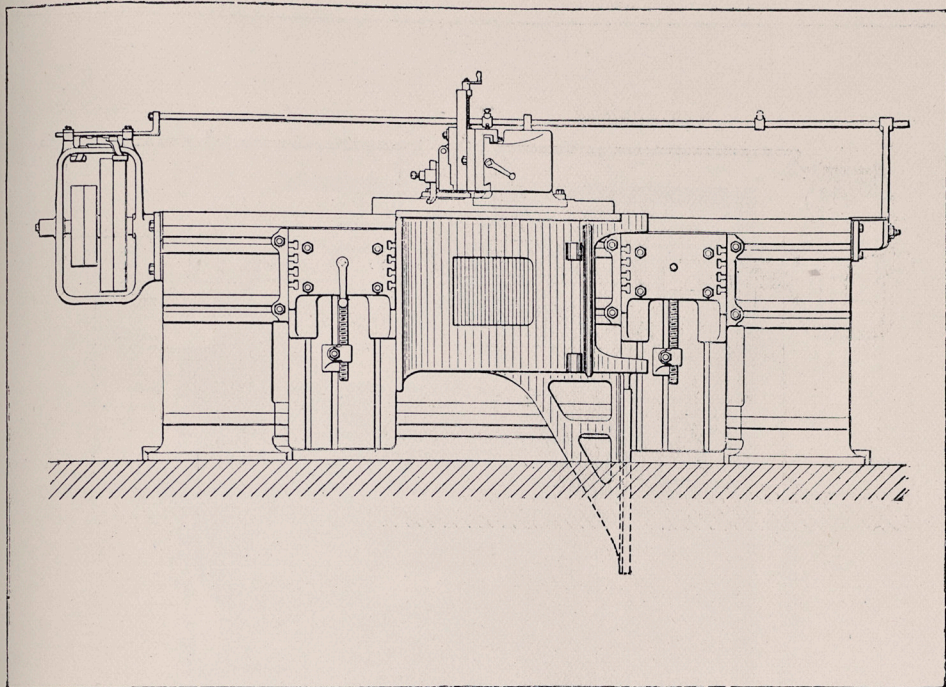
Examples of planing irregular pieces in Open Side Planing Machines.

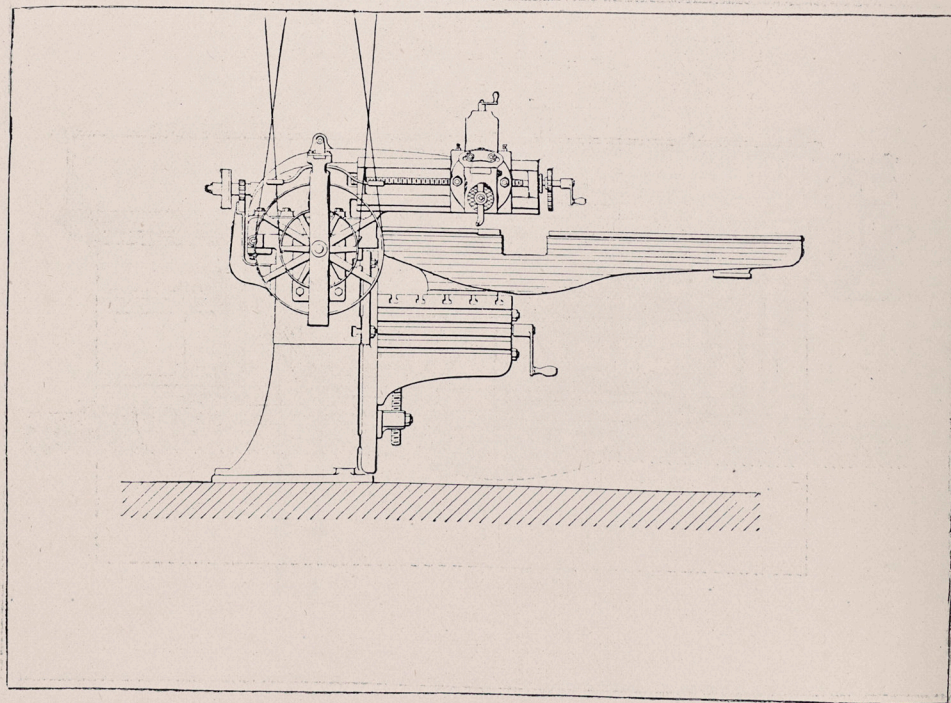
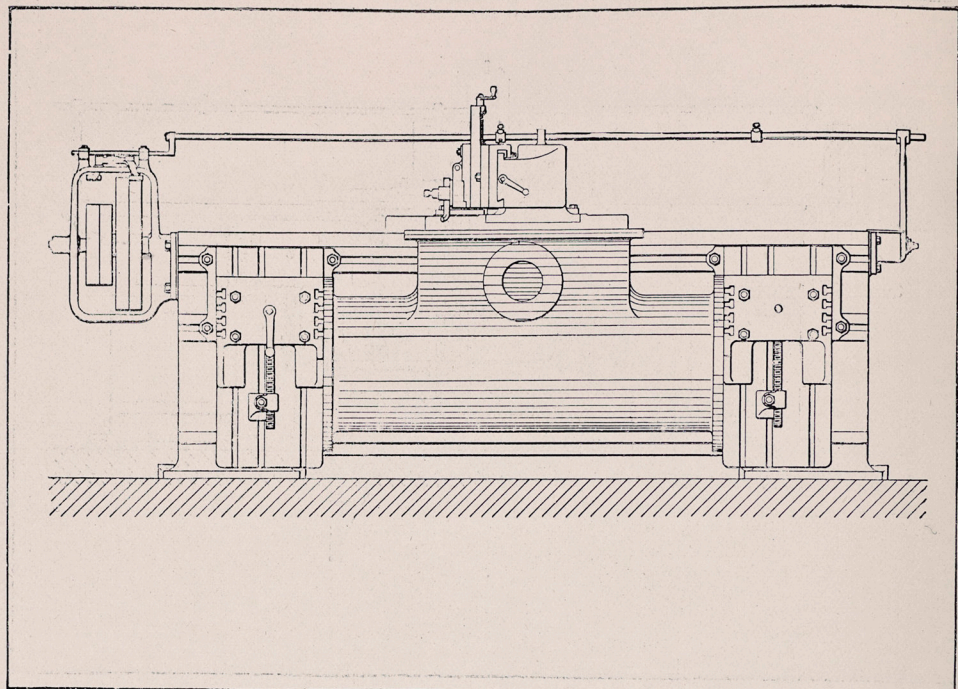
In order to show some very good examples of what is done by us on the Open Side Planing Machine we give a few examples in the following pages.

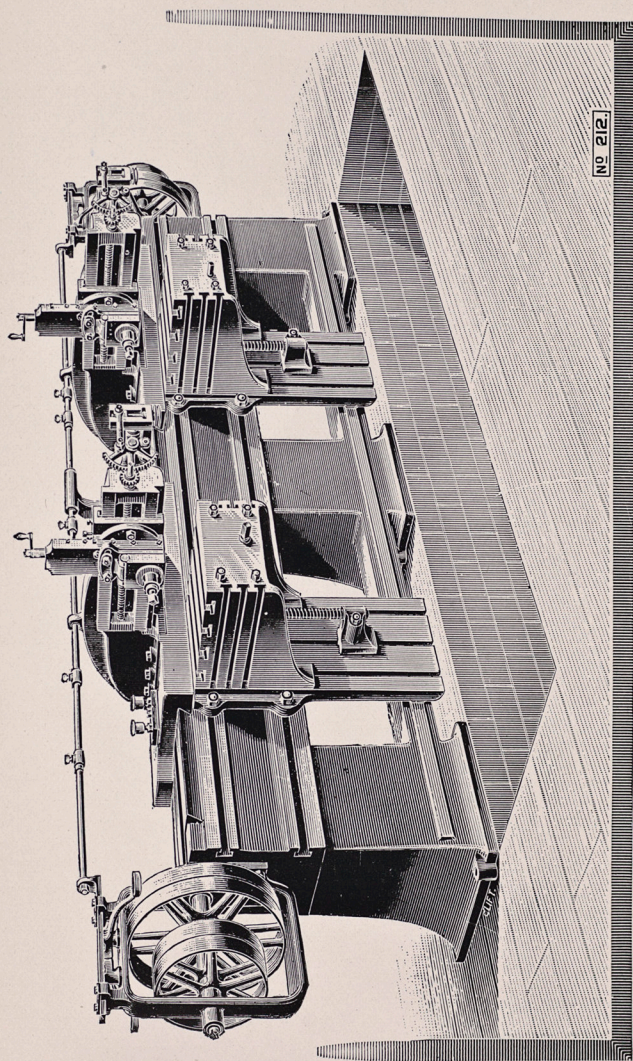
It will be readily seen that the clamping of most of these parts to the platen of ordinary planers would not only be extremely difficult and almost impossible to hold them rigid for being acted upon by the tools so high above the table but would require the largest sizes of the ordinary Planing Machines to pass the pieces between the uprights.











Double-Headed Side Planing Machine.

