

(No Model.)

2 Sheets—Sheet 1.

# H. AIKEN. SHEARS.

No. 584,570.

Patented June 15, 1897.

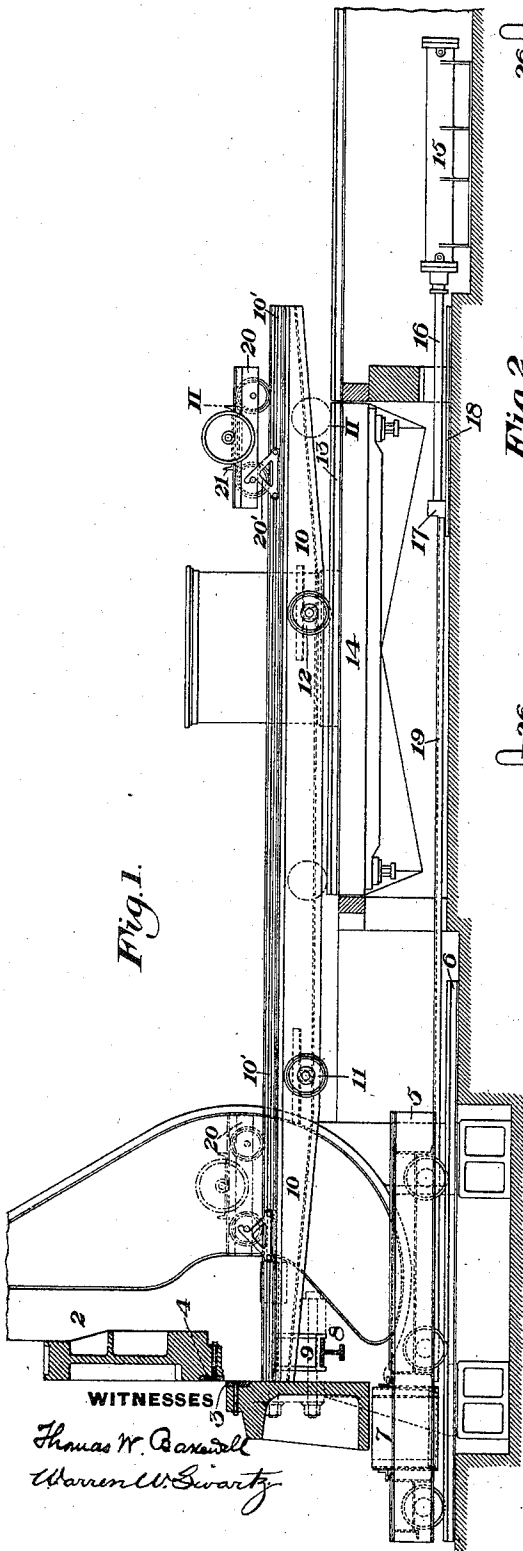


Fig. 1.

WITNESSES

Thomas W. Cassidell  
Warren W. Sivarty

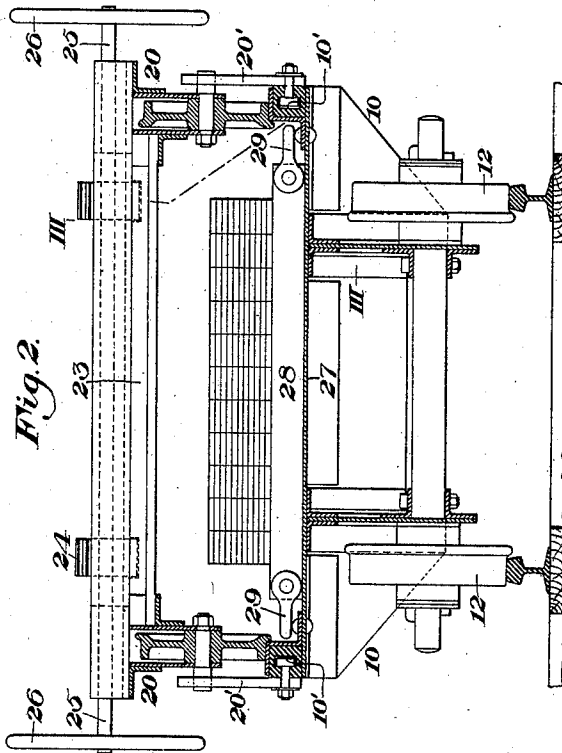


Fig. 2.

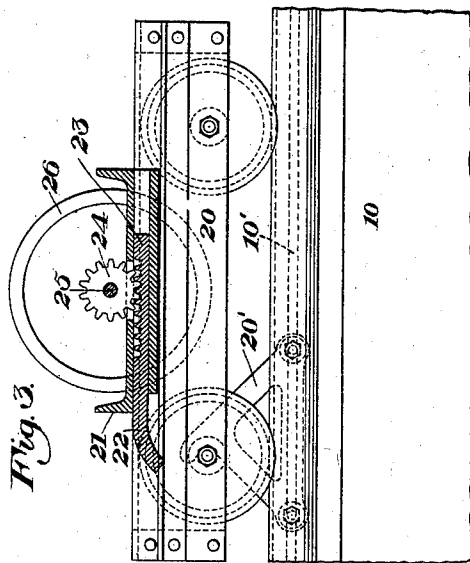


Fig. 3.

INVENTOR

Henry Aiken

(No Model.)

2 Sheets—Sheet 2.

# H. AIKEN. SHEARS.

No. 584,570.

Patented June 15, 1897.

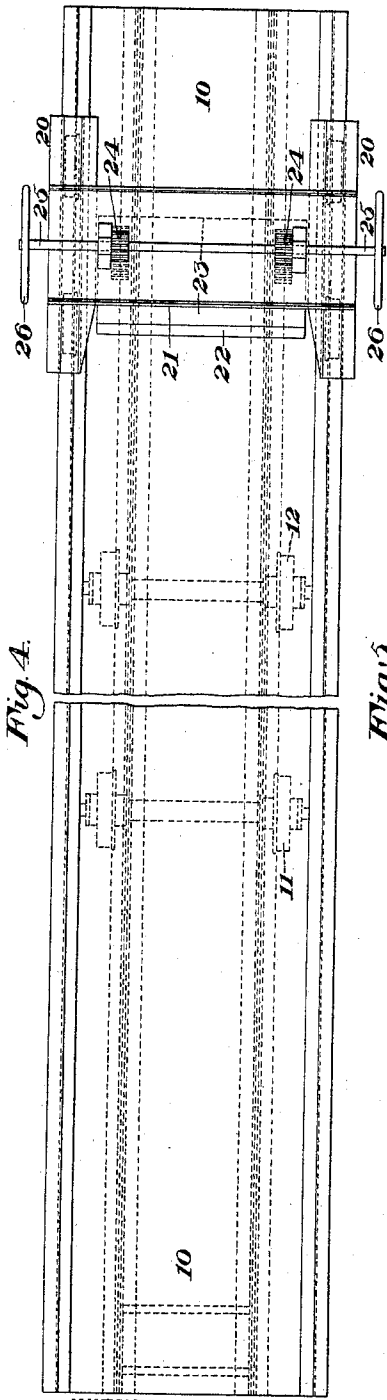


Fig. 4.

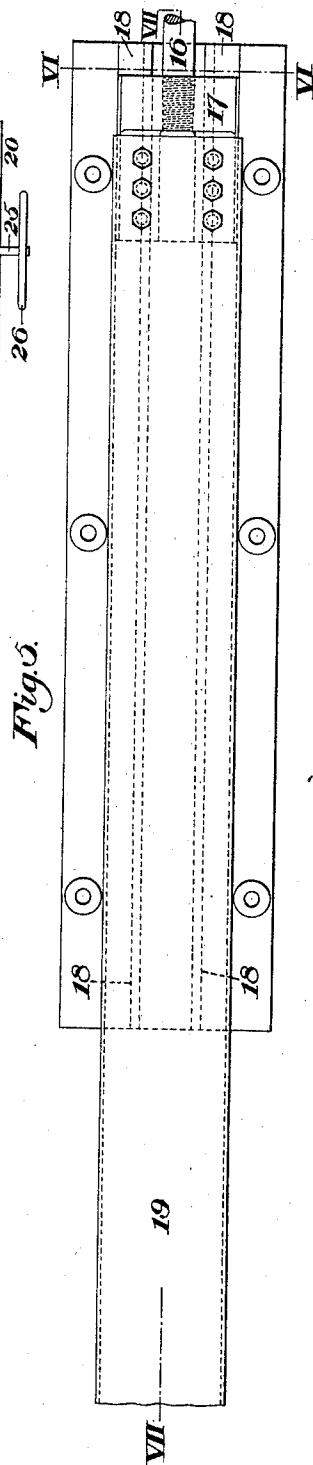


Fig. 5.

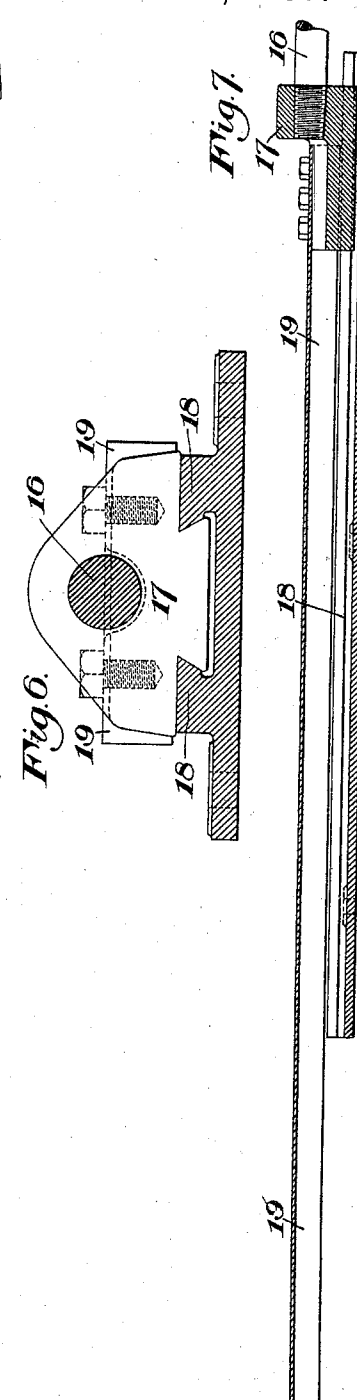


Fig. 6.

Fig. 7.

WITNESSES

Thomas W. Bassett  
Warren W. Stewart

INVENTOR

Henry Aiken

# UNITED STATES PATENT OFFICE.

HENRY AIKEN, OF PITTSBURG, PENNSYLVANIA.

## SHEARS.

SPECIFICATION forming part of Letters Patent No. 584,570, dated June 15, 1897.

Application filed October 2, 1896. Serial No. 607,669. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY AIKEN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Shears, of which the following is a full, clear, and exact description.

In the accompanying drawings, Figure 1 is a side elevation of my improved apparatus, showing the shears in vertical section. Fig. 2 is a cross-sectional view, on a larger scale, on the line II II of Fig. 1. Fig. 3 is a longitudinal section on the line III III of Fig. 2. Fig. 4 is a plan view of the parts shown on Fig. 1 except the shears. Figs. 5, 6, and 7 are detail views, Fig. 5 being a plan view of the slideway, (marked 18 in Fig. 1,) Fig. 6 being a vertical cross-section on the line VI VI of Fig. 5, and Fig. 7 being a vertical longitudinal section on the line VII VII of Fig. 5.

I have devised my invention for the purpose of providing means for cutting metal pieces of considerable length, and, if desired, weighing it as cut and stacking it in convenient form to be removed to the cars or other place of storage.

In the drawings, 2 represents the frame of the shears, which may be of ordinary construction, having a fixed shear-blade 3 and a movable shear-blade 4.

Shears which I have actually built in accordance with my invention have been constructed as described in a pending patent application, Serial No. 607,726, filed October 3, 1896, the construction being such that a large number of metal bars grouped together side by side in contact with each other can be fed to the shears simultaneously and divided at one operation by a cross-cut of the blades. Below the level of the shear-blades is a carriage 5, mounted upon rails 6 and adapted to travel horizontally to and from the shears at the rear part of the frame. This carriage supports a scrap-box 7, the function of which is described in the application above referred to, and has an upwardly-extending frame or body 8, provided with a support 9, on which rests the body 10 of a movable table which extends in a horizontal position away from and back of the shears and should be of the length or about the length of the longest piece intended to be cut. The table 10 is provided with pairs of wheels 11 12, and when the for-

ward end of the table is adjacent to the shears, as in Fig. 1, the rear pair of wheels 12 are constantly supported by rails 13 on the platform 14 of suitable scales. The carriage 5 is arranged to be moved longitudinally by a suitable cylinder or other motor 15, whose plunger 16 has a sliding head 17, mounted in ways 18, connected with the carriage by a rod 19.

When the parts are in the position shown in Fig. 1, with the front end of the table 10 up to the shear-frame, the rear wheels 12 are supported by the scale-platform, but the forward wheels 11 do not rest upon it, the front end of the table 10 being then upheld by the supports 9. If, however, the carriage 5 be drawn back from the shears by operation of the motor 15, the wheels 11 will engage the rails 13 and will ride thereon, lifting the table 10 sufficiently to free it from the support 9 and to cause its entire weight to rest upon the scale-platform.

Upon the table 10 is a movable gage composed of a buggy 20, mounted upon rails on the table so that it may travel thereon from one end to the other, and having a stop composed of a shoulder 21 and a movable shelf or lip 22, having a rack bar or bars 23 in gear with a pinion or pinions 24, whose shaft is fitted with a suitable hand-wheel 26, or other device is provided by which the shelf or lip can be projected, as shown in Fig. 3, or retracted. The stop and lip above mentioned are at a higher level than the bed 27 of the table. To stop the motion of the movable gage or buggy 20, I employ stops 20', adapted to engage and stop the wheel-axles or other projecting portions of the gage when the latter is moved back against it. These stops are set in guiding-grooves 10' on the car-body 10, so that they may be moved and adjusted at any desired distance from the shears. Upon the bed of the table 10 I lay rests for supporting the metal pieces after they have been cut. These are constituted of cross-bars 28, having clevises, enabling them to be lifted and handled by an ordinary crane.

The operation of the device is as follows: The rests 28 having been placed in position upon the table, I adjust the stops 20' on the car-body in proper position to stop the buggy 20 at such place that the stop-shoulder 21 shall be distant from the shear-blades the

length of the metal piece intended to be cut, and I move the buggy 20 up to the shear end of the table and bring the end of the table close to the frame of the shears. The metal pieces to be cut having been grouped together upon the feed-table of the shears are fed forward between the separated shear-blades until the ends of the metal pieces engage the shoulder 21 and rest upon the then projected lip 22. Then as the metal pieces continue to advance, being fed forward by the feed-rollers or other mechanism of the shear-table, they push along before them the buggy 20, which travels upon the rails on the table until it comes into engagement with and is stopped by the stop 20'. The advance of the metal is then checked by said stop, and the metal pieces then projecting beyond the shears being of the length desired to be cut the shear-blade is caused to descend and to cut them transversely. One end of the group of metal pieces is then supported by the lip 22, while the other end drops upon and is supported by one of the rests 28 on the table. Then by turning the pinion 24 the lip 22 can be retracted, so that the rear end of the group of metal pieces shall also drop upon the rests 28. The operation of cutting may thus be repeated as often as desired, so as to deposit a number of layers of metal pieces, one upon the other, upon the rests before they are removed from the table. The carriage 5 is then retracted by the motor 15 until the forward wheels 11 of the table 10 ride upon the rails of the scale-platform, and the weight of the metal pieces carried thereby can then be noted, after which they may be removed *en masse*. The use of the rests or supports 28 makes it very easy to remove the sheared pieces and to load them upon a car for shipment. They are removed by a crane, the chains of which are connected to the clevises 29. The rests, with the metal pieces, can then be lifted and carried to and deposited upon a railway-car, and by disconnecting the chains from the clevises at one end of the rests and raising the other ends they may be drawn out from the pile of the metal pieces and the latter left lying on the bottom of the car.

The advantages of my invention will be appreciated by those skilled in the art. It enables metal bars, &c., to be measured and cut with great accuracy and to be weighed and stacked at the same operation.

It will be understood that although I have described my invention as applied to the simultaneous cutting of a group of metal bars it is not limited thereto.

Many changes within the scope of the following claims may also be made in the construction and arrangement of the parts of the apparatus without departing from my invention, since

What I claim is—

1. The combination with metal-shears, of a receiving-table, and a movable supporting-gage.

2. The combination with metal-shears, of a movable table upon which the metal is deposited from the shears, and scales upon which the table is movable.

3. The combination with metal-shears, of a movable table, a movable frame or carriage by which the shear end of the table is supported, and rails or like supporting-surfaces mounted upon scales by which, when the carriage is retracted, the weight of the table is borne.

4. The combination with metal-shears, of a receiving-table movable to and from the shears transversely to the plane of the shear-blades, and a movable gage on said table.

5. The combination with metal-shears, of a gage adapted to support the metal piece, said gage being movable away from the shears and adapted to be pushed by and to travel freely with the metal as it passes through the shears.

6. The combination with metal-shears, of a movable gage having means for supporting the end of the metal as it passes through the shears and adapted to travel therewith, and means for retracting the support and permitting the metal to drop.

7. The combination with metal-shears, of a receiving-table situate in front of the shears and adapted to receive the metal pieces in parallel position as they are delivered from the shears, and supporting cross-bars situate on said table upon which the metal pieces are deposited, whereby by lifting the bars the metal may be removed *en masse*.

8. The combination with metal-shears, of a movable gage for supporting the end of the metal coming from the shears and for dropping the same, and supporting-bars on the table upon which the metal is deposited and by which it may be removed.

9. A gage having a movable lip on which one end of the metal is supported, and means for retracting the same.

In testimony whereof I have hereunto set my hand.

HENRY AIKEN.

Witnesses:

THOMAS W. BAKEWELL,  
G. I. HOLDSHIP.